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English Heritage and Operation Nightingale excavations 2003−14

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Front cover The late Kim Siddorn of Regia Anglorum (left) and Jake Watts (right) at Barrow Clump in 2012

Back cover Images from the project, 2012–14

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The Ministry of Defence granted permission for the excavation to take place, improved access to the site and provided various facilities and equipment. The programme of archaeological work in 2012 was generously funded through Defence Training Estates (REES funds) obtained by Richard Osgood, with additional support given by Care for Casualties and The Rifles through the efforts of Corporal Steve Winterton.

Landmarc administered the funds for the excavation and post-excavation work and Tom Theed, Esther Smeardon and, subsequently, Sarah Hicks helped with several matters in this respect. Tents, tables, beds and canteen/cooking equipment, vital to the welfare of the team, were provided by 6 Rifles. Giles Woodhouse and Amy Stringer from Tedworth House, Frances Fox (World Wide Volunteering), Mike Smith (The Rifles Casualty Officer at Peninsular Barracks) helped in various ways, and Wessex Archaeology contributed more generally to the running of the project through all its stages. Funds for the open days and some of the metalwork conservation were provided by Wiltshire Council, and we are very grateful to Melanie Pomeroy- Kellinger for arranging this. Tracey Williams, Terry Crawford and the Headley Trust gave generous donations to the project and their support is fully acknowledged.

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The 2012–14 fieldwork strategy was developed by Richard Osgood (DIO), who obtained all the necessary consents, and Phil Andrews (Wessex Archaeology), in conjunction with Jonathan Last (English Heritage) who directed the 2003 and 2004 excavations at the site. Scheduled Monument Clearance was arranged by Amanda Chadburn and Phil McMahon, who also monitored the project for English Heritage, whilst Melanie Pomeroy Kellinger monitored the work on behalf of Wiltshire Council.

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The excavation was directed by Phil Andrews and Richard Osgood, with invaluable assistance from Dave Murdie and Angus Forshaw (of Wessex Archaeology, the latter funded through a Council for British Archaeology placement), Rowan Kendrick, Laurence Savage and Steve Winterton. Corporal Steve Winterton, Captain Paul Johnstone-Armstrong and Sergeant Diarmaid Walshe provided vital logistical support, and a number of others lent their archaeological expertise to help run the fieldwork and pass on their skills. Amongst the latter are Peter Buxton, Al McCluskey, Giles Woodhouse, Mike Kelly, Tim Elmer and Harry Buxton, all from the military. To these can be added Kathy Garland, Briony Lalor, Jayne O'Connell and Roger Collins, with additional help from Dan Bashford (EH), Peter Addison (EH), Dan Miles (EH), Melissa Conway, Natasha Brett, Ellie Morris, Catriona Gibson, Sue Harrison, Emily Vincent, Jade Panetta-Romain, Pip Meek and Allison Saxton. Further assistance was provided by several students from Leicester University, particularly Sam Nord, James Spry, Kerry Rapson and Archie Forrest. Without Stephanie Vincent in 2012 we would have struggled to keep up with the recording and lifting of the larger number of burials than anticipated. We were subsequently very grateful to Jackie McKinley for her invaluable help with the excavation, recording and lifting of the burials in 2013 and 2014. Finally, we would like to thank Mike Heaton for re-excavating Lt-Col Hawley's excavation trench, approximately 110 years after it was originally dug.

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Geoff and Lesley Burr carried out the preliminary metal detector survey of the site and, with other members of the West Kent detectorists group and Paul Marks, undertook further metal detecting throughout the course of the fieldwork.

Katie Marsden looked after the recording and packing of the various objects and materials on site, assisted by Samantha Wildman in 2014. Many of the finds were processed on site by Laurence Savage and Natasha Brett, both of whom also carried out preliminary sorting of the worked flint, along with Kathy Garland and Roger Collins, under guidance from Phil Harding. Richard Henry (Portable Antiquities Scheme, Finds Liaison Officer Wiltshire) identified the Roman coins. The Anglo-Saxon bucket and sword were block lifted, excavated and conserved by Lynn Wootten, conservator at Wessex Archaeology, who also undertook the x-raying and stabilisation of the other metalwork from 2012 and 2014. The 2013 metalwork was x-rayed and stabilised by Gabrielle Flexer of Wiltshire Council Conservation Service, who also carried out the cleaning and conservation of the Visigothic brooch. The bucket was x-rayed on site by an Army medical team using their portable x-ray equipment, the arrangements for the provision of this facility made by Peter Buxton. This and the sword were subsequently x-rayed at the Army Medical Research Centre at Aldershot, the visit organised by Capt Thomas Doe.

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Project Florence, the outreach element of the Barrow Clump project, was initiated by Sarah Phillips in 2012 and supported through a grant from the Heritage Lottery Fund. Laura Joyner subsequently took over the running of the project and was involved, along with Angus Forshaw, in all of the many aspects of the community programme which were undertaken during the fieldwork and the post-excavation phase which followed. This included three very successful open days during each of the seasons, with support not only from Wessex Archaeology and Operation Nightingale participants, but also from *Weorod*, Mark Routledge and Wiltshire Museum, Devizes, as well as several of the Project Florence volunteers who helped in various ways and gave guided tours.

The making of a *Time Team* programme during the course of the fieldwork provided an opportunity to extend the excavation area and address some additional research questions, undertake further geophysical survey in the vicinity of Barrow Clump and also bring the project (as well as Operation

Nightingale) to a wider audience. Tim Taylor, Jim Mower and Sian Price of Videotext Communications, together with Richard Osgood, instigated and made the necessary arrangements for the programme's development.

Carly Hilts at *Current Archaeology* invited us to submit an article on the Operation Nightingale work at Barrow Clump, and the project was subsequently short-listed for an award. Although narrowly failing to win, Operation Nightingale did achieve success when it was given a British Archaeology award for its outstanding work.

A variety of specialists provided advice and training on site including Ruth Pelling and Poly Baker from English Heritage and Phil Harding, Jackie McKinley and Lorraine Mepham from Wessex Archaeology. Kirsten Egging Dinwiddy and Lynn Wootten undertook further training sessions during the post-excavation programme.

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The human bone and the finds not processed on site were dealt with subsequently at the offices of Wessex Archaeology by Steve Winterton, Rowan Kendrick and a dedicated team of Project Florence volunteers including Margaret Melsom, Kathy Garland, Roger Collins, Briony Lalor, Claire McHardy, Eleanor Salkeld, Dan Rendall, Janet Reedman and Olivia Robson. Laura Joyner and Angus Forshaw organised and looked after this part of post-excavation work and Sue Nelson provided help with the finds recording database for the project.

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Preliminary reports on the 2012–13 seasons were prepared by Phil Andrews and Angus Forshaw, incorporating information provided by Jonathan Last and Nick Stoodley, with draft grave catalogues compiled by Steve Winterton, Rowan Kendrick, Briony Lalor and Roger Collins.

In addition to the named contributors, various people have helped in various ways. Mandy Way, Carlos Rocha and Janine Peck prepared data that have been used to produce the distribution plans, Kathy Garland and Roger Collins organised finds and paperwork for specialists, and Karen Nichols liaised with Historic England over publication drawings prepared for the 2003–4 phase of work.

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The site drawings, grave plans and distribution figures published here have been produced by Rob Goller, who has also re-worked some of the 2003–4 figures, with the finds illustrations by Elizabeth James. The barrow reconstruction drawing is by Eleanor Winter and the Anglo-Saxon dress reconstructions are by Judith Dobie. John Vallender also provided valuable assistance with graphics.

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Abstract

Barrow Clump, on the east side of the Avon valley, lies in the centre of the Salisbury Plain Military Training Area. It is the site of a large, partly extant Early Bronze Age burial mound which incorporates an earlier Beaker funerary monument, seals a Neolithic land surface, and was the focus of an Anglo-Saxon cemetery, most of the burials taking place in the 6th century AD.

After Lt-Col William Hawley's initial investigation of the mound at the end of the 19th century, another 100 years were to pass before further excavations were instigated, largely in response to the damage being caused to this and other prehistoric monuments by burrowing animals, in particular badgers. The 2003–4 excavations were carried out by English Heritage (now Historic England), while in 2012–14 the work was undertaken by Defence Infrastructure Organisation with Wessex Archaeology and made possible by the participation of Operation Nightingale (Exercise Beowulf), an innovative military initiative to involve injured service personnel in archaeology to aid their recovery.

The buried land surface preserved beneath the barrow mound produced a significant assemblage of mainly Middle Neolithic pottery and worked flint, while a single relatively large Early Neolithic pit contained an unusual group of stone and antler tools. Approximately half of each of the two Bronze Age barrows were excavated, the Beaker monument comprising a 12 m diameter ring-ditch and associated mound with a single central burial (excavated by Hawley) and a satellite burial, both containing Beakers, the latter noteworthy as providing the first recorded example of scurvy in Britain. The central grave of the large Early Bronze Age bell barrow, approximately 50 m in diameter, had also been excavated by Hawley, but some bone from the four burials he noted was found in the backfill of his excavation trench (the accompanying Food Vessel, as well as the Beaker he found, are now in the Wiltshire Museum, Devizes). In addition, three later cremation graves survived, two in inverted Collared Urns and one unurned, the latter associated with an unusual group of pyre goods. Radiocarbon dating has provided a coherent chronology for the prehistoric sequence, the barrow representing one of about 23 in this group, the remainder now ploughed flat but evident from cropmarks and geophysical survey.

The Anglo-Saxon cemetery, focused on the largest mound in the most prominent spot, occupied the southern half of the berm and ditch of the barrow, continuing beyond this to the south-west. Approximately 70 inhumation graves were recorded, most belonging to the 6th century, although radiocarbon dating has shown that some unaccompanied burials belong to the later 7th, possibly even the 8th century. No contemporary settlement has so far been located, but it can be surmised that this lay a short distance to the south-west in the valley below. Study of the human bone assemblage and isotope analysis indicates that not all of those buried at Barrow Clump were brought up in the area and, initially at least, two or more family groupings were represented in the cemetery, these becoming inter-related over time. Levels of health and nutritional stresses seem to have been typical for the period, but the fatal sharp blade injury to a juvenile is a rare finding. The grave good assemblages include a number with weapons, one with a sword with well-preserved organic remains and another with the remarkable survival of a bucket with staves of yew. There is a diversity of jewellery assemblages, most of which do not exhibit a particularly impressive range of wealth, but one is noteworthy for including a great square-headed brooch, a silver spoon and a bridle bit, whilst another contained only the second Visigothic brooch of this type found in Britain and the first from a burial.

In addition to the more conventional archaeological remains, there are several 19th- and 20th-century military items of interest, and the reflections of some of the Operation Nightingale participants are included here, along with the outcomes of the associated outreach programme – Project Florence, as this has come to represent such an integral and successful element of the overall project.

Résumé

Barrow Clump, sur le versant est de la vallée d'Avon, se trouve au centre de la zone militaire de la plaine de Salisbury. C'est le site d'un grand tertre funéraire de l'âge du Bronze ancien, partiellement existant, qui incorpore un monument funéraire antérieur, datant du Campaniforme, scelle un sol du Néolithique et se trouve également sur l'emprise d'un cimetière anglo-saxon, dont la plupart des enterrements ont eu lieu au VIe siècle ap. J.-C.

Après l'enquête initiale du lieutenant-colonel William Hawley sur le tumulus à la fin du XIXe siècle, un siècle s'écoula avant que d'autres fouilles ne soient entreprises, en grande partie en réponse aux dommages causés à ce monument ainsi qu'à d'autres monuments préhistoriques par des animaux fouisseurs, notamment des blaireaux. Les fouilles de 2003-2004 ont été effectuées par English Heritage (aujourd'hui Historic England), tandis qu'en 2012-2014, les travaux ont été entrepris par la Defence Infrastructure Organisation avec Wessex Archaeology, opérations rendues possibles grâce à la participation de l'Operation Nightingale (Exercise Beowulf), une initiative militaire novatrice visant à faire participer les militaires blessés à l'archéologie, afin de faciliter leur guérison.

Un important ensemble de céramique et de silex taillés, principalement du Néolithique moyen, a été recueilli sur la surface du sol conservée sous le tertre, tandis qu'une unique fosse relativement grande, du Néolithique ancien, contenait un lot inhabituel d'outils en pierre et en bois. Environ une moitié de chacun des deux tertres de l'âge du Bronze a été fouillé, le monument de période campaniforme comprenant un fossé annulaire de 12 m de diamètre et un monticule associé à une seule sépulture centrale (dégagée par Hawley) et une sépulture adventice, toutes deux contenant des gobelets ; la dernière mérite d'être mentionnée comme le premier exemple enregistré du scorbut en Grande-Bretagne. La tombe centrale du grand tertre en forme de < bell barrow >, datant de l'âge du Bronze ancien et d'environ 50 m de diamètre, avait également été dégagée par Hawley, mais une partie des ossements des quatre sépultures qu'il a prélevées a été trouvée dans le remplissage de sa tranchée de fouille (le pot de forme Food Vessel qui l'accompagne, ainsi que le gobelet, se trouvent maintenant au Wiltshire Museum, Devizes). De plus, trois sépultures à crémation plus tardives ont survécu, deux dans des urnes à collier inversé et une sans urne, cette dernière étant associée à un groupe inhabituel de mobilier funéraire déposé sur le bûcher. La datation radiocarbone a fourni une chronologie cohérente pour la séquence préhistorique, le tertre représentant l'un des 23 points de ce groupe, les autres étant maintenant arasés par les labours mais évidentes au regard des indices phytologiques et de l'exploration géophysique.

Le cimetière anglo-saxon, centré sur le plus grand tertre à l'endroit le plus marquant, occupait la moitié sud de la berme et du fossé du tertre, continuant au-delà vers le sud-ouest. Environ 70 sépultures ont été enregistrées, la plupart datant du VIe siècle, bien que la datation au radiocarbone ait montré que certaines sépultures sans mobilier datent de la fin du VIIe, peut-être même du VIIIe siècle. Aucune habitation contemporaine n'a été localisée jusqu'à présent, mais on peut supposer qu'elle se trouvait dans les parages vers le sud-ouest, dans la vallée en contrebas. L'examen anthropologique des ossements et l'analyse isotopique indiquent que tous les individus enterrés à Barrow Clump n'avaient pas grandi dans la région et que, au départ, au moins deux groupes familiaux étaient représentés dans le cimetière et se sont mélangés avec le temps. Les niveaux de stress nutritionnel et de santé semblent avoir été typiques de cette période, mais les blessures mortelles causées par une lame tranchante à un mineur constituent une découverte rare. Les ensembles du mobilier funéraire comprennent un certain nombre d'armes, l'une avec une épée avec des restes organiques bien conservés, l'autre avec la conservation remarquable d'un seau en douelles d'if. Il y a une grande diversité d'ensembles de parure, dont la plupart ne présentent pas une richesse particulièrement impressionnante ; mais l'un d'entre eux se distingue par la présence d'une fibule à grande plaque de tête quadrangulaire, d'une cuillère en argent et d'un mors de bride, tandis qu'un autre contient la deuxième fibule wisigothique de ce type trouvée en Grande-Bretagne, et la première issue d'un contexte funéraire.

Outre les vestiges archéologiques plus conventionnels, il y a plusieurs objets d'intérêt militaire des XIXe et XXe siècles, et les réflexions de certains participants à l'Opération Nightingale sont incluses ici, ainsi que les résultats du programme de sensibilisation associé – le Projet Florence, qui en est venu à représenter un élément essentiel et réussi du projet entier.

Traduction : Jörn Schuster

Zusammenfassung

Barrow Clump, an der Ostseite des Avon-Tals gelegen, befindet sich im Zentrum des Truppenübungsplatzes in der Ebene von Salisbury (Salisbury Plain). Der Fundplatz umfasst einen teilweise erhaltenen frühbronzezeitlichen Grabhügel, der einen älteren, becherzeitlichen Grabbau einschließt, eine neolithische Geländeoberfläche überdeckt, um dann später zum Mittelpunkt eines angelsächsischen Gräberfeldes zu werden, dessen Bestattungen größtenteils während des 6. Jahrhunderts angelegt wurden.

Nach einer ersten Untersuchung des Grabhügels durch Oberstleutnant William Hawley Ende des 19. Jahrhunderts vergingen weitere 100 Jahre, ehe weitere Ausgrabungen in Angriff genommen wurden, hautsächlich als Reaktion auf Schäden, die an diesem und anderen urgeschichtlichen Denkmälern durch Wühlgänge von Tieren, insbesondere von Dachsen, angerichtet wurden. Die Ausgrabungen in den Jahren 2003-4 führte English Heritage (heute Historic England) durch, während die Arbeiten der Jahre 2012-14 von der Defence Infrastructure Organisation mit Wessex Archaeology bewerkstelligt wurden. Die Arbeiten wurden durch Teilnahme an der Operation Nightingale (Exercise Beowulf) ermöglicht, einer innovativen Maßnahme der Streitkräfte, die der Genesung verletzter Militärangehöriger durch Einbindung in archäologische Arbeiten dient.

Auf der unter dem Grabhügel erhaltenen ehemaligen Geländeoberfläche fand sich eine bedeutende Sammlung von größtenteils mittelneolithischer Keramik und bearbeitetem Feuerstein. Eine vereinzelte, relativ große frühneolithische Grube enthielt eine ungewöhnliche Sammlung von Stein- und Geweihwerkzeugen. Die beiden bronzezeitlichen Grabhügel wurden jeweils ungefähr zur Hälfte freigelegt, wobei der becherzeitliche Grabbau von einem Ringgraben von 12 m Durchmesser umgeben war und der dazugehörige Hügel eine zentrale Bestattung (von Hawley ausgegraben) und ein Satellitengrab aufwies, beide mit Becherbeigabe. Das Satellitengrab ist bemerkenswert, da es den ersten dokumentierten Nachweis für Skorbut in Großbritannien geliefert hat. Das Zentralgrab des großen frühbronzezeitlichen glockenförmigen Hügels, mit einem Durchmesser von ungefähr 50 m, ist ebenfalls von Hawley ausgegraben worden, aber einige Knochen der vier von ihm dokumentierten Bestattungen wurden in der Verfüllung seines Grabungsschnitts gefunden (das beigegebene Food Vessel-Gefäß, wie auch der Becher, befinden sich heute im Wiltshire Museum, Devizes). Darüber hinaus haben sich auch drei spätere Brandbestattungen erhalten, zwei in Collared Urns und eine ohne Urne, wobei Letztere mit einer ungewöhnlichen Gruppe von Scheiterhaufenbeigaben vergesellschaftet war. Die Radiokarbondatierungen haben eine in sich schlüssige Chronologie für die urgeschichtliche Befundabfolge geliefert, wobei der Grabhügel nur einer von etwa 23 in dieser Gruppe ist, von denen die übrigen jetzt ausgepflügt und nur noch durch Bewuchsmerkmale und geophysikalische Untersuchungen nachweisbar sind.

Das angelsächsische Gräberfeld, das sich auf den größten Hügel in der markantesten Position konzentrierte, erstreckte sich über die südliche Hälfte der Berme und den Graben des Hügels und setzte sich in südwestlicher Richtung fort. Es wurden ungefähr 70 Körpergräber dokumentiert, von denen die meisten dem 6. Jahrhundert angehören; allerdings zeigen die Radiokarbondatierungen, dass einige der beigabenlosen Bestattungen in das späte 7., möglicherweise sogar das 8. Jahrhundert datieren. Obgleich bislang keine gleichzeitige Siedlung gefunden wurde, ist anzunehmen, dass diese in geringer Entfernung im Tal in Richtung Süd-Westen lag. Die Untersuchungen der Menschenknochen und Isotopenanalysen zeigen, dass nicht alle der in Barrow Clump Bestatteten in der Umgebung aufgewachsen sind und dass, zumindest anfänglich, mindestens zwei, wenn nicht mehr Familiengruppen innerhalb des Gräberfelds repräsentiert sind, die sich im Laufe der Zeit vermischten. Gesundheits- und ernährungsbedingter Stress scheint auf dem für den Zeitraum typischen Niveau zu liegen, aber die durch eine scharfe Klinge verursachte tödliche Verletzung eines juvenilen Individuums stellt einen seltenen Befund dar. Einige der Gräber enthielten Beigabenausstattungen mit Waffen, darunter eine mit einem Schwert mit gut erhaltenen organischen Überresten. Bemerkenswert in einem anderen Grab war die Erhaltung eines Eimers mit Dauben aus Eibenholz. Die meisten Schmuckkombinationen repräsentieren kein übermäßig beeindruckendes Ausmaß an Wohlstand; hervorzuheben ist jedoch eine Bestattung, die eine große Fibel mit rechteckiger Kopfplatte, einen silbernen Löffel und eine Pferdetrense umfasst, während eine weitere die zweite bislang in Großbritannien gefundene westgotische Fibel dieses Typs enthielt (und die erste aus einem Grabzusammenhang).

Neben den eher konventionellen archäologischen Hinterlassenschaften gibt es auch mehrere Gegenstände des 19. und 20. Jahrhunderts von militärischem Interesse, und die von einigen Teilnehmern der Operation Nightingale hierzu angestellten Reflexionen werden hier zusammen mit den Ergebnissen des damit verbundenen Öffentlichkeitsprogramms – Project Florence – vorgelegt, da dies zu einem so wesentlichen und erfolgreichen Element des Gesamtprojekts geworden ist.

Übersetzung: Jörn Schuster
(ARCHÆOLOGICALsmallFINDS)

Preface
Several Months in the Country: the Op Nightingale (Ex Beowulf) Team

All the same, it's exciting to be the first to see again what has been long hidden, and Moon, pushing his face closer to the gap, blew gently into the trough. A puff of dust stirred. "The shroud!" he murmured.

Then he said, "Oh, come on; in for a penny, in for a pound. Let's push, both of us, and then tipple it against the pit side." So we did and the lid budged inch after inch until we could see the full length of the collapsed skeleton. We crouched and peered at it.

– Captain James Moon, *A Month in the Country* by J L Carr (1980, 103–4).

This volume not only illustrates the importance of the archaeological deposits at Barrow Clump but also highlights the empirical data of the damage caused to monuments by the actions of burrowing animals. However, the unique aspect of the overall project was the composition of the fieldwork team for the 2012–2014 seasons. Established in 2011, 'Operation Nightingale' initially provided the opportunity for members of The Rifles (the largest infantry Regiment in the British Army) to undertake archaeological work as part of the recovery process for those on the 'Wounded, Injured and Sick' (WIS) list. Given the tempo of military operations in both Iraq and Afghanistan, it is perhaps not surprising that there were a number of individuals who were keen to experience an archaeological excavation and all that goes with it. The Charitable support of 'Care for Casualties', The Rifles Charity, was instrumental in enabling their participation (Pl. 1).

The programme was extended beyond The Rifles to all 'cap badges' of the military and the results of the endeavours of these individuals who worked alongside professional archaeologists, students and local volunteers are presented below. The military staff participated fully in all aspects of the fieldwork, some post-excavation and also were a key part of the outreach campaign; presenting the site to visitors on the open days, speaking to the schoolchildren engaged on filming the site for the HLF-funded 'Project Florence', and being the stars of an episode of the Chanel 4 television programme *Time Team*.

These military men and women had generally viewed their career-paths as being military, it had been their life, their family, their future and thus for it to end suddenly was often shocking for them. Ex-Marine, Richard Bennett, felt that:

> 'In the military you don't talk about your feelings, you have an emotional suit of armour on. When you leave this disappears. You are vulnerable and you start feeling all these emotions that you don't really know how to deal with. It was a big shock,' he says. 'I had a career one day and the next day I didn't.'

Several of these individuals wrote about their own, personal, experiences at the site they knew as 'The Clump'. This is their chapter. To this end, much of the testimony below has been left as written and kept to its original length without editing – it bears powerful testimony to those that had been through some very testing times. It also illustrates the humour, and ability of those that took part – never should it be said that those that join the military are anything other than very capable individuals (perhaps something picked up by Kipling in 'Tommy' many moons ago). All those who have written below have now left the Armed Forces and have their own inimitable take on archaeology, its benefits and privations. Many of these participants had their first experience of archaeological excavation at Barrow Clump, whilst others had begun on earlier 'Operation Nightingale' projects. Numerous luminary figures from archaeology had a military background – from General Pitt-Rivers and Mortimer

Plate 1 Team shot 2014

Plate 2 Dave Hart

Wheeler through to Martin Biddle and beyond, as well as William Hawley, the first excavator of Barrow Clump (see Chapter 1). The team on this excavation (codenamed 'Exercise Beowulf') were aware of inter-disciplinary parallels. In writing about his time at The Clump, Dave Hart (Pl. 2) said:

> 'What followed was the experience of a lifetime over the next three summers. There was something magical about Barrow Clump in every way. The meticulous and physical demands of archaeology seemed to lend themselves to the art of soldiering and vice versa. The task of taking ground and holding it, and by default interpreting it, are the very purpose of the infantry soldier and at the very basic end of the skills spectrum we are pretty adept at digging 'oles despite injuries. The opportunity to learn from everybody involved in the dig was reward in itself and some of the finds were astounding. The ever developing realisation and piecing together of what we were discovering was thrilling and educational, the skills we were honing seemed a refining of the basic skills required of every soldier and a glimpse at a life beyond the military for a lot of us.'

Richard Bennett concurred:

> 'In the military you are told when to get up, when to eat breakfast, when to have a shower. In archaeology there are also set processes that you have to go through. You have to do things a certain way and pay attention to detail or you are going to miss something.'

The transition from a military role to civilian life is evidently not always the easiest move. For some, the excavations provided a brief illustration that their skills acquired in the military were indeed transferable, that they could work as well within a civilian environment and, in some cases, even that archaeology might be a possible career path; something that had seemed impossible beforehand.

> 'Barrow Clump was a particularly unique excavation for several of us because the years between its inception and completion were also the stage for our passage from soldiers to professional, civilian archaeologists. None of us chose this journey, but I don't think a single one of us could have imagined a better outcome, or a better place to start a new life.
>
> When I arrived from Germany, back in 2012, on the weekend before the project was to start, myself and a corporal from the same regiment pitched camp on the hillside next to the barrow. We had both dug before, on a Romano-British site in Wales, but had never expected to find ourselves working on a project of this scale. A trickle of people arrived over the following days, mostly from The Rifles. A week later an enthusiastic Colour Serjeant heard of our project and sent ten more volunteers. From there the project kept growing until we had participants from all arms of the forces. We even had a tame Royal Marine who, for some reason, always seemed to wear a hopeful look and have a packet of biscuits to hand. We supposed it must have been a Marine thing but were always grateful at tea break.
>
> The project provided us with the first real chance to see ourselves in a non-military environment since we had entered service and sometimes the contrasts were stark. One of the things that still haunts me is the look on the site director's face the first time he was exposed to a robust, military vocabulary. Thankfully Phil is a man of infinite patience and with his gentle guidance we learned to find our place in the decidedly civilian world of archaeology. This came as more of a comfort to us than you might think. Despite the best efforts of individual officers and doctors, most of us had been consigned to the medical scrapheap and were in the midst of a several year wait to be unceremoniously thrown out. With our jobs would go our homes, our friends, and our identity. To find that there was at least one place where we could fit in, find new friends, and begin a new career came as a welcome relief. Even those who didn't see themselves becoming archaeologists after the

Forces were at least able to think of themselves as more than just dumb squaddies.'
(Laurence Savage (Sav)) (Pl. 3).

Plate 3 Laurence Savage ('Sav')

Inspiration for Joining In

Motivation for participating in the project and, in particular, Barrow Clump varied by individual. Steve Winterton found that:

> 'Coming to terms with losing a career that you love and enjoyed doing to suddenly having nothing and being sat at home. What am I doing today, actually doing today? It was hard…very hard. I was suicidal. I had a bag packed and was ready to go and do something stupid to be honest.'

His *Time Team* passion inspired him to give archaeology a try, and he was instrumental in passing on his brand of enthusiasm to all of the others that joined the team and to ensure that people enjoyed themselves and wanted to return for subsequent seasons.

Participants were told about the dig by friends and colleagues who felt it might be something that would interest them. James Tong wrote that:

> 'I was invited to attend the OP NIGHTINGALE dig on Salisbury plain in 2012 as my brother Adam was already involved and had made it known that I had a keen interest in archaeology and would jump at the chance to get involved in this project that was for injured servicemen and women as a way of rehabilitating them. I had been made aware that Time Team would also be filming for a special episode of the show.'

When asked why he joined the group, Dave Hart replied:

> 'Where did it all begin? I had just finished off my Primary PGCE and was awaiting further surgery on my injured left arm at Salisbury hospital. Then as I checked my emails between hurried box ticking in my final assessment. There it was an email from Colonel Mike Smith at Rifles welfare which had the essential questions; Have you an interest in archaeology? Fancy excavating an Anglo Saxon burial site? Want to dig holes, eat 'compo', and live in field conditions for up to five weeks on the Plain? Want to work alongside/socialise with other injured soldiers and archaeologists? With all boxes ticked and the fact they had me at "regularly emptied portaloo's" the clinchers were the presence of Time Team and Beer on tap. Having stopped jumping up and down with glee in the library I was fully signed up to Operation Nightingale and realised that I would soon realise my error in choosing History and popstar teacher wages over Archaeology and a life of blissful poverty, or at the very least I would blag my teaching of Anglo Saxon England to enthralled classes of Primary pupils by speaking with some authority like a budget Howard Carter. In all honesty though the main draw was of course Phil Harding's shorts.'

Of course, humour was something that featured writ large on the excavation.

Richard Bennett decided to go along to The Clump with his daughter and on their very first day of excavation here they found a skeleton:

> 'It was a beautiful day; everything was perfect – it set the scene for an amazing experience. Archaeology has a huge cathartic value. Depending on your state of mind, you can choose to sit there and reflect on life or just concentrate on looking for something in the ground and not think about anything else at all. Suffering from PTSD manifests itself in many different ways. For me I have to keep busy and I have to keep doing things. It was something to really focus on and get immersed in and learn new skills.'

For Richard, archaeology was the mechanism by which he could recover (Pl. 4).

Plate 4 Richard 'Dickie' Bennett

Introduction to Archaeology

The motivation for people to be on the excavation was varied. As we saw on other sites, it could initially be as prosaic as to avoid dull guard duties, or indeed to get their friend to 'shut up' and stop 'nagging' them to attend. Others were recommended by those in the medical chain of command and some brave few saw it as something that they had always wanted to do. The great thing is that there is a job for everyone on site – be it excavation, recording, finds processing or manning the rations tent! Not everyone even wanted to be there to start with, but the magic of 'The Clump' was something that soon changed their opinion. It was fascinating to see those that had an excellent understanding of the Plain from a military perspective realising just how rich the archaeological palimpsest of this area actually is. Many have of course dug trenches, 'observation positions' or 'shell scrapes' on the Plain beforehand but this was a wholly new way for them to experience the landscape.

Plate 5 Stu Bowman

'Barrow Clump was in its final year when I first turned up. My Personnel Recovery Officer had decided that my interest in history meant that I would love to dig holes on SPTA (Salisbury Plain Training Area), with the only difference being that I wouldn't have to live in these ones. I personally couldn't think of anything worse, but what did I have to lose?'
(Matt Smith)

Rowan Kendrick picked up an important point. Whilst being used to digging on training areas, actually looking at the material one was uncovering, and recording it, was an altogether different experience. Throughout the excavation these volunteers were all supported by the professional archaeologists on site – to ensure not only that the excavation ran smoothly and to a high standard, but also that these individuals learned quickly:

'Well what can I say about Barrow clump? After being in the military for seven years and introduced to all sorts of different challenges and environments I thought very little could have phased me but going from the little cocoon of day to day camp life to suddenly have to deal with carefully excavating Anglo Saxon skeletons whilst dealing with civilians and the seemingly ever present press and tv people who took great interest in this ground-breaking project was one of the most daunting, exciting and fascinating things I have ever done. To say I felt slightly out of my depth is an understatement but I quickly learned I was in very good hands and was surrounded by lots of professional archaeologists prepared to offer help and advice whenever you needed it.'
(Rowan Kendrick)

Fellow Rifles veteran James Tong reminisced:

'I spent four days doing something that I never thought I would get a chance to do and that was digging on an Anglo-Saxon burial ground. The site was off the main track and situated around a burial mound that had become the home to some rather industrious badgers. The first day I was given a patch of ground with my brother to investigate and was shown how to use the trowel, other equipment and how not to damage any artefacts that I may find as the site was incredibly rich in history and many artefacts have already been found.

The four days I spent digging with OP NIGHTINGALE was fantastic and something I will never forget. It has stoked up my love of history and has given me memory's I will never forget.'

And they buried torques in the barrow, and jewels
and a trove of such things as trespassing men
had once dared to drag from the hoard.
They let the ground keep that ancestral treasure,
gold under gravel, gone to earth,
as useless to men now as it ever was
– Beowulf

Great Finds at The Clump

The Operation Nightingale sites are carefully selected, as are the contractors that provide the professional support (Pl. 5). For a start, all of the projects are sites which need some sort of intervention – often because they are in some way 'at risk' – generally from the actions of burrowing animals. Another is that the sites will always work better if they are to yield artefacts or interesting stratigraphy; a statement that works for everyone in archaeology and the military are no different. This volume illustrates that the latter target was certainly achieved at Barrow Clump and the military diggers certainly appreciated the fact. Each had their favourite moment which will be something they remember, something that stood out for them. Just as for Moon in *A Month in The Country*, to be that person who makes a discovery has a quality all of its own:

'After getting to grips with how to properly use a trowel and brush I started to scrape away at my patch of chalk, all of a sudden I discovered what I thought was an amazing find. The tip of a Stone Age spear! I was so happy with my find I rushed up to Phil Harding from Time Team and instead of saying what I had just found I just made a series of strange noises at him and showed him the spear point. He picked it up looked at it smiled and explained to me what it was and how it was made, I was in awe of a man I had seen on the telly growing up and I was not disappointed. The next few days were fantastic and I was so lucky to see items being brought out of the ground that had not been seen in a thousand years. In the next few days I discovered some pottery and a very odd perfectly circular quartz stone that was nearly on the very top of the burial mound.'
(James Tong).

Davey Averill from The Rifles worked alongside his regimental colleague Nick Brown:

'It was my teammate Nick who first discovered her knee bone and I've got to say I was quite jealous so we kept working away for the day and when I found the brooches [one Roman, one Saxon – RO] to be honest, you know being the first person in just over 1000 years to look at those brooches was just amazing. It's an honour. ... I've learned that archaeology teaches patience … you can't go too fast.'

Matt Smith seemed to develop something of a 'Midas Touch' on his first excavation:

'On arrival, I met up with Richard Osgood who, being evil, wanted me to get straight into a hole. I was paired up with Jade and we set to work. Laid down on the mud, troweling the mud, looking at mud! "Why did I agree to this!?" I scraped and scraped and scraped and then I saw it. It was only small, but I'd found something. It was bone! I had actually found a piece of bone! Against my better instincts I was becoming excited. I took my time exposing it across the full length, encouraged the whole time by Jade.

I'd done it! I had both ends of the bone visible. My excitement grew. I wanted to take it out and show it to the world, but we had to do things properly, it had to be recorded and identified. I ran off to find Jacki Mckinley. Osteoarchaeologist extraordinaire, that's famous from Time Team. She was coming to identify a bone that I had uncovered. In my trench. My bone! Jacki jumped into my trench and bent down to take a look. Any second now she would tell me what part of the body it was from, what sex the person was, how old they were, what conditions they may have died from… I was so excited I was going to burst.

Then it happened. She picked it up and threw it on the spoil heap! "Where's the bone you found?" she asked. "You just threw it on the spoil!" I replied. "That was a stick!" she said smiling. We eventually went on to find a lady in our trench. Buried with a bone hair pin, a brooch that turned out to be of Visigoth origin and over 20 beads. I named her Beatrice after the beads. I was hooked.' (Pl. 6).

Plate 6 Matt Smith and the 'Visigothic brooch grave'

Plate 7 Steve Winterton ('Winno') and the sword

Defying, perhaps, the stereotype of machismo ascribed to members of the British Military, the image of a heated debate between a Royal Marine and a soldier from the Royal Corps of Signals as to who had the 'prettier' jewellery from the graves they were excavating will live long. Nobody on site who witnessed the discussion will forget it, and it surely lies many fathoms from discussions they would have had within their Mess in a military sphere. This 'banter' and camaraderie though is one of the key ingredients of the success of these fieldwork projects. Although there is clearly to be transition between the military and civilian lives of participants, their old lives still have a major resonance and to be able to be outside, working with people who understand their sense of humour seems critical (see Finnegan 2016).

In addition to the Visigoth brooch, perhaps two artefacts stood out for the soldiers involved; the Saxon 'bucket' and the sword. The latter had been something that Steve Winterton (Winno), the inspiration behind 'Operation Nightingale', had been demanding as a discovery from the site director from 2012. It was thus almost prophetic that the penultimate grave uncovered yielded such an item – the only one on site – and that its finder was indeed 'Winno'. When Steve realised what he was excavating, he stood and announced, whilst shaking, that he had not felt like that since he had been mortared in Afghanistan! Archaeology clearly moves people in mysterious ways (Pl. 7).

Rowan Kendrick (Kenny) tells his own story on his discovery – that of the drinking vessel:

> 'This was a big leap from my very first excavation where I was uncovering Roman buildings. Now I was dealing with human remains which were dealt with very carefully. I remember cleaning back a section and a piece of bone fell out and I panicked thinking I'd wrecked a grave. Luckily it was a piece disturbed by the badgers. As time wore on I started to relax more and remember concentrating so hard on carefully cleaning the bones I had to be told to take breaks because I'd forget. Eventually the finds started coming thick and fast and due to my interest in military history I was overjoyed to be excavating ancient warriors and their shield bosses and spear heads.
>
> My main find came about in a really strange way. Dave Murdie, one of the Wessex archaeology staff helping supervise soldiers like me on this site, had uncovered the pelvis of a skeleton that had been exposed by a badger run and needed help uncovering the rest. Luckily I was given that role. Once I'd uncovered some of the skeletons left hand side Dave asked to swap sides for some reason and as I started digging the right hand side near the skull I came down onto a metal object that I uncovered as a spear head immediately below that I brushed away the soil to reveal what appeared to be a circular green band a few archaeologists gathered round and started to discuss what it might be and I was thinking in the time it took them to discuss the possibilities I could have excavated the rest and told them what it was. But in archaeology you have to learn patience and be more careful excavating artefacts. As I started to uncover one side of the artefact I discovered wood within a set of metal bands and people became exited and said it was an important find. Due to my lack of archaeological experience at this point in time I didn't feel comfortable fully excavating this artefact and left it to the Wessex Archaeology conservator to fully excavate and remove this item. It turned out to be a 1600+ year old drinking vessel which is rare to have that much surviving wood still in place. This now sits proudly in Devizes museum and, surprisingly to me, a picture in the British Museum along with my name. I do maintain this was a joint find by me and Dave Murdie but he likes to stay anonymous on the matter. Had we not swapped round he would have uncovered it and strangely for a moment I thought it had been planted for me to find for some reason but that sounds completely stupid now.'

For somebody who was told at school that a career in archaeology was an impossibility and thus joined the infantry, Kenny had made the discovery of a lifetime (Pl. 8). Having left the Army, he is now a professional archaeologist.

Camaraderie

Archaeology really provides an environment that is cathartic in the broadest sense. Indeed, the motivation behind setting up the whole Operation Nightingale programme came from Steve Winterton's fondness for the television programme *Time Team*: 'I don't know why, just watching people just getting down and digging a hole, seeing what was in it. I don't know – it was very strange for me it really did help me relax.' Excavation enables use of mind and body, much of it takes place in the open air and it is a most sociable activity. Friendships are made and maintained and for the excavation team at Barrow Clump, this proved to be one of the most beneficial aspects of the whole project (Pl. 9).

Nick Brown was shot in Afghanistan:

> 'I remember everything, absolutely everything. We got ambushed on a company op. I had a feeling in my head that I let everyone down… I spent New Year's eve at the stroke of midnight sat on my sofa, pillows around my head crying my eyes out.'

For Nick, Barrow Clump had something:

> 'This site is amazing I uncovered one skeleton already. It's good to be with them [the other military personnel]…to chat about it really -what injuries you've been through and how you've coped and what helps you…it's a great place.'

Richard Bennett agreed fully with this interpretation:

> 'When I left the military I saw myself as being worthless and a failure so I intentionally withdrew from my social circle, by coming to the project I was back with the military guys that spoke my language, who laughed at the sort of things I laughed at. People open up and say 'I'm having a bad day'. Because we have all been there, we can all empathise. It creates a strong bond and a trusting friendship.'

This feeling seemed commonplace amongst the team. Jake Watts:

> 'craved solitude because I didn't want to feel I was enjoying myself. This project helped me re-establish myself. As I was working with other injured personnel I could connect with them on a different basis. I'm enjoying life again. What more can you ask for… its brilliant.'

Plate 8 Rowan Kendrick ('Kenny') and the (replica) bucket

Kenny added that:

> 'Although this was an archaeological dig it was still effectively a military run exercise with a chain of command, military accommodation (good old army tents) and an army chef who did wonders with the ration packs and budget available to him. I was with 5 other guys from my regiment and we'd travelled over from Germany not fully knowing what to expect when we got there. We all settled into one of the tents and had a brief about the site and what we was going to be doing for the next six weeks.
>
> One of the fun aspects of the dig was the camping element which you no longer seem to get in commercial archaeology being able to sit around the campfire and have a drink and a laugh made it a relaxed atmosphere and should be reintroduced to commercial archaeology for

Plate 9 Tyler Christopher and Stu Grey

Plate 10 Early morning at the camp – the day after the end of the 2014 season

> the right excavations if everyone was interested in doing such a thing.' (Pl. 10).

Although some of the military staff knew each other as members of the same Battalion within a Regiment, others came along without knowing anybody on site. For them, Barrow Clump became an archaeological 'battle honour' and many have become great friends, keeping in touch on other excavations or social media. Laurence Savage believed that:

> 'We were far from perfect, either as a group or as individuals but in the seemingly endless cycle between personal triumph, personal catastrophe, and spectacular archaeology things improved. As our archaeological skills broadened so did our ability to support those around us and we grew from a group who needed help to a group who could help each other. These support networks, both formal and informal, are still flourishing and expanding, now reaching far beyond our rainy corner of Salisbury Plain.
>
> As time wore on and the years rolled by, our ramshackle community became closer. Like any family we had our troubles, and people came and went. One friend we remembered from an earlier dig sadly passed away after poor health prevented him from coming on several occasions. Together we faced our challenges as we struggled through the process of leaving the forces, and together we dealt with the uncertain times that faced all of us.'

Theories

These personnel were fledgling archaeologists, yet soon they were discussing their own theories on site formation processes, spatial patterning and even artefact identification (Pl. 11). Their interpretations of the site were as complex and as valid as anything that was discussed by the professional archaeologists on site. When he started at The Clump, Mike Kelly 'was in quite a dark place myself'. He felt a great empathy for those buried in the burial mound:

> 'It's a great respect to lay the dead with what they fought with. Obviously they had been to war and I can relate to that for the simple fact that I know the stresses they go through; I've been to Afghanistan myself…what greater respect for a fallen warrior to be dug up by another warrior rather than the badgers that were finding them?'

Having spoken with team mates during the excavation, round the camp fire, over a beer in the mess tent at the end of the day's work, Mike formed his own theories on one particular area of the site. Mike had worked on an area of the barrow ditch which had a distinct concentration of male burials with shield bosses. Being a part of all the discussions around Beowulf and epic poetry on site (from the project name and beyond) – and to be fair probably Bernard Cornwell-inspired topics too – Mike formed a particular theory relating to the remains of the men he was excavating; that they were forming some sort of 'shield wall' for the souls of the others buried in the berm and mound of the barrow.

Future

The excavation was completed in 2014 and the post-excavation work has culminated with the publication of this volume, future studies of chronologies and artefactual elements notwithstanding. Those that took part have moved on, to new careers and phases in their lives outside their military roles. But The Clump had been formative – for some in enabling them to view the world differently, and for others in that they were beginning their archaeological phase:

> 'The next year after leaving the army and getting into full time archaeology I returned to Barrow Clump as a full time archaeologist for Wessex Archaeology and took great pride in being able to pass on the skills I learnt to new soldiers that came on the dig. Barrow Clump set the tone for how I go about excavating many features today and helped fully kick start my career in archaeology.'
> (Rowan Kendrick)

For Richard Bennett things have moved quickly – he has formed a charitable company to enable veterans to have access to heritage projects and has met a real demand:

> 'I was expecting a very slow, gentle progression and it's just gone 'boom'. It's been a steep learning curve. It shows there's a real need for something to give people suffering from mental health or physical injuries a break and this really works. Heritage is not just there to look at but to really get involved with. To use our past to help build our future. If we can help one more person, it's definitely worth it.'

Plate 11 Jeanette Dunn

Conclusions

So what do these participants have by way of a conclusion to their months in the country at The Clump? (Pl. 12)

Rowan Kendrick:

> 'I have always been interested in archaeology since I was young so being given an opportunity to retrain as one was a dream come true and I am truly grateful to Operation Nightingale for giving me that opportunity. My thanks and praise goes out to all the staff and volunteers of these digs for which many would not be possible. And Care for Casualties for giving me the financial support in order to take part in these excavations and begin a new career as a full time archaeologist. I feel indebted to everyone who took part in the dig and made it a real special place to be.'

Dave Hart:

> 'It's always been difficult to explain exactly what makes Operation Nightingale such a success but ultimately everybody benefits from their participation. From a veteran's perspective the opportunity to be a part of a shared endeavour of such validity once more was the reward in itself. The easy comparison between the warriors of the past being uncovered by warriors of the present lends so much gravitas to the endeavour, and respect and reverence was at the heart of all we did. I am overjoyed to have seen the development of my Op Nightingale comrades over the last four years and we all have so many great memories attached to the clump. Whether its Kenny's first find ending up in the British Museum or 'Winno' finally finding the sword that we had joked about over 3 summers. My personal favourite was spending the last night of year one sharing the finds tent with an Anglo Saxon princess. Although I'm obviously selective who I share that with. The whole experience has enriched my practice as a teacher and

Plate 12 Team shot 2013

although I have temporarily hung up my Fedora and bullwhip I still feel the need to read, watch and enjoy archaeology as a result of Barrow Clump.

It's very hard not to break into a smile and reminisce about this excavation and its place as a catalyst for so many good things. Writing from the perspective of a participant it is easy to appear flippant and miss the raison d'être for the project, missing the bigger picture. I am positive that the pages of this report are enough to do justice to the very hard work, professionalism and enthusiasm of all involved.

Finally i would like to thank Richard, Diarmaid and Winno, Wessex Archaeology and the MOD for giving us, and many in the future, the opportunity to record some of our history rather than feeling like its victims. Who knows along the way perhaps we even made some.'

Steve Winterton (Winno) found that the most basic of human interactions have helped – 'Just being around people and things like that. It slowly and surely builds you back up again. Everyone takes something from it.'

The final word goes to former Rifleman Savage, his conclusion:

'On the last day of the last year, the whole group drank half of several bottles of port and buried the remainder at the base of the burial chamber in the centre of the barrow. It wasn't our idea: William Cunnington had buried a bottle of port under Stonehenge in the early 19th century "to share a drink with future archaeologists". His bottle was recovered, mouldering and undrinkable, one hundred years later. Back in the present, once the site had finally been backfilled, a cairn was built in the centre of the barrow. In these clumsy ways we tried to express how much Barrow Clump meant to us all. There was something uniquely formative about the whole experience: like the adult equivalent of *that* record which inspired you to take up an instrument and try to form a band. My life has changed immeasurably since I first got on the plane to go digging but just about every success and every major turn has its roots on the windy hillside in 2012, on the night before the start of the Barrow Clump excavation.'

Chapter 1
Introduction

by Jonathan Last, Phil Andrews and Richard Osgood

Setting

Towards the centre of the army's Salisbury Plain Training Area (SPTA), in Figheldean parish, east of the village of Ablington, is a small plantation of trees known as Barrow Clump (NGR SU 1655 4690). Hidden within the trees, as the name suggests, is a round barrow, also known as Figheldean 25 (Goddard 1913; Grinsell 1957). The barrow lies about 6 km north-east of Stonehenge and 3 km outside the World Heritage Site boundary (Fig. 1.1) at an altitude of about 110 m OD, some 30 m higher than the River Avon which is about 1 km downslope to the west. The geology of the site, as with much of the SPTA, is Upper Chalk.

The mound at Barrow Clump is the only upstanding survivor of a cemetery of some 23 round barrows and other ditched monuments, most now lying in the arable and pasture fields to the north, west and south of the Clump. The Barrow Clump group is one of a number of mostly plough-levelled barrow cemeteries above the present-day settlements on the east bank of the River Avon (McOmish *et al.* 2002, 46); another lies about 500 m north-east of the monument, associated with a possible Neolithic long barrow (PastScape monument no. 916706; Field 2006, pl. 19).

The land surrounding Barrow Clump slopes gently down to the west towards the river, while to the north it slopes away rather more steeply into a small dry valley. The surviving mound is enclosed by a number of mature beech trees and sycamores (Pl. 1.1), with the latter also growing on the barrow (though many of these were felled to facilitate the fieldwork) (Pl. 1.2). The first known record of the barrow is on Andrews and Dury's map of 1773, which does not depict any trees on or around the mound. However, the trees were there before 1880 (the date of the 1st edition Ordnance Survey mapping) so the Clump may have been one of those plantations made by William Dyke in the late 18th century (Crowley 1995, 115). None of the other barrows around Barrow Clump are marked on Andrews and Dury's map so it can be presumed that they were already levelled by this time.

Andrews and Dury name the site 'Cicencutt Barrow', which appears to be a version of 'Syrencot', the name applied to Syrencot House, 1 km south-west of the site, by the river (which they also name 'Ciencutt'), and Syrencot Penning, 1.5 km to the east. The distribution of these names reflects the

Plate 1.1 Barrow Clump from the south-east (note parch mark of another ring-ditch, lower left)

Figure 1.1 Site location plan

linear nature of land-holdings in the Avon valley, each of the six historic settlements in Figheldean parish possessing a strip running from the river to the downs. The name Syrencot possibly means 'cottages with (or by) six homesteads' (Gover *et al.* 1939, 366), though by 1773 there was no settlement other than the manor house, which has 17th century origins.

Previous Work

Barrow Clump, as we shall term the site, was investigated by William Hawley, along with a number of other barrows on Brigmerston and Syrencot Downs and some near Bulford, the work taking place 'Shortly before the Government occupation …over intervals during a period of about three years' (Hawley 1910, 615). Hawley's report, written several years later, does not make it clear whether this work was directly related to the process of land acquisition but the contiguous farms of Great Ablington and Syrencot were sold to the War Office, which was looking for new training grounds for cavalry, in 1898 (Crowley 1995, 105–16; McOmish *et al.* 2002, xv). We might therefore guess that Barrow Clump was excavated in the period between about 1895 and 1898. A suggestion that the barrow may already have been investigated in 1849 by Edward Dyke Poore, a previous owner of Syrencot manor, which is mentioned by Goddard (1913) and Newall (1929) but not by Hawley, has been dismissed by Moore and Rowlands (1972, 47–9).

Hawley's publication provides little information about the extent of his excavation at Barrow Clump. We know that he found a rectangular grave some 5 feet (1.5 m) deep containing the flexed inhumation of 'an old man' with a Beaker at his feet and flint knife under his head. Above and to the north-east were four secondary burials (three adults and an infant), perhaps interred as a group (they are described as almost touching one another), associated with a Food Vessel (Hawley 1910; Newall 1929). The pots currently reside at the Wiltshire Museum in Devizes but the flint knife and human remains have been lost (though see Chapters 2 and 5). Hawley admits that his work at this and other nearby barrows 'were my first attempts at investigating Prehistoric remains' and apologises for 'the perfunctory way they were carried out' (Hawley 1910, 615). He does mention that 'the structure of the barrows is left uninterfered with except in the portion excavated' although notes that these remarks apply chiefly to the better preserved barrows at Bulford rather than those which had been 'in great part already destroyed'. Barrow Clump seems to have been one of the latter, since Hawley (1910, 623) states that:

> It had been partly destroyed and some of the oldest villagers remember much of the earth being taken from it and spread over the land nearby. I should not be surprised if an attempt had been made then to explore it, as it was much disturbed and rabbits had been at work on it also.

However, the limited evidence of earlier excavation encountered during the work reported here and the fact that he did not record many key features of the site (not least the presence of a large number of Anglo-Saxon graves) suggests Hawley's excavation was confined to a small area in the centre of the mound. Almost the full extent of his trench was exposed during the recent fieldwork, in Trench 10 (see below).

No further investigations at Barrow Clump are recorded until the work reported here, but finds have been made as a result of the burrowing animal activity which continued after Hawley's fieldwork. In particular, an Anglo-Saxon spearhead found in a 'rabbit scrape' on the site in 1935 implied there might also be later, intrusive interments (Grinsell 1957, 175). In more recent years human remains, including a lower jaw and most of a humerus, were found in the spoil outside badger sett entrances at the site (see Morton 2003, fig. 3) prompting the work reported here. The duration of the badger activity at Barrow Clump is unclear; that Hawley only mentions rabbits does not necessarily mean badgers were not already present. The number of sett entrances observed in 2003 (see below) certainly suggests activity spanning a number of decades, but the history of the sett is not known; Barrow Clump is not marked on the map of Wiltshire badger setts recorded in 1966 though that was not a comprehensive survey (Gillam 1967).

Plate 1.2 Central part of the barrow mound with beech and sycamore trees, from the north

William Hawley

Hawley's background merits a brief resume, given the military associations of the work reported in this volume. Born in 1851, his early life and archaeological training remain obscure but he was appointed 2nd Lieutenant in the Portsmouth Division of the Submarine Miners in 1888; this was a volunteer battalion that formed part of the auxiliary forces of the Royal Engineers, made up of experienced boatmen charged with operating the mine defences of the major ports. Hawley became commander of the Division in 1903 and three years later was granted the honorary rank of Lieutenant-Colonel; he retired from the Royal Engineers in 1907 with permission to retain his rank.

His archaeological activity seems to have begun during this period of military service, with his work at Barrow Clump and other barrows taking place in the 1890s (Hawley 1910, 615). He is first listed as a member of the Wiltshire Archaeological and Natural History Society (WANHS) in December 1896 and delivered a paper to the society in July 1899 (at which time he held the rank of Major), describing the excavation of two Romano-British villages on Rushall Down.

Hawley's archaeological career prospered after his retirement from the military. Having been elected a Fellow of the Society of Antiquaries in June 1902 he co-directed their excavations at Old Sarum from 1909 and joined the Society's Council in 1912. His best-known role was as director of the Antiquaries' fieldwork at Stonehenge, assisting the Ministry of Works, from 1919 to 1926 (Hawley 1928; Cleal

Plate 1.3 Recent and old badger setts in the south-west part of the barrow at the time of the 2012 metal detector survey

et al. 1995, 12–15), in the course of which (1921) he was appointed Inspector of the various antiquities on Salisbury Plain. His obituary (C.P. [Charles Phillips?] Anon. 1941, 241) focuses on the work at Stonehenge and Old Sarum, but also records his character in affectionate terms:

> Hawley was the most modest and self-effacing of men, generous to a fault and greatly appreciative of competence in others, being himself skilled in all manner of ways. From the workshop at his home at Figheldean came a series of neatly made 'gadgets' which he was wont to present to his friends and fellow workers; his own excavating tools were as ingenious, neat, and clean as their owner.

The English Heritage Project

Barrow Clump was scheduled as a monument of national importance in 1990, so evidence of its damage by burrowing animals came to the attention of Defence Estates (now the Defence Infrastructure Organisation) (DIO) and English Heritage (EH) (now Historic England), which initiated the excavations at Barrow Clump in 2003. At this stage it was considered that the badgers had damaged the site at Barrow Clump to such an extent that it was not worthy of expensive protective measures, which provided the main justification for a 'rescue' excavation. A secondary aim was to enhance understanding of the impact of badgers on earthwork monuments in general, and how the situation might be managed elsewhere; specific questions related to how far the barrow's stratigraphic integrity had been degraded, to what extent deposits had been contaminated, and over what period of time these processes had taken place (Pl. 1.3).

The project reflected the realisation at this time that badger damage to archaeological sites was an increasing problem across England, affecting a variety of monument types from long barrows and hillforts to upland cave deposits. This was linked to evidence for a dramatic increase in badger populations since the 1990s, with various causes including the statutory protection afforded by the *Protection of Badgers Act* 1992, climate change leading to warmer winters and reduced cub mortality, and an increase in suitable habitats because of the expansion of arable reversion and set-aside land. Recent research suggests the badger population of England and Wales has doubled in the last 25 years, with around 71,600 badger groups present in 2013 (Judge *et al.* 2014), perhaps representing a total population of around 400,000. Badgers' ideal habitat is mature deciduous woodland surrounded by grain fields and pasture (where earthworms are plentiful); Salisbury Plain is not dominated by woodland so the soft soil of barrow mounds and other earthworks provides ideal alternative locations for setts.

The scale of the threat to archaeological remains caused by the increase in badger numbers was not acknowledged until the turn of the millennium. In 1995 the Monuments at Risk Survey (MARS) report suggested that burrowing animals did not represent a severe threat to scheduled monuments, comprising less than 1% of the identified hazards (Darvill and Fulton 1998, 123) and although rabbit and badger burrowing were acknowledged to be widespread, they were considered transitory within the lifespan of a monument (*ibid.*, 138). Although the authors admitted this kind of activity had potentially serious consequences for the integrity of the stratigraphy, it warranted no further discussion. Elsewhere, work aimed at assessing and managing rabbit damage was carried out at a number of sites, such as Brown Caterthun, Angus (Dunwell and Trout 1999, 5–7). The greater difficulty of dealing with badgers, for which licences to exclude were required, may have hampered similar work, although the National Trust did successfully exclude badgers from the White Barrow, a long barrow near Tilshead (https://archaeologynationaltrustsw.wordpress.com/2014/03/16/the-badgers-of-white-barrow-salisbury-plain/).

More notice has been taken of burrowing animal damage in general, and badger activity in particular, since 2000. The 'Scheduled Monuments at Risk' survey found that by 2008 4% of monuments in the south-west of England (not just earthworks) were threatened by animal burrowing. On Salisbury Plain 38 of 305 scheduled monuments (12.5%) had evidence for badger damage in September 2000 (Whitley-Kinzett 2001) and by 2003 it was estimated that some 25% of long barrows were affected (P. Addison, pers. comm.). Burrowing animal damage remains a concern within the Stonehenge World Heritage Site; the second of eight priorities within the current management plan is to 'Protect monuments from damage by burrowing animals' (Simmonds and Thomas 2015, 11), following a 2012 Condition Survey that noted 'a substantial increase in the incidence of damage from badgers' (Simmonds and Thomas 2015, 96). The recent discovery of a rich cremation burial disturbed by badgers from a barrow at Netheravon has once again raised awareness of the problem (Andrews and McKinley 2019).

In 2003, however, little was known about the impact of badgers on buried archaeological deposits and a project to assess this seemed timely. Badger setts are large and continually expanding constructions; their chambers lie up to 10 m from tunnel entrances and fresh ones are regularly dug. Thus damage will continue even if the population of a sett remains steady. Tunnel depth is usually about a metre, but can go down at least 4 m (Neal and Cheeseman 1996). An average sett can produce 30–40 cubic metres of spoil and visual observation suggests that internal bioturbation by badgers will cause the relatively sudden collapse of a barrow into a 'humpy mess', after years of tunnelling during which it would apparently keep its height and shape intact. It was with these expectations that the excavation was initiated.

However, the work in 2003–4 revealed that despite the extensive damage from burrowing (Pl. 1.4), the monument was both better preserved and more complex than previously thought, and hence protection measures were installed on the site in an attempt to exclude the badgers and arrest the deterioration of the monument. Unfortunately, the badgers were able to tunnel beneath the mesh of the chain-link exclusion fence, which was tampered with (and repaired) on several occasions, so the sett continued to be active. A site visit in November 2011 by the Defence Infrastructure Organisation (DIO) resulted in the discovery of further disturbed human remains in the spoil cast out from a recently dug sett entrance. Given the evident failure of the protection measures at Barrow Clump, it was decided that resources for such measures would be better targeted at sites with a more realistic chance of successful long-term preservation. At Barrow Clump the ongoing destruction of the monument led to the conclusion that recovery of the remaining archaeological evidence by excavation was the only viable solution, to be followed by the de-scheduling of the monument. Accordingly the Operation Nightingale project was implemented in 2012.

Operation Nightingale

The 2012–14 excavations at Barrow Clump provided an ideal subject for the continuation of Operation Nightingale, a project which had been developed by Sgt Diarmaid Walshe, Corporal Steve Winterton and Richard Osgood (Senior Archaeologist, DIO) to use archaeology as a method to aid in the recovery of service personnel wounded in Afghanistan and elsewhere. In particular, it was evident that there is a close correlation between some of the skills required by the modern soldier and those of the professional archaeologist, for example surveying, geophysics, ground scrutiny, site and professional team management, mapping, navigation and the physical ability to cope with hard manual work in often inclement weather conditions. A pilot project in 2011 focused on the Late Bronze Age–Early Iron Age deposits at East Chisenbury on Salisbury Plain, with follow-up work based around placements within the commercial sector of cultural heritage organisations. At Barrow Clump, soldiers – particularly those

Plate 1.4 Badger burrows in barrow mound, Trench B, from the south

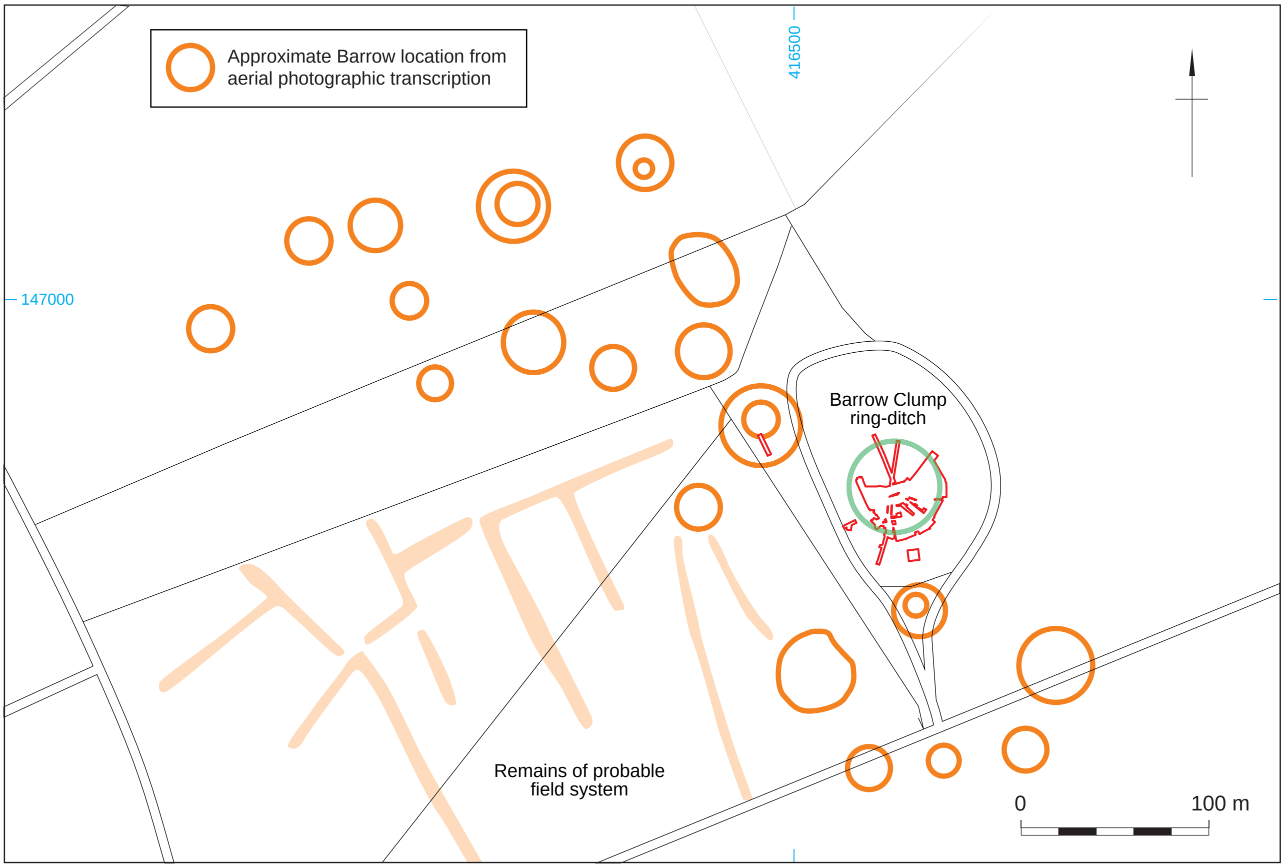


Figure 1.2 Aerial mapping

Plate 1.5 Barrow Clump and the camp site in 2014, from the north (note parch marks of other ring-ditches in fields at top and to right)

attached to the Rifles, and other serving or recently serving personnel formed an integral part of the excavation teams of 2012, 2013 and 2014, which were led by professional archaeologists.

The 2012–14 archaeological investigations were undertaken with a number of aims and objectives, which also addressed several of the Archaeological Research Strategies identified in the South West Archaeological Research Framework (Webster 2008) and, although it lies outside the Stonehenge World Heritage Site, the Barrow Clump site is relevant to various research issues identified for the Stonehenge landscape (Darvill 2005, section 3).

The general objectives of the excavation were to:

- Recover addition archaeological data from the site prior to further disturbance by badgers and other burrowing animals;
- Remove the monument from the English Heritage (Historic England) Heritage At Risk list;
- Recover more data about the nature of damage to archaeological monuments by burrowing animals;
- Determine whether specific predictions can be made on the patterning, density and disturbance of deposits and burials across the entire site based on the evidence from the trenches excavated in 2003–4;
- Restore the mound to a more recognisable shape following the completion of excavations;
- Provide a suitable project for 'Operation Nightingale'.

More specifically the aims were to:

- Establish the extent and survival of the pre-mound Neolithic horizon and recover further finds and environmental data which will help date and characterise this activity;
- Identify and recover any further Beaker as well as Bronze Age burials;
- Clarify the construction sequence of the Beaker monument site and barrow;
- Establish the extent of the Anglo-Saxon cemetery. For example, does it extend to the northern half of the barrow, or is it restricted to the ditch and berm on the southern side? Is there any indication that it might extend further away from the barrow?
- Recover further data from the Anglo-Saxon cemetery, specifically on the human remains, the associated grave goods, and the extent, arrangement and nature of the graves. This will contribute to our understanding of the use of earlier monuments for Anglo-Saxon burial (eg, Williams 1997; Osgood 1999); the age, sex, health and social structure of the people who were buried there; and allow comparison with other Wiltshire cemeteries, where the burial rite is fairly regular and structured in the 6th century;
- Identify the location and extent of the excavations undertaken by Hawley at the end of the 19th century.

The Barrow Cemetery

Geophysical Survey

The work on the badger-damaged barrow also provided an opportunity to enhance understanding of the wider barrow cemetery around Barrow Clump. Geophysical (magnetometer) survey was undertaken during 2003 and is fully reported by Payne (2004). It was designed to complement the excavation by mapping the remains of the associated barrows known from aerial photography in arable fields to the north and pasture to the west and south of Barrow Clump (Fig. 1.2; Pl. 1.5). Magnetometer survey was also trialled within Barrow Clump in an attempt to locate the ditch of the earthwork barrow, but this was abandoned when the results showed that further survey would not be productive due to the amount of recently deposited ferrous material over the site.

The magnetometer survey detected 20 barrows or similar monuments in the Barrow Clump group, with a further two (in areas 1 and 7 on Fig. 1.3) only partially or poorly resolved due to ferrous interference. The ditches of the ploughed-out barrows were clearly detected as a series of circular and sub-circular positive magnetic anomalies. Some of the smaller ring-ditches exhibited a weaker magnetic signal but were nevertheless visible against the quiet magnetic background of the chalk geology. Circular ring-ditches are by far the most common form in the cemetery with 13 of these in three distinct size categories: five measuring less than 20 m in diameter, five around 25 m and three around 35 m. The remainder of the cemetery consists of two larger oval monuments (nos 11 and 15 on Fig. 1.3), two smaller, sub-square enclosures with interrupted ditches (8 and 9), one small oval with a narrow interrupted ditch (4), one slightly oval ring-ditch with an off-centre smaller inner ring (7) and a semi-circular ditch (21) that may alternatively represent a small enclosure attached to a linear boundary. Barrows 4 and 6 in the northern field had not previously been recorded by aerial photography.

The development of the barrow cemetery is impossible to interpret from remote sensing alone but the magnetometer results show distinct lines of barrows roughly on either side of a triangle with its apex to the north, near sites 6 and 7. A line of widely spaced barrows runs parallel to the western side of Barrow Clump (sites 5, 12, 14, 15 and 16). To the north of this a second, more closely spaced and less regular line of barrows follows the edge of the tributary valley running down into the Avon valley (sites 1–7).

Figure 1.3 Geophysical survey

These two principal lines of barrows intersect at the largest circular ring-ditch (site 5), which is shown as a double ring-ditch on the aerial mapping (Fig. 1.2) but only appeared as a single ring in the magnetometer survey. The two principal lines have less well defined alignments running approximately parallel to them, east of the fence separating Barrow Clump from the pasture in area 5 and directly south of the fence between areas 2 and 3. Further alignments of barrows are formed by diagonal rows between the two main axes of the cemetery, Barrow Clump lying at the south-eastern end of an alignment of six barrows (including sites 2, 8, 10, 12 and the poorly defined barrow in area 1). On closer inspection, therefore, what appears at first sight to be a fairly random group of barrows displays an apparently purposeful plan. The cemetery appears to have developed so that the barrows formed visible alignments when observed from a range of different viewpoints, though the significance of the layout remains unclear.

The line of barrows formed by sites 1–7 is bounded to the north by a probable curvilinear pit alignment visible as a series of approximately 27 weak localised positive anomalies running along the crest of the slope of the valley side (site 20). The line of pits appears to emanate from near the ditch of oval barrow 4. Localised anomalies visible inside and adjacent to some of the ring-ditches may represent graves associated with the barrows but could have other explanations.

In addition to the barrows and the probable pit alignment, the survey detected several more continuous linear positive anomalies (A and B on Fig. 1.3). These are best interpreted as linear boundary ditches of prehistoric date and they appear to mark a division between the funerary area of the barrow cemetery and a field system covering the valley side to the south-west of the barrows, which is known from aerial photography (see Fig. 1.2). The two ditches seem to be aligned on ring-ditch 14, to the north and west of which a more complex arrangement of multiple linear features is visible. This may be evidence of recutting or indicate the presence of a droveway. Further west, adjacent to boundary A, is semi-circular ditch 21.

In response to the discovery of Anglo-Saxon graves during the excavation in 2003 the magnetometer survey was extended up to the south-eastern side of Barrow Clump in an attempt to assess the extent of the cemetery but again the results proved negative due to the overriding effect of recently deposited ferrous material in the area.

A second geophysical survey was carried out for the *Time Team* television programme by GSB Prospection

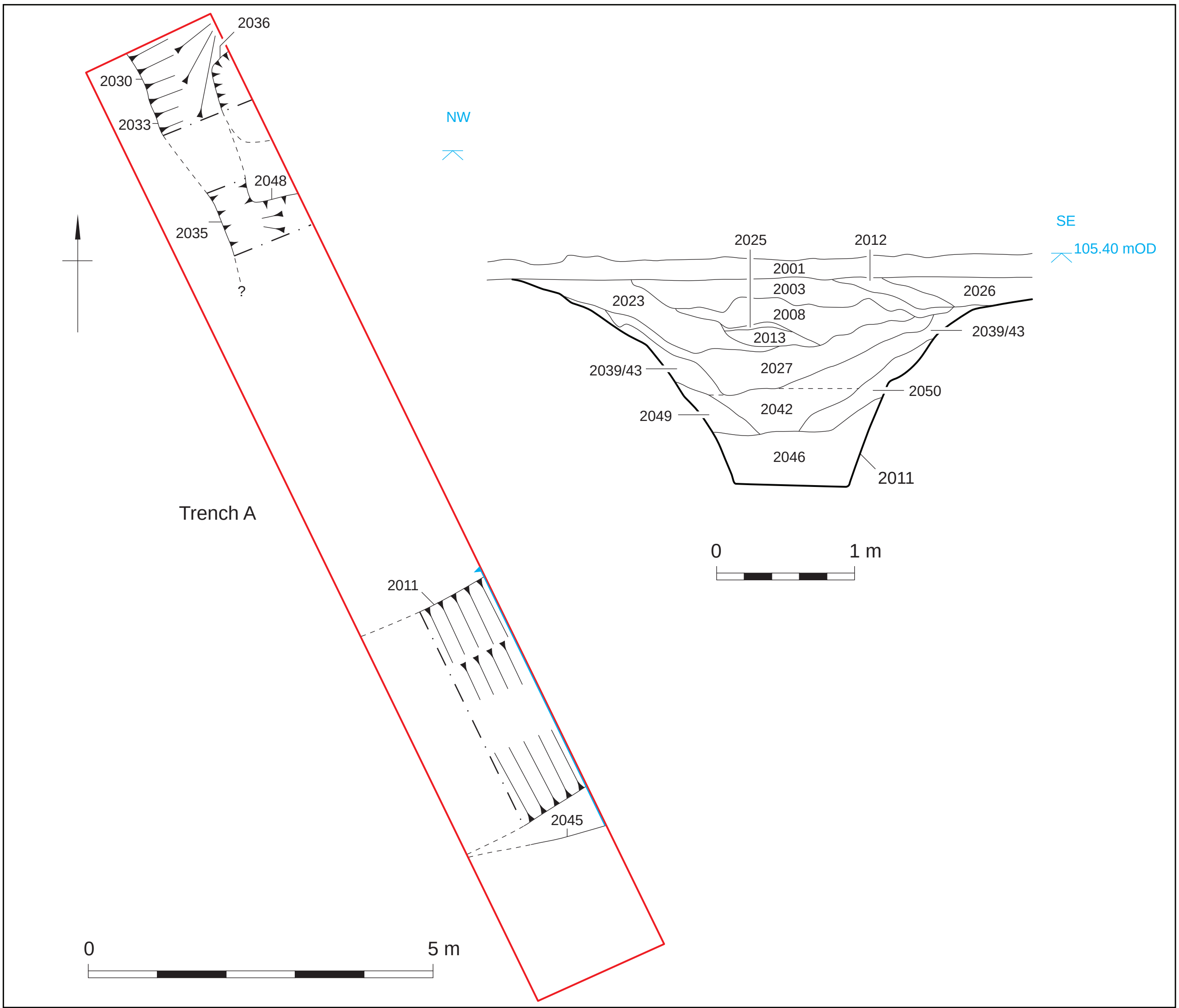


Figure 1.4 Plan and section of Trench A

Ltd in 2012 (Adcock and Wood 2013). Magnetometer survey within Barrow Clump proved no more enlightening than it had in 2003, which was not a surprise, but the coverage of previously unsurveyed areas to the south and east of the Clump was useful in showing there were no further ring-ditches in these areas. The southern area also encompassed the previously surveyed ring-ditch 16, which was then subject to ground penetrating radar (GPR) survey. This suggested that the ditch was about 1.5 m deep and also identified a number of isolated anomalies, both inside the ring-ditch and immediately outside it, which may represent cut features, either pits or burials, up to 0.75 m deep.

Excavation

The barrow in magnetometer survey area 1, on the west side of the Clump, was recorded from aerial photographs as a double ring-ditch site with a maximum diameter of 40 m (Figs 1.2 and 1.3), similar in size to Barrow Clump itself. In 2003 it was decided to excavate a small trench across this monument in order to assess the nature and depth of surviving features within the levelled monuments, and provide some comparison with the earthwork barrow. The magnetometer survey in this area was hindered by the presence of recently deposited ferrous material in the topsoil, but there are hints of a ring-ditch with a diameter of approximately 37 m, partly in area 1 and partly in the adjacent field (area 5), possibly accompanied by a smaller inner ditch of rather irregular form.

Trench A measured 15 x 2 m and was oriented roughly north-west–south-east. It was located in a position such that its northern end should have intersected the inner ditch of the barrow as transcribed from aerial photographs (see Fig. 1.2). However, it was in the southern part of the trench that a ditch (2011) was encountered (Fig. 1.4), just inside the line of the outer ditch that was visible as a parchmark in

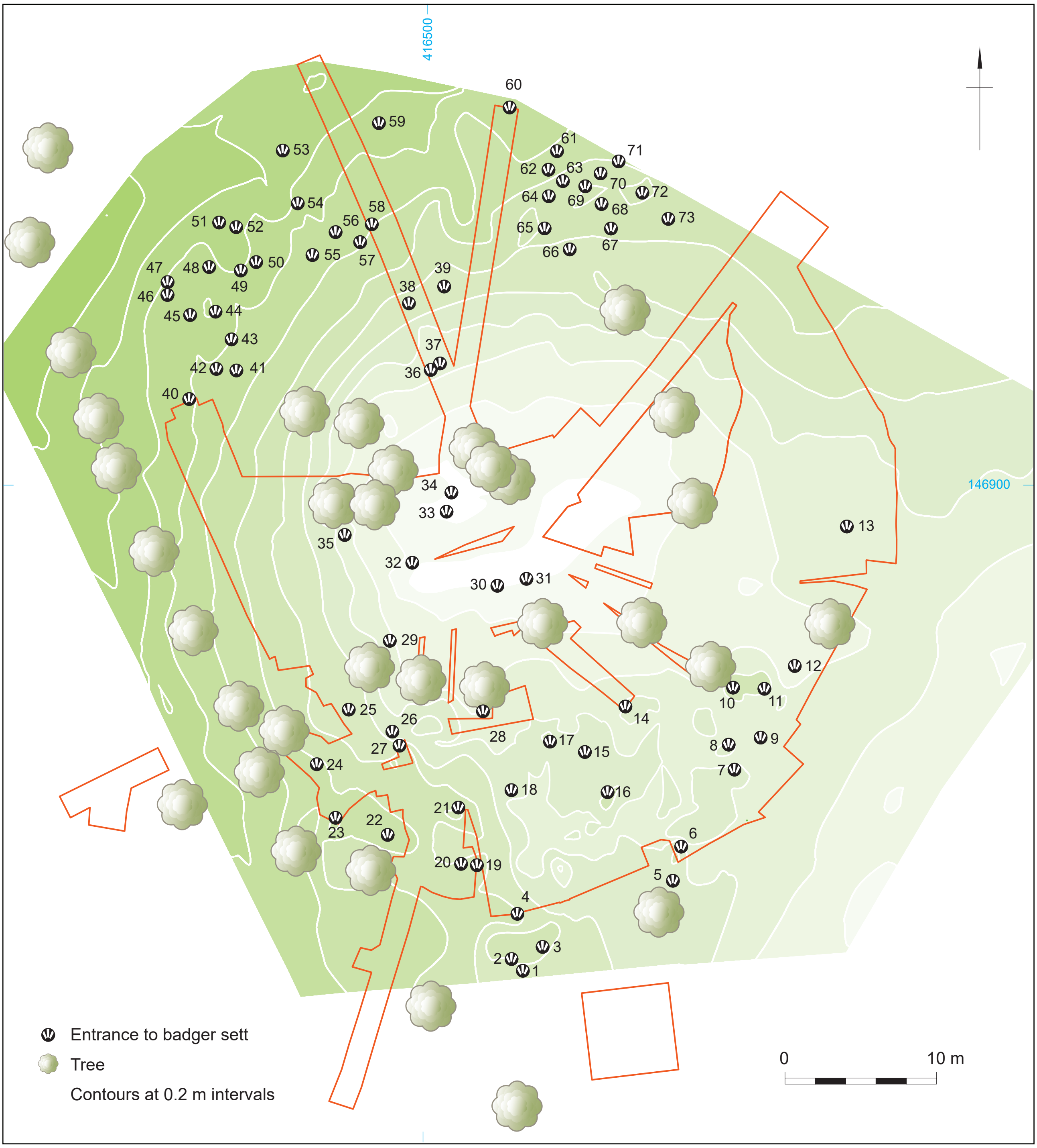


Figure 1.5 Topographic plan

the field to the west. Excavation revealed a substantial V-shaped feature, over 3 m wide and about 1.5 m deep, with a relatively narrow flat base. The ditch contained a clear series of primary, secondary and tertiary fills (Fig. 1.4), beginning with a loose deposit of chalk rubble (2046) which underlay mixed chalky material that had apparently slumped in from either side. Above this was a silty pale brown layer of secondary infill (including 2039 and 2043) followed by a deposit of large flint nodules (2027), an orange-brown silty layer (2023 to the north and 2024 (not shown in section) to the south), and two chalk rubble fills (including 2008) separated by a pale brown silty lens (2025). These were sealed by a tertiary fill of compact, rammed chalk (2003) that may represent deliberate infilling, perhaps when the barrow was extended or when it was levelled. More mixed chalky material was found on the northern edge of the ditch (2026). Finds from the ditch fills comprised occasional struck flints with notable groups of flakes interpreted as primary knapping waste in 2043 (100 pieces) and 2046 (41) (see Harding, Chapter 4).

At the southern end of the trench, only 1 m outside the excavated ditch, a deposit of pale brown clayey silt (2044) was encountered but not excavated; this was thought possibly to be the fill of another ditch around 2 m in width (2045) (see Fig.1.2). It produced one sherd of flint-tempered pottery. However, more recent work suggests this is not another ring-ditch; it has confirmed that the outer ditch lies beyond the limit of the trench while (2011) is indeed the inner ditch of the barrow, albeit not quite in the location indicated by the aerial photographic transcription.

Instead the north end of the trench revealed a group of at least four intercutting features (Fig 1.4), the latest of which (2036) was a vertically-sided pit that was only partially investigated but measured at least 1.4 m across and 1.1 m deep, and was filled with a compact chalk rubble. No finds came from any of these features and they are assumed to be prehistoric. Cut 2036 resembles Beaker graves seen elsewhere and it is possible this feature holds a burial. Five probable tree-throw holes of uncertain age were also recorded in Trench A, one of which (2005) produced a sherd of Peterborough Ware from its upper fill (2004).

Barrow Clump

Excavation Sequence

A full topographic survey of the mound within Barrow Clump was undertaken using a Total Station Theodolite prior to commencing excavations in 2003. The locations of all observable burrow entrances were also plotted (Fig. 1.5). These totalled over 70, mostly badger setts but including some rabbit activity. The survey revealed that the ground on which the barrow sits slopes down by 1.8 m from south-east to north-west across a distance of approximately 60 m. Although the precise extent of the barrow was hard to define, especially around the southern and eastern sides of the site, the survey data suggested the spread mound had a diameter of 40–50 m and a maximum height (above inferred ground level) of 1.3–1.5 m. There was no sign on the ground of a ring-ditch, but there were some clues. Firstly, an arc of mature beech trees around the western edge of the mound looked like it might be following the line of a ditch. Secondly, the visible animal burrows were not evenly distributed across the barrow but concentrated in a ring some 20–25 m from the centre of the mound. It was thought that the presence of a greater depth of soil in this area (ie, the ditch fills) was the most likely explanation for the observed distribution, and this was confirmed by excavation.

Because the barrow mound had a number of sycamore trees upon it, it was agreed for the 2003–4 campaign that excavations would be restricted to the southern half of the mound, from which the trees would first be removed. Trench B (Fig. 1.6) was positioned to run roughly west-east from the edge of the tree canopy around the western side of the barrow to the centre of the mound (or as close as possible given the trees still standing on the northern half at this time). This was the steepest part of the earthwork. The trench measured 17 x 4.5–5 m in area and revealed the composition of the main barrow mound as well as significant earlier activity. It also clearly demonstrated the impact of animal burrowing and military activity on these deposits (see below).

Trench C was positioned to run across the ring-ditch and onto the mound in the south-eastern part of the site where trees were not present on the line of the ditch. The ditch was found to underlie a thick (up to 0.8 m) series of deposits which contained a number of modern finds and appear to derive from the comparatively recent slumping or spreading of the mound and mixing by badgers: deposit (2115/2116/2118) overlying (2121). Subsequently the trench was extended northwards to join up with Trench B. It measured 23 x 3–5 m in area and revealed a full ditch section as well as the relationship between mound and ditch. The first Anglo-Saxon graves were revealed in this trench, along with considerable evidence of badger activity, especially within the ditch fills. The southern 3 m of the trench lay outside the line of the ditch but no archaeological features were noted except for a few possible plough marks.

In 2004 Trench D was positioned across the eastern side of the barrow where there was a much shallower

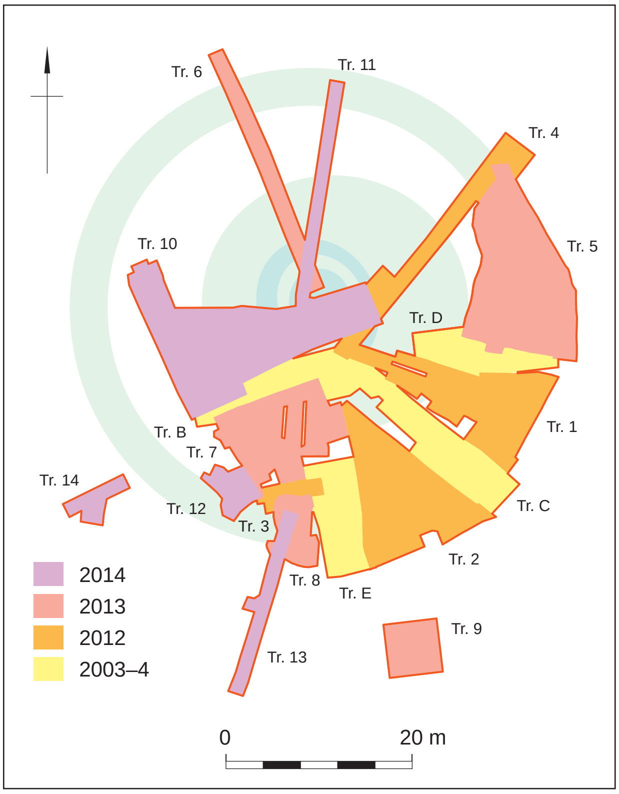


Figure 1.6 Plan of all trenches

Plate 1.6 Trench 1 with Trench 2 beyond (2012), from the north-east

gradient to the site than in Trench B, and little sign of animal disturbance on the surface. It was oriented east-west and measured 15 x 3 m. Like Trench C it revealed a full ditch section, the berm area and the edge of the intact mound as well as further Anglo-Saxon graves.

Trench E was positioned across the southern side of the barrow where there was considerable animal disturbance evident on the surface. It was oriented roughly north-south and measured 12 x 3 m. It covered the ditch and berm area but no intact mound material was encountered. Anglo-Saxon graves were present, along with considerable badger activity.

Trenches 1 and 2 in 2012 lay between and overlapped with three of the areas (Trenches B/C and D and E) excavated by English Heritage in 2003–4 (Fig. 1.6; Pl. 1.6). The aim was to excavate and record all Anglo-Saxon burials and, as far as possible, all earlier features, specifically those relating to the Early Bronze Age barrow F25 which lay in these areas. The excavation of the Anglo-Saxon graves was viewed as a priority as these relatively shallow features were vulnerable to disturbance and were clearly suffering most from animal burrowing. Trench 3, smaller than intended due to various constraints, extended to the west of one of the areas excavated by English Heritage, and it too was specifically aimed to excavate and record Anglo-Saxon burials in this area. Trench 4 was originally intended to extend further northwards across the previously un-investigated north-east part of the barrow, but the trench location was subsequently rotated to the south to avoid a large badger sett. Nevertheless, it provided a very informative transect across this area and was linked to the northern end of Trench 1.

Further geophysical survey, undertaken as part of a three-day *Time Team* programme at Barrow Clump in 2012, added a little more detail to the earlier English Heritage work, the GPR work possibly indicating the presence of a burial in the southern part of the ditch of barrow 19 (Adcock and Wood 2013, fig. 5). However, it also confirmed that the quantity of modern metallic debris in the topsoil precluded obtaining any useful results from the area of barrow F25 itself.

In 2013 five areas were excavated with a total area of approximately 345 m². Three of the 2013 areas (Trenches 5, 7 and 8) lay between the previously excavated trenches, and together these covered approximately 260 m², the extent of Trench 5 to the west restricted by the presence of two sycamore trees that could not be removed, while the extent of Trenches 7 and 8, either side of 2012 Trench 3, had to fit in with the disposition of trees and badger setts (Pl. 1.7). A radial trench approximately 27 m long and 2 m wide (55 m²) was also excavated (Trench 6), extending from the centre and across the north-west side of the mound, in an area not previously investigated, in order to help confirm the apparent absence of Anglo-Saxon burials in this part of the mound, provide a further section through the mound and ditch, and record the extent and degree of animal disturbance in this area (Pl. 1.8). A further area (Trench 9), covering approximately 30 m² was excavated to the south of the monument in order to establish the presence or otherwise of Anglo-Saxon burials in this area, where discoveries in 2012 had suggested they might be found.

Trench 10, the largest area excavated in 2014, lay across the west side of the barrow mound and berm, its extent to the west restricted by the presence of

Plate 1.7 Trenches 7 and 8 (2013), from the north-east

Plate 1.8 Trenches 5 (right) and 6 (left) (2013), from the north-east

Plate 1.9 Trench 10 with Trench 11 beyond (2014), from the south

mature beech trees and to the north by a complex of badger holes, which were left undisturbed (Pl. 1.9). Investigations here had two aims, firstly to examine the central part of the Beaker and Early Bronze Age barrows, and with it determine the location of Hawley's excavation trench, and secondly to establish, if possible, the northern extent of Anglo-Saxon burials on the west side of the monument.

In addition, one long, relatively narrow trench (Trench 11) in the northern half of the monument was principally designed to determine the presence or absence of Anglo-Saxon graves in this area, as well as recording the prehistoric sequence, whilst two trenches to the south and south-west (Trenches 13–14) were aimed at assessing the extent and density of Anglo-Saxon graves beyond the barrow ditch.

After a gap of more than three years, and although not originally envisaged, three subsequent, smaller programmes of excavation have taken place at Barrow Clump, in 2017, 2018 and 2019. These again took place under the aegis of Defence Infrastructure Organisation and Operation Nightingale, in conjunction with the newly-formed Breaking Ground Heritage, and with support from Wessex Archaeology. These were in response to continued disturbance caused by badger burrowing in the vicinity of the beech trees on the west side of the site, as well as the threat of compaction of graves by wheeled and tracked vehicles just beyond the south-western limit of the scheduled monument. Unfortunately, the results of the work in 2017–19 come too late to be included in this volume, but it is proposed that they be published together in an article for the county journal. The main findings, most relating to the Anglo-Saxon cemetery, are noted in various places below, these recording the first (urned) cremation burials at the site, the first pottery vessel to be found in a (inhumation) grave and, as anticipated, showing that the cemetery extends further to the south-west than previously established, by approximately 25 m.

Methods

In 2003 all excavation was undertaken by hand. During the course of the work, however, it became clear that there was considerable surface disturbance to the site and slumping or redeposition of material around the edge of the mound. In 2004, therefore, the upper deposits within the new excavation areas were removed by machine prior to the start of excavation.

In the light of the English Heritage experience in 2003–4 it was agreed that topsoil and subsoil could be removed by machine in 2012–14 (Pl. 1.10). Originally, hand-excavation of these deposits was proposed, but it was recognised that this would be very time consuming and physically challenging and, furthermore, that no significant archaeological information would be lost through machining because of the very disturbed nature of the topsoil and subsoil.

Plate 1.10 Machine stripping Trench 2 (2012), from the south-west

Initial site clearance of scrub in 2012–14 was undertaken by Landmarc Support Services assisted by members of the Bulford Conservation Group. Before machine excavation began the site was walked over and scanned with a metal detector by experienced detectorists to identify, where possible, the location of any items or fragments of ordnance, as well as recover any Anglo-Saxon and other objects from the topsoil. This produced many items of modern debris (including blank cartridges) but nothing of traditional archaeological interest.

Following these preparatory works, a tracked excavator was used in 2012, and a wheeled excavator in 2013–14, to remove overburden in 0.1 m deep spits to a depth at which the top of archaeological levels were exposed, with subsequent excavation by hand. Trench 3, however, was completely hand-excavated because trees and a badger sett precluded the use of a machine.

Machine excavation was monitored at all times by a representative from Natural England to ensure that no active badger setts were unduly disturbed or badgers trapped within the setts. In the event, no badgers were seen during the course of the fieldwork. Concurrent with this monitoring, the exposed surface of each machine or hand-excavated spit and all spoil was scanned with a metal detector and visually inspected for the recovery of disturbed human bone and other finds, as well as any fragments of ordnance.

All exposed archaeological deposits were subsequently excavated by hand and recorded using the *pro forma* recording systems of English Heritage's Centre for Archaeology (2003–4) and Wessex Archaeology (2012–14). In 2012–14 number allocations for contexts etc were issued which continued from the numbers used for the site in 2003–4 by English Heritage, thereby avoiding duplication.

In 2003 an orthodox system of context numbering was used, with separate numbers in a single series given for each deposit and cut, whether archaeological or animal in origin. Animal disturbances were planned on the same sheets as archaeological contexts, where they intersected or truncated them. In 2004 it was decided to number and plan animal disturbances in separate series ('badger plans'). The separate context numbering (8000 numbers) had the advantage of making it immediately clear which finds came from badger spoil; while the additional plans, showing only the animal burrows, presented a more coherent picture of the size, extent and interconnections between the tunnels than could be pieced together from a number of single-context plans. In 2012–14 animal burrows were recorded in plan and section where they impacted on archaeological features, but for pragmatic reasons and because of time constraints they were not recorded to the same level of detail as they were in 2003–4.

Plate 1.11 Badger-damaged Early Bronze Age barrow ditch (Trench 8), from the east (scales = 2 m and 1 m)

Plate 1.12 Badger-damaged Anglo-Saxon grave 2839, from the south (scale = 2 m)

Plate 1.13 Badger-damaged Anglo-Saxon grave 2847, from the north (scale = 0.5 m)

In 2003–4 whole-earth samples of a minimum of 40 litres were taken for flotation, most for the recovery of charred plant remains, along with some from the graves and others taken principally for the recovery of flintwork. In addition, all grave deposits were dry-sieved over a 4 mm mesh and wet-sieved over 4 mm and 2 mm meshes, while samples from badger spoil were coarse-sieved, with the volumes taken dependent on the quantity of spoil. Five sequences of mollusc samples were taken from the main barrow ditch, the inner ring-ditch and the Trench A ring-ditch. In 2012–14 bulk environmental soil samples for plant macrofossils, small animal bones and other small artefacts were taken from what were considered to be well-sealed and dated or datable archaeological contexts. However, it became clear in 2012 that none of the deposits sampled had completely escaped mixing as a result of extensive animal burrowing and tree root disturbance (Pls 1.11–13), and bulk soil sampling thereafter was restricted to a small number of contexts.

The excavation in 2012 lasted for a period of six weeks in June and July, with the subsequent 2013 and 2014 excavations each lasting for five weeks, also during June and July, a cumulative period of 16 weeks for the entire 2012–14 investigation. Throughout, the soldiers and other staff and participants camped adjacent to the site, which prevented nighthawking and the looting of either artefacts or human remains.

Excavations were supervised by professional archaeologists and undertaken by a team comprising soldiers, as well as members of the local community and others with archaeological experience who gave freely and generously of their time (Pls 1.14–16).

Work in 2012–14 was undertaken in broad accordance with the methods set out in the Written Scheme of Investigation (WSI) (WA/DIO 2012). All graves were fully excavated, and the trench edges extended where necessary to enable the recovery of burials only partly exposed within the excavation areas. The volume of other features and deposits (including animal burrows) excavated was undertaken on a pragmatic basis, largely depending on the nature, significance and threat from burrowing animals. Precise strategies were developed or modified in consultation with English Heritage and the Wiltshire Council Archaeologist.

Following the completion of each season of work the excavation areas were backfilled using a wheeled excavator, and in 2014 the barrow mound was re-profiled to its 2012 pre-excavation form with the excavated spoil (Pl. 1.17).

Reporting

The English Heritage investigations were partly brought to draft publication stage within three years

Plate 1.14 Trench 2 (2012), Early Bronze Age mound in foreground with barrow ditch and Anglo-Saxon graves in background, from the north-west

Plate 1.15 Trench 10 (2014), Early Bronze Age and Beaker mounds, from the west

Plate 1.16 *Worked flint – 'sorting the wheat from the chaff'*

of the fieldwork being completed in 2004 (Last 2006), whereas the results from the DIO/WA work were at various stages of assessment or analysis or, in the case of the 2014 season, not yet studied in detail by 2015.

No formal post-excavation assessment for the DIO/WA investigations has taken place, but interim reports were produced for the 2012 and 2013 work including, for example, detailed grave catalogues and finds reports which go beyond what is generally included in assessments (Wessex Archaeology 2013; 2014). Furthermore, the availability of additional resources in 2014 allowed some material, including much of the unburnt human bone from 2012–13, to be fully recorded and selected finds drawn for publication.

When the decision was taken in 2015 to amalgamate the results of the fieldwork in to a single publication, it was recognised that there would be some differences in approach and reporting between the EH and DIO/WA investigations, for example with the human bone, where different specialists have employed different recording methods. However, this was not considered to be an over-riding difficulty in reconciling the joint reporting and publication of two phases of fieldwork which took place a decade apart.

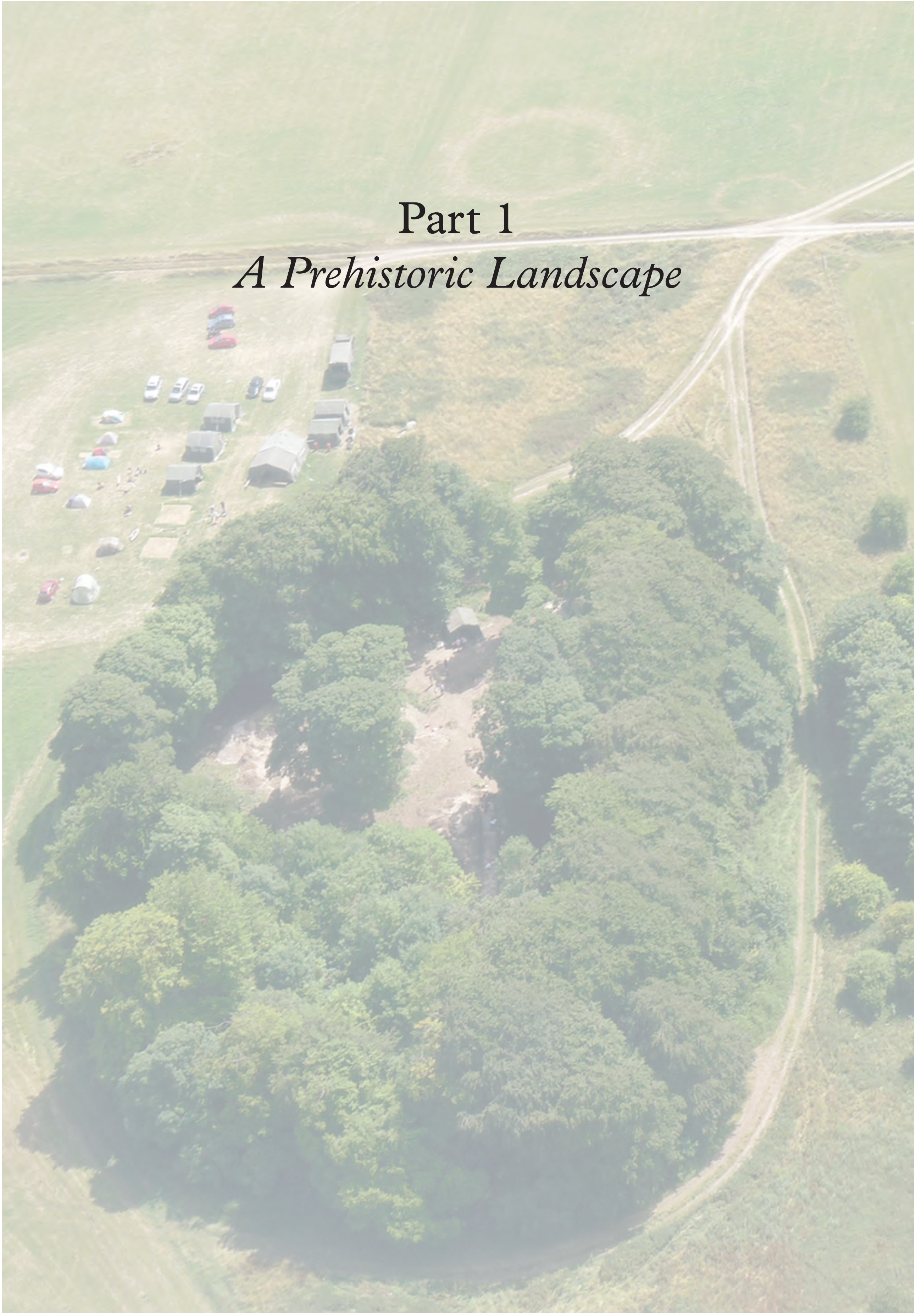
As noted above, the results from the later smaller-scale work in 2017–19 came too late to be included in anything but passing detail in this volume, and it is intended that they be published together as a follow-up article in the county journal.

Phasing

Phase 1	Pre-mound deposits (Early–Late Neolithic)
Phase 2	Beaker mortuary site
Phase 3	Early Bronze Age barrow construction and use
Phase 4	Mound re-use – Iron Age and Romano-British activity
Phase 5	Anglo-Saxon cemetery
Phase 6	Recent human activity, including military use

Plate 1.17 *Barrow mound, as left at the close of 2014, from the south-east*

Part 1
A Prehistoric Landscape



Chapter 2
The Neolithic, Early Bronze Age and Later Prehistoric Sequence

by Jonathan Last

Pre-mound Features (Phase 1)

Features Beneath the Buried Soil

The earliest features beneath the barrow (Fig. 2.1; Table 2.1) cut the natural chalk and were sealed by a pre-mound deposit which is discussed below. The fills of these features were generally light in colour with a high chalk content and were often graded, becoming more like the natural towards the edges and base of the feature. Finds were extremely few and on this basis the majority of the features were considered to be tree-throw holes or similar, preceding the earliest occupation of the barrow site, though some may be pits or gullies of anthropogenic origin. Interpretation was not aided by the burrowing animal disturbance throughout the area, which accounts for the rabbit bones in some features.

The Buried Soil

Sealing the early features, and covered in turn by the barrow mound, but criss-crossed by a large number of animal burrows, was a buried soil deposit approximately 0.1 m thick which contained a large quantity of flint, much of it struck or burnt, and fragments of Neolithic pottery (mainly Peterborough Ware). It was found in Trenches B, C, 1, 2, 4, 6, 7 and 10 and varied in thickness and appearance, though it was generally dark brown in colour and between 0.1 and 0.2 m thick.

Two representative sections are presented in Figure 2.5; not all of the contexts described below are illustrated. In Trench B there were two main components to this pre-mound buried soil or occupation deposit (see Fig. 2.5): in the east, by the centre of the barrow, a silty clay layer (2498/2515), which ranged in colour from light brown to dark brown, was overlain by a dark greyish-brown silty loam (2411/2441), which was 0.1–0.2 m thick (in 2003 an area of 4 sq m in the south-east corner of the trench was removed as 2164), while to the west (2498/2515) was overlain by a mid- to dark brown silty clay loam (2439/2440), which was 0.15 m thick and produced most of the flint assemblage (Pl. 2.1).

At the western end of the trench, by the Beaker grave discussed below, a yellowish-brown chalky deposit (2389/2414; 0.1–0.2 m thick) overlay an orange-brown clayey silt (2390) and another chalky deposit (2391), both 0.05 m thick; none of these contexts produced any finds. At the north-western end of Trench C, the buried soil (2163/2423) was a dark brown clayey loam 0.1 m thick which also lacked flints, though they were present in a similar deposit (2400, 0.2 m thick) at the western end of Trench D (see Figs 2.1 and 9.1).

Once the extent of the artefact scatter was realised, the deposit in Trench B was gridded out into 1 m squares, each square given a separate number, though the extent of the burrowing led to some modification (see Table 2.2); the same process was followed in the smaller area exposed in Trench 1. In Trench B this showed that the majority of the finds came from an area within about 5 m of the Beaker ring-ditch (see below) on the eastern side of the trench, while the western half of the gridded area had far fewer flints (Fig. 2.2). However, Neolithic pottery was found (in small quantities) across the gridded area. This may suggest that a palimpsest of material is represented, some associated with the construction of the monument and some of much earlier date. Alternatively, or in addition, the distribution may show that the monument was very deliberately sited over a known ancestral site.

In the second phase of fieldwork another 10 sq m of the buried soil was exposed either side of Trench C at the northern end of Trench 1, where a dark brown clayey loam (2691) overlay a grey silty loam (2771), and in Trench 2 (greyish-brown silty loam 2767), though the latter area only produced small amounts of worked flint and Neolithic pottery. This gridded area

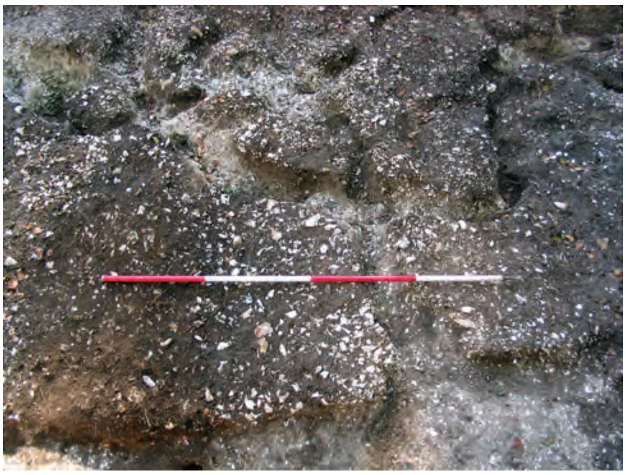


Plate 2.1 Flint scatter beneath the Early Bronze Age barrow mound (Trench B), from the south (scale = 2 m)

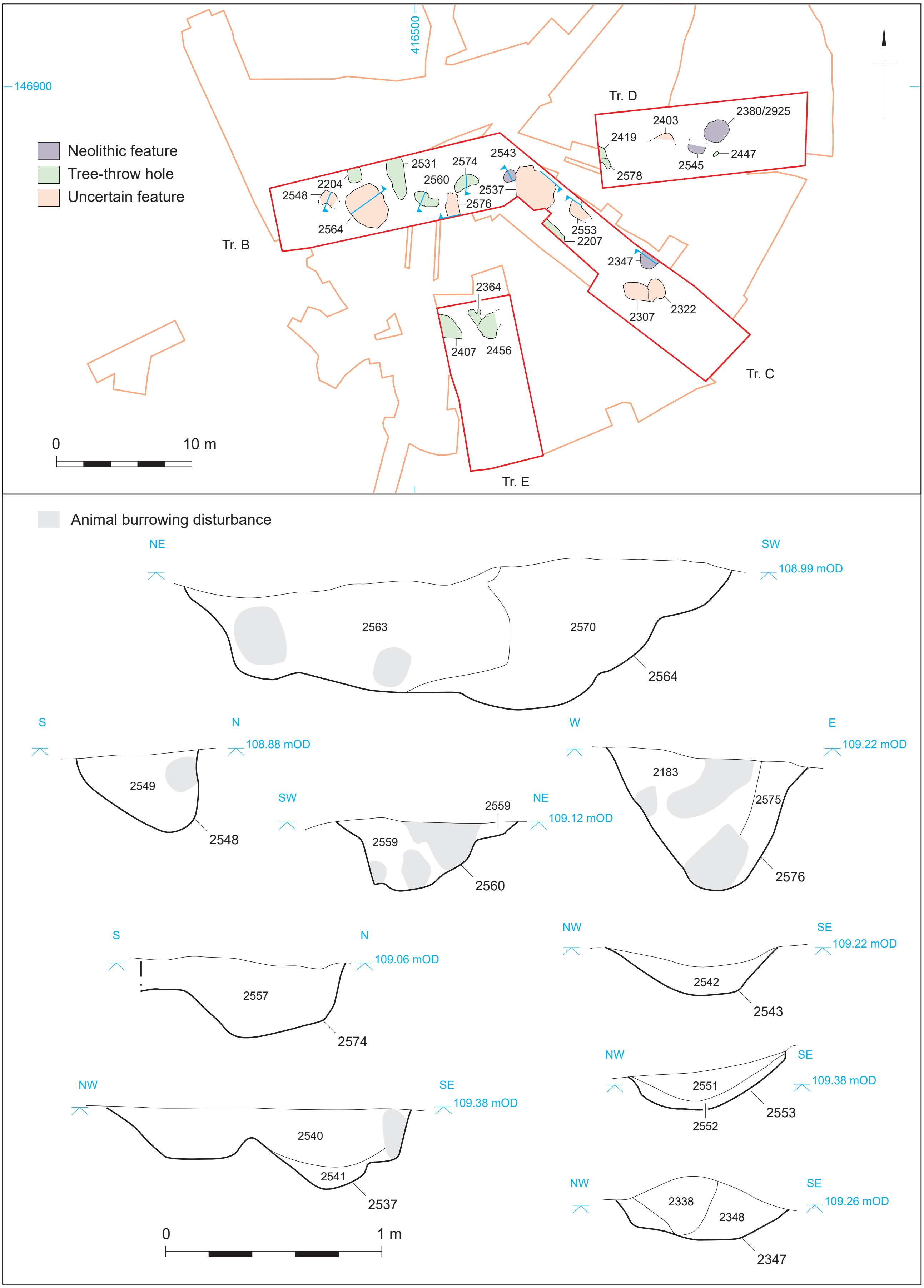


Figure 2.1 Plan and sections of pre-mound features

Table 2.1 Pre-barrow features

Trench	Cut	Length (m)	Width (m)	Depth (m)	Fill colour(s)	Finds (fill no.)	Interpretation
Beneath the buried soil							
B	2204	>0.8	0.8	–	chalky	(unexcavated)	uncertain
B	2238	>0.8	0.45+	0.7	chalky	1 struck flint (2213)	uncertain
B	2548	>2.0	0.75	0.4	graded	–	tree-throw hole
B	2560	0.9	0.9	0.4	1) pale brown 2) dark brown	–	uncertain
B	2564	3.1	2.5	0.7	chalky/light brown	–	tree-throw hole
B	2574	1.75	0.8	0.4	dark brown	cattle bone (2557)	uncertain
B	2576	>1.2	0.9	0.65	1) pale brown 2) mid-brown	18 struck flints, rabbit bones (2183)	tree-throw hole?
B/C	2537	>2.0	1.9	0.4	1) mid-brown 2) chalky	–	tree-throw hole (disturbed)
B/C	2543	0.9	0.8	0.3	dark brown	–	pit
C	2207	1.8	0.5+	0.7	1) chalky 2) mid-brown 3) dark brown	rabbit & corvid bones (2163)	uncertain
C	2553	1.75	0.7	0.4	1) light brown 2) mid-brown	–	tree-throw hole
10	7095	>0.95	0.65	0.5	mid-brown	–	tree-throw hole
D	2419	>0.7	>0.4	-	dark brown	3 struck flints (2420)	uncertain
D	2578	>0.5	>0.5	0.5	light brown	–	uncertain
Cutting the buried soil							
B	2191	1.2	0.55	0.3	1) light brown 2) mid-brown	1 struck flint, worked bone (2151)	uncertain
B	2531	2.5	1.1	0.4	1) chalky 2) yellowish brown 3) brown	–	uncertain
In the berm							
C	2307	1.7	1.0	0.3	light brown	–	tree-throw hole
C	2322	1.4	1.3	0.5	light brown	–	tree-throw hole
C	2347	1.25	>0.75	0.25	1) chalky	–	pit?
D	2545	1.2	>0.55	0.2	dark grey	10 struck flints,	pit
D	2403	>1.1	1.1	0.55	yellowish brown	–	tree-throw hole
D	2447	0.5	0.2	0.15	mid-brown	1 struck flint (2425)	uncertain
E	2364	1.0	0.6	0.25	light brown	2 struck flints,	uncertain
E	2407	>1.6	1.6	0.55	1) yellowish brown	cattle bone (2405)	uncertain
E	2456	1.7	1.5	0.6	chalky	–	uncertain

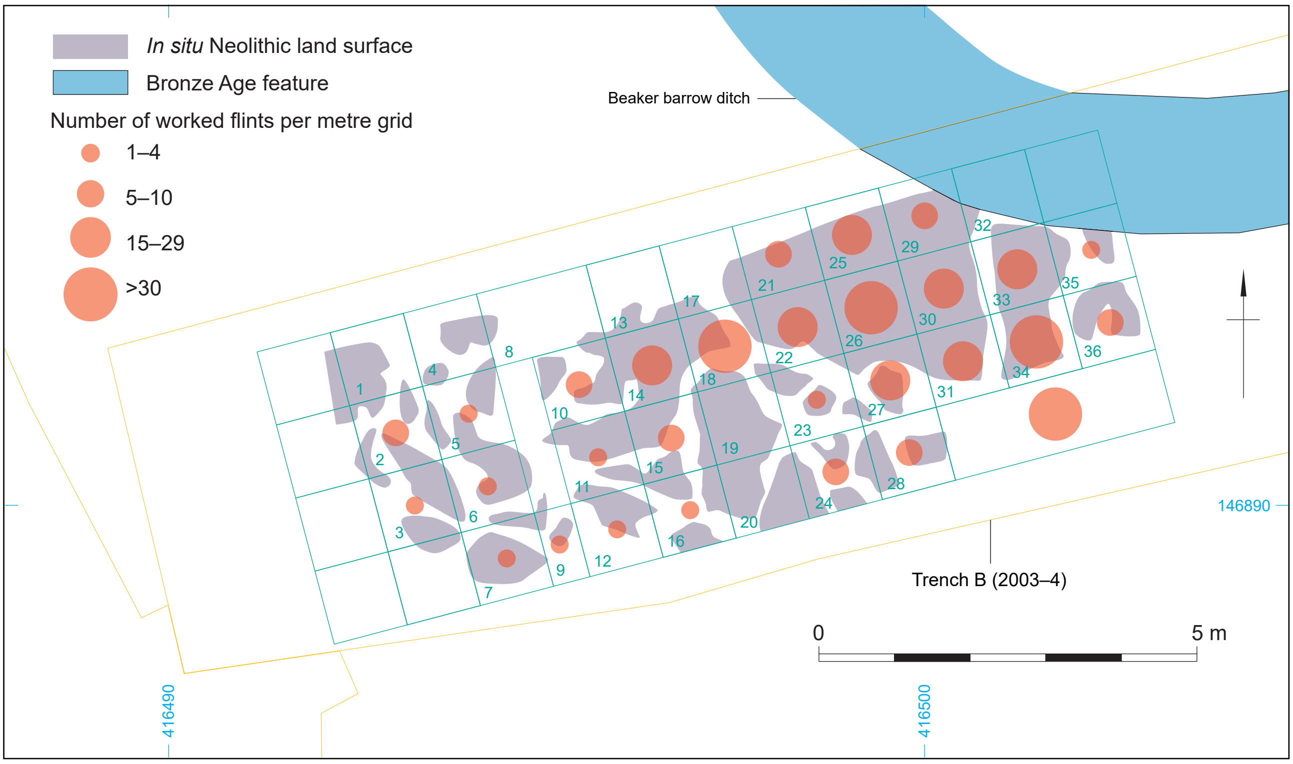


Figure 2.2 Worked flint distribution (Trench B)

Table 2.2 Finds from the buried soil (for grid locations see Fig. 2.2)

Context	Location	Flints	Pottery	Context	Location	Flints	Pottery	Context	Location	Flints	Pottery
2458	36	6	–	2489	15	9	–	2703	W	27	Y
2461	35	2	–	2490	22	27	–	2704	SW	25	Y
2462	35	1	–	2491	10	2	Y	2705	S	14	–
2463	34	404	–	2492	11	3	Y	2706	NW	53	Y
2464	34	59	–	2493	6	1	–	2707	Centre	34	Y
2466	31	22	Y	2494	16	2	–	2708	SE	28	Y
2467	27	27	Y	2495	12	1	–	2776	N	40	Y
2468	33	10	–	2496	23	2	–	2777	NE	6	Y
2469	33	5	–	2497	20	-	–	2778	E	2	–
2472	10	6	Y	2498	24	7	–				
2473	3	1	Y	2499	25	25	–	**Non-gridded** (only contexts with finds are listed)			
2474	28	9	–	2500	18	37	–	2164	–	120	Y
2475	13	–	–	2501	21	9	–	2400	–	50	–
2476	3	–	–	2511	29	5	–	2411	–	85	Y
2477	14	15	–	2512	19	–	–	2423	–	–	Y
2478	7	1	–	2513	22	–	–	2515	–	24	–
2479	2	5	–	2514	23	–	–	2691	–	14	Y
2480	1	–	–	2517	32	–	–	2767	–	5	–
2481	30	15	Y	2518	32	–	–	2854	–	17	–
2482	26	46	–	2519	17	–	–	2910	–	4	Y
2483	5	–	–	2520	17	–	–	7091	–	4	–
2484	4	–	–	2521	18	–	–	7094	–	19	–
2485	9	3	–	2522	18	–	–				
2486	5	1	–	2523	11	–	–				
2487	19	–	–	2524	11	–	–				
2488	8	–	–								

in Trench 1, though small (3 x 3 m), showed higher densities to the north-west than south-east. Possible elements of the buried soil, but heavily disturbed, were also noted in the north-east corner of Trench 7 (dark greyish-brown silty loam 2910), to the west of Trench 2. North of Trench B, 3 sq m of buried soil were revealed at the south-eastern end of Trench 6, where it had been protected beneath the Beaker mound; this comprised two dark brown silty clay deposits (2854 and 2896; 0.1 m thick in total) over chalky pea grit (see Fig. 2.5). It too produced only a small quantity of worked flint. Between Trenches 6 and 7, the buried soil was also encountered in Trench 10 as a mid-brown silty loam (7091/7094) (see Fig. 2.10; Pl. 2.2). To the north-east in Trench 4 a lighter greyish-brown deposit (2757) appears to be the same. The distribution of material in the Trench 1 grid squares, though only a 3 x 3 m area, nevertheless showed a fall-off in densities from west to east, ie, away from the centre of the monument, as was also seen in Trench B.

Plate 2.2 Neolithic buried soil exposed beneath chalk deposits of Beaker mound (Trench 10), from the east

Finds from the numbered grid squares and related contexts are shown in Table 2.2. Faunal remains from these deposits include cervid (2463), pig (2467), cattle (2482, 2164, 2400, 2411), sheep (2492, 2164) and intrusive rabbit bones (2164).

Neolithic Pit

Beyond the mound area and the buried soil, pit 2380/2925 was partly investigated in 2004 when part of its disturbed upper fill was removed but it was not recognised that this deposit of flint nodules and chalk cobbles (2381) was the capping of a much deeper pit. On reinvestigation in 2013 (within Trench 5, Fig. 1.6) the feature was revealed to be oval in plan, measuring 1.95 m by 1.6 m, and 0.65 m deep, with near-vertical sides and a flat base (Figs 2.1 and 2.3; Pl. 2.3). On the base was a thin layer of dark clayey silt (2927) which was associated with parts of two antler tools (a pick and possibly a hammer), a flint hammerstone, a large sarsen hammer and one smaller piece of sarsen, as well as a few pieces of worked flint. The antler and stone tools are discussed further below (see Harding, Chapter 4). Most of the remainder of the pit fill below the capping comprised backfilled chalk in a compact silty clay matrix (2932), which contained a single Neolithic sherd (along with some intrusive Iron Age or Romano-British pottery), but in the centre the deposit of flint nodules and chalk cobbles continued down to just above the base (2926). It seems likely that

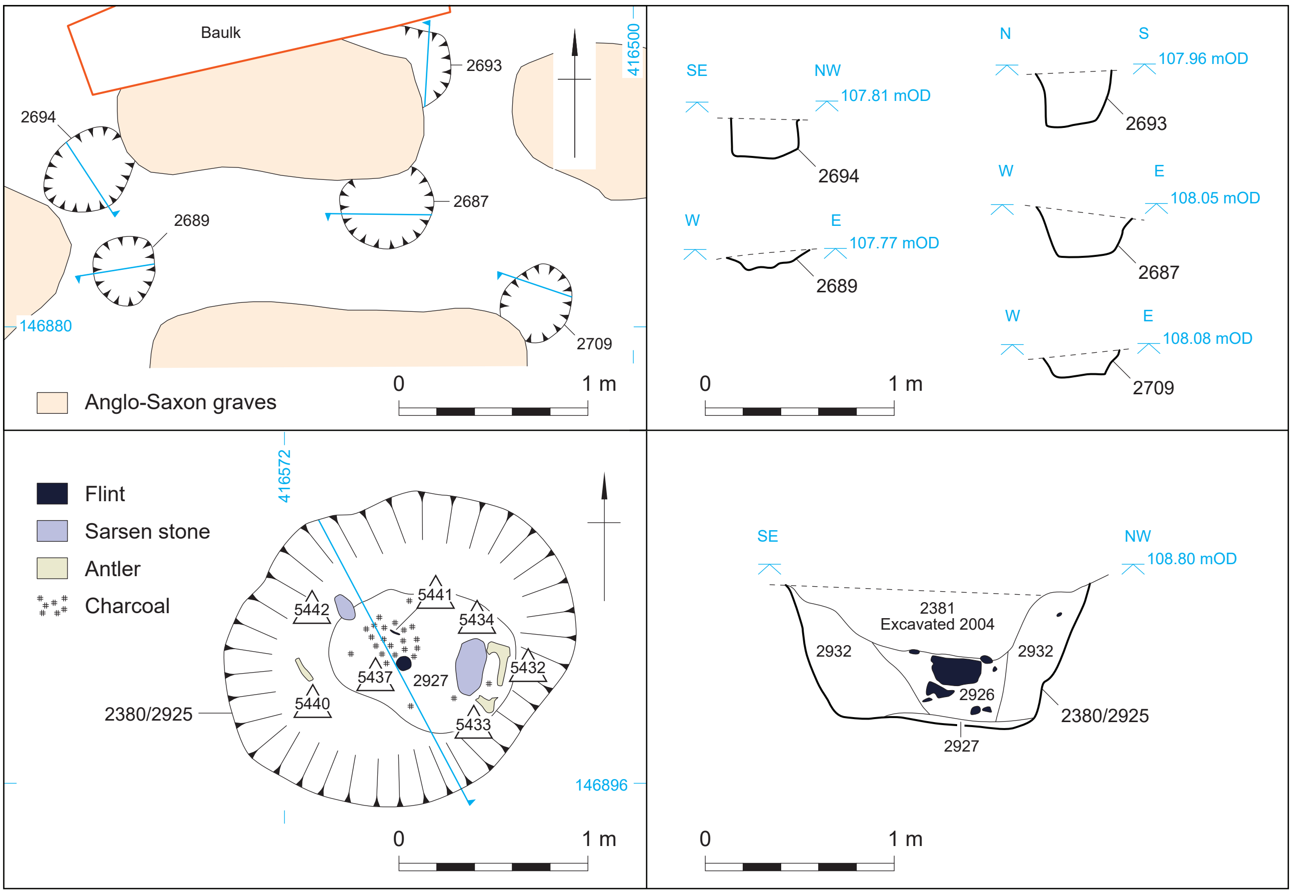


Figure 2.3 Plans and sections of pit 2380/2925 (Trench 5) and posthole group (Trench 3)

the feature had been recut and perhaps covered by a cairn in order to mark it out, which had subsequently slumped into the pit. The capping contained two struck flints and a sherd of pottery. A radiocarbon determination on one of the antler tools has shown the pit was filled in the second quarter of the 4th millennium BC, ie, the Early Neolithic (see Marshall *et al.*, Chapter 3), making it older than the material from the buried soil, which mostly appears to date to the Middle Neolithic.

Other Pre-mound Features

Where the buried soil was present, most of the pre-mound cut features appeared to be sealed by it. Two exceptions in Trench B, both of which cut through layer 2498/2515, are detailed in Table 2.1 and Fig. 2.1. A number of features cut into the berm of the main barrow mound in Trenches C, D and E were not sealed by *in situ* mound material but their similarity to some of the features discussed above suggests they are probably contemporary (Table 2.1); one possible exception is a heavily badger-disturbed feature (2364) which was aligned with an adjacent Anglo-Saxon grave and may therefore be related to that phase of activity.

A number of possible postholes were also found which may pre-date the barrow or could be related to the construction or use of the monument. These include a cluster of five circular or sub-circular features (2687, 2689, 2693, 2694, 2709) found in the outer berm area towards the western end of Trench 3 (Figs 1.6 and 2.3). They varied in diameter (0.38–0.46 m), depth (0.10–0.29 m) and profile, but all contained grey-brown sandy silt loam fills with no finds. Four of them were cut by Anglo-Saxon graves so it is certain that they pre-date that part of the cemetery, and a

Plate 2.3 Early Neolithic pit 2380/2925, with flint nodules from fill lower left (Trench 5), from the east

prehistoric date is considered most likely. However, their function remains unclear, and as only a small area was exposed it is likely that other postholes belonging to this group lie outside the excavated area. A similar feature (2235) was found on the outer edge of the main barrow ditch in Trench C (not illustrated).

Plate 2.4 Beaker ring-ditch (showing recut) beneath the Early Bronze Age barrow mound (Trench B), from the south (scales = 1 m and 2 m)

The Beaker Monument (Phase 2)

The fact that Hawley had recovered a primary Beaker grave and a secondary group of burials with a Food Vessel (see McKinley, Chapter 5) hinted at a multi-phase monument. This was confirmed by the discovery of a small Beaker barrow sealed by the later barrow mound (Figs 1.6 and 2.4). About 6 m outside the Beaker monument was a second Beaker grave (see below). Modelled radiocarbon dates suggest this phase probably began in the last quarter of the 3rd millennium cal BC, the initial part of the Early Bronze Age (see Marshall *et al.*, Chapter 3).

The Ditch

The Beaker barrow was first noticed in Trench B where an arc of ditch with an estimated external diameter of 15 m lay at the eastern end of the trench, running into Trench C, close to the northern section. It had truncated the Phase 1 flint scatter, which was not apparent in this area. The ditch measured up to about 1.5 m wide and 0.5 m deep; it had been recut twice, with each cut having a complex fill sequence of several deposits (Fig. 2.5; Pl. 2.4), nearly all of which produced struck flint. The initial cut of the ditch (2583) had steep sides and a flat base at least 0.3 m wide; it was filled with two pale brown silty loam deposits (2585 and 2568), separated by redeposited natural chalk (2569) and overlain by a light yellowish-brown upper fill (2546); all but the basal fill produced small quantities of struck flint. The first recut (2530) had a similar pale brown basal fill (2577) beneath a darker brown sandy loam (2567), redeposited chalk (2565) and another pale brown silty loam (2571), all except the last of these producing struck flint. The only other significant find from the ditch was a complete cattle scapula, probably deliberately placed, from fill 2567. This is estimated to date to *2140–1960 cal BC (95% probability*; OxA-16642; Fig 3.2).

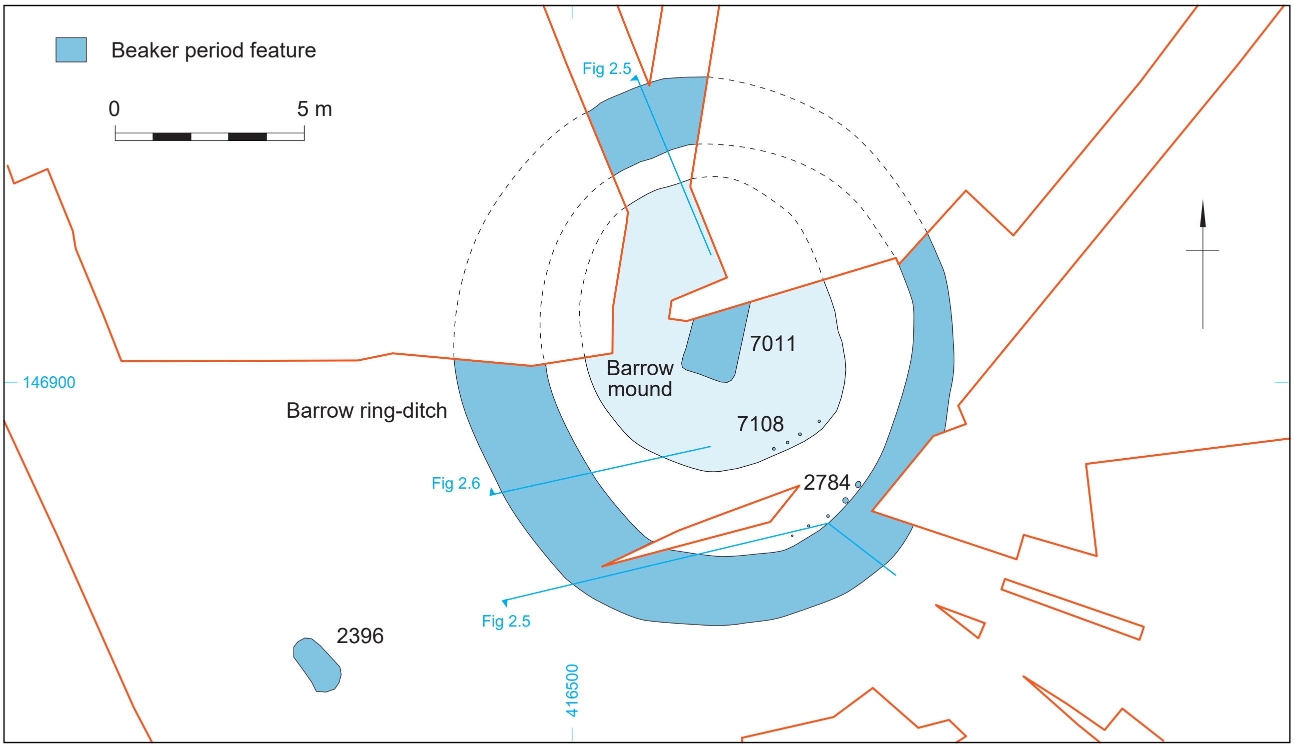


Figure 2.4 Plan of Beaker monument

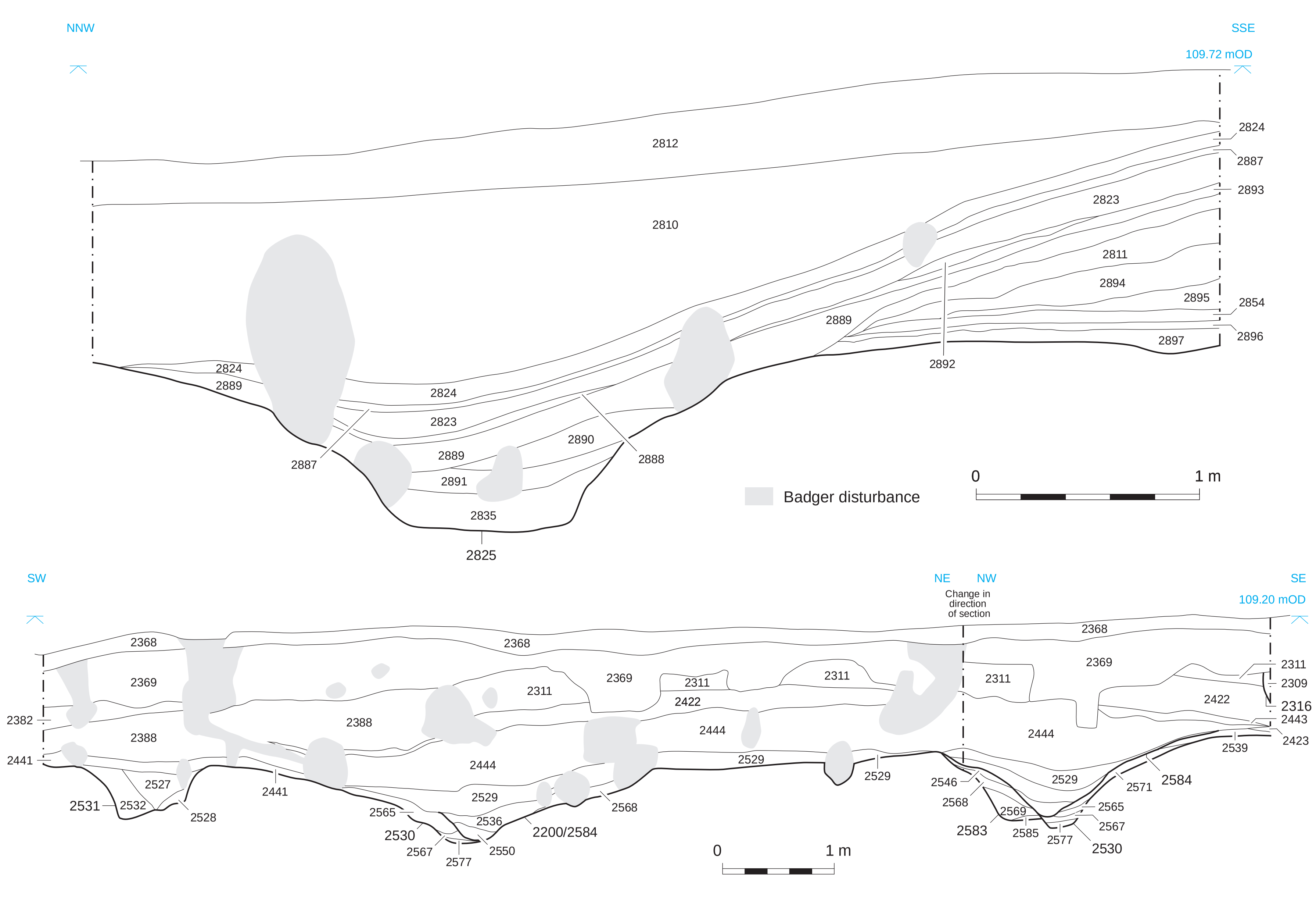


Figure 2.5 Sections of Beaker monument (Trench 6) and Beaker ring-ditch with bell barrow mound (Trench B)

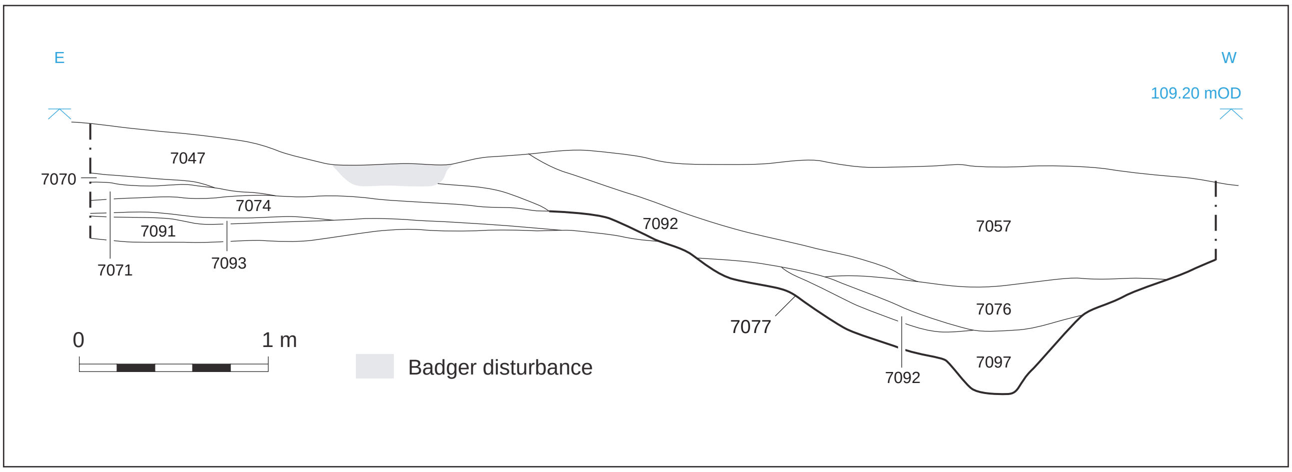


Figure 2.6 Section of Beaker monument and bell barrow mound (Trench 10)

Plate 2.5 Chalk deposits of Beaker mound eroding into ring-ditch in foreground; note Neolithic soil below mound in section (Trench 6), from the north-west (scales = 1 m and 2 m)

Plate 2.6 Chalk deposits of Beaker mound eroding into ring-ditch in foreground; note Neolithic soil below mound in section and Hawley trench to left cutting ditch fill and mound (Trench 10), from the south-west (scale = 0.5 m)

The second recut (2200/2584) contained two chalky yellowish-brown fills (2550, 2536) with substantial quantities of struck flint, and a darker yellowish-brown silty loam (2529), which produced 20 struck flints and a sherd of Late Neolithic pottery (Grooved Ware). When excavated, this uppermost fill was seen as equivalent to layer 2539 on the outer edge of the feature, which was apparently sealed by buried soil layer 2423 (see above), presumably indicating some disturbance of the earlier deposits. Context 2539 produced two fragments of cattle bone. The complexity of the fills indicated that the ditch had some longevity and was not simply a marker for the main barrow, though it did appear to be approximately concentric with the later barrow ditch some 14 m outside it. It also suggested that material had slumped in from an internal mound or bank, though this was not visible within Trench B/C.

In 2012–14 the Beaker ring-ditch was further investigated in Trenches 4, 6, 10 and 11, though the recuts were not clearly discerned; an internal mound was also revealed (see below) (Pl. 2.5). In Trench 4, to the north-east of Trench B/C (Fig. 1.6), two short lengths of the eastern part of the ditch were excavated. Here the feature (2755) was about 0.55 m deep and filled with a fairly thick deposit of light greyish-brown clayey silt (2782), a light grey clayey silt (2756) and a yellowish-grey silty loam (2754), each containing a few pieces of struck flint.

Moving anti-clockwise, in Trench 11 the Beaker ring-ditch was recorded as 7050 but only a partial section was excavated. Here it was about 0.45 m deep and filled with a pale grey-brown primary clayey loam fill (7051), which contained struck flint and animal bone, and a rather darker silty clay loam secondary fill (7052), with a smaller amount of struck flint.

Another short length of the ring-ditch (2825) was excavated to the west in Trench 6 in 2013 (Fig. 1.6); it measured 2.7 m wide and 0.7 m deep, though the upper edges sloped very gently and the main part of the ditch was generally 1.8–2 m in width (Fig. 2.5). It was filled by a light brown chalky deposit (2835, 0.2 m thick) beneath two layers of silty clay inwash that were thicker on the southern (interior) side of the ring-ditch (mid-brown 2891, 0.1 m thick, under light brown layer 2890, which was 0.15 m thick). Above this, the upper fills of the ditch are largely continuous with layers that spread up and over the adjacent mound, presumably representing slumping, and are discussed below with the mound, though interdigitated between two of these (2889 and 2823) was a thin (0.04 m), dark yellowish- brown silty clay deposit found only in the ditch (2888).

Finally, in Trench 10, to the west of Trench B/C (Fig. 1.6), cut 7077 was around 3 m wide and 0.9 m deep, filled by a mid-greyish-brown silty loam (7097), a darker brown silty loam (7076), which produced some Neolithic sherds, and a pale brown, chalky fill (7092) (Fig. 2.6; Pl. 2.6). Some discrete concentrations of knapping debris were found within basal fill 7097: 7098 and 7099 in the upper part on the east (inner) and west (outer) sides respectively, and 7105 and 7106 lower down and close together on the west side.

Plate 2.7 Chalk deposits of Beaker mound prior to excavation (Trench 10), from the south-west (scale = 2 m)

Plate 2.8 Beaker mound during excavation (Trench 10), from the south-east (scale = 2 m)

The Mound

Because the Beaker ring-ditch was initially exposed against the northern section of Trench B/C it was unclear what lay within the circuit, although the number and variety of fills seemed to indicate erosion of an internal mound or bank. The excavation of Trench 6 subsequently confirmed that there was an internal mound which extended to the edge of the ditch. The mound was relatively well preserved, though some burrows were apparent and there was evidence of substantial slumping of mound material into the upper part of the ditch. The mound survived to a height of 0.80 m, including the eroded layers (Fig. 2.5). The lower, presumably intact deposits comprised two chalky layers (2895 and 2811, each around 0.15 m thick, the latter containing struck flint and a Neolithic sherd) sandwiching a slightly less chalky deposit (2894) of similar thickness. Over layer 2811 was slumped material (2889; 0.10 m thick, similar in composition to 2894) which also overlay ditch fill 2890. Above this were two thin pale brown deposits found only on the mound (2893 and 2892, each around 0.05 m thick). These were overlain in turn by less chalky layers: a dark brown silty clay (2824; 0.10 m thick) and two thin (0.03 to 0.05 m) deposits of dark yellowish-brown silty clay (2887 and 2823, the latter containing struck flint), which formed a buried turf and topsoil horizon over both mound and ditch.

The mound was also apparent in Trench 10, where mid-brown silty loam turf material (7070) overlay two chalky deposits (7071, which produced struck flint, and 7093; Pls 2.7 and 2.8), separated by a mid-brown silty loam (7074) which produced a small group of Neolithic sherds (Fig. 2.6). Overlying turf layer 7070 was a greyish-brown layer of eroded material (7047), which was the uppermost surviving deposit in this area.

Remains of two possible stake circles (2784 and 7108) were found in Trenches 4 and 10 (see Fig. 2.4). While these could represent a late phase of use of the Beaker mound, they may equally well relate to the Early Bronze Age bell barrow, which includes other arcs of stakeholes, and are therefore described further below.

The Graves

Towards the western end of Trench B, a grave was encountered close to the northern section (Fig. 2.4). It was probably sealed by the main barrow mound (see below), though the intact deposits tailed off at this point, making the relationship impossible to establish with complete certainty. The oval grave pit

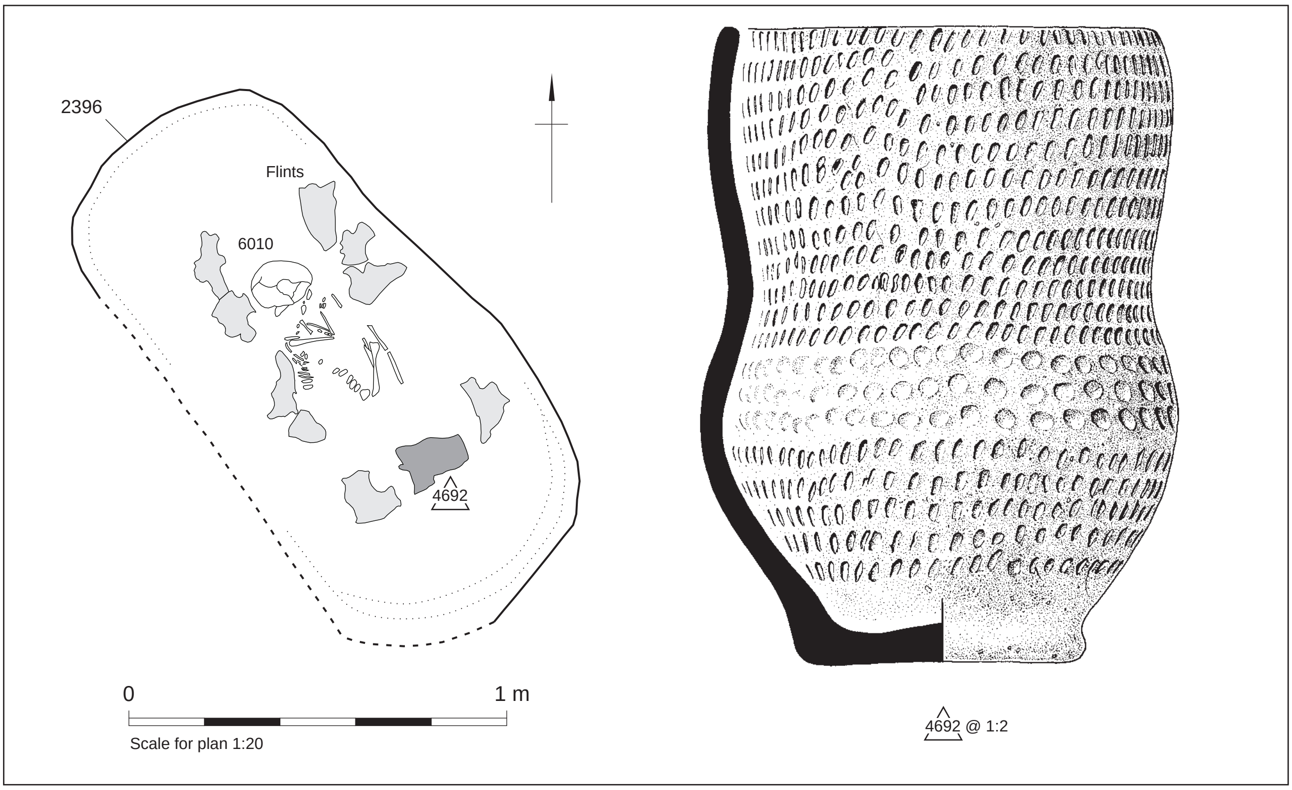


Figure 2.7 Plan of Beaker grave 2396

Plate 2.9 Beaker grave (Trench B), from the north-east

Plate 2.10 Hawley trench/central Beaker grave (Trench 10, from the south-east (scale = 2 m)

(2396) had been truncated by a modern machine-cut pit, but fortunately this had not impacted the skeleton (6010), and the compact chalk fill (2394) showed no significant burrowing animal activity, although a leporid and a corvid bone were recovered; there were also 18 struck flints. The grave was oriented north-west–south-east; it measured 1.6 x 0.8 x 0.75 m. On the base was the crouched skeleton of a young child, with a Beaker pot placed at the feet and a number of flint nodules carefully laid around the body, one (placed behind the head) containing a fossil sea urchin (Fig. 2.7; Pls 2.9 and 8.3). The burial is estimated to date to *2145–1970 cal BC (95% probability*; OxA-16643; Fig 3.2), and is contemporary with the scapula in the ring-ditch (see Marshall *et al.*, Chapter 3). There were no finds from the fill of the pot, which was excavated in the laboratory.

In the centre of the monument, Trench 10 revealed Hawley's excavation trench (7078; see below) at the end of which was a sub-rectangular cut 2.7 m deep (7011) below the current surface of the mound, which may mark the Beaker grave that he reported (Fig. 2.8; Pl. 2.10). At the base was a thin chalky deposit (7054) below a series of dark brown silty loam fills with redeposited human bone and struck flint (7055, 7056 and 7053) that were overlain in turn by a layer which looked like redeposited barrow (turf) mound material (7012). Two of the disarticulated human bones were radiocarbon dated and one may well belong to Hawley's 'old man', though we cannot be certain (see Marshall *et al.*, Chapter 3; see McKinley, Chapter 5).

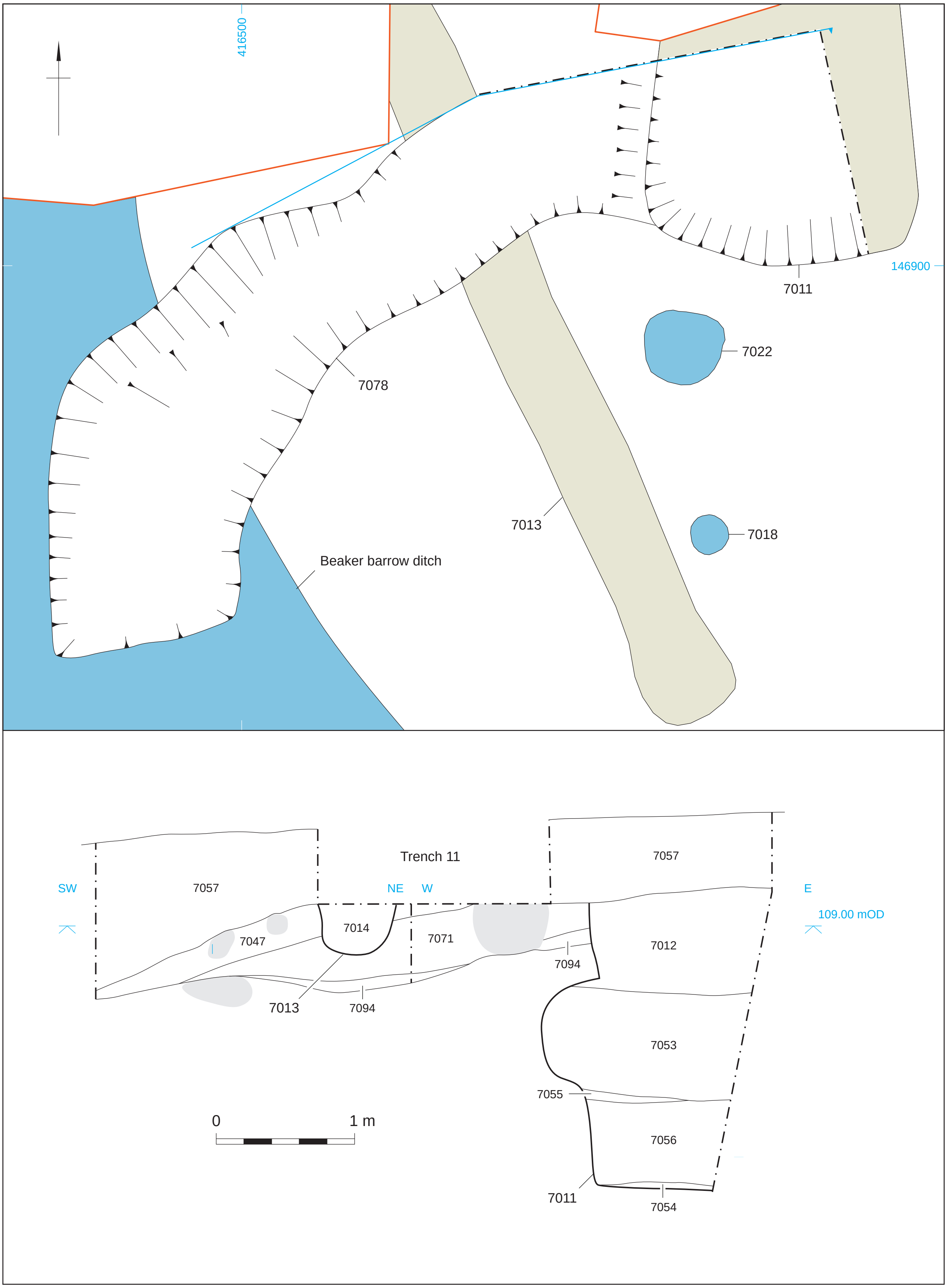


Figure 2.8 Plan and section of Hawley trench 7078 and central Beaker grave 7011

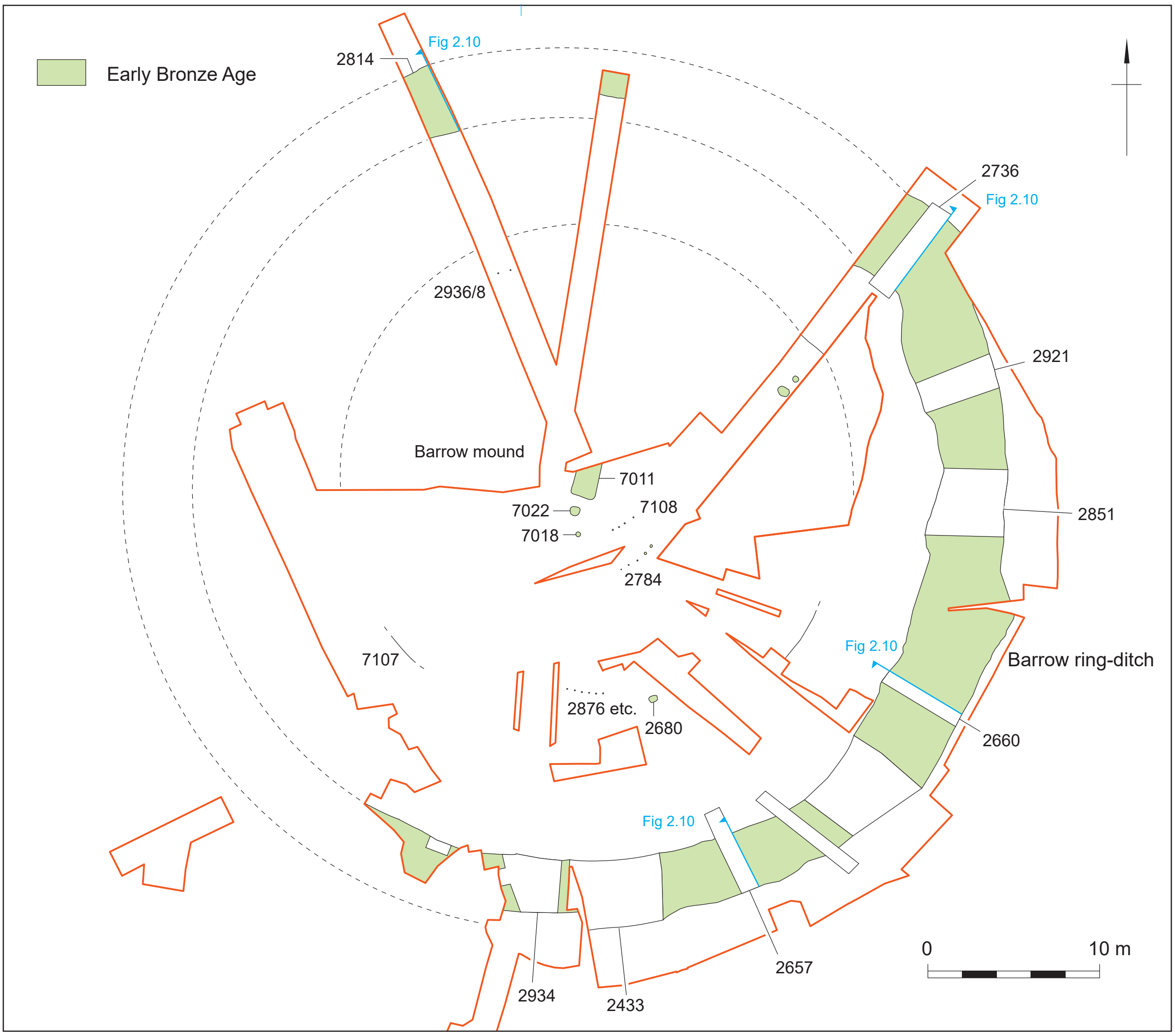


Figure 2.9 Plan of bell barrow

The Bell Barrow (Phase 3)

The main barrow mound (Fig. 2.9) was constructed over the Beaker monument, enlarging it considerably. Modelled radiocarbon dates suggest this happened at least 200 years after the Beaker phase began, and that the bell barrow was completed in the first quarter of the 2nd millennium BC, still within the Early Bronze Age (see Marshall *et al.*, Chapter 3). If cut 7011 does indeed mark the Beaker grave excavated by Hawley, then the other burials he reports, which may well be associated with the construction of the bell barrow, might have lain beyond the limit of excavation in Trench 10. Hawley records them as lying 'above and to the north-east' [of the Beaker burial], so they may have been located immediately adjacent in an area not accessible in 2014 because of the presence of a large tree stump (which prevented the full excavation of cut 7011).

The Ditch

The different phases of work recorded a sufficient proportion of the main barrow ring-ditch to estimate its diameter as approximately 50 m, with a berm between the ditch and the intact barrow mound that was up to 7 m wide, and establish that it was more or less concentric with the earlier Beaker ring-ditch (Fig. 2.9).

In Trench C, the ditch (2209) measured some 6 m across at the top and its base was 1.9 m below the modern surface. However, this includes a series of deposits up to 0.8 m thick which contained a number of modern finds and appear to derive from the comparatively recent slumping or spreading of the mound and mixing by badgers. With these removed, at the level of the natural chalk, the ditch was about 3.5 m wide and 1.25 m deep with a broad, slightly concave base. The lower ditch fills comprised a

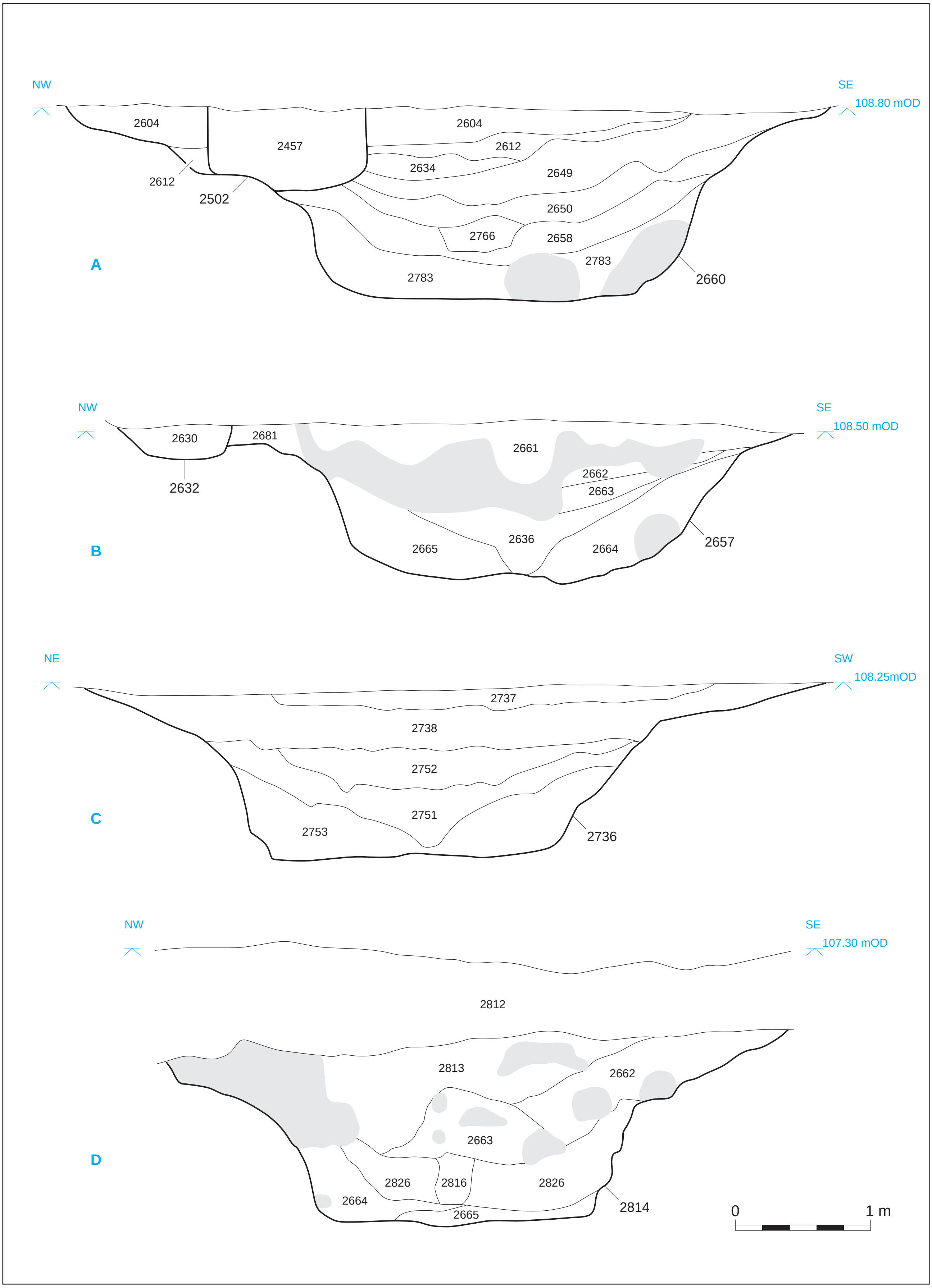


Figure 2.10 Sections of bell barrow ditch

Plate 2.11 Early Bronze Age barrow ditch under excavation (Trench 5), from the east

Plate 2.12 Early Bronze Age barrow ditch following excavation (Trench 5), from the south

series of deposits containing between 30% and 90% chalk (including 2208, 2232, 2230 and 2229) which produced no finds, though the molluscan evidence hints at some disturbance (see Robinson, Chapter 7). There was evidence for a narrow recut (2225), with straight sides and a flat base, through the central part of the primary fills, containing a flinty deposit (2224). Above this was another very flinty deposit (2223), a light brown clayey silt with 40% chalk (2222), and a well-rooted deposit (2221), none of which contained any finds. Above these secondary fills, the upper half of the ditch contained a thick, fairly homogeneous greyish-brown clayey silt fill with chalk and natural flint (2220), but again no finds, through which three Anglo-Saxon graves were cut. Badger tunnelling was apparent within all levels of the ditch and seems to have introduced the intrusive snail shells to the lower fills of the ditch.

On the eastern side of the barrow in Trench D, the ring-ditch (2361) measured some 3.7 m wide and 1.5 m deep; although there was little surface evidence of burrowing, animal disturbance was again evident towards the base of the ditch. The feature had a basal fill of chalk rubble below two light brown layers with 80% chalk, none of which produced any finds. At this point, as in Trench C, a recut was apparent (2555), though here it had a V-shaped profile and the flinty fill (2544) contained a few struck flints. Above this the deposits contained finds of post-Bronze Age date and are discussed below (Phase 4).

To the south, at the southern end of Trench E, to the south-west, the ditch (2433) measured approximately 3.2 m wide and 1 m deep; it had a primary fill of chalk rubble (2434), which contained a few struck flints, followed by a thin chalky layer (2506) and a deposit of sandy loam (2448). As in the other sections, the ditch was then recut (2445), here with a U-shaped profile, and filled with a yellowish-brown flinty deposit (2432), which produced a number of struck flints, beneath an upper deposit which contained post-Bronze Age finds.

In 2012 two approximately 10 m-long stretches of the barrow ditch were investigated in Trench 1 (between Trenches C and D) and Trench 2 (between C and E). The ditch was generally excavated to below the level of the Anglo-Saxon graves which had been cut into its fills, with further excavation to the ditch base in 1 m-wide sections in several places in both trenches. In Trench 1 the ring-ditch (2660) was 5.5 m wide and 1.4 m deep with a flat base about 2 m wide (Fig. 2.10a). Badger tunnelling had disturbed the primary fill of chalk rubble, which underlay a yellowish-brown silty clay with 50% flint and chalk (2658 on the outside of the ditch and 2659 on the inside, the latter containing struck flint). No recut was identified but a similar narrow depression in the centre of the ditch at this level was visible, again filled by a deposit largely composed of flint nodules (2766), containing a considerable amount of struck flint, above which were post-Bronze Age layers.

In Trench 2, the cut (2657) was 1.2 m deep with a flat base. Here again there was an initial chalk rubble inwash on either side and a central depression or recut filled by a flinty deposit (2636), which contained much worked flint as well as fragments of Neolithic and (presumably intrusive) medieval pottery (Fig. 2.10b). Sub-divisions of this fill were made to investigate two concentrations of worked flint (2730 and 2731), which largely comprised fresh flaking debris. Above this were a series of heavily badger-disturbed deposits (see Phase 4).

In addition, a 1 m-wide section through the ring-ditch was dug in Trench 4 on the north-east side of the barrow. Here the ditch (2736) was over 5 m wide at the top and 1.3 m deep, with a broad flat base about 2 m wide (Fig. 2.10c). The basal fill of chalk inwash, much thicker at the sides than in the centre, was succeeded by a possible V-shaped recut (2750) with a fill of yellowish-brown sandy loam with chalk and flint (2751), including two struck flints.

Four more ditch sections were excavated in 2013 with a total length of approximately 12 m. In Trench 5, between Trench 4 and Trench D, two slots were excavated (Pls 2.11 and 2.12). The more northerly (2921) was not fully dug but chalky primary fills were again followed by a central flinty deposit (2920), which produced struck flint, two Neolithic sherds and a Middle Bronze Age one. Four metres further south, the ditch (2851) was filled by primary chalk rubble infill (2869 and 2863 to the east; 2870 and 2856 to the west), light brown silty loam fills with flint (2855 and 2865) and central deposits with abundant flints (2852 and 2849), all containing struck flint (Pls 2.13 and 2.14).

In Trench 8, to the west of Trench E, the ditch (2864/2934) was slightly shallower and wider with heavy badger disturbance on the south side. To the north, primary chalk infill underlay a mid-brown layer, the interface between these containing the posterior part of a cattle mandible (2930).

A 2 m-wide section of the ring-ditch was also dug in Trench 6, the only complete section in the north-western half of the barrow (Fig. 2.10d). This showed a very similar profile to that in other areas, with the ditch (2814) measuring about 1.3 m deep with a flat base 2 m wide. Again there was a primary chalk rubble infill (2826) and a flinty deposit in the central depression within this (2816), both containing struck flint. Just to the east in Trench 11 the ditch (7069) was not fully excavated (only reaching a depth of 1.2 m) but two light orange-brown sandy silt fills (7005 and 7068) both contained struck flint.

To summarise, the main barrow ditch was generally around 4–5 m wide, 1.3 m deep and had a broad flat base. There was relatively little variation between the excavated sections, and the Operation Nightingale work generally confirmed the form and fill sequence recorded in 2003–4 (Fig. 2.10). A basal chalk rubble fill was followed by a mixture of weathered chalk and soil, probably deriving from erosion of the ditch sides. Above this in the central part of the ditch was a notable concentration of flint nodules (up to about 0.1 m in size), sometimes including a significant amount of worked flint. The flinty deposit apparently filled a narrow recut of the ditch, which was clearer in some sections than others but may have continued around the entire circumference of the barrow. This probably took place fairly soon after the original cutting of the ditch and can be assigned on stratigraphic grounds to the Early Bronze Age. The lower ditch deposits were succeeded by a sequence of secondary and tertiary fills of mostly pale brown silty clay loam containing varying quantities of chalk and flint, with the upper fills being of Roman or later date (eg, 2634 in Fig. 2.10a; see below).

Plate 2.13 Early Bronze Age barrow ditch section, showing flint-filled possible recut (Trench 5), from the north (scales = 1 m and 2 m)

Plate 2.14 Early Bronze Age barrow ditch section (Trench 5), from the south (scales = 1 m and 2 m)

Throughout most of the excavated sections, the various fills of the ditch, at all depths, had been heavily and extensively disturbed by animal burrowing. Only in Trench 4 did the degree of disturbance to the ditch fills appear to be less intense.

The Stake Circles

In 2012 part of a possible stake circle was identified in Trench 4, cutting the upper fill of the Beaker ring-ditch, and probably of similar diameter, but offset slightly to the circuit of the latter (see Fig. 2.4). This stake circle had not been identified in the 2003–4 excavations, which did not extend far enough towards the centre of the monument, and the narrow width of Trench 6 probably precluded its identification there. In Trench 4 it was represented by an arc of five small stakeholes (2784), spaced at intervals of approximately 0.5 m and measuring around 0.06 m in diameter and

Plate 2.15 Stakehole group 2876 (Trench 7), from the south (scale = 1 m)

0.1 m deep. In 2014 in Trench 10 at least two further stakeholes were recorded (7108), measuring 0.05 m in diameter and 0.08 m deep, apparently belonging to a slightly smaller diameter stake circle than that found in Trench 4, which cut the edge of the Beaker mound. Both stake circles may have been associated with the construction of the main barrow mound over the remains of the Beaker monument, or possibly with a late phase of activity relating to the latter.

In 2013 and 2014 parts of a probable stake circle of much larger diameter were identified in Trenches 6 (2936 and 2938), 7 (from west to east, 2876, 2878, 2880, 2882, 2911 and 2913) and 10 (a group of three stakeholes collectively numbered 7107) (Fig. 2.9; Pl. 2.15). This outer stake circle was not recognised in the 2003–4 or 2012 excavations, perhaps because the areas of its projected circuit, corresponding closely with the edge of the main barrow mound, had in places been heavily disturbed by animal burrowing. It has an estimated diameter of approximately 30 m, and all the stakeholes were apparently sealed beneath the surviving edge of the chalk capping of the mound; it could therefore have served as a marker or revetment for the turf stack forming the core of the mound. The stakeholes were spaced at intervals of approximately 0.4 m, and measured 0.05 m in diameter and 0.1 m deep. Fills were generally light in colour and chalky, though a couple of the features (2911 and 2913) had rather darker fills.

The Barrow Mound

The main barrow mound was constructed over the smaller Beaker monument. Although heavily disturbed by badger activity, modern pits (see below) and spreading/slumping that was perhaps related to the 19th-century destruction reported by Hawley, its architecture was still legible, comprising a turf core covered by a capping of chalk that measured some 1.5 m wide at the base, giving a total mound diameter of around 28 m (Fig. 2.9). The height of the mound as recorded from the excavation is 1.25 m (Fig 2.5) though it may well originally have been considerably higher. In Trench B the upper part of the main barrow mound comprised a series of more or less disturbed, mixed silty layers running down the side of the mound and out towards the western end of the trench with an ill-defined edge (definition was hindered by badger and human disturbance as well as a high density of tree roots in this area). The main deposits (2109, 2111, 2113 and 2128/2135) all contained some modern finds as well as a considerable quantity of struck flint (approximately 170 pieces), and are treated as belonging to a recent phase. Mixed material was also found on the disturbed southern side of Trench B (layers 2156, 2157 and 2186), which produced a few struck flints, and in the southern part of Trench C (2216, 2217, 2335). Given the extent of the disturbance revealed during the initial hand excavation, similar material in the other trenches was generally removed by machine.

The Beaker ring-ditch and the area beyond it in Trench B were overlain by a layer of dark yellowish-brown silty clay loam (2388/2429 and 2415, the latter number given to the area near the Beaker grave). This contained around 480 struck flints, presumably displaced from the pre-mound scatter, and some Neolithic pottery, as well as cattle, pig and intrusive leporid bones. Above this in turn were mound deposits comprising a firm clay core interspersed with chalky lenses, presumably reflecting the construction of the mound from turves which had some chalk attached to the roots. These deposits also filled the top of the Phase 2 Beaker ring-ditch, showing this was still a visible depression that needed to be levelled when the mound was built (Fig. 2.5).

In the middle part of Trench B, remnants of the original mound make-up survived almost to the present surface, comprising relatively fine layers and lenses of chalk and clay. At the eastern and western ends of the trench, however, it was only at a depth of 0.4–0.5 m below the surface that intact horizons of mound construction material could be discerned, the eastern sequence comprising gently sloping bands of stiff, brown clay up to 0.3 m thick, interspersed with occasional chalky lenses. At this end of the trench the sequence of deposits is shown in Table 2.3. The finds provide some evidence of disturbance throughout the

Table 2.3 The mound sequence in Trench B

Contexts	Thickness	Description	Finds
2144		compact mixed greyish brown clayey silt and 'pea gravel' chalk	flint (20) animal bone: cattle, sheep
2148 2154 2155	0.5 m	friable/compact mid- to dark brown clayey silt with chalk	flint (2148: 30; 2154: 6; 2155: 8) animal bone: cattle, sheep, leporid (2155)
2152 2170 2188	0.15 m	compact mid-brown clayey silt with 'pea gravel' chalk	flint (2152: 48; 2170: 3; 2188: 6) animal bone: cattle, leporid, canid, corvid (2152); cattle,pig, leporid (2188)
2161 2187 2189	0.25 m	hard, strong brown silty clay	flint (2161: 91; 2187: 38; 2189: 6) modern pottery (2187) animal bone: sheep, pig (2161); cattle (2187); cattle, sheep (2189)
2193	0.1 m	friable/compact mid-light brown clayey silt with chalk	flint (9) animal bone: cattle (2193)
2197 2198 2199	0.2 m	compact/hard reddish/dark brown silty clay	flint (2197: 5; 2198: 20; 2199: 13) animal bone: red deer (2198), leporid (2197)

Table 2.4 The mound sequence in Trench C

Contexts	Thickness	Description	Finds
2310/2311	0.2 m	reddish brown clay loam	flint (4); modern pottery; cattle, pig and leporid bone
2392	0.2 m	mid-brown sandy clay silt	cattle bone
2412	0.2 m	compact light brown silty clay with chalk and flint	flint (12); pottery; pig and leporid bone
2418	0.1 m	compact reddish-brown silty clay	flint (5); pottery
2422	0.35 m	compact dark brown silty clay	flint (14); pottery; cattle, sheep, pig and leporid bone
2443	0.05 m	friable light brown clayey silt	

mound make-up, including intrusive faunal remains and a fragment of modern pottery. Within the upper mound make-up in the central part of Trench B, two areas of burning (2168 and 2174) were noted; the former produced a fragment of pig bone and two struck flints, the latter a single flint. In the centre of the trench these layers were removed as a single context (2382), which produced 14 struck flints as well as cattle, sheep and pig bone.

The turf mound core was covered by a capping of crushed and rammed chalk, remnants of which (2312, 2313) survived as a ring some 1.5 m wide and 0.2 m high around the edge of the mound at the west end of Trench B. The inner edge of this deposit lay some 5 m beyond the outer edge of the Beaker ring-ditch.

Over and outside the remnant capping, slumped mound material was found, such as 2123, a root-disturbed light brown clayey silt deposit, which overlay the natural chalk at the west end of Trench B, and contained over 20 struck flints as well as intrusive leporid bones.

At the northern end of Trench C a comparable mound construction sequence was noted. The chalk capping was again encountered about 5 m from the Beaker ring-ditch; it comprised a layer of compacted chalk (2160, 2350) about 0.3 m thick, which contained a struck flint and an intrusive leporid bone, over a softer layer of mixed chalk and soil, only 0.05 m thick. Stratigraphically beneath this was a complex series of mound construction layers. Deposits here comprise a compact light brown sandy clay loam, 0.05 m thick, which overlay the buried soil, succeeded by a compact dark brown clay loam 0.2 m thick, which produced struck flints (2444); this also filled the top of the Beaker ring-ditch (see Fig. 2.5). Above this in turn were a series of six generally clayey deposits (Table 2.4).

In Trench D the mound was revealed only at the western end of the trench and comprised a deposit of compacted white chalk, 0.3 m thick, that formed part of the capping. Below this was a looser layer composed of 75% chalk and a light brown silty clay loam (2356; 0.15 m thick) that overlay the buried soil and produced some cattle bone.

The extent of the intact mound material in Trenches C and D and its absence in Trench E made it clear that the monument is a bell barrow and not, as previously thought, a bowl barrow. The confusion arose because damage to the barrow (probably starting with that described by Hawley) has spread mound material towards the ditch, obscuring the berm.

In the later phase of work the barrow mound was found to survive to a maximum height of approximately 0.8 m in Trenches 1, 2, 4 and 6, and in some places the individual turves making up the core of the mound were again visible in both plan and section (the visible turves approximately 0.3 m square and up to 0.15 m thick; Pl. 2.16), though in Trench 7 the turf core had been extensively disturbed by burrowing animals and such detail was not apparent.

The outer layer of the turf mound in Trench 1 comprised two mixed greyish/yellowish-brown

Plate 2.16 Turves of Early Bronze Age barrow mound, overlying chalk deposits of Beaker mound (Trench 6), from the south (scales = 0.5 m and 1 m)

Plate 2.17 Removing last remnants of chalk capping of Early Bronze Age barrow mound (Trench 7), from the north-west

Plate 2.18 The two figures in the foreground stand on the edge of the Beaker chalk mound (Hawley trench to the right), with the figure in the background marking the extent of the Early Bronze Age turf mound (Trench 10), from the east

silty clay loam deposits up to about 0.6 m thick in total (2683 and 2770), while in Trench 4 it was a mixed greyish-brown silty clay loam (2742); each of these deposits contained struck flint and 2683 also produced three Neolithic sherds and a whetstone of unknown date. Beneath these, and within the Beaker ring-ditch, was a more coherent dark brown clay loam turf core (2743) up to 0.9 m thick, containing struck flint, which overlay disturbed Beaker mound material (2756) and ring-ditch fill (2754).

The chalk capping again survived around the outer edge of the mound core though, as before, it had been subject to some slumping and spreading (Pl. 2.17). Whilst damage from burrowing animals made it difficult to accurately determine the extent of each layer, the surviving capping in Trenches 1 and 4 was approximately 0.3–0.4 m thick; in Trench 1 the capping layer (2645) produced a group of around 50 Neolithic sherds, possibly from the same vessel, and over 100 struck flints.

To the south in Trench 2, the chalk capping (2676) survived to a height of up to 0.4 m and overlay turf mound 2677, which was the equivalent of 2683 and 2770 in Trench 1. Here the mound reached 0.8 m high and was covered by slumped material, which contained Early Bronze Age and Roman pottery (2610); all these contexts also contained some struck flints. In Trench 7 the remaining capping (2857) was approximately 0.25 m thick and the surviving turf core 0.45 m thick (2858); again struck flint was found in both deposits, while 2858 also contained some intrusive post-medieval pottery.

To the north in Trench 6 the surviving turf core, which overlay the Beaker mound (2824), was a very dark greyish-brown silty clay up to 0.85 m thick (2810), with thin layers of chalk visible between the turves (Fig 2.5); it produced a large amount of flintwork and a sherd of Neolithic pottery. In Trench 11 the turf stack was recorded as a dark brown clayey silt 1.2 m thick which overlay the Beaker ring-ditch (7050). Above this was slumped mound material recorded as 7006, with some struck flint.

In Trench 10 the mound core infilling the top of the Beaker ring-ditch (7057) comprised a compact

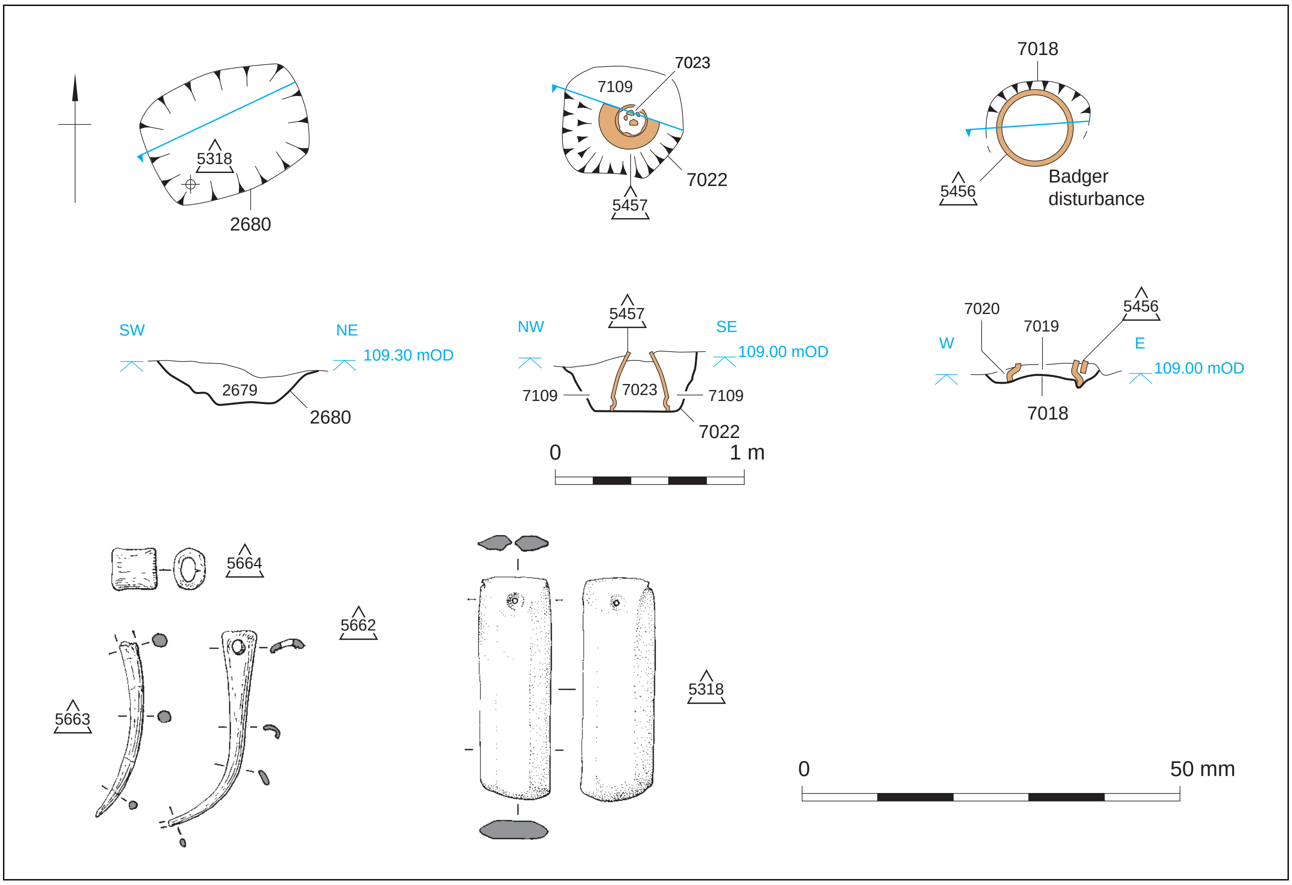


Figure 2.11 Plans and sections of cremation graves 2680, 7018 and 7022, with associated pyre goods

mottled greyish/yellowish-brown silt loam 0.7 m thick with chalky lenses denoting the divisions between turves; 7057 produced a single sherd of comb-impressed Beaker pottery and numerous struck flints. Further west, what remained of the mound was too disturbed to see individual turves (7043), though this deposit produced Middle Neolithic and Late Neolithic/Early Bronze Age sherds (Pl. 2.18). Nothing survived of the chalk capping.

Secondary Burials

No Early Bronze Age burials were found beneath the turf core of the surviving mound and Hawley's four skeletons (three adults and an infant) associated with a Food Vessel appear to be the only primary burials contemporary with the construction of the bell barrow (though how they relate spatially to the Beaker monument and grave remains uncertain; see above). At least one of the two disarticulated human bones that were radiocarbon dated appears to belong to this phase (see Marshall *et al.*, Chapter 3; McKinley, Chapter 5).

However, three secondary burials were recovered (Figs 2.9 and 2.11), with modelled radiocarbon dates suggesting they were inserted in the later part of the Early Bronze Age, during the 18th and 17th centuries

Plate 2.19 Urned cremation burial 7018 in foreground, with burrow to right and military trench to left; top of vessel in grave 7022 just visible in left background, with Hawley trench beyond (Trench 10), from the south-west (scale = 0.5 m)

BC (see Marshall *et al.*, Chapter 3; Pl. 2.19). Cut into the southern edge of the barrow mound in Trench 2 was a small, shallow pit (2680) containing an unurned cremation burial (2679). The cut was subrectangular in plan, measuring 0.8 m by 0.65 m, and flat-bottomed with a maximum surviving depth of 0.2 m. The fill of the pit was not initially clear following the cleaning of

Plate 2.20 *Urned cremation burial 7018 (Trench 10), from the north-west (scale = 50 mm)*

Plate 2.21 *Urned cremation burial 7022 (Trench 10), from the north-west (scales = 0.1 m and 0.2 m)*

the chalk capping as it lay below a thin spread of chalk, possibly part of the slumped mound. The cremation deposit comprised a notable quantity of human bone (2.9 kg), representing three individuals (a juvenile and two adults, possibly an older male and younger female: perhaps a family group; see McKinley Chapter 5), accompanied by several bone objects (ONs 5662–5, comprising two points, a bead/toggle and three very tiny possible beads, the latter not illustrated) and part of what may be a stone wristguard or bracer (ON 5318) that was inexpertly refashioned, perhaps as a pendant or whetstone (see Mepham, Chapter 4).

In Trench 10, an inverted urn (7019) lay within a close-fitting cut (7018), which measured 0.37 m in diameter and also contained a pale greyish-brown clayey silt fill (7020) (Fig. 2.11; Pl. 2.20). As found, the cut was only 0.06 m deep and had been severely truncated, presumably by the 19th-century activity described by Hawley; in addition, badger activity had damaged the south side of the feature but not the burial itself, though the badger tunnel did contain sherds from the urn thought to have been already disturbed and to have fallen in during machining (this redeposited material was numbered 7021). The cremated bone (0.5 kg) came from an adult, probably a female.

One metre to the north of burial 7018 was cut 7022, which measured 0.75 x 0.6 m in plan and was 0.3 m deep (Fig. 2.11). It contained a large inverted urn (7023), which had been broken but was almost complete (Pl. 2.21), and a pale brownish-grey clayey silt fill (7109); some pieces of the urn were retrieved from a cleaning layer over the mound (7024). The grave produced 2.3 kg of cremated bone from an adult female.

Both urn burials were cut into chalky material derived from the disturbed Beaker mound (7047); because of erosion the turf mound and chalk capping of the main Early Bronze Age barrow did not survive in this area, assuming it was once present.

Other Activity

A brownish-yellow clayey silt deposit (2735) in Trench 4 contained a concentration of struck flint, interpreted as knapping activity on the berm of the barrow. This appeared to overlay eroded turf mound material and was sealed by the spread of the chalk capping.

Later Bronze Age, Iron Age and Romano-British Activity (Phase 4)

Evidence for activity at the site between the construction of the bell barrow and its reuse as an Anglo-Saxon cemetery largely comprises material that accumulated in the middle and upper fills of the barrow ring-ditch, above the flinty fills of the narrow recut described above. The upper limit of this phase of infilling may be marked by an indistinct and discontinuous former turf line found approximately half-way up the sequence of barrow ditch fills in Trenches 1, 2, 5 and 8, comprising a dark brown silty clay loam up to 0.15 m thick. In Trenches 1 and 2 several Anglo-Saxon graves cut through this layer, but it was less clear in the northern part of the monument. Associated pottery indicates it to be of broad Romano-British date, suggesting that the ditch was still largely open some 2000 years after it was cut. Finds from ditch fills of this phase include later Bronze Age, Iron Age and Roman pottery (see Mepham, Chapter 4), a horse bone that has been radiocarbon dated to the Early Iron Age (see Marshall *et al.*, Chapter 3) as well as a coin of the House of Constantine, AD 335–341.

In Trench D, across the whole width of the ditch, the flinty fill of the narrow recut was overlain by a dark yellowish-brown silty loam (2454), which produced two struck flints, some Late Iron Age pottery and animal bone including equid. Next came a dark brown silty clay loam (2436), with 17 struck flints, which may equate to the Roman turf line (see below). Above this was a yellowish-brown silty loam (2377), which contained a little struck flint as well as Roman pottery, equid bones and human bone, perhaps derived from Anglo-Saxon skeleton 6013.

The ditch fill above the recut in Trench E was a pale brown silty loam (2370), which contained a considerable quantity of struck flint (182 pieces), a fragment of Roman pottery and some animal bone (cattle, equid and leporid), prior to the insertion of grave 2397.

Flinty deposit 2766 in Trench 1 (see Fig. 2.10a) was succeeded by two mid-brown silty clay deposits (2650 and 2649) and a dark brown stabilisation layer or turf line (2634/2635) below upper fills 2612 and 2604, which were thicker on the inside (north-west) of the ring-ditch, perhaps indicative of eroding mound material. All these layers produced both Roman pottery and residual struck flints, while the Early Iron Age horse bone came from layer 2650, testament to the degree of mixing in the upper ditch fills.

Above the ditch fills with freshly struck flint in Trench 2 were three heavily badger-disturbed deposits, the latest of which (2661), a light greyish-brown silty clay, produced Late Iron Age pottery and residual struck flint. The upper 0.5 m of ditch fills were removed in part as a series of 10 cm spits; from the top these were numbered 2602, 2611, 2614, 2618, 2619 and 2633, all of which produced struck flint and Roman pottery.

The upper fills in Trench 5 in the southern ditch slot comprised a light brown silty loam fill (2935) below a dark brown turf horizon (2850) and three deposits above this (2817, 2827 and 2828) which all contained Roman pottery. In the northern slot two upper fills comprised mid-brown loamy sand, one of which (2918) contained struck flint.

In Trench 4 (see Fig. 2.10b), the upper ditch fills comprised a dark brown sandy loam, a light brown layer with 60% chalk, and an upper light brown sandy loam, none of which had any finds.

The upper layers in Trench 8 were 2815 and 2909, which produced some struck flint, and a dark brown upper fill that was disturbed by recent military activity. In Trench 6 the upper fill was also heavily disturbed, here comprising a uniform light brown silty loam up to 0.8 m thick (2813), which produced some struck flint and a sherd of medieval pottery (see Fig. 2.10d). In Trench 12 only the top fill of the ditch (7103) was exposed, comprising an orange-brown silty clay loam.

Chapter 3
Chronology and the Radiocarbon Dating Programme

by Peter Marshall, Christopher Bronk Ramsey, Elaine Dunbar and Paula Reimer

Aims of the Barrow Clump Dating Project

A number of specific objectives relating to the chronology of the site sequence at Barrow Clump were identified.

For the Bronze Age Sequence

- to determine the date of the Beaker mortuary phase (Phase 2);
- to determine the chronological relationship between the Beaker grave and the inner Beaker ring-ditch;
- to understand the temporal relationship between the disarticulated human bones in Hawley's backfill and the Beaker monument (inner mound and ring-ditch) and bell barrow (enlarged mound and main outer ring-ditch);
- to provide a formal estimate for the completion of the bell barrow (Phase 3);
- to provide a precise date for the cremation burials inserted into the mound of the bell barrow;
- to provide a precise date for the horse bone from the tertiary fill of the barrow ditch (Phase 4).

For the Anglo-Saxon Cemetery (Phase 5)

- to understand the chronological relationship between the small unaccompanied burial group and the much larger group of Anglo-Saxon graves that probably date from the 6th century AD.

For Pit 2380/2925

- to confirm or refute the suggested Neolithic (Phase 1) date for pit 2380/2925.

Radiocarbon Dating and Chronological Modelling

The radiocarbon dating programme for Barrow Clump was conceived within the framework of Bayesian chronological modelling (Buck *et al.* 1996). This allows the combination of calibrated radiocarbon dates, or other scientific dates, with archaeological prior information using a formal statistical methodology. At Barrow Clump a number of stratigraphic relationships were available to constrain the radiocarbon dates.

Radiocarbon Results

A total of 13 radiocarbon measurements are now available from Barrow Clump (Table 3.1). All are conventional radiocarbon ages (Stuiver and Polach 1977).

Samples of calcined and non-calcined bone were measured by Accelerator Mass Spectrometry (AMS) at the Oxford Radiocarbon Accelerator Unit (ORAU) in 2006 and 2016. The samples were pretreated and combusted as described in Bronk Ramsey *et al.* (2004a) and Brock *et al.* (2010), graphitised (Dee and Bronk Ramsey 2000) and dated (Bronk Ramsey *et al.* 2004b).

The Scottish Universities Environmental Research Centre (SUERC) processed samples of antler, calcined and non-calcined bone in 2016 which were dated by AMS using the methods described in Dunbar *et al.* (2016).

The ^{14}CHRONO Centre, The Queen's University, Belfast processed three samples in 2016 (one sample UBA-31686; Table 3.1; failed) using methods described by Reimer *et al.* (2015), with the sample of calcined bone pretreated as described by Lanting *et al.* (2001). All samples were graphitised using zinc reduction (Slota *et al.* 1987).

Quality Assurance

All three laboratories maintain continuous programs of internal quality control in addition to participation in international inter-comparisons (Scott 2003; Scott *et al.* 2010). These tests indicate no laboratory offset and demonstrate the validity of the precision quoted.

A pair of replicate determinations are available on a sample that were divided and submitted for dating to different laboratories (sk 7038). The measurements are not statistically consistent at 95% confidence (Table 3.1; Ward and Wilson 1978), but as they are from the same individual (and are statistically consistent at 99% confidence) they have been combined by taking a weighted mean before calibration and inclusion in the chronological model described below.

Table 3.1 Barrow Clump radiocarbon and stable isotope measurements

Laboratory Number	Material and context	$\delta^{13}C$ (‰)	$\delta^{15}N$ (‰)	C:N	Radiocarbon age (BP)	*Posterior Density Estimate – (95% probability)*
Pit 2380/2925						
SUERC-67499	Antler (SF 5440; L Higbee) from the basal fill (2927) of pit 2380/2925	-21.4±0.2	3.2±0.3	3.2	4914±32	*3765–3640 cal BC*
Ring-ditch and barrow						
OxA-16643	Human bone, (sk 6010), right femur & tibia (S Mays), on base of grave 2396. Probably sealed by the barrow mound	-20.1±0.2	10.2±0.3	3.2	3684±29	*2145–1970 cal BC*
OxA-16642	Animal bone, cattle scapula (P Baker) from the secondary fill (2567) of recut of inner ring-ditch sealed by later barrow mound	-22.4±0.2			3680±30	*2140–1960 cal BC*
SUERC-67500	Human bone (sk 7056A), left radius (J McKinley), from the disarticulated human bone representing Hawley's backfill. The other individual is UBA-31687	-20.9±0.2	9.9±0.3	3.2	3601±29	*2030–1890 cal BC*
UBA-31687	Human bone (sk 7056B), left radius (J McKinley), from the disarticulated human bone representing Hawley's backfill. The other individual is SUERC-67500	-21.4±0.22	9.7±0.15	3.2	3731±32	*2200–2030 cal BC*
OxA-34586	Human bone, calcined (J McKinley) from unurned cremation burial (2679) on the base of pit 2680, inserted into the barrow mound	-21.8±0.2			3427±31	*1870–1840 (3%) or 1815–1795 (2%) or 1780–1635 (90%) cal BC*
SUERC-67240	Human bone, calcined (J McKinley) from Collared Urn cremation burial (7023) in pit 2680, inserted into the barrow mound	-21.7±0.2			3348±30	*1745–1600 (92%) or 1585–1560 (3%) cal BC*
UBA-31688	Human bone, calcined (J McKinley) from Collared Urn cremation burial (7019) in pit 7018, inserted into the barrow mound		Sample failed			
OxA-34178	Animal bone, horse, 1st phalanx(L Higbee), from the tertiary fill (2650) of barrow ditch 2660	-22.2±0.2	5.0±0.3	3.2	2532±33	–
Anglo-Saxon						
UBA-31686	Human bone (2820), mature/old female, left tibia (K Egging Dinwiddy) from grave 2818. This burial was unaccompanied by any grave goods	-20.4±0.22	9.4±0.15	3.2	1481±40	*cal AD 540–660*
OxA-34177	Human bone (2831), mature male, left tibia (K Egging Dinwiddy) from grave 2829. This burial was unaccompanied by any grave goods	-19.8±0.2	8.2±0.3	3.2	1325±30	*cal AD 645–720 (87%) or 740–760 (8%)*
OxA-34488	Human bone (7038,) right femur shaft (K Egging Dinwiddy), a crouched burial in grave 7036	-20.1±0.2	7.6±0.3	3.2	1261±29	–
UBA-31685	Replicate of OxA-34488	-19.9±0.22	7.6±0.15	3.2	1355±27	–
Weighted mean: bone 7038	T'=5.6; T'5%=3.8; ν=1				1312±20	*cal AD 655–720 (85%) or 745–765 (10%)*

Bayesian Modelling

The chronological modelling described in this section has been undertaken using OxCal 4.2 (Bronk Ramsey 1995; 2009a), and the internationally agreed calibration curve for the northern hemisphere (IntCal13: Reimer *et al.* 2013). The models are defined by the OxCal CQL2 keywords and by the brackets on the left-hand side of Figures 3.1, 5–7 and 9–10. In the diagrams, calibrated radiocarbon dates are shown in outline and the posterior density estimates produced by the chronological modelling are shown in solid black. The Highest Posterior Density intervals which describe the posterior distributions are given in italics.

The Chronological Model

Within the berm of the later barrow on the inside edge of the ditch a large pit 2380/2925 was sealed with a capping of flint nodules. From the basal fill (2927) of the pit one of the two antler tools (ON 5440) was dated (SUERC-67499).

From the Beaker mortuary phase samples were dated from the child's skeleton (6010) buried on the base of chalk-filled grave 2396 (OxA-16643) and a cattle scapula (OxA-16642) from the secondary recut fill of the inner ring-ditch. The scapula was complete and is interpreted as being functionally related to its context, ie, it was used in the secondary recutting of the inner ditch (though see Last, Chapter 8). The two measurements from the Beaker mortuary phase (OxA-16642–3) are statistically consistent (T'=0.0; T'5%=3.8; ν=1) and could therefore be of the same actual age.

From the centre of the barrow mound a quantity of redeposited non-calcined human bone was recovered from the backfill of Hawley's late 19th-century excavations. This material almost certainly derives from the four adults and infant that he recorded finding and the central Beaker grave (Hawley 1910). Samples (SUERC-67500 and UBA-31687) were dated from duplicating skeletal elements (two left radii) that must represent two individuals. These two determinations are not statistically consistent (T'=9.1; T'5%=3.8; ν=1) and therefore represent people who died at different times.

A sample from a single horse bone (OxA-34178) recovered from a tertiary fill (2650) of the barrow ditch in Trench 1 (2660) was submitted to provide a precise date for the animal and give some idea of how long the barrow ditch fills might have taken to accumulate.

Samples from all three of the cremation burials inserted into the mound were submitted for dating, but one, UBA-31686, failed following pretreatment. Measurements on the two other cremation burials,

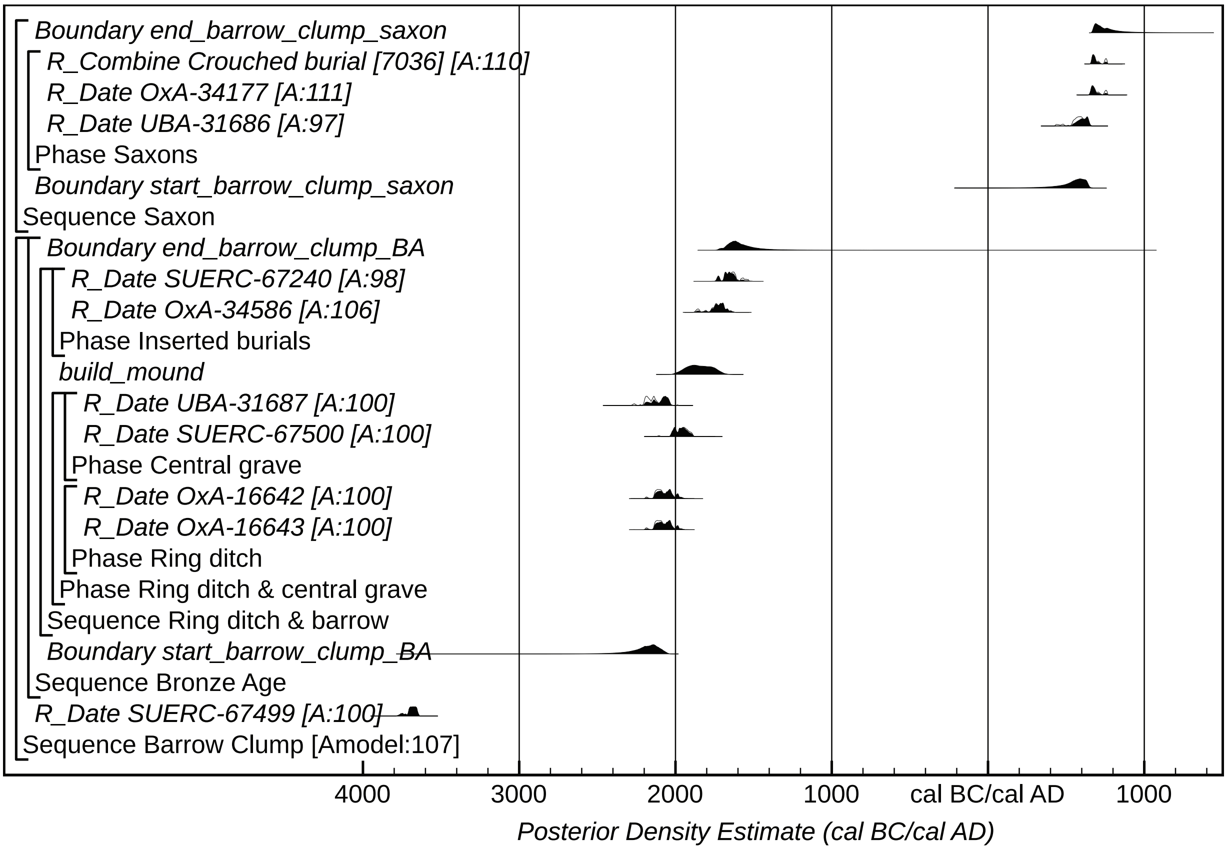


Figure 3.1 Probability distributions of dates from Barrow Clump. Each distribution represents the relative probability that an event occurs at a particular time. For each radiocarbon date, two distributions have been plotted: one in outline which is the result of simple radiocarbon calibration, and a solid one based on the chronological model used. The other distributions correspond to aspects of the model. For example, the distribution 'build_mound' is the estimate for when the chalk-capped turf mound of the bell barrow was finished. The large square brackets down the left-hand side of the diagram and the OxCal keywords define the overall model exactly

unurned (OxA-34586) and urned (SUERC-67240), are statistically consistent (T'=3.4; T'5%=3.8; ν=1) and could therefore be of the same actual age.

Given that the vast majority of the excavated Anglo-Saxon burials were accompanied by grave goods dating from the 6th century AD, no radiocarbon dating was undertaken on samples from these burials. However, samples from a small group of similarly aligned burials without grave goods were dated in order to clarify their chronological relationship with the accompanied burial group. Measurements from graves 7036 (OxA-34488 and UBA-31685; 2829; OxA-34177) and 2818 (UBA-31686) are not statistically consistent (T'=14.8; T'5%=6.0; ν=2) and therefore represent inhumations of different ages.

Interpretation

The model shown in Figure 3.1 interpreting the Bronze Age and Anglo-Saxon activity as two continuous phases (Buck *et al.* 1992) has good overall agreement (Amodel: 107) between the radiocarbon dates and prior information from the archaeological evidence outlined above. The disarticulated horse bone from the tertiary fill of the barrow ditch has been excluded from the model given it is Early Iron Age in date (800–540 cal BC; 2σ; OxA-34178).

The fill (2927) of pit 2380/2925 that contained the antler tools, flint hammerstone, large sarsen hammer and worked flint is estimated to have been deposited in *3765–3640 cal BC (95% probability; SUERC-67499*; Fig. 3.1) probably *3705–3650 cal BC (68% probability)*.

The model estimates that the Beaker mortuary phase began in *2450–2045 cal BC (95% probability; start_barrow_clump_BA*; Fig. 3.1), probably *2245–2085 cal BC (68% probability)*. The bell barrow mound was completed some *110–645 years (95% probability*; Fig. 3.4) probably *210–450 years (68% probability)* later in *1990–1700 cal BC (95% probability; build_mound*; Fig. 3.2), probably *1930–1760 cal BC (68% probability)*. Finally, in the 17th–18th centuries cal BC urned and unurned cremation burials were inserted into the barrow mound.

The model does not provide any definitive answer as to the temporal relationship between the disarticulated

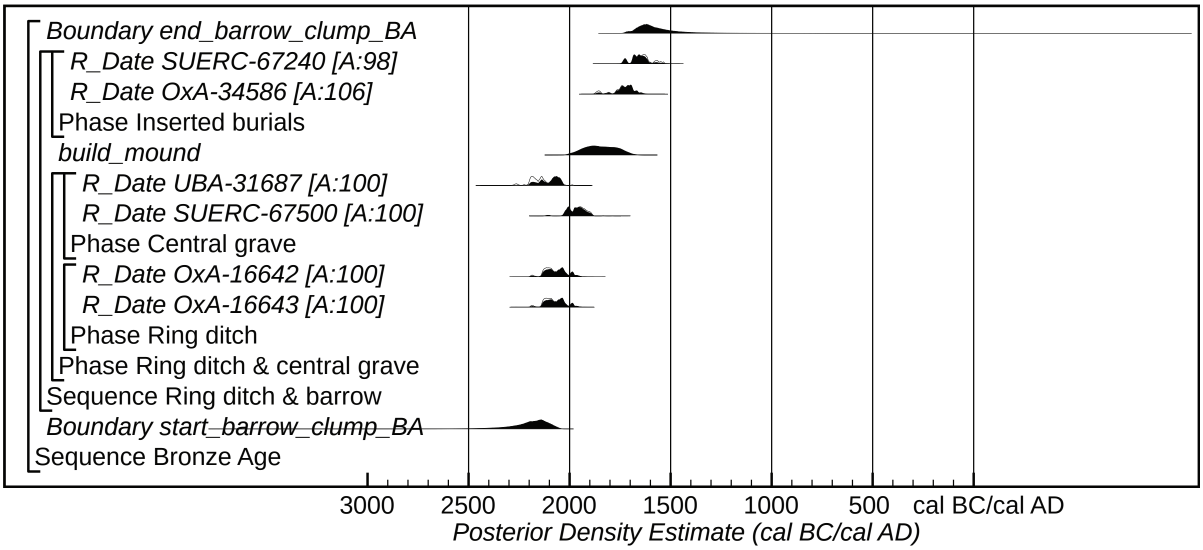


Figure 3.2 Probability distributions of Bronze Age dates from Barrow Clump (derived from the model shown in Figure 3.1)

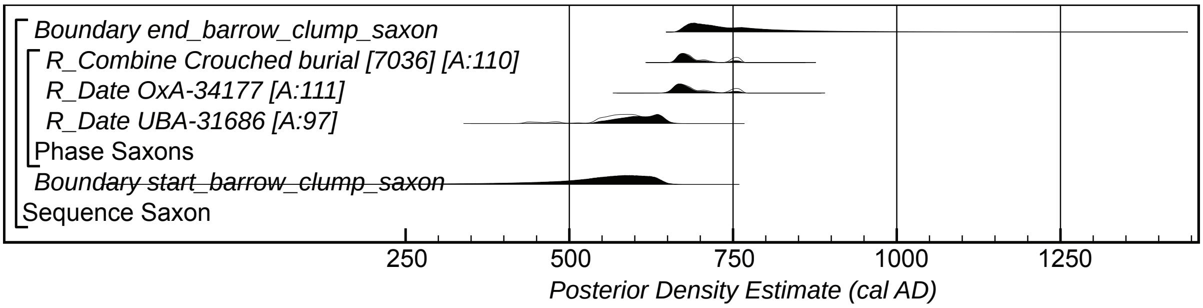


Figure 3.3 Probability distributions of Anglo-Saxon dates from Barrow Clump (derived from the model shown in Figure 3.1)

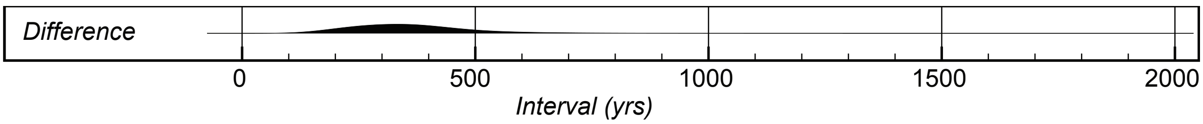


Figure 3.4 Probability distributions showing the number of years between the first Beaker activity and completion of the chalk-capped turf mound of the bell barrow (derived from the model shown in Figure 3.1)

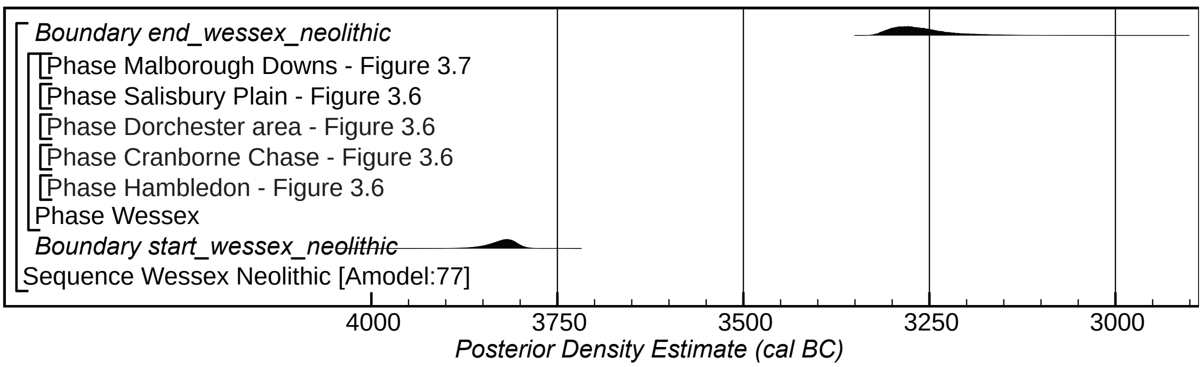


Figure 3.5 Overall structure of the chronological model for the date of the Early Neolithic in Wessex (based on the following models from Whittle et al. 2011, figs 14.52–14.53), together with distributions taken from the models defined in figs 3.8–11 (Windmill Hill), fig. 3.25 (Knap hill), fig. 4.51 (Robin Hood's Ball), figs 4.41–5 (Maiden Castle), fig. 4.26 (Whitesheet Hill), and figs 4.7–13 (Hambledon Hill). Other distributions have been taken from the models defined by Wysocki et al. (2007, fig. 10 – Fussell's Lodge), Bayliss et al. (2007, fig. 6 – West Kennet), Barclay 2014 (Coneybury Anomaly), Barclay et al. (forthcoming, fig. 6 – Rowden; fig. 14 – Cherhill) and Allen et al. (2016, fig. 12a – Wor Barrow). The format is identical to that shown in Figure 3.1

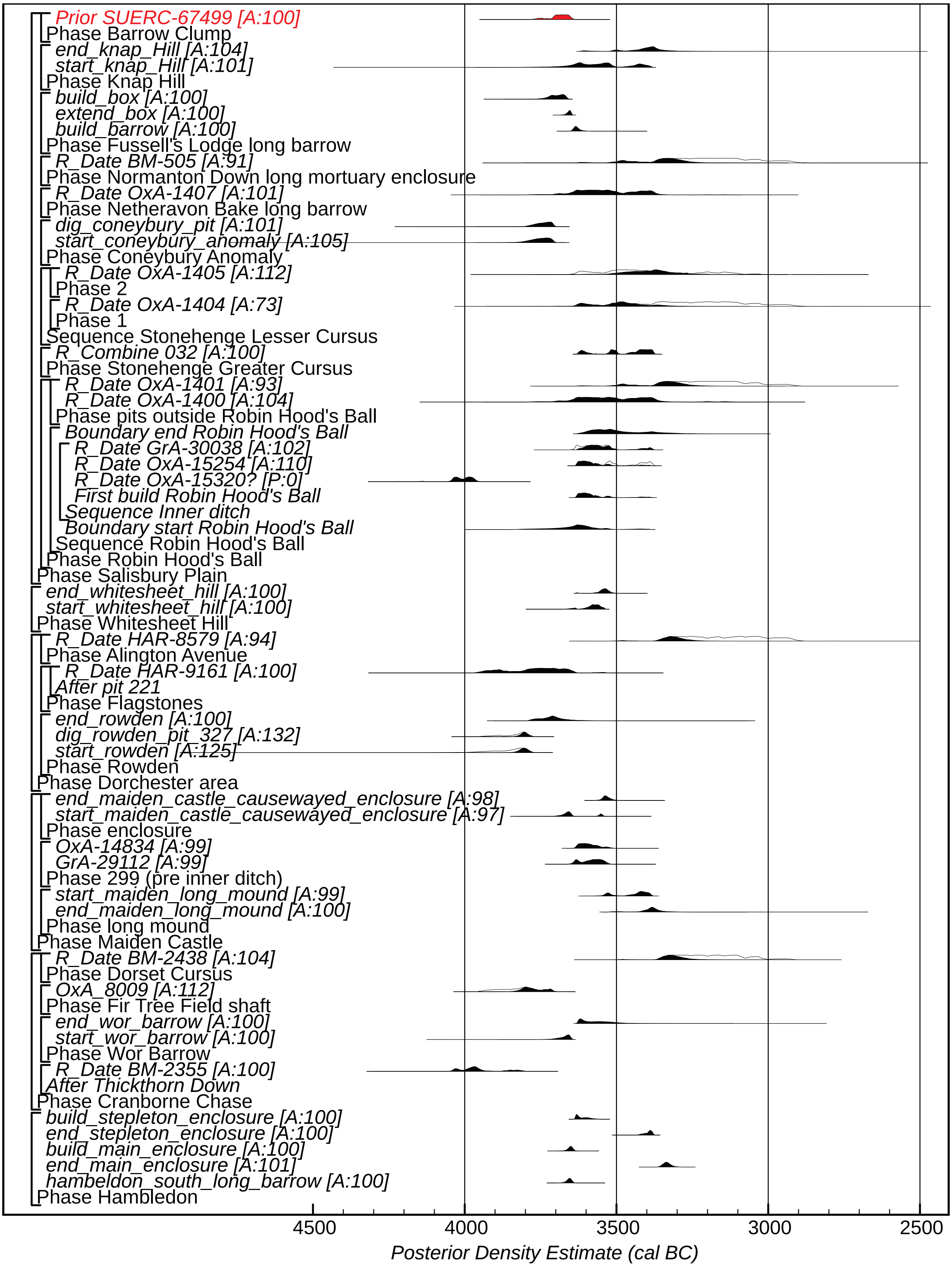


Figure 3.6 Probability of dates for the Early Neolithic in Wessex (Hambledon, Cranborne Chase, Dorchester Area, and Salisbury Plain) – Pit 2380/2925 from Barrow Clump is highlighted in red. The overall structure for this model is shown in Figure 3.5, and its other components in Figure 3.6

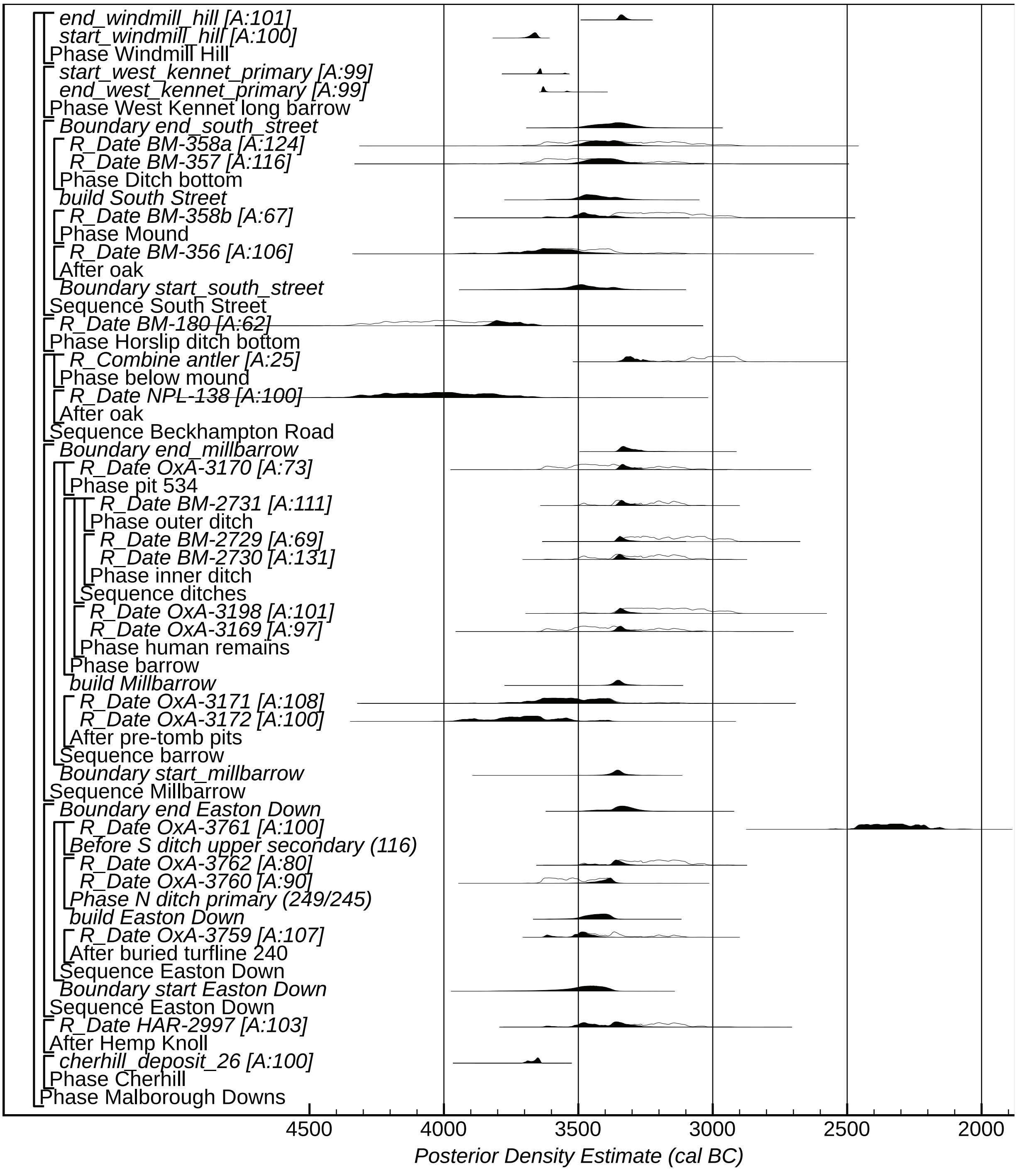


Figure 3.7 Probability of dates for the Early Neolithic in Wessex (Marlborough Downs). The overall structure for this model is shown in Figure 3.5, and its other components in Figure 3.6

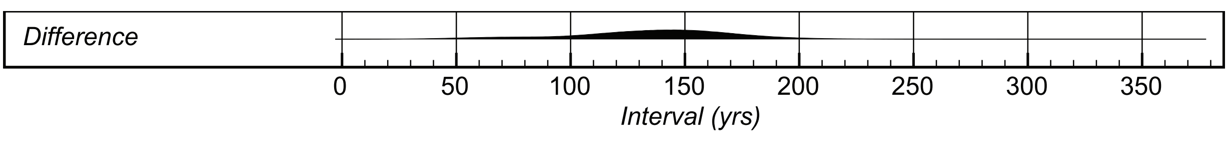


Figure 3.8 Probability distributions showing the number of years between the first appearance of the Early Neolithic in Wessex and the deposition of the material in pit 2380/2925 from Barrow Clump (derived from the model shown in Figures 3.5–7)

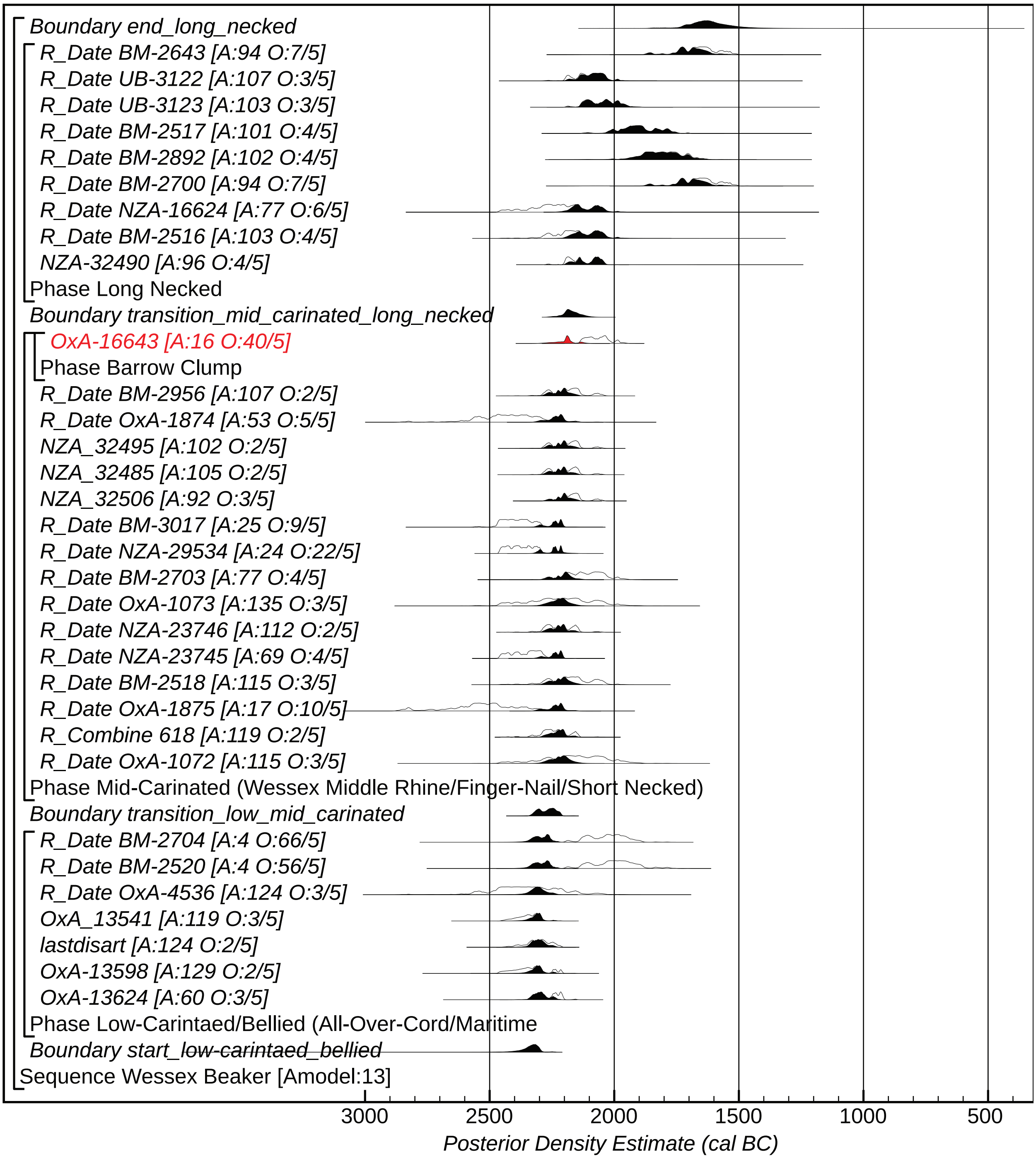


Figure 3.9 General outlier model for Beaker ceramics from key sites in Wessex and the Upper Thames (adapted from Barclay et al. *2011, fig. 63), together with the Barrow Clump Beaker from grave 2396 (highlighted in red) (derived from the model shown in Figure 3.1). The overall format is as described in Figure 3.1. The large square 'brackets' down the left-hand side along with the OxCal keywords define the overall model exactly*

human bones in Hawley's backfill and the Beaker monument and bell barrow. The disarticulated bones could belong to either phase of activity.

The small number of unaccompanied Anglo-Saxon burials (Fig. 3.3) date from the late 6th–late 8th centuries cal AD and may therefore post-date the bulk of the inhumations in the Anglo-Saxon cemetery.

Discussion

Earliest Neolithic

The model for the earliest Neolithic in Wessex (Figs 3.5–7) illustrates that pit 2380/2925 and its finds assemblage represent activity that was taking place in the first couple of centuries during which a Neolithic

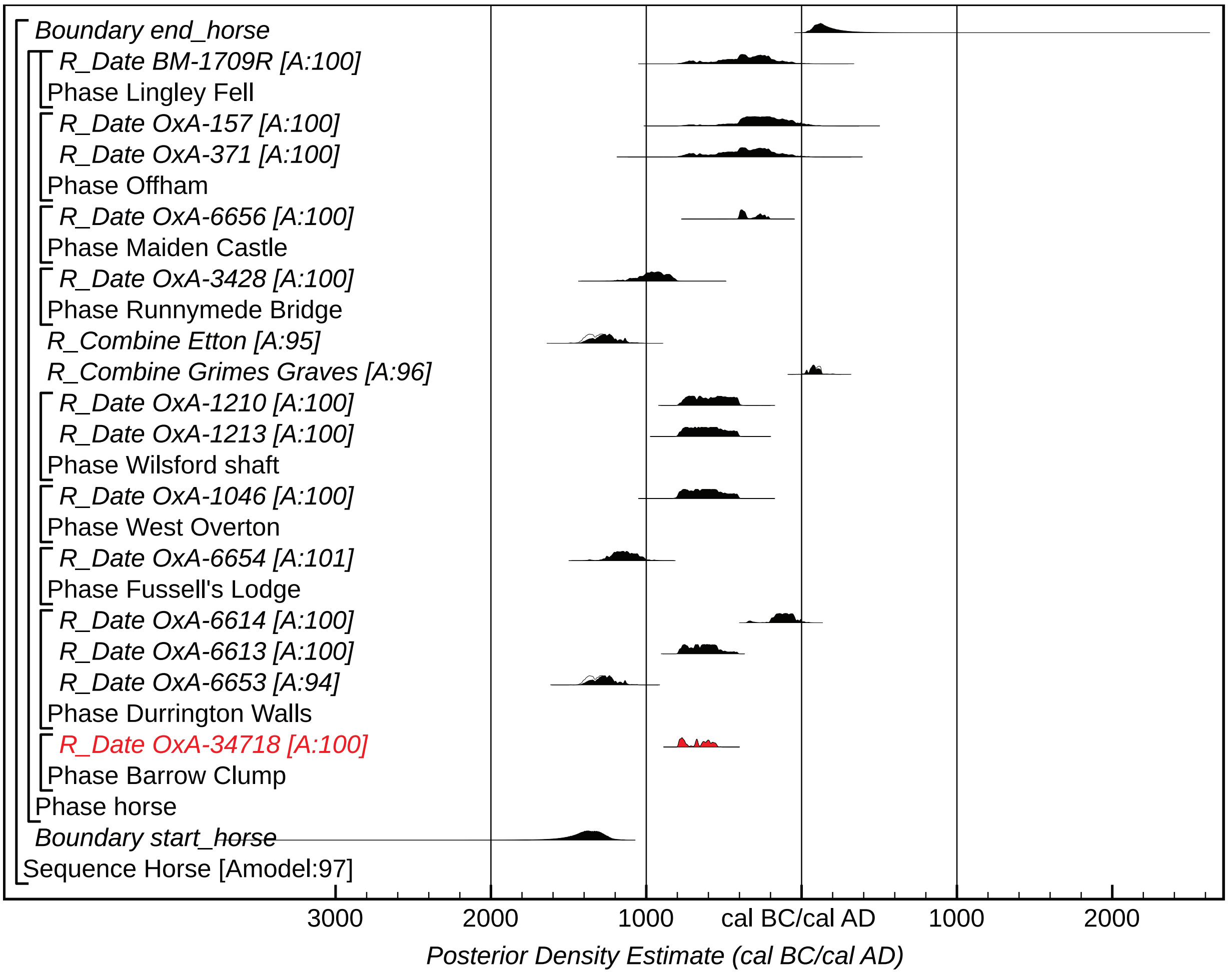


Figure 3.10 Probability distributions of dates for the reintroduction of the horse into England (dates from Kaagan 2000, table 4.5 and Healy et al. *2014), together with the Barrow Clump horse bone (highlighted in red). The format is identical to that shown in Figure 3.1*

way of life and its associated material was beginning to be used in Wessex (Fig. 3.8). The pit and its contents are therefore broadly contemporary with the start of the main floruit of long barrow and causewayed enclosure building that happened at the start of the 38th century cal BC (Whittle *et al.* 2007; 2011).

Beakers

The Beaker vessel from grave 2396, decorated all-over with fingernail impressions (Clarke's (1970) type FN) contributes to a growing body of scientifically dated Beaker burials that have helped to provide a more precise understanding of the currency of this ceramic type (Parker Pearson *et al.* 2016).

For the currency of Beaker burials in Wessex and the Upper Thames Valley a general outlier model (Bronk Ramsey 2009b, 1028) has been employed (Fig. 3.9), that includes prior information about the typological development of Beakers derived from those proposed by Clarke (1970) and Case (1977), and which weights each radiocarbon date in accordance with its probability of being an outlier. Each radiocarbon date has been given a prior probability of 5% of being an outlier; the posterior probability calculated by the model of its being an outlier is shown on Figure 3.9. So, for example, *OxA-16643* has a prior outlier probability of 5% but a posterior outlier probability of 40% (Fig. 3.9) and so has been downweighted in the model accordingly. In order to interpret the results from the chronological model for the currency of Beakers (Fig. 3.9), we need to examine each radiocarbon date that has been identified as an outlier in an attempt to judge why it may be so (ie, whether it is a misfit, an outlier, or an offset; Bronk Ramsey *et al.* 2010).

Considering the dates that have posterior outlier probabilities between 20% and 50% (*OxA-16643*, O: 40/5, and NZA-29534, O: 22/5), these probably represent statistical outliers that accurately date the currency of the vessels that actually fall into the concentrated horizon of Mid-Carinated (Wessex Middle Rhine/Finger Nail/Short-Necked) Beakers suggested by the modelling (Fig. 3.9).

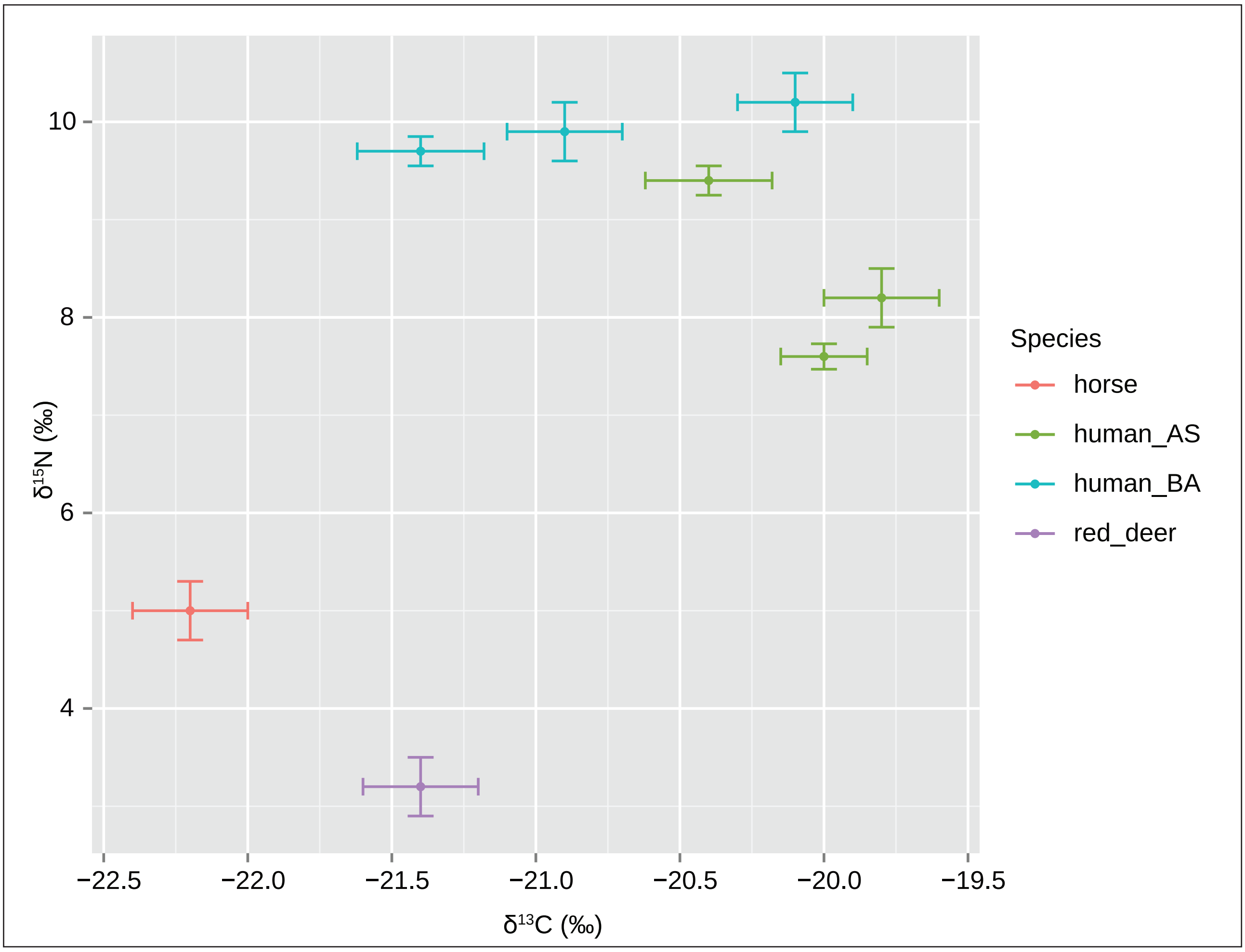


Figure 3.11 Carbon and nitrogen stable isotope data from Barrow Clump

Only two Beakers, both from Barrow Hills, Oxfordshire, have a posterior outlier probability greater than 50% (*BM-2520, O: 56/5; BM-2704*, O: 66/5) and clearly these both represent misfits: *BM-2520* is an All-Over-Cord S-profile Beaker and *BM-2704* an atypical Comb-Zoned Maritime Beaker (Barclay *et al.* 2011, 178) – both appear to be too young by a couple of hundred years.

This interpretation of the outliers is important since it suggests that perhaps 21 of the 23 dated Beakers in the sample (91%) do actually fall in the very concentrated currency of Low- and Mid-Carinated Beakers suggested by the modelling. The two outliers from British Museum measurements made in 1989–1990 were only pretreated with 'cold dilute acid' (Ambers and Bowman 1994, 95) and the pretreatment might not therefore have removed all contaminants (Hedges and Law 1989).

Horses

The single dated horse bone from Barrow Clump contributes to better understanding the beginning of the widespread use of the horse in England. Following the approach outlined in Buck and Bard (2007) we estimate the earliest calendar date of the widespread use of the species (Fig. 3.10) from the available radiocarbon dates from England as occurring in *1660–1185 cal BC (95% probability; start_horse*; Fig. 3.10) probably *1460–1260 cal BC (68% probability)*. The horse bone from Barrow Clump therefore derives from one of the earliest dated animals reintroduced into England.

Dietary Stable Isotopes

Figure 3.11 shows the carbon and nitrogen isotopic values for the human and faunal samples dated at Barrow Clump. Carbon and nitrogen stable isotope analysis was undertaken on the human bone samples as the potential for diet-induced radiocarbon offsets if the individual has taken up carbon from a reservoir not in equilibrium with the terrestrial biosphere (Lanting and van der Plicht 1998) might have implications for determining the actual date of their death. If one of the reservoir sources has an inherent radiocarbon offset – for example, if the dated individual consumed marine fish or freshwater fish from a depleted source – then the bone will take on some proportion of radiocarbon that is not in equilibrium with the atmosphere. This makes the radiocarbon age older than they would be if the individual had consumed a diet consisting of purely terrestrial resources. Such ages, if erroneously calibrated using a purely terrestrial calibration curve, will produce anomalously early radiocarbon dates (Bayliss *et al.* 2004).

The human diet of the sampled individuals from Barrow Clump was mostly based on terrestrial foods produced in a C_3-ecosystem (Fig. 3.11), as would be expected for England. However, although the sample size is extremely small it does appear that the Bronze Age individuals had enriched $\delta^{15}N$ values compared to the Anglo-Saxon individuals, and were probably therefore consuming more protein in their diet.

Chapter 4
Artefacts

Worked Flint

by Phil Harding

Introduction

The worked flint assemblages from the five seasons of excavation have been quantified and are presented by monument phase (Table 4.1). This report has been compiled from a series of assessment reports which were prepared at the completion of individual campaigns of work; no supplementary analysis has been undertaken. The nature of the monument, which was constructed in a number of separate phases, inevitably resulted in a degree of mixing within individual chronological groups of material. This palimpsest of activity has created an environment in which material from any phase is likely to contain both residual material and artefacts from that phase of construction. Successive modifications to the monument provided additional artefact input to an already mixed assemblage compounded by later animal burrowing activity. This scenario has reduced the value of data that can be obtained from the assemblage but in no way renders it worthless.

Quantification

Worked flints from individual phases of the monument included significant, but relatively small groups from the Phase 1 old ground surface (14%) and the Phase 2 Beaker ring-ditch (13%). The largest quantities (35%) were recovered from the Phase 3 Bronze Age barrow mound and ditch. This episode probably represents the final phase of flint working at the site, material from Phases 4, 5 and 6 comprising reworked collections recovered from upper fills of the barrow ring-ditch, Anglo-Saxon graves and modern features (18%) with, additionally, unstratified material (20%).

Assemblage composition within each phase indicates that flaking waste, flakes, blades and microdebitage (chips <10mm), accounts for 94% of the worked flint total within the overall assemblage, varying only slightly between individual phases (92% in Phases 4–5 and 96% Phase 1). Microdebitage itself accounts for 11% of the total collection. This component is difficult to assess in detail, but is nevertheless a significant reflector of site use and development through time. Microdebitage was most prevalent in Phases 1 and 2 of the monument,

Table 4.1 Flint totals by phase

Phase	1	2	3	4	5	3/6	6	Total
Blade cores	1	0	0	0	0	0	0	1
Flake cores	9	7	41	39	4	4	12	116
Broken cores/core fragments	2	7	18	16	2	0	3	48
Blades	62	58	135	31	12	21	85	404
Broken blades	30	19	49	14	3	3	55	173
Bladelets	2	8	14	1	0	2	2	29
Broken bladelets	16	14	18	2	3	0	9	62
Flakes	439	461	1625	841	254	129	957	4706
Broken flakes	456	359	1273	418	166	59	542	3273
Rejuvenation tablets	5	3	5	6	0	0	2	21
Axe thinning	0	0	3	0	0	0	1	4
Chips/microdebitage	344	338	280	15	112	5	51	1145
Scrapers	9	3	17	4	2	2	19	56
Other tools	8	1	19	6	3	5	12	54
Projectile points	0	0	5	0	0	0	1	6
Denticulates	1	0	2	0	0	0	0	3
Core tools	0	0	0	0	0	0	1	1
Piercers	0	1	1	0	0	0	0	2
Edge damaged	6	1	3	0	0	0	4	14
Miscellaneous retouched	3	0	11	5	1	0	10	30
Debitage	15	62	94	23	11	1	22	228
Total	1408	1342	3613	1421	573	231	1788	10,376
Burnt (no.)	3	0	1	0	0	0	0	4
Burnt unworked (no.)	13	0	52	0	0	10	98	173
Burnt unworked (wt/g)	2657	456	3303	520	736	0	652	8324

where it accounted for approximately 25% of each phase assemblage. These phases are most closely linked to social or ceremonial activity associated with the buried soil where it was preserved beneath the Bronze Age mound and incorporated within the turf core of the Beaker and bell barrow mounds. Flaking techniques were more sophisticated throughout the Neolithic period, extending into the Beaker period, and generated considerable quantities of microdebitage during blank production. The presence of microdebitage is a valuable indicator that artefacts are unlikely to have moved far from their place of manufacture and suggests that the buried soils remained relatively well preserved beneath later mound construction. Quantities of microdebitage fell to 8% in Phase 3, where Bronze Age industrial core preparation activity, which generated reduced quantities of chips, is represented.

If the microdebitage is excluded from individual phase groups then artefact composition becomes clearer. This is especially marked by the frequency with which blade/lets are proportionally more plentiful (11%) in Phases 1 and 2 of the monument than in Phase 3 (6%). These totals need not be over emphasised, as it is possible that they may have been diluted by the addition of later material. Nevertheless, the figures are likely to reflect the established pattern whereby production of blade/lets formed a significant component of blank production in the Early/Middle Neolithic periods. Phase 1 contributed the only blade core from the entire site. The blade component may therefore relate to the earliest activity on the site, associated with use of Early Neolithic pit 2380/2925, and also reflect the use of blades as cutting tools during domestic or ceremonial activity on the site.

Retouched Tools

Retouched tools and unclassifiable miscellaneous retouched flakes account for 1.5% of the assemblage when microdebitage is excluded from the totals. The composition of this material by phase mirrors trends in site use through time. Phase 1, probably representing occupation, contains 2.5% retouched material. These figures declined markedly through Phases 2 and 3, reflecting flint industries that were dominated by flaking waste and core preparation debris. The composition of individual phase groups also illustrates anticipated patterns of stone tool typology through time. Phase 1 is dominated by formal retouched tools, primarily scrapers and 'other tools', with only relatively infrequent numbers of flakes with miscellaneous retouch (Fig. 4.1, 1–5). Assemblages in Phases 2 and 3, in contrast, reflected not only the industrial origin of this material but also the decreasing range of formal tools through time, when flakes with miscellaneous retouch were more prevalent.

Distribution

The excavated areas were predominantly located around the southern part of the monument in order to maximise recovery of Anglo-Saxon graves that were most at risk from badger damage. These areas contained clearly defined pockets of prehistoric activity that were associated with a range of diagnostic retouched tools, including arrowheads of Early Neolithic leaf (Fig. 4.1, 6) to Middle–Late Neolithic chisel and oblique forms (Fig. 4.1, 7–10). A triangular arrowhead (Fig. 4.1, 11) from the Phase 3 mound is of a form that has been documented locally with Beaker burials (Harding 2011) and may relate to the Phase 2 monument. Much of this material was preserved in the buried soil below the south-east quadrant of the monument and also, redeposited, in the turf cores of the Phase 2 Beaker and Phase 3 barrow mounds. It suggests that the activity represented in the buried soil, which was sealed beneath the upcast of the Phase 3 Bronze Age mound, was complex and probably multi-period, spanning the period from the Early Neolithic, centred on pit 2380/2925, to the construction of the Phase 2 Beaker ring-ditch. Clusters of flaking waste were identified near the Phase 2 Beaker ring-ditch which contained similar material to that collected from the fill of the ring-ditch itself. These clusters contained no diagnostic retouched tools by which they could be dated; nevertheless, the discovery of material from the ring-ditch provides a strong hint that they may be related. A cluster of flaking waste, which was more difficult to date, was located on the east side of the monument in Trench 4, on the fringe of the Phase 3 Bronze Age barrow mound. This material may be contemporary with the clusters of flaking waste recovered from the Phase 2 Beaker ring-ditch or be related to flaking waste that exists in the Phase 3 barrow ditch. Either way it is most likely to be of Bronze Age date.

Excavations on the north side of the monument were restricted to three linear Trenches (4, 6 and 11). These limited opportunities indicated that the worked flint density was apparently reduced in these areas, implying that the distribution of material on the south side of the monument reflects preferential use of that aspect from the earliest times.

Early Features and Pre-barrow Mound Buried Soil

The pre-mound soil extended continuously from the west end of Trench D, where an artefact cluster within context 2400 was recorded, into Trench B which contained a group of knapping debris (2411). These clusters were excavated in 2003–2004 and recorded in three dimensions; other material from the pre-mound soil was collected by metre square (Fig. 2.2).

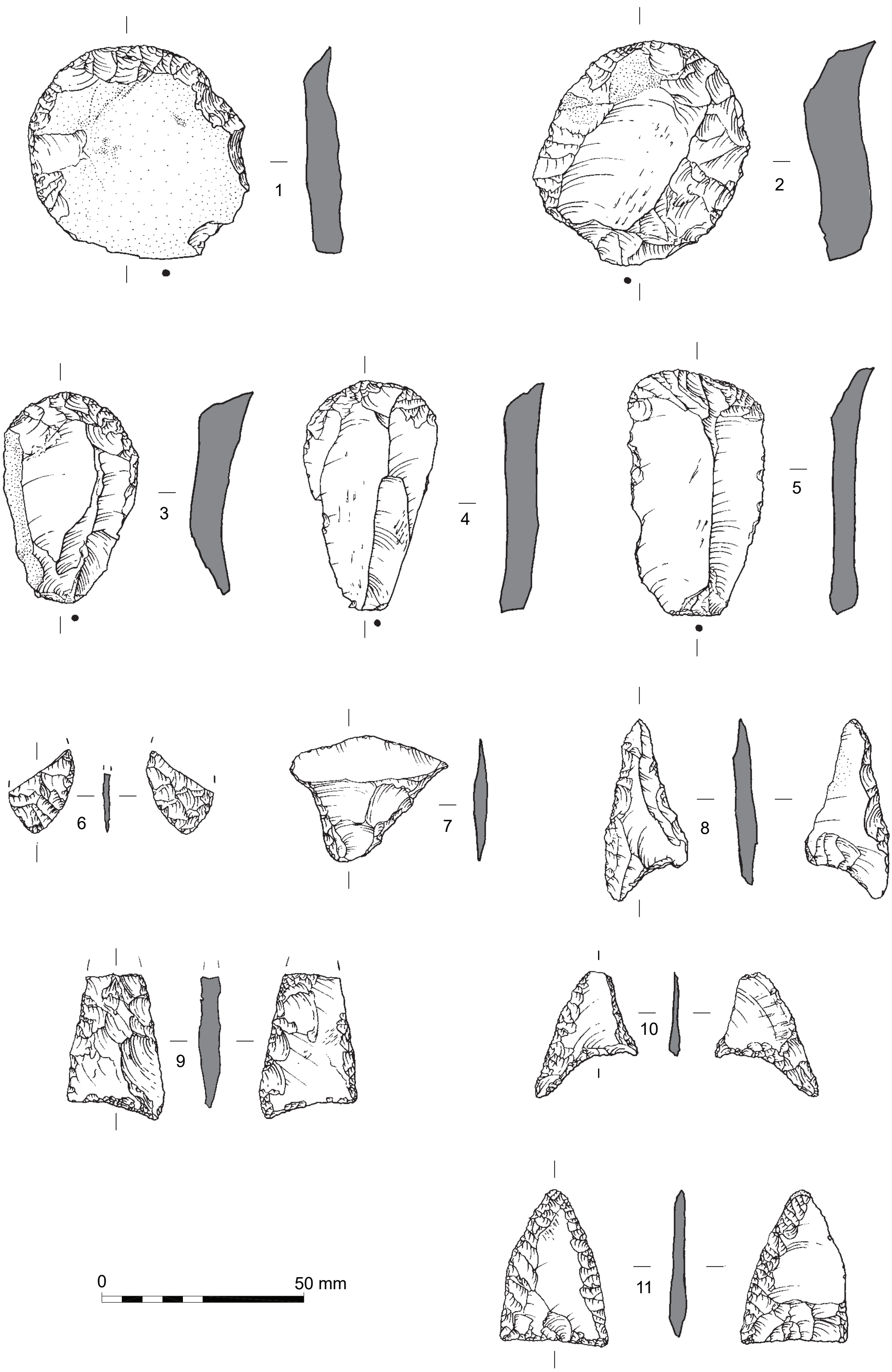


Figure 4.1 Worked flint see catalogue for details

The precision with which these groups were recorded demonstrated that artefacts were primarily located in the upper parts of the soil, but had undergone some (anticipated) vertical movement through the profile. Very little post-depositional movement of artefacts was indicated before the construction of the Phase 3 barrow mound.

Artefact cluster 2400 extended from the southern edge of Trench D and comprised flakes with abraded butts and others with facetted butts, a feature more frequently associated with flaking of Late Neolithic type. Cluster 2411 in Trench B comprised a dense group that was concentric with the outer edge of the Phase 2 Beaker ring-ditch. The nucleus of this spread was characterised by core preparation debris, with similar material in an adjacent square (2463/2464). Artefact distribution within the pre-mound soil thinned beyond this arc of activity. Flint was noticeably absent from the interior of the Phase 2 Beaker ring-ditch itself, as far as this was excavated, confirming that the worked flint was probably earlier or at least contemporary with the construction of the ring-ditch.

The distribution of burnt flint, which was also plotted in three dimensions, correlated with that of the worked flint, with most concentrated in the area around the Phase 2 Beaker ring-ditch.

Technology

Knapping clusters 2411 and 2463/2464 on the south side of the Phase 2 Beaker ring-ditch comprised large, boldly struck primary and secondary core preparation flakes, with smaller tertiary trimming flakes and broken debris. All pieces were in a mint condition with a light blue patina. The presence of microdebitage, including bulbar scars, and two pairs of refitting flakes suggest that flaking took place locally; however, the absence of complete refitting sequences suggests some secondary reworking of material.

The scatter includes five flake cores, which are otherwise under-represented by the quantity of debitage. There is nothing to indicate any preferred, pre-determined blank form or intended tool types. The material cannot be dated technologically; nevertheless, the spatial relationships of the material to the Phase 2 Beaker ring-ditch suggest they may be contemporary. Retouched tools were generally scarce within this area; only one end scraper made on a thick secondary flake, was present in 2463. However, only a relatively small area of the interior of the Phase 2 monument was excavated.

Artefact density within the remaining parts of the buried soil, including the area around pit 2380/2925, was relatively low. The pit contained 30 pieces of worked flint, including five pieces of microdebitage; however 17% of the total assemblage comprises blades, of which one shows edge damage. This component also includes material struck using soft hammer percussion. There are no other retouched tools, but the collection is most notable for the inclusion of a well-worked flint hammer-stone. The significance of this object is increased by the presence of a large sarsen hammer and one of antler, which were found on the base of the pit (see below). Artefacts from the surrounding area comprise blades and flakes, including platform rejuvenation flakes, tertiary flakes with facetted butts and others with abraded butts. Cores are virtually absent. The surface condition of this material is frequently more weathered, and there is less microdebitage (13%) but more blades (9%), possibly reflecting trends indicated by the pit. Retouched tools (3%) include seven end scrapers, a backed knife, a microdenticulate, a probable unfinished chisel arrowhead and flakes with traces of edge damage, retouch or use. These implements are typical of Neolithic domestic or ceremonial assemblages, although the chisel arrowhead is more diagnostic of Middle–Late Neolithic assemblages.

Ten artefacts, including an end scraper made on a flake, a core rejuvenation tablet, four metrical blades, a Late Neolithic oblique/hollow-based arrowhead and one large flake with inverse edge damage, were found in the Phase 2 Beaker ring-ditch but probably represent artefacts that were reworked from the buried soil.

Well-made blades and a broken leaf-shaped arrowhead were also found in the chalk capping of the Phase 3 Bronze Age mound (2645), and were similarly residual, as were an unstratified core tool roughout, a broken, heavily worn fabricator from the backfill (2646) of an Anglo-Saxon grave and a well-made knife with fine marginal edge retouch from the mound spread (2742).

Phase 2 The Beaker Barrow

Worked flints from the Beaker mound reflect trends noted from the Phase 1 buried soil of which it was probably constructed. Totals are again relatively small, although blades account for 8% of the collection. Retouched tools, indicative of domestic or more probably ritual activity, are also of similar type and date to those from the buried soil, including an oblique arrowhead, a chisel arrowhead, a possible broken arrowhead rough out and a discoidal piece. There are also a number of less diagnostic implements including four well-made end scrapers and five retouched pieces. A number of poorly developed multi-platform rotating flake cores were also recorded.

Larger, fresher collections of primary and secondary core preparation flakes in mint condition, with microdebitage, were distributed throughout the fill of the Beaker ring-ditch itself. A number of small flakes, possibly resulting from controlled core reduction, were also included. Two flakes could be refitted and a semi-discoidal flake core with a flake that is likely to have been removed from it confirm the freshness of the material. The cortex is slightly weathered, suggesting that nodules were obtained from the surface rather than from freshly dug chalk. Dating is problematic; it is possible that this material was contemporary with similar debris in the Phase 1 buried soil at the edge of the ring-ditch and, by implication, the construction of the turf mound.

Phase 3 The Bronze Age Barrow

This phase produced the greatest quantities of worked flint from the site. The assemblage includes two clusters (2043 and 2046) of core preparation waste from the base of the barrow ditch in Trench A, which are included in this phase. These large flakes and broken flakes, which include two flake cores and a flake with miscellaneous edge retouch, are similar in character to material from the Phase 2 Beaker ring-ditch (2550); however, the apparent disparity in phases suggests that the collections are unlikely to be contemporary. Also, the clusters from Trench A are covered with thick unweathered cortex, suggesting the use of fresh nodules obtained from the chalk during the excavation of the ditch. All pieces are in mint condition and had developed only a light blue patina. Pieces are frequently partially covered by areas of calcium concretion ('race') from ground water precipitation.

Microdebitage (chips) is under-represented although a bulbar scar, a diagnostic indicator of blank manufacture, confirms localised flaking. There are no by-products of tool manufacture. Flakes are generally broad or squat with irregular edges and plain butts. Distal terminations include eight pieces with hinge fractures. A small number of *Siret* fractures (accidental breakage) are present, none of which could be conjoined. Despite this, the general appearance of the group suggests that it represents part of a larger flaking event derived from only a limited number of nodules worked during blank manufacture.

Excavation of the main barrow ring-ditch produced only relatively small numbers of pieces from the primary and secondary fills, though these deposits were completely excavated in only a limited number of locations. Some of this material may well have weathered in from the surrounding berm, and very little material was recovered from the base of the ditch to suggest that flaking occurred in the shelter of the ditch. In this respect it seems likely that the barrow was afforded a degree of respect during its life as a burial monument. The largest numbers of pieces were recovered from the weathering cone of the ditch fills, where large quantities of flaking waste had accumulated. This collection comprised mainly flakes with cores, with generally low retouched tool counts. The context of this material is relatively secure and is characterised by its fresh condition, consistent technology and coverings of calcium concretion ('race'). The technology can be summarised as a flake industry with multi-platform, rotating and biconical flake cores. No microdebitage (chips) was collected, although it is highly unlikely that this would have been present in any quantities, the technology not including extensive levels of platform preparation.

Phases 4 and 5 Anglo-Saxon and Later Activity

Some groups of material listed from the upper ditch fills are almost certainly largely derived from the lower fills, most probably the flint from the weathering cone, as the condition and technology are consistent. Irrespective of this, part of the assemblage can be assigned to an industrial origin, not necessarily *in situ* flaking but more probably dumping. Redeposited elements of the Phase 3 assemblage were also recovered in small quantities from the backfill of Anglo-Saxon graves.

Discussion

The 10,376 pieces of worked flint from Barrow Clump constitute one of the largest excavated assemblages from a burial mound in the area. The total has been exceeded only rarely, for example at Micheldever Wood, Hampshire (Fasham and Ross 1978), where 16,030 pieces came from the excavation of a barrow which followed a broadly similar development to that at Barrow Clump. Ten published rescue projects conducted on plough-damaged mounds from the locality of Barrow Clump produced 14,320 pieces of worked flint, although well stratified assemblages were rare. Individual totals ranged from 3700 pieces at Winterbourne Stoke G45 (Saville 1980), a mound with no ditch, to 178 pieces from SPTA 2249 on Snail Down (Thomas 2005). Some excavations merely sampled the barrow while others, including SPTA 2249, comprised total excavation. Low counts have been attributed to the effects of plough damage on the mound and underlying old ground surface. Artefact recognition has also been cited as a contributory factor in the reduced quantities (Smith 1991) although relatively small assemblages have persisted in more recent excavations, where artefact recovery has been more rigorous. At Twyford Down, Hampshire, the total excavation of a heavily ploughed barrow produced only 1398 pieces of struck flint of which only 17% were from stratified contexts (Walker and Farwell 2000), and from barrow 12 at Barrow Hills, Radley, Oxfordshire, where flint does not occur naturally, only 291 pieces were recovered (Barclay and Halpin 1999).

The worked flint assemblage from Barrow Clump traces the progress of the site from one of Early/Middle Neolithic occupation emphasis, including formal deposition in pit 2380/2925, through Bronze Age funerary function to final industrial use later in the Bronze Age. The activity occurred within the context of the River Avon valley which provided a major arterial route from the Mesolithic period onwards. Stone tool distributions from this period are sparse in the area, although many floodplain locations are likely to remain sealed beneath alluvium. Activity has nevertheless been recorded from the floodplain (Leivers and Moore 2008; Jacques and Phillips 2014) and also on eminences overlooking the valley (Andrews and McKinley 2019). These pioneering episodes undoubtedly familiarised communities with their environment and identified favoured locations within the landscape that could be adopted and revisited. It is possible that this development was initiated from hunting trips, and may have contributed to locations like Barrow Clump acquiring some form of special status by the Early Neolithic period. The Phase 1 activity contained within a buried soil contributed approximately 14% of the worked flint assemblage from the site. Blade forms predominate, which suggests domestic/ceremonial cutting and scraping activity. Hunting apparently persisted, as represented by a single broken leaf arrowhead. Pre-mound activity at Micheldever Wood, by comparison, accounted for only 2% of the assemblage. There, two flint scatters were found with a number of shallow pits. Activity was poorly dated, although a Neolithic presence was suggested by the recovery of a broken polished flint axe.

Relatively dense concentrations of material have been recovered from some Neolithic buried soils (Wainwright and Longworth 1971; Saville 1990; Gibson 2003, 139) that were of sufficient density to suggest that they represented midden deposits. Elsewhere, Christie (1970) noted instances where 'in all cases the old ground surface …. was free of flints', suggesting that the barrow mounds were constructed on virgin sites. These contrasting densities within pre-mound soils illustrate how artefact spreads and activity areas may have developed at locations on which burial mounds were subsequently constructed.

Artefact density within the buried soil at Barrow Clump was relatively thin, suggesting that occupation events were of only relatively short duration. The location nevertheless had sufficient importance at an early stage to stimulate the excavation of a pit in which selected objects were placed. The choice of objects, arguably including varying forms of hammers, reinforces the impression that the activity was of ceremonial type. Pits were among the first acts of Early Neolithic 'civil engineering' and contain some of the most informative evidence of Neolithic activity in the archaeological record. The importance of such pits is increased where associated activity is documented within adjacent buried soils. The trend whereby Neolithic pits were dug at locations that were subsequently adopted by Bronze Age barrows is known from the River Avon valley; at New Barn Down, Early and Middle Neolithic pits, dated to 3786–3657 cal BC and 3347–3094 cal BC respectively, were found beneath round barrows Amesbury 61 and 61a (Ashbee 1985). Neolithic pits, dated by radiocarbon to 3800–3650 cal BC (SUERC 54203) and 3360–3030 cal BC (SUERC 54202) similarly predated Bronze Age funerary monuments at the Old Dairy, Amesbury (Harding and Stoodley 2016).

The range of artefacts represented in the buried soils at Barrow Clump include arrowheads and pottery which indicate that repeated visits were made to the site into the Middle to Late Neolithic periods. The Middle Neolithic activity is represented across most of the site by diagnostic artefacts but is especially well represented as a concentration of domestic/ritual/midden refuse at the east end of Trench B.

Elements of the worked flint assemblage from the buried soil were replicated within the Phase 2 mound; there were no definitive Beaker artefacts from the mound itself. Clusters of core preparation debris came from the fill and outer edge of the ring-ditch, material which could be dated stratigraphically to the Early Bronze Age, spanning the period between Phases 2 and 3.

The Phase 3 mound and ditch contributed the largest component (35%) of the worked flint assemblage at Barrow Clump. This figure may be increased by the addition of material from the Anglo-Saxon graves of Phase 4, many of which were dug into the ditch and berm of the Phase 3 monument, a trend that follows a pattern that has been noted elsewhere. Flaking waste is frequently absent from the primary fills of Early Bronze Age barrow ditches but becomes more prevalent in the Middle or Late Bronze Age upper fills. This trend suggests that barrow mounds and their ditches were afforded some respect during funerary use but provided dumping grounds, detached from settlement, for flaking waste after burials ceased. This pattern can be surmised at Barrow Clump despite the fact that some core preparation debris was recovered from the base and primary fills of the Trench A ring-ditch. Flaking waste persisted into the upper silts of the ditch, mirroring results from previous excavations of Bronze Age barrows in the locality (Saville 1980). The trend was especially apparent at Micheldever Wood (Fasham and Ross 1978), where flaking waste was derived from a flint cairn, which formed part of the barrow mound and was 'cannibalised' for the raw material.

Catalogue of illustrated flints
Fig. 4.1

(ON – Object Number; SF – Small Find)

1. Side/end scraper made on primary flake; context 7043; Phase 3
2. End scraper made on flake; context 2161 SF 200304431; Phase 3
3. End scraper made on a flake; context 2161 SF 200344432; Phase 3
4. End scraper made on a flake; context 2113 SF 200304233; Phase 5
5. End scraper made on a flake; context 8038
6. Broken leaf-shaped arrowhead; context 2645; Phase 3
7. Chisel arrowhead; context 7057; Phase 3
8. Oblique arrowhead; context 7043; Phase 3
9. Broken oblique arrowhead; context 2187 SF 200304458; Phase 3
10. Oblique arrowhead; context 2101 SF 200304452
11. Triangular arrowhead; context 2857 ON 5417; Phase 3

Stone and Antler Hammers
by Phil Harding

Three objects were found together on the base (context 2927) of Early Neolithic pit 2380/2925 (see Fig. 2.3; Pl. 4.1). Despite the fact that they were made of different materials they deserve to be described and discussed collectively. Each object is characterised by at least one flattened facet that typifies damage which results from hammering. The largest object comprises a large tapering wedge-shaped flake of light grey, dense quartzitic sarsen stone (ON 5434). It measures approximately 140 mm long, 230 mm wide and 79 mm thick, with a sub-triangular cross section and weighs 3559 g (Fig. 4.2). Relict flake scars, which form the butt of the flake, suggest that the blank was removed during a systematic episode of sarsen flaking from a large boulder. A series of marginal flakes were removed from the distal edge, together with two removals from the narrow tapering end. Traces of polishing on the convex bulb of percussion indicate use as a rubbing stone or top-stone for a saddle quern. The stone was subsequently adopted as a hammer, creating a pecked facet approximately 90 mm long and 40 mm wide at one end.

The sarsen stone was accompanied by a flint hammer-stone (ON 5437, not illustrated), weighing 351 g, of the type that occur relatively frequently. The hammer is sub-spherical and pecked on all surfaces which results from prolonged use. These objects were used for flint working but were undoubtedly also used for a range of other tasks.

Three fragments from two shed red deer antlers were also found on the base of the pit (Fig. 4.3). Objects 5440 and 5433 were in a moderate to poor condition, McKinley's Grade 3–4 (2004a, 15–16, fig. 6), but conjoined to form the base and brow tine from a shed left sided antler. The beam was truncated at a point approximately 90 mm from the burr of the antler. The tip of the brow tine is missing making it impossible to establish whether the antler was derived from a pick or not. The most distinctive feature comprises two oblique, oval intersecting facets, approximately 27 mm long and 18 mm wide, around the posterior surface of the burr, none of which remained. The brow tine fragment 5440 is estimated to date to *3765–3640 cal BC (at 95% probability*; SUERC-67499; Fig. 3.1) (see Marshall *et al.*, Chapter 3).

The second antler (ON 5432) was truncated across the beam a similar distance, approximately 80 mm, above the burr and immediately adjacent to the bez tine. The tip of the brow tine is heavily worn and rounded, consistent with use as a pick. No trace of either beam or crown survived, suggesting that the antlers were truncated before these selected parts were deposited in the pit.

Discussion

This small collection of objects of different materials documents a range of activities but may arguably be linked by their apparent use as hammers. The sarsen hammer was itself a by-product of systematic sarsen breaking. This activity created blanks which could be adopted for a range of other functions including polishing and grinding; however, this dense rock is ideal for hammering. Percussors have been defined primarily on the basis of size as hammers (Gowland and Judd 1902), mullers (Cunnington 1923) and mauls (Gowland and Judd 1902), the last a term which most closely describes the object from Barrow Clump. These 'ponderous' (Gowland and Judd 1902,

Plate 4.1 Sarsen (ON 5434) and antler (ONs 5432 and 5433) hammers in base of pit 2380/2925, from the east (scale = 0.2 m)

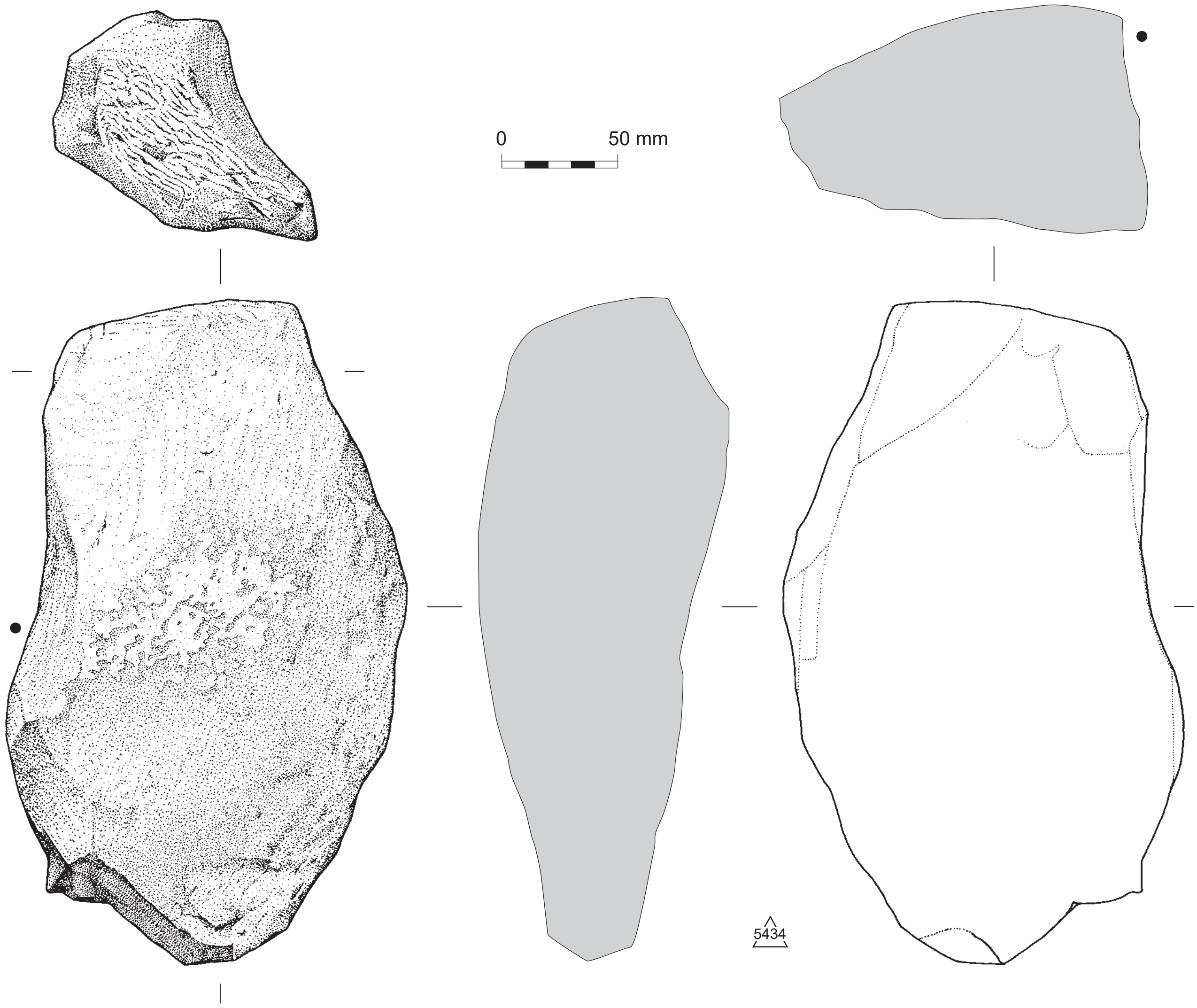


Figure 4.2 Sarsen hammer see text for details

67) objects often comprised natural boulders. They have been closely linked to Stonehenge, where they were considered to represent tools used to dress the surface of the sarsen circle, although this phase of work was undertaken over a millennium later than the date calculated for the pit at Barrow Clump. Flint hammers are found relatively frequently displaying varying levels of use. Many are known from Neolithic pits, where they have also been found with unused spherical nodules (Powell *et al.* 2005) in sufficiently large numbers to suggest that their inclusion may have been deliberate. These strong spherical forms undoubtedly attracted attention as hammer blanks.

This percussive thread naturally extends to the antlers, although here the evidence is less certain. Antlers with clear traces of hammering around the posterior part of the burr have been described by Clutton-Brock (1984) in assemblages from Grimes Graves flint mines and Durrington Walls, and by Serjeantson and Gardiner (1995) from collections at Stonehenge. Clutton-Brock (1984) considered that two explanations, both related to chalk quarrying, could be offered to account for this damage. The antler had either been used as a wedge and driven into the chalk, an interpretation favoured by Serjeantson and Gardiner, or the antler had itself served as a hammer. Some of the shorter pieces Clutton-Brock regarded as probably hammers. Unequivocal evidence for the use of antlers as hammers, for whatever purpose, is rare. An antler, from a Late Neolithic pit at Boscombe, Wiltshire, has provided a plausible instance of one that was apparently used for flint knapping. The single oblique facet on the posterior surface was embedded with flint chips, and in such a way as to suggest use by a right-handed person (Harding forthcoming).

It remains uncertain whether the damage to the antler from Barrow Clump resulted from delivering or receiving the blow, but the association with other percussive tools remains undeniable. Hammers of both hard and soft materials, including organic hammers of wood, bone or antler, undoubtedly performed a range of functions in the hands of artisans beyond the manufacture of stone tools. Many of these creative implements may have acquired

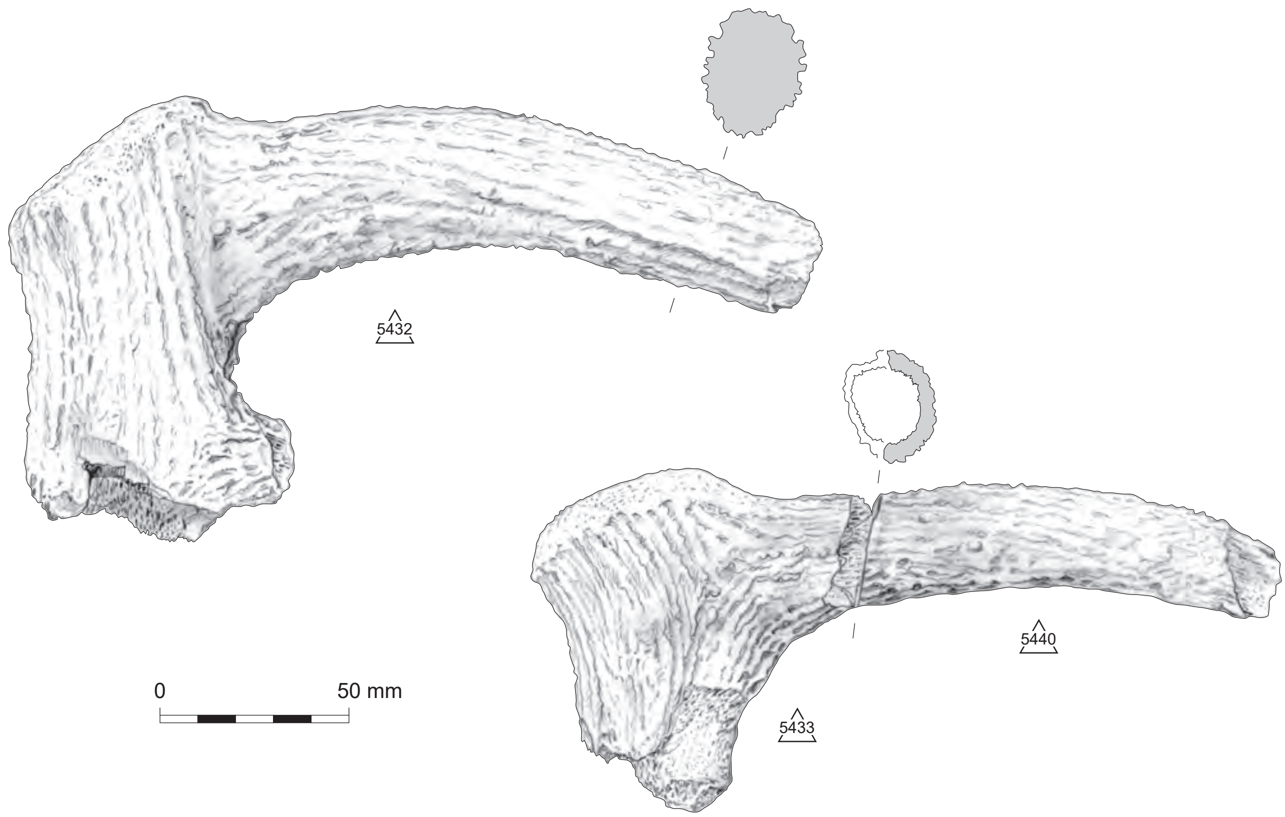


Figure 4.3 Antler hammers see text for details

personal and sentimental value, which extended to acts of deposition. The relative positions of the sarsen maul and the two antler fragments, together with the absence of the antler crown or beam, suggest strongly that these objects represent deliberate placed deposits. The value and status of hammers in the prehistoric periods can be reinforced by the manufacture and trade of axe hammers and pebble hammers (Roe 1979). These exotic implements may have acquired comparable value or status to polished stone or flint axes which were traded as extensively. More esoterically it may be appropriate to consider whether Neolithic oral traditions included equivalent tribal deities to the hammer-carrying Thor of Scandinavian folklore.

Neolithic and Early Bronze Age Pottery

by Jonathan Last

Quantification

The Neolithic and Early Bronze Age pottery from the two phases of excavation at Barrow Clump consists of one complete vessel (a decorated Beaker from grave 2396), large parts of two others (Collared Urns from cuts into the mound 7018 and 7022) and approximately 315 sherds (several are in small fragments and in some cases it is not clear exactly how many pieces they comprised when in the ground). The sherds have a mean weight of approximately 6 g, although individual pieces range from tiny crumbs to large sherds weighing over 30 g. They are almost entirely from the main barrow, with only three sherds coming from Trench A, none of which was in the excavated ring-ditch. The vast majority came from the buried soil, the main ring-ditch and the barrow mound. The full distribution (by sherd no./%) among deposits of the different phases is as follows:

Neolithic (Phase 1)	96	(30.5%)
Beaker (Phase 2)	12	(3.8%)
Early Bronze Age (Phase 3)	174	(55.2%)
later prehistoric to Roman (Phase 4)	2	(0.6%)
Anglo-Saxon (Phase 5)	8	(2.5%)
modern, disturbed and unstratified (Phase 6)	23	(7.3%)

To this assemblage can be added the two extant vessels from Hawley's excavation – another Beaker and a Food Vessel – which have been redrawn for this report.

Fabrics

Not including the five main vessels from the site, which are described separately below, the prehistoric pottery comprises four fabric groups based on the principal inclusion type:

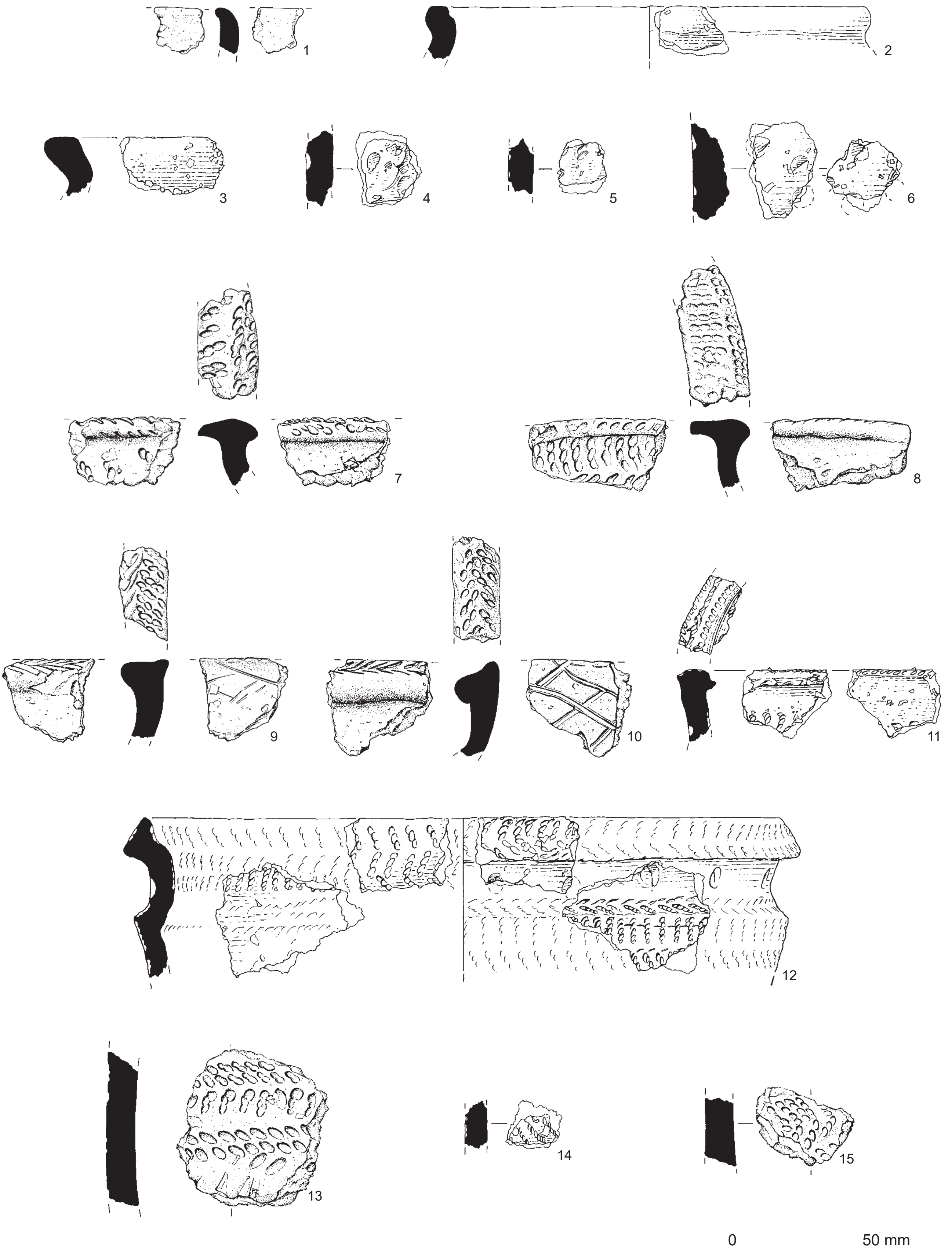


Figure 4.4 Neolithic pottery see catalogue for details

Flint (fabric 1)

Flint-gritted fabrics represent 45% of the assemblage by count (143 sherds), including 14 rim sherds and 39 other decorated fragments. The density and coarseness of the temper varies, as does the presence of fine sand as a subsidiary inclusion, allowing two main fabrics to be recognised within this group:

a) varying densities of sub-angular/angular flint; one sub-group (i) has common fine/medium to very coarse flint; the other (ii) sparser and better sorted coarse/very coarse flint.
b) abundant fine/medium quartz (sand) and sparse/moderate sub-angular/angular coarse/very coarse flint; one sub-group (i) has moderate densities of flint, one (ii) has sparse flint.

Flint or flint and sand combinations account for 40–60% of the Early/Middle Neolithic vessels and 20% of the Beakers studied by Ros Cleal (1995) in her survey of Wessex pottery fabrics. However, flint is rarely if ever found in Grooved Ware pottery.

Shell (fabric 2)

Shelly fabrics (all with varying admixtures of sand and/or flint) represent 41% of the assemblage (130 sherds), including just one rim sherd and five decorated pieces. Over 80% of this group derives from six contexts within the buried soil (2703, 2704, 2706–8) and barrow mound (2645), and may therefore represent a small number of vessels. The shell (whether added or not) probably derives from a non-local source off the chalk, as demonstrated for the Neolithic pottery from Maiden Castle (Cleal 1995).

Grog (fabric 3)

Grogged fabrics represent 12% of the assemblage (38 sherds) and include seven decorated body sherds but no rims or other indicators of form. The majority of fragments include some other type of inclusion, such as flint, sand or shell. Grog occurs particularly in pottery of Grooved Ware, Beaker and Urn styles in Wessex (Cleal 1995).

Sand (fabric 4)

Four sherds, representing just 1% of the assemblage, contain sand only; none of them had any diagnostic features and they could potentially represent intrusive later prehistoric material. Similar fabrics account for up to 16% of the Early Neolithic, Grooved Ware and Beaker pots studied by Cleal (1995) but are not found in Peterborough Ware vessels.

Forms, Decoration and Dating

The sherd material can be assigned to at least four styles of Neolithic or Early Bronze Age pottery.

Neolithic Bowl

Diagnostic sherds of Early Neolithic plain bowl pottery, broadly contemporary with pit 2380/2925, comprised simple everted rims from barrow mound contexts (Fig. 4.4, 1) and (Fig. 4.4, 2), and the pre-barrow buried soil (Fig. 4.4, 3). Another similar rim from the buried soil (2466) is not illustrated. While most of the diagnostic sherds from this phase are Middle Neolithic Peterborough Ware (see below), these finds indicate an earlier component to the buried soil/flint scatter, which is presumably also represented by some of the undecorated body sherds from this phase. It is notable that the vessel from the mound in Trench 1 (Fig. 4.4, 2), marked by a group of very abraded sherds, has a similar shelly fabric to a group of sherds from the buried soil in the same trench, suggesting it may have been displaced from this deposit. A body sherd in this fabric from the buried soil has hints of impressions (Fig. 4.4, 4), less regular than that on the Peterborough Ware, which might indicate a decorated Early Neolithic component; the same goes for a flint-gritted sherd from the same phase (Fig. 4.4, 5). Two sherds from the Beaker ring-ditch (Fig. 4.4, 6) with circular impressions may also belong to this type since they are in a shelly fabric which is unlikely to belong to the Beaker phase and would be rare for Mortlake Ware (Cleal 1995).

Peterborough (Mortlake) Ware

The majority of the diagnostic pieces derive from Middle Neolithic Mortlake bowls with expanded rims and elaborate decoration, mostly cord impressions. Exterior surfaces are frequently oxidised (orange or red) while cores and interior surfaces are generally unoxidised (dark grey). All are made in flint-gritted fabrics, which Cleal's (1995) study showed to be the dominant inclusion for Mortlake ware in Wessex.

Illustrated examples of rim sherds come from the buried soil (Fig. 4.4, 7) and the mound make-up (Fig. 4.4, 8–12), with decorated body sherds from the buried soil (Fig. 4.5, 13), the Beaker mound (Fig. 4.4, 14), later mound deposits (Figs 4.4, 15 and 4.5, 16–17), and redeposited contexts (Fig. 4.5, 18–19). They all show typical arrangements of impressions of short sections of twisted cord ('maggots'). The vessel shown in Fig. 4.4, 12 also has a row of circular impressions on the cavetto zone of the neck. Not illustrated are another rim (2411) and two other decorated sherds (2467) from the buried soil. Some of the plain body sherds from these contexts could be from the lower, undecorated parts of the same vessels.

It therefore seems likely that Peterborough Ware was the style of pottery in use when the pre-mound flint scatter accumulated, and that some of it was subsequently incorporated into the barrow mound.

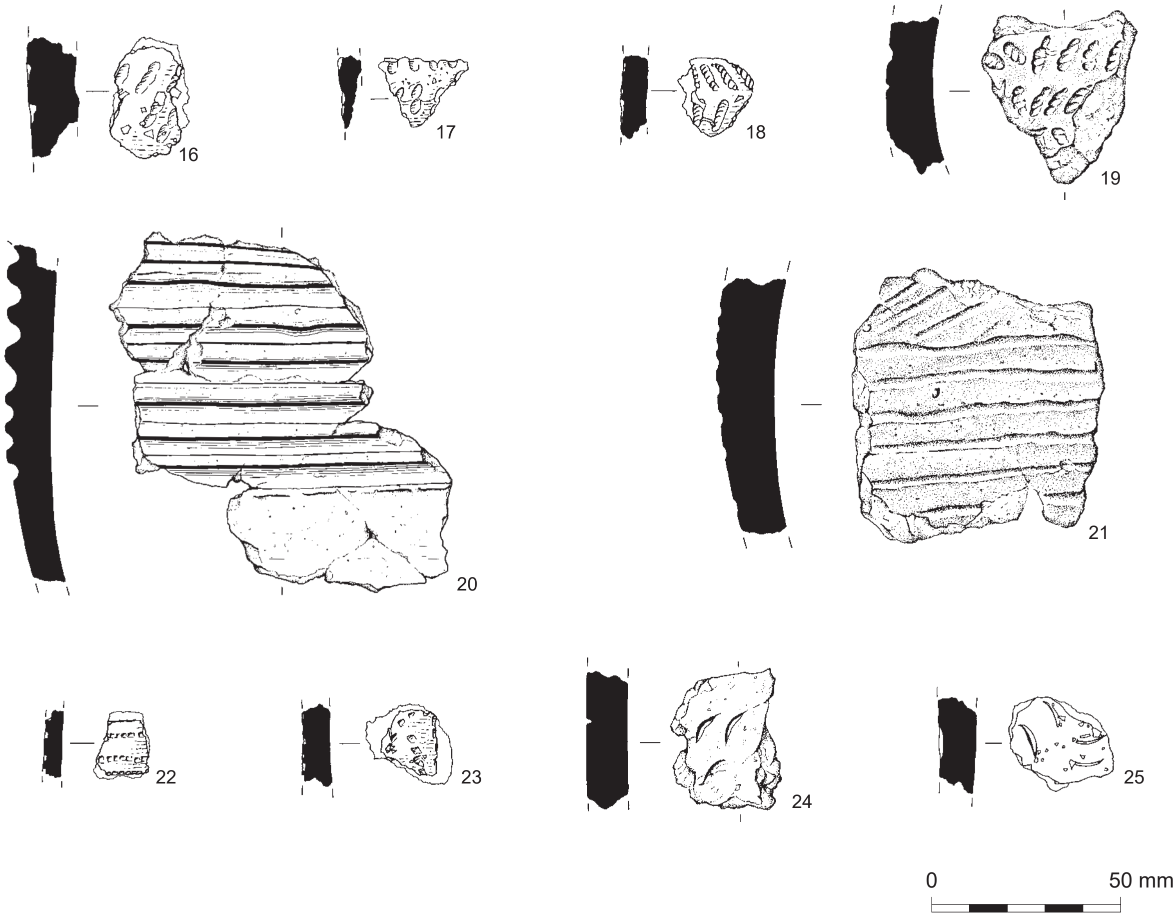


Figure 4.5 Neolithic and Beaker pottery see catalogue for details

Grooved Ware(?)

Five body sherds, all in grogged fabrics, have linear decoration that suggests they can be characterised as Late Neolithic Grooved Ware, although in the absence of information on form it is just possible that they derive from Early Bronze Age urns (noting the grooved decoration on urn 5456 as described below). However, one piece with deeply incised horizontal broad-groove decoration that came from a recut of the Beaker ring-ditch (Fig. 4.5, 20) seems too large to be intrusive. Two large, joining body sherds from different contexts within the barrow mound (Fig. 4.5, 21) have similar horizontal and diagonal-line decoration, although in this case it appears to be impressed rather than incised. While these sherds provide the only ceramic evidence for Late Neolithic activity at the site, there appears to be more lithic material of this period including oblique arrowheads (see above).

Beaker

Apart from the two complete Beakers found in graves, which are discussed below, material of this phase is very limited. The clearest example is a small grog-tempered sherd from a fine Beaker with comb-impressed decoration found in the later mound deposits that infilled the top of the Beaker ring-ditch (Fig. 4.5, 22). A possible Beaker sherd (not illustrated) came from deposit 2910, which is part of the buried soil but noted as disturbed. Another came from the barrow mound (2422), and shows traces of horizontal and vertical decoration. It has a fabric tempered with grog and sand (a combination that accounts for 15% of the Beakers studied by Cleal 1995) and is oxidised (orange) throughout, unlike the possible Grooved Ware, which all has unoxidised cores. A third potential Beaker sherd is a flint-gritted example with less regular tooth-like impressions from an unstratified context (Fig. 4.5, 23). Two candidates for rusticated Beaker sherds include flint-gritted examples with fingernail impressions from the barrow mound (Fig. 4.5, 24) and an unstratified context (Fig. 4.5, 25).

Beakers from Graves

The Beaker excavated by Hawley (Fig. 4.6, 1; Pl. 4.2) was subsequently published by Newall (1929), who describes it as being:

> ‘ … ornamented with first two and then three bands of oblong irregular indentations on the neck, each one being made by the same

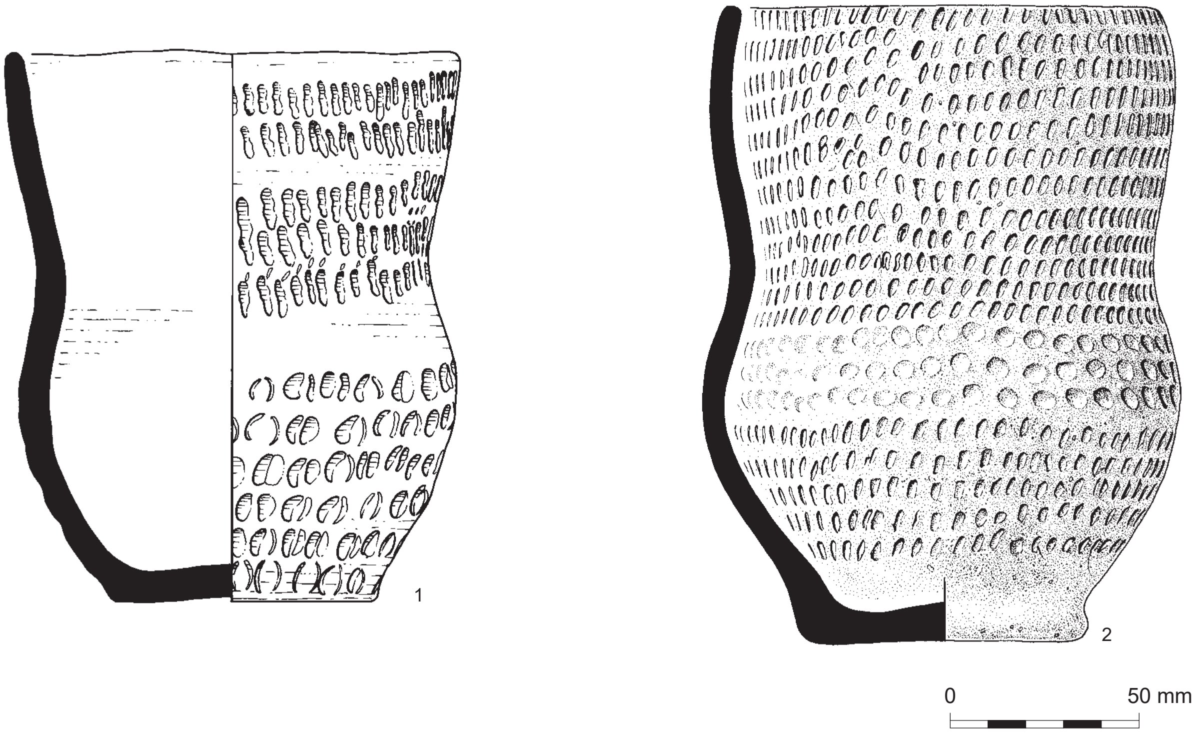


Figure 4.6 Beakers see text for details

Plate 4.2 The Beaker excavated by Hawley

Plate 4.3 Beaker from grave 2396

> tool, which … seems to have been the edge of a worked flint… The bulbous lower half is covered with double fingernail impressions in seven bands… The colour is buff, varying to grey in places.'

The height of the pot is given as 5⅝ in. (143 mm) and the rim diameter as 4⅝ in. (117 mm), which makes it slightly smaller than the Beaker from the child's grave discussed below. Recent inspection of the vessel showed that the base and interior of the pot are smoothed while the exterior has traces of burnish on the shoulder. It also showed that on one side there are only six bands of fingernail impressions on the lower part (see Fig. 4.6).

The Beaker vessel from grave 2396 (Fig. 4.6, 2; Pl. 4.3) is well-made, although the profile is not quite symmetrical, and finished with smooth but not

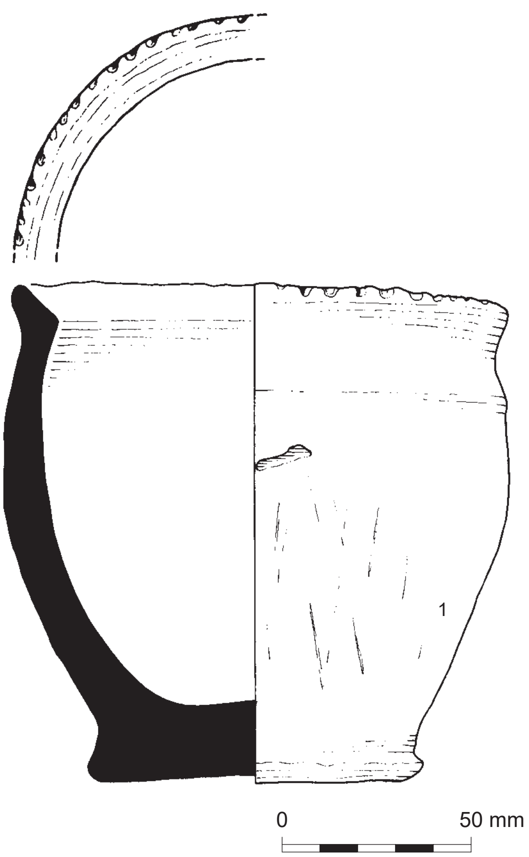


Figure 4.7 Food Vessel see text for details

Plate 4.4 The Food Vessel excavated by Hawley

burnished surfaces. It is a long-necked form (the neck accounting for about half the height of the vessel) standing some 158 mm high, with a rim diameter of 120 mm and base diameter of 75 mm. The wall thickness at the rim is 6 mm, and at the shoulder and belly up to 9 mm. The surfaces are orange-brown and the fabric is oxidised (orange) with an unoxidised (black) core except at the rim and neck. It is tempered with moderate quantities of angular flint up to 3 mm in size (12% of the Wessex Beakers studied by Cleal were flint-tempered). There are some cereal impressions on the interior of the base.

The Beaker is decorated all over with close-set rows of impressions, not entirely even but not careless either. There are 12 rows of small oval or crescentic, probably fingernail impressions, 4–6 mm long, on the neck and shoulder (the first of these virtually on the rim) and another five on the lower body. It seems quite likely from the size and shape that they could have been made by a child. In between, on the belly of the pot, are three rows of shallower circular impressions.

In terms of decoration, the closest local parallel is the Beaker found with the infant burial in Wilsford 52 which has '[i]rregular horizontal rows of upright and oblique oval jabs' with a plain band at the waist (Smith 1991, 22–3). This vessel is slightly bigger than the one from Barrow Clump. Clarke (1970) classified both this vessel and Hawley's Beaker as type FP, which he considered to represent plastic, rusticated ware typical of Beaker domestic assemblages, possibly replacing his type FN, which was seen as earlier, non-plastic, rusticated ware. Of course, if the Barrow Clump impressions are fingernails then it would fit the FN classification, along with a Beaker from Winterslow (Clarke 1970, no. 121). In terms of Needham's (2005) typology, the form of the vessel has parallels with examples in both the earlier and later series of his Long-Necked (LN) type.

The Food Vessel

This vessel (Fig. 4.7; Pl. 4.4) is described by Newall (1929, 118) as 'a food vessel or small urn', 5 in. (127 mm) high and 5 in. in rim diameter:

> 'The rim… is ornamented with a row of circular impressions about ?in. (3 mm) in diameter… The walls are plain and thick… The colour is buff, but very dark grey in section…'

Unlike the Beaker, the Food Vessel has rough surfaces. The vessel wall is about 8 mm thick with the end of the rim bevel, where the decoration is applied, measuring about 5 mm wide. Southern English Food Vessels have not been systematically studied in recent times, though Wilkin (2013, 4) notes that they are often plain, and quite distinct from those found in regions further north. This pot, though not entirely plain, lacks the bipartite profile and heavy rim typical of the style. Nevertheless, it lies squarely within the range of Food Vessel sizes and shapes plotted by Wilkin (2013, fig. 1.7), who suggests the style has a relatively short currency of around 200 years from the earlier

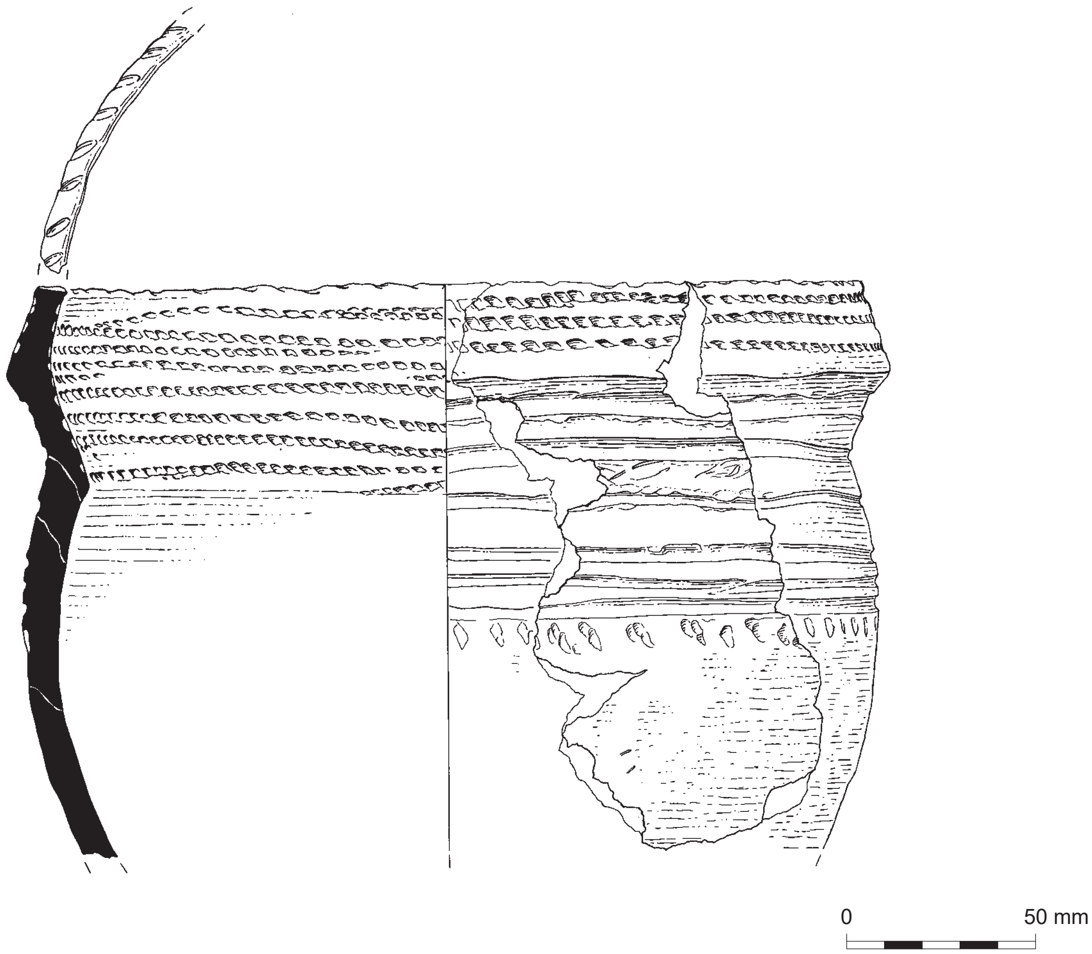


Figure 4.8 Collared Urn see text for details

21st to the earlier 19th century cal BC). Since the modelled date for the construction of the bell barrow is probably *1930–1760 cal BC (68% probability)* this would suggest the Barrow Clump vessel belongs in the latter part of the chronological span of Food Vessels.

The Urns

The upper part of urn 5456 (context 7019) is preserved to a depth of 160 mm below the rim (Fig. 4.8). It is a bipartite Collared Urn, lacking a clear shoulder, with a concave neck and a rim diameter of 220 mm. The height of the collar, which is slightly inturned, is 27 mm. The form of the vessel fits Longworth's (1984) primary series or Burgess's (1986) early group.

The vessel has an oxidised exterior and unoxidised interior and is tempered with moderate quantities of fine to very coarse grog (generally 1–2 mm across); there are also occasional very coarse quartz inclusions (up to 7 mm across) and burnt-out organics. The exterior is lightly burnished and possibly slipped, while the interior has been smoothed by wiping. The average wall thickness is around 8 mm. There is evidence of coil breaks, including one just below the neck, that have diagonal junctions (Longworth 1984, fig. 1).

The top of the rim is decorated with short cord impressions. The exterior of the rim/collar has three rows of twisted cord impressions while below the collar are five to six parallel horizontal grooves 4 mm wide, above a single row of possible small cord end impressions. The interior moulding of the collar and neck has at least seven parallel rows of cord impressions matching those on the exterior of the collar. The most notable decorative feature is the grooves, which Longworth (1984, 22) notes as a rare feature, paralleled in two examples from Wiltshire at Wilsford 7 and 65, though in both cases it forms part of more complex motifs. Closer parallels are from further afield, including Stanton Moor, Derbyshire (Longworth 1984, pl. 38) and Desborough, Northants (*ibid.*, pl. 34), though in neither case are the grooves combined with impressed cord.

Urn 5457 (7023) is a very different vessel in its treatment and decoration, with a much coarser appearance (Fig. 4.9). It is larger than 5456, having

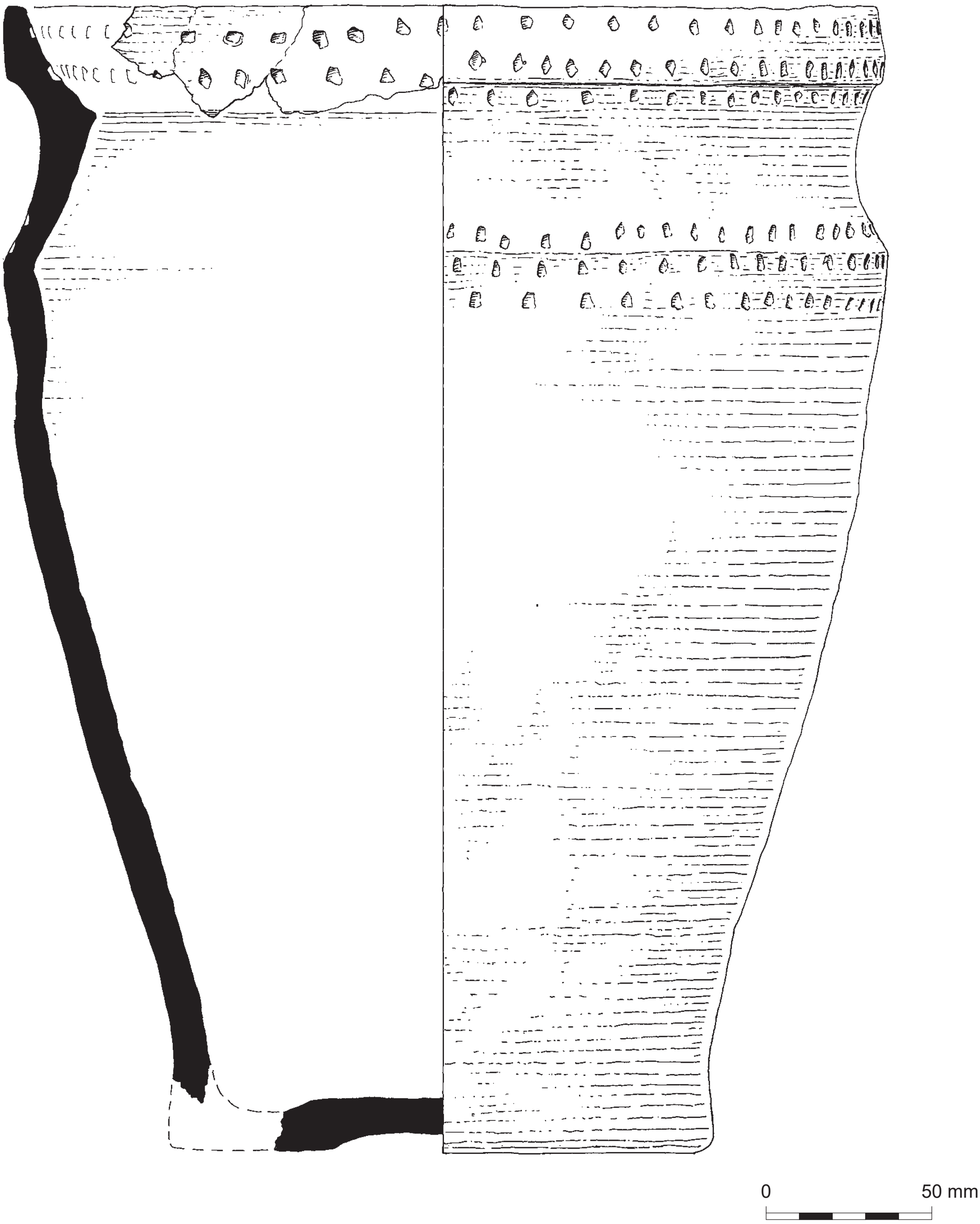


Figure 4.9 Collared Urn see text for details

a rim diameter of 260 mm and height of 350 mm. The base has an omphalos form and a diameter of approximately 165 mm. The collar is short (25 mm) and more upright than 5456, and the profile is more angular, with a distinct shoulder. Parallels for the form of the rim and collar can be found among Longworth's primary series with Food Vessel associations (Longworth 1984, pls 22, 79–81) but also his secondary series, especially a vessel from Hengistbury Head (*ibid.*, pl. 139). Burgess (1986) puts the latter in his middle group. Typologically, therefore, we might see 5457 as slightly later than 5456.

The vessel has unoxidised surfaces, probably self-slipped, with a part-oxidised core, rather fragile. The wall thickness is 9–10 mm and the inclusions are sparse coarse or very coarse grog and stone.

The two Collared Urns share a simple approach to decoration in horizontal bands but its execution on urn 5457 is very different. Decoration is restricted to rather irregular horizontal rows of wedge-shaped impressions: three on the exterior of the collar and neck, two on the internal moulding and three around the shoulder. Within each row the impressions are spaced around 12 mm apart. Although impressed decoration is more common than grooves, close parallels within Longworth's corpus remain very limited. The closest local example is probably the primary series urn from Ogbourne St Andrew 6, which has triangular impressions on the collar (exterior only) and above the shoulder, while a large urn from Hengistbury Head has rows of rounded impressions on the collar, neck and shoulder (Longworth 1984, pl. 58). An urn from Amesbury has flint flake impressions on the collar and neck, with finger-tip impressions on the shoulder (*ibid.*, pl. 55). Further afield, an urn from Llanbabo, Gwynedd, with a comparable rim and collar profile to 5457 has similarly varied impressions on the exterior and interior of the collar as well as the neck and shoulder (*ibid.*, pl. 22). The urn with Food Vessel affinities from Barton Stacey, Hants, has irregular stab-and-drag impression on the collar and shoulder (*ibid.*, pl. 79). Among secondary series urns we can also note a vessel from Downton with a double row of round-based impressions on the shoulder (*ibid.*, pl. 125), and one from Coylton, Strathclyde, with rather widely spaced impressions on collar, neck, shoulder and rim (*ibid.*, pl. 179).

Catalogue of illustrated pottery
Figs 4.4–4.9

The complete vessels are described in the text.

Neolithic Bowl

1. Context 2418; fabric 1ai; grey-brown
2. Context 2645; fabric 2 (moderate fine-medium shell); light brown
3. Context 2691; fabric 1aii; exterior grey, core grey-brown, interior light brown
4. Context 2704; fabric 2 (moderate fine-medium shell), exterior orange, core light brown, interior grey
5. Context 2706; fabric 1ai, exterior orange, core and interior light brown
6. Context 7076; fabric 2 (common medium-very coarse shell); exterior orange, core and interior grey

Peterborough Ware

7. Context 2164; fabric 1ai; exterior orange, interior grey
8. Context 2193; fabric 1aii; exterior orange, core grey-brown, interior light brown
9. Context 2422; fabric 1ai; exterior mottled, core grey-brown, interior grey
10. Context 2422; fabric 1ai; exterior and interior orange
11. Context 2770; fabric 1aii; exterior orange, interior grey
12. Context 7043; fabric 1aii; exterior mottled, core and interior grey
13. Context 2388; fabric 1aii; exterior and core orange, interior grey
14. Context 7074; fabric 1ai; exterior grey-brown, core and interior grey
15. Context 2422; fabric 1ai; exterior and core orange, interior grey
16. Context 7043; fabric 1ai; exterior orange, core buff, interior grey
17. Context 7043; fabric 1aii; exterior grey, interior grey-brown
18. Context 7061; fabric 1ai; exterior buff, core and interior grey
19. Context 8038; fabric 1ai; exterior and interior orange

Grooved Ware

20. Context 2529; fabric 3 (moderate/common fine-very coarse grog); orange surfaces and grey core
21. Context 2148/2154; fabric 3 (moderate fine-coarse grog); exterior and core grey-brown, interior orange

Beaker

22. Context 7057; fabric 3; buff surfaces and grey core
23. Context 2812; fabric 1ai; exterior orange, core and interior grey
24. Context 2189; fabric 1ai; exterior and core orange, interior grey
25. Context 2600; fabric 1aii; exterior grey-brown, core and interior buff

Late prehistoric and Romano-British Pottery
by Lorraine Mepham

Introduction

The pottery assemblage dating from the late prehistoric to post-medieval periods amounts to 309 sherds (3108 g). This includes material of late prehistoric, Romano-British, Saxon, medieval and post-medieval/modern date (see Chapter 14 below for the post-Roman pottery).

Condition ranges from fair to poor; many sherds are small and heavily abraded, particularly the softer-fired and friable prehistoric and Saxon sherds. Mean sherd weight overall is 10.1 g, but this is skewed by the presence of a few large, thick-walled post-medieval sherds. Without these, mean sherd weight falls to 9.0 g, and individual period groups range from 4.6 g (medieval) to 10.9 g (Romano-British). The condition of the material is consistent with a high level of reworking and redeposition, some of which has undoubtedly been caused by badger disturbance of the archaeological deposits and which has led to intrusive sherds being incorporated in earlier deposits. Poor condition (combined with a general scarcity of diagnostic sherds) has in some cases hampered

Table 4.2 Later prehistoric and Romano-British pottery

Period	Ware	No. sherds	Wt. (g)
Late Prehistoric	Deverel-Rimbury	2	24
	M/LBA flint-tempered ware	12	54
	Iron Age sandy ware	35	202
	Flint-tempered ware (late prehistoric unspec.)	7	42
	Flint-tempered ware (prehistoric unspec.)	3	24
	Sub-total Late Prehistoric	*59*	*346*
LIA/Romano-British	LIA/ERB sandy ware	9	36
	Black Burnished ware	6	78
	New Forest colour coated ware	1	5
	Greywares	48	400
	Oxidised wares	6	43
	Whiteware	2	14
	Samian	2	9
	Savernake-type ware	98	1286
	Sub-total LIA/Romano-British	*172*	*1871*

dating; some of the sandy wares cannot be confidently divided between Iron Age and Saxon groups, and some of the flint-tempered sherds can only be dated broadly as 'late prehistoric' or even just 'prehistoric'.

Given these caveats, the assemblage has been quantified (sherd count and weight) by chronological period and ware type within each context. For Romano-British, medieval and post-medieval sherds, this has involved assignation to known ware types (eg, samian, Kennet Valley coarseware, Verwood earthenware), with some grouping into 'catch-all' coarseware groups for Romano-British sherds. The prehistoric and Saxon sherds have been broadly described in terms of dominant inclusion type (eg, sandy, flint-tempered), but have not been subjected to detailed fabric analysis, given the relatively small quantities and poor condition. Late prehistoric and Romano-British totals by ware type are given in Table 4.2 (see Table 14.4 for the Anglo-Saxon and later pottery).

Late Prehistoric

Two undiagnostic body sherds, both containing abundant, fairly well sorted flint inclusions (both from the Early Bronze Age barrow ditch, fills 2633 and 2920) have been dated as Middle Bronze Age (Deverel-Rimbury ceramic tradition). Twelve other flint-tempered sherds have been dated as Late Bronze Age with a fair degree of confidence, although there are no diagnostic sherds (Table 4.2). Apart from one sherd from badger disturbance, all these sherds came from the fills of the Early Bronze Age barrow ditch.

A further seven sherds are in flint-tempered fabrics, which are more tentatively, and broadly, dated as 'late prehistoric'; none are diagnostic. All came from fills of the Early Bronze Age barrow ditch, and the likelihood is that most if not all fall within a Late Bronze Age to Early Iron Age date range (although the possibility that some could be Neolithic cannot be entirely ruled out).

A group of 35 sherds in sandy fabrics, some containing rare fine flint inclusions, are tentatively dated as Iron Age, although most of these are really not chronologically distinctive, and there is a possibility that some sherds could be of Anglo-Saxon date. The only diagnostic piece is a small rim sherd with oblique incisions or impressions around the rim. Even this is not definitively datable as either Iron Age or Anglo-Saxon, but its provenance (from the Early Bronze Age barrow ditch fill) renders the earlier date more likely. A further 16 sherds from the barrow ditch are dated on similar grounds, while other sherds, from unstratified or topsoil contexts (eight sherds) and Anglo-Saxon grave backfills (nine sherds, but apparently representing redeposited material rather than grave goods) remain of uncertain date.

Late Iron Age/Romano-British

A small group of 14 grog-tempered and nine sandy ware sherds may constitute the earliest material in this chronological group (Table 4.2). All appear to be from handmade, unevenly fired vessels, and could represent pre-conquest, or conquest-period ceramic traditions. The grog-tempered wares belong to the Savernake tradition, for which kilns have been located in the Savernake Forest to the south of Marlborough, and which continued from its Iron Age origins well into the Romano-British period (at least to the 2nd century AD). Harder-fired Savernake ware sherds of 'Romanised' appearance make up a significant proportion (49% by sherd count) of the assemblage here, and belong exclusively to jar forms (with either beaded or everted rims).

Also commonly represented here are coarse greywares (28% by sherd count), one jar rim and one lid being the only diagnostic forms. The greywares have several potential sources, including the New Forest and Oxfordshire production centres. The same could be true of the oxidised wares; the whitewares are probably Oxfordshire products. Six sherds of south-east Dorset Black Burnished ware, including two dropped flange bowls of late 3rd–4th-century AD date, are the only coarsewares that can be definitively linked to production area.

The only finewares present are two sherds of samian (both from 2nd century AD Central Gaulish vessels) and one from a New Forest colour coated ware indented beaker (late 3rd–to 4th century AD).

Late Iron Age/Romano-British sherds mostly derived from fills of the Bronze Age barrow ditch (from all levels), and from Anglo-Saxon grave fills. Other sherds came from topsoil, disturbed or unstratified contexts.

Early Bronze Age Grave Goods

by Lorraine Mepham

Grave goods were recovered from cremation grave 2680 (Fig. 2.11), in the form of one stone object, and six objects of worked bone.

Plate 4.5 Perforated stone (ON 5318), possibly a pendant/reused bracer (scale = 50 mm)

Stone Object

The stone object (ON 5318) is subrectangular (measuring 60 x 19 x 5 mm), with a flat profile, and with a small perforation, drilled from both sides, centrally placed at one end (Fig. 2.11; Pl. 4.5). It appears to have been reused, as while one short and one long edge are rounded, the other long edge has been slightly unevenly bevelled on both sides, and the end opposite the perforation has been broken across slightly obliquely, and smoothed down. There are no obvious marks of wear around the perforation to reflect either primary or secondary use. The object is made from a fine-grained metamorphic phyllite. This is difficult to provenance macroscopically but the nearest possible British rocks would be in the south-west (Devon or Cornwall) (R. Ixer pers. comm.).

This may be a reused bracer or wristguard, although the lithology does not match either of the two main groups of bracers analysed in a recent study (Woodward and Hunter 2011, ch. 3). If it was a bracer, the original form could have been wider and longer, with four perforations, one at each corner, in which case the object could have been split both lengthwise and crosswise (examination of the upper, perforated, edge to ascertain possible curvature is inconclusive here). Alternatively, it could have had only two perforations, one at each end, in which case the rather inexpert bevelling has removed little from the overall width, while the original overall length remains unknown. A number of other reworked bracers are known, some of which have been interpreted as having been reused as pendants (*ibid.*, 81, Cat IDs 3, 32,82, 102, 141), but none appear to have been reworked along the length as this example is.

In its present form, the object falls into the category of 'perforated stones', found in Early Bronze Age graves, and which have been variously described as perforated whetstones or pendants; the lithology of the Barrow Clump example does not match any of those analysed in a recent survey, but it may be noted that several of the latter examples were probably from sources in the south-west peninsula (Ixer 2015). Of the 11 perforated stones included in the survey, all but one came from cremation graves and, where the human remains had been identified, all were found with adult men, and most formed part of rich grave groups including, as here, bone beads and pins (the individuals in grave 2680 comprise an adult possible male, an adult possible female and a subadult). There were clear indications of use, the conclusion being that these objects were used as whetstones (Woodward and Hunter 2015, 76, 79–80).

Bone Objects

The six bone objects comprise two points (one incomplete), one bead or toggle, and three small beads (Fig. 2.11; beads not illustrated). Both points, and the bead/toggle, were burnt on the pyre, while the small beads are unburnt.

The more complete of the two points (ON 5662) is made from a sheep/goat metatarsal with the articular head retained; the head is perforated. This falls into Longworth's type 4 pins in a classification of artefacts found with Collared Urns (Longworth 1984, 63–5); this equates to class 2 points in a more recent survey (Woodward and Hunter 2015, 97). The second point (ON 5663), lacking its head, is of unknown type. The recent survey, examining evidence for use, concluded that these objects were most probably used as items of adornment (eg, as hair pins, head ornaments or embellishments for costume) rather than as tools (*ibid.*, 105). A number of examples are known from other barrows in Wiltshire, eg, Wilsford G64, Collingbourne Kingston G4 and Winterbourne Stoke G58 (Annable and Simpson 1964, nos 314, 389, 454).

A short length of sheep/goat metatarsal has been identified as a toggle (ON 5664), although lacking any distinctive features; the possibility remains that it represents the broken upper part of a set of tweezers, which are items often found with perforated stones in rich grave groups (Woodward and Hunter 2015, fig. 4.8.1); burning on the pyre has removed any evidence for either cutting or breakage on the ends. Toggles are a rare form of grave good; the six examples included in a recent survey are of widely variable form, but were all found either in Beaker graves of mature males that also included bracers, or in Food Vessel

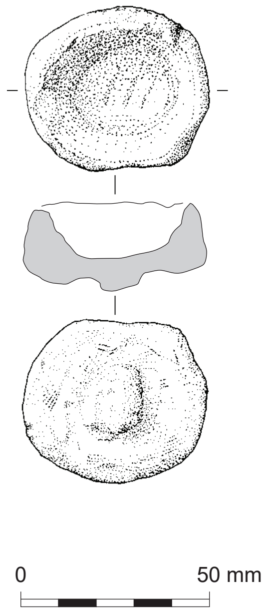


Figure 4.10 Chalk cup or lamp

graves in Yorkshire. Examples from bracer graves all seem to have been placed close to the bracers, and may therefore have had a function related to the latter objects (*ibid.*, 121–3).

Three small objects comprising short lengths (6–8 mm) of bird bone have been tentatively identified as beads (ON 5665). Two have transverse marks at the ends, possibly from cutting; all three could conceivably have derived from a single bone, although none appear to fit together. No direct parallels have been found for the beads, although they bear a superficial resemblance in form to fossil shell beads found in a necklace group at Winterbourne Stoke G64a (Woodward and Hunter 2015, fig. 8.2.2).

Other Stone Objects

by Lorraine Mepham

A chalk object found unstratified (ON 5371) has been interpreted as a possible cup or lamp (Fig. 4.10). This is a shallow, roughly circular object (48 x 43 x 22 mm) with one face hollowed out; marks are visible showing scraping across the base and around the circumference inside the rim. The outside wall has been roughly shaped, with some horizontal scraping marks visible, and there is a slight protuberance in the centre of the underside of the base. Although unstratified, the object is presumed to be of prehistoric date, most probably Neolithic or Bronze Age, although a later date cannot be ruled out.

Chalk objects have been recovered from a number of prehistoric sites, mainly in southern England and associated with monumental sites of the 3rd and early 2nd millennia, although these artefacts have as yet received relatively little academic attention. They have previously been seen as part of the Neolithic cultural assemblage (associated, for example, with Grooved Ware sites), but the first major typology (Varndell 1991) was based on the largely Bronze Age assemblage from Grimes Graves flint mines, Norfolk. Varndell’s typology has been reviewed in a recent study of Neolithic chalk artefacts (Teather 2016, tables 5.1 and 5.2), but cups are common to both schemes, and demonstrate a lengthy period of use in socio-cultural activities; Teather’s definition describes them as consisting of ‘a depression within a small chalk block’, the cavity most probably made by a flint blade, as seems to be the case here (*ibid.*, 72).

This example is finer than, for example, the Neolithic cups from Windmill Hill, which have thicker walls (Smith 1965b, 131, fig. 56), and is noticeably better made than a Neolithic ‘cup’ from Stonehenge, which is little more than a roughly shaped piece with a small depression on one surface (Montague 1995, 402, fig. 221, 11). In fact the closest parallel found is with an Iron Age object from Danebury (Brown 1984, fig. 7.62, 8.67).

A whetstone (ON 5397) was recovered from an outer layer of mound material (2683). It is subrectangular in cross-section, and broken across at one end; the opposite end is tapering and the tip has broken obliquely. There are some traces of use in the form of slight grooves across at least two of the edges. Incorporation in mound material could indicate a Bronze Age date for the object, but the outer mound material has been much disturbed, and an Iron Age or later date is entirely possible. The object is not datable on morphological grounds.

Chapter 5
Cremated and Unburnt Human Bone and Aspects of the Mortuary Rites

by Jacqueline I McKinley

Introduction

The human remains analysed and reported on here derived from 10 contexts excavated over three seasons between 2012 and 2014. Data pertaining to the remains from one other context, excavated during the 2004 investigations by English Heritage and recorded by Dr Simon Mays (SM), have also been incorporated as the deposit forms part of the same prehistoric assemblage. Cremated bone was recovered from six contexts and unburnt prehistoric bone from five (Tables 5.1–2; see Egging Dinwiddy, Chapter 11, for the remains from the Anglo-Saxon inhumation cemetery).

The unburnt bone came from two features. *In situ* burial remains were recovered from the Beaker period grave 2396 situated mid-way between the central Beaker ring-ditch and the larger, later Early Bronze Age barrow ditch (Figs 2.4, 2.7 and 2.9; see also Fig. 9.1). The rest of this part of the assemblage was redeposited at various levels within the trench (7011) cut through the centre of the mound by Hawley at the end of the 19th century (Fig. 2.8). Due to the presence of a tree stump only about one-third of the main part of this trench was re-excavated, to its full depth of about 2 m; redeposited bone was randomly distributed throughout the lower 1.50 m depth. Hawley (1910, 623–4) recorded:

> '… after considerable digging a skeleton [crouched on left side] … of good physique and the teeth showed early life. A foot or two eastward a second skeleton … and … a third, all about the same age [ie, adult]. They were almost touching one another, but there was a regularity observable in the way they were placed. Just above the last two the skeleton of a very young infant appeared … Its teeth were uncut, so it could not long have been born. Over and about this spot were appearances of burning, such as wood, bones, and the remains of a pot [Food Vessel] … below these and slightly south-west of them a rectangular cist …cut in the solid chalk [2.20 x 1.29 m, 1.52 m deep] … at the bottom rested a skeleton … the individual … was an old man, the teeth having been abraded down to their crowns, but not decayed. The skull was brachycephalic … at the foot of the cist was a pot of badly-baked coarse brown ware … under the head of the skeleton was a flint knife …'

The deposits he recorded are undoubtedly those pertaining to the early/primary mortuary use of the monument. No *in situ* features or deposits were observed in the re-excavated segment of his trench but radiocarbon analysis of the remains recovered in the current investigations have attempted to establish some elements of the stratigraphic sequence which are not clear from his description. The results show a minimum of two phases of at least cross-generational burial occurred in this central area, the Beaker period grave 2396 to the south-west potentially being cut between these episodes (Marshall *et al.*, Chapter 3).

Most of the cremated bone derived from the remains of three Early Bronze Age burials. Two urned burials (graves 7018 and 7022) had been made in inverted vessels within adjacent graves (about 1 m apart) located within the area described by the Beaker period ring-ditch. The third, unurned burial (grave 2680) was made some 10 m to the south-east in the area between the two ring-ditches (Fig. 2.9; Pls 2.19–21). The graves for the two urned burials had been cut through the chalk mound of the Beaker barrow, indicating they were secondary deposits. Similarly, the grave containing the unurned burial remains had been cut through the chalk capping of the later barrow. Radiocarbon analysis of samples from the unurned and one of the urned burials (the sample from the third grave failed) indicates they could all have occurred at a similar date (Marshall *et al.*, Chapter 3).

Very small quantities of redeposited cremated bone (insufficient for radiocarbon dating) were also found in the fills of two of the Anglo-Saxon inhumation graves situated in the south-western part of the archaeological investigations, one on the inner edge of the later ring-ditch and one external to it (see Fig. 9.1). In the latter case (inhumation grave 7016), other residual archaeological components from the grave fill – several heavily abraded Anglo-Saxon pot sherds (potentially all from the same vessel; see Mepham, Chapter 14) and a small fragment of melted copper-alloy (though this could be intrusive) – suggest the cremated bone could be Anglo-Saxon and the combined components represent the disturbed and redeposited remains of a burial (this is discussed further below; Stoodley, Chapter 15). The date and origin of the bone in the other grave (7079), situated some 15 m to the east, is debatable, no other redeposited archaeological components being recovered with it.

Table 5.1 Summary of results from analysis of prehistoric unburnt human bone

Context	Cut	Deposit type	Quantification	Age/sex	Pathology
6010*	2396	inh. burial (crouched)	*c.* 50%	infant 2 yr	abnormal porosity – exocranial vault (frontal, right temporal & sphenoid, right orbit, right maxilla & zygomatic process, palate, medial mandibular condyles, right parietal & occipital ('branched lysis'); new bone – orbital roofs, endocranial occipital & right sphenoid, left medial tibia; delayed fusion – anterior fontanelle
7053–6	7011	R antiquarian trench	fragments min. 62 elements	MNI: 4 1) neonate 0–8 wks 2) adult 30–40 yr male 3) adult 25–35 yr ?female 4) adult > 45 yr ?male	infection (?brucellosis) – 1T; osteoarthritis – left hip; degenerative disc disease – 2C, 1T (?4); Schmorl's nodes – 2L; osteophytes – 2L bsm, right innominate (2); endocranial porosity – temporal (1); enthesophytes – fibula shaft, rib shaft, finger phalanx, right calcaneum; bowing – femur shaft

KEY: * – data derived from records by Simon Mays; inh. – inhumation; R – redeposited; C/T/L – cervical/thoracic/lumbar vertebrae; bsm – body surface margins

Probably a random redeposition, its distance from grave 7016 render it unlikely to be from the same original cremation-related deposit, but the possibility cannot be dismissed. The Bronze Age burial remains were all undisturbed (at least until recently) so it cannot have derived from these deposits, but it could still be Bronze Age in date. In addition, fragments of unstratified cremated bone were recovered (from the spoil heap) in the final season of the investigations in which the urned cremation burials were excavated together with the antiquarian trench and the areas of the Anglo-Saxon cemetery where cremated bone was recovered from two graves. The redeposited bone from grave 7079 could, therefore, be of either Bronze Age or Anglo-Saxon date, though the former seems most likely.

Methods

Excavation of the urned cremation burial deposits was undertaken by the writer (burial 7019 *in situ* and 7023 under laboratory conditions following block lifting of the vessel) in quadranted spits (generally 20 mm depth) to enable detailed analysis of the burial formation processes. The remains of the unurned cremation burial were also excavated by quadrant. The weights of bone from the various sub-divisions are shown together in Table 5.2.

Recording and analysis of the cremated bone followed McKinley (1994a, 5–21; 2004a). The degree of erosion to the unburnt bone was scored following McKinley (2004b, fig. 6). The minimum number of individuals (MNI) amongst the unburnt remains from Hawley's trench was ascertained from the most commonly occurring skeletal elements in association with clear distinctions in age (McKinley 2004b).

Age (cremated and unburnt bone) was assessed from the stage of tooth and skeletal development (Bass 1987; Beek 1983; Scheuer and Black 2000), and the patterns and degree of age-related changes to the bones and teeth (Buikstra and Ubelaker 1994). As has been observed elsewhere (Molleson and Cox 1993, 150; McKinley 2008a, 60; McKinley 2012), the use of long bone lengths to estimate the age of non-modern immature individuals tends to underestimate by comparison with the more reliable method of dental development, to an increasing degree with the advancing age of the child. Consequently, the latter has taken precedence over the former where available.

Sex was ascertained from the sexually dimorphic traits of the skeleton (Bass 1987; Brothwell 1972; Buikstra and Ubelaker 1994; Gejvall 1981). The variable integrity of the attributed sex is denoted in Tables 5.1 and 5.2 as '??'most likely, '?' probable and un-questioned. Similar methodologies for assessment of age and sex were used by SM but using different source material (Flecker 1942; Gustafson and Koch 1974; Mays 1998, fig. 3.9; Mays *et al.* 1995).

Where possible, a standard set of measurements was taken on the unburnt bone (Brothwell and Zakrzewski 2004) to facilitate the calculation of various skeletal indices including stature and cranial index (Trotter and Gleser 1952; 1958: Brothwell 1972, 88; Bass 1987). Non-metric traits were recorded (Berry and Berry 1967; Finnegan 1978). Details are held in the archive.

Results

Summaries of the results are presented in Tables 5.1 (unburnt bone) and 5.2 (cremated bone).

Disturbance and Condition

The deposits made in the centre of the barrow had probably been totally removed by Hawley in his investigations (see above) having, apparently, being undisturbed prior to his intervention (1910, 623). The

Table 5.2 Summary of results from analysis of human cremated bone

Context	Cut	Deposit type	Bone wt (g)	Age/sex	Pathology	Pyre goods/*grave goods*
2679	2680	unurned burial + rpd	2938.2	1) adult > 45 yr 2) adult 20–40 yr 3) subadult 12–15 yr one male (?1) & one female (?2) adult; subadult unsexed	degenerative disc disease – 2C; osteoarthritis – distal ulna, sacro-iliac; osteophytes – sacro-iliac, 2 distal IP joints (hand), 1T bsm; pitting – costo-clavicular, costo-vertebral; solitary bone cyst – left hamate; mv – metopic suture, ?coronal ossicle	2.2 g animal bone; most of two bone pins; bone bead; blue/green spot stains – radius shaft; *3 unburnt bone beads*
7019	7018	urned burial	537.8	adult 20–35 yr ?female		1 g ?animal bone
7023	7022	urned burial	2275.6	adult 25–30 yr female	well healed fracture – femur; mv – metopic suture, 3 wormian bones	26.4 g animal bone; blue/green spot stain – C
7040	7016	R ?AS crd (inh. burial skull sample)	0.3	subadult/adult >13 yr		see R finds from grave fill – sherds, melted bronze, ?fuel ash
7081	7079	R (inh. burial skull sample)	0.4	subadult/adult >13 yr		
u/s	–	R (SW area)	3.1	juvenile 5–10 yr		

KEY: inh. – inhumation; R – redeposited; rpd – redeposited pyre debris; crd – cremation-related deposit; AS – Anglo-Saxon C/T/L – cervical/thoracic vertebrae; IP – interphalangeal; bsm – body surface margins; mv – morphological variation/non-metric trait

level of skeletal representation/survival and condition of the bone at the time of its discovery cannot be established with certainty as there are neither drawn nor photographic records of the finds. However, the written description, in which Hawley refers to 'skeletons' and the position of the remains, suggests undisturbed complete or near complete skeletal remains were uncovered. The only totally unknown quantity is the cremated remains for which we have only a note of its presence; the nature of this deposit is unclear, it could have comprised burial remains with redeposited pyre debris or just redeposited pyre debris. It is also possible that disarticulated skeletal elements or parts thereof may have been present in the fills of the feature(s) in which the burials were made but that Hawley failed to record their presence (the cist containing the remains of the elderly male is the only feature he mentions).

The skeletal material recovered from Hawley's trench (cut 7011) during the recent excavations clearly represents only a very small proportion of the original deposits. Only about one-third of Hawley's central trench could be re-excavated due to the presence of a tree stump, and it is possible that a larger proportion of the redeposited skeletal remains lay undiscovered in the remaining two-thirds. It also cannot be stated with any degree of certainty that he redeposited all that he found; it was relatively common for certain skeletal elements, notably the skull, to be retained for further study given the particular interest in craniometrics at the time. The recovered material comprises an apparently random assortment of bone fragments from all skeletal areas (the only complete elements comprising some hand and foot bones, a few vertebrae, a clavicle and a radius); it may be pertinent, however, that the only skull elements found derived from the neonate. Fragments of individual skeletal elements were found scattered throughout the depth of the fills suggesting there had been no separate storage/collection of bone during the antiquarian digging or ordered re-burial.

The bone had many old, dry bone breaks, presumably sustained during Hawley's investigations, together with some fresh breaks from the current investigations. An adult scapula and the pelvic bone of the mature adult male both had individual crush fractures which appear to have been made to semi-green bone. This post-mortem damage, apparently sustained sometime in the first few years after burial, may indicate where an angular flint or chalk block in the grave fill had been forced into the bone under the pressure of weight, or could reflect some deliberate manipulation of the remains: in the absence of contextual information and clarity as to the remains of which individual (one or more) had been affected neither possibility can be confidently supported. Dry fissuring/fracturing observed in one tibia shaft suggests it may have been laid exposed on or close to the surface as a semi-green/dry bone but again, without the original context information, this can only be speculation.

The majority of the bone from Hawley's trench is in good condition (grade 0–2) but numerous fragments are more heavily eroded (grade 3–4). The latter include the few bones from the basal fill from which some of the confidently aged older adult bone was recovered. The remains of at least one of the two adult males show the higher grading, and those of at least two adults and the neonate (all from the upper of the four fills containing bone) are amongst the lower grading scores. There is no pattern of grading related to skeletal element. These observations suggest that the burial environment in the lower areas of the trench may have been more detrimental than those higher up, possibly associated with drainage. It could also imply that the original burial environment associated with the elderly male (buried within the cist grave if Hawley's records are correct and correspond with the surviving material) and one of the adult males was less conducive to bone survival than that of the others, though through what mechanisms in the case of the latter is unclear without the context data.

The burial remains within Beaker inhumation grave 2396 (0.75 m deep) were undisturbed (Fig. 2.7, Pl. 2.9) and show variable levels of preservation (Mays 2008). Most of the trabecular bone had been lost, the long bone shafts are generally highly degraded (up to grade 5) and the skull substantially less so (0–1). The contrast with the surviving bone from the centre of the barrow is marked. These remains seem to have more in common with the condition of the Anglo-Saxon remains than the other Bronze Age material, possibly reflecting their similar spatial relationship and position within the monuments and the associated variations in burial environment.

The cremation graves had survived to varying depths, but in each case the burial remains themselves were undisturbed or only slightly so (Fig. 2.11). In grave 7022 (0.31 m deep) the vessel had survived almost intact whilst its less fortunate neighbour (grave 7018) was substantially truncated (0.06 m) (Pls 2.19 and 2.21). In both cases, the dislodged sherds from the vessels directly overlay the mass of cremated bone within them and it was clear no soil infiltration had occurred prior to this disturbance, which was probably sustained during the 19th-century destruction mentioned by Hawley. A few sherds were recovered from a badger run to the immediate south of grave 7018, having fallen in during machine stripping prior to excavation. The unurned burial remains in grave 2680 had not suffered any truncation, some of the mound capping material having slumped into the upper few centimetres of the 0.20 m deep grave, effectively sealing the deposit. There was some slight bioturbation (rabbits) in the north-western quadrant of the grave and some disruption to the southern margins of the deposit during initial site clearance; it is unlikely however, that much, if any, bone will have been lost as a result.

The bone is in good visual condition and the overall assemblage includes substantial proportions of trabecular bone (generally subject to preferential destruction in adverse burial environments; McKinley 1997a, 245; Nielsen-Marsh *et al.* 2000). Exceptions include a fragment of poorly oxidised ulna shaft from grave 7018, which is root-marked in a similar fashion to much of the Anglo-Saxon unburnt bone and that from the Beaker grave. A few fragments of skull (predominantly facial bones) and finger phalanges from grave 2680 have a slightly worn and chalky appearance. The fragments appear to have derived from at least two of the individuals from this grave (probably one male and one female adult; Table 5.2) and were recovered from different parts of the deposit. It is unclear why these particular fragments (all well oxidised) should show different preservation to the rest of the bone, suggesting potentially minor but sufficiently significant variations in the burial micro-environment.

Demographic Data

A minimum of 12 individuals (MNI) is represented overall; seven within the cremated bone assemblage and five amongst the unburnt remains. The MNI of four amongst the unburnt remains from the antiquarian trench, coupled with the estimated age and sex of the individuals, is relatively close to the four adults (three young and one elderly, the latter and one other being male) and one neonate identified by Hawley (1910, 623). In addition to the five cremated individuals represented amongst the burial remains at least two others are indicated within the cremated bone assemblage. Although the origin of the unstratified cremated bone is unknown, no other juvenile remains are represented within the assemblage. The date is uncertain but it is most likely to be prehistoric, probably Early Bronze Age, and to have derived from a disturbed deposit somewhere in the central area of the site (possibly even representing the remains Hawley mentioned in his report; *ibid.*, 623). Given the context and associated archaeological components, the redeposited cremated remains from the Anglo-Saxon inhumation graves, although very small in quantity, are believed to represent those of a seventh, Anglo-Saxon, individual.

The relatively small numbers identified within the prehistoric assemblage, coupled with the paucity of context data for much of the unburnt bone (and known incomplete recovery of remains), place limitations on the scope for comparisons with similar sites in the region, but some comment is warranted. Neonates and young infants feature within other Early Bronze Age assemblages from the region, notably amongst inhumation burials from Amesbury Down and the remains from Porton Down, both situated some 8–10 km to the south of the site (Andrews and McKinley 2016; Egging Dinwiddy 2016a; McKinley 2016a; forthcoming). At both sites the proportions of immature individuals (47.2% and 64.3% respectively) – particularly infants and juveniles – were substantially higher than those from sites in the Stonehenge Environs (32%; McKinley forthcoming) and, in the case of Porton, than the 46% from the combined data from Snail Down, Wiltshire (Thomas 2005) and Barrow Hills, Oxfordshire (Barclay and Halpin 1999). The figures from Barrow Clump of 36% immature individuals within the overall assemblage and 40% amongst the unburnt remains are close to those recorded for the Stonehenge Environs (38% unburnt remains immature; McKinley forthcoming). The figures from both Barrow Clump and the Stonehenge Environs are also closer to those commonly seen in archaeological populations elsewhere (around 20–30%), and may illustrate the seemingly unusual demographic of those buried at Porton Down and Amesbury Down where a potential temporal/spatial distinction in the location of the burials of young immature individuals has been suggested (Andrews and McKinley 2016; McKinley forthcoming).

An imbalance between the number of male and female adults in favour of the former was observed within the unburnt bone assemblage at Amesbury Down, amongst the sites within the Stonehenge Environs, and at Snail Down and Barrow Hills, the disparity being considerably reduced within the cremated bone assemblage from the latter two sites (McKinley forthcoming). Factors related to osteological methodology and spatial distributions may have been pertinent in some cases, as is potentially illustrated by the singularity of only female adults being buried at the Porton Down funerary monument (Andrews and McKinley 2016; Egging Dinwiddy 2016a; McKinley 2016a). At Barrow Clump, both sexes were subject to both rites, and the numbers of sexed adults is far too small to suggest any gender related distinction in terms of mortuary rite as has appeared elsewhere in the locality. It may, however, be at least pertinent to note the small division that was observed with more males (two) than females (one) amongst the unburnt bone compared with more females (three) amongst the cremated (one male).

The potential presence of cremation burials and/or some other form of cremation-related deposits within the Anglo-Saxon cemetery is intriguing. A small number of cremation burials (four), *memento mori* (two) and other cremation-related deposits were found in two discrete areas of the similarly dated Anglo-Saxon cemetery at Collingbourne Ducis some 11 km to the north-east, where the predominant rite involved burial of the unburnt corpse (115 inhumation graves; Egging Dinwiddy and Stoodley 2016; McKinley 2016b). At the time of writing this report the potential for further Anglo-Saxon mortuary deposits external to the ring-ditch at Barrow Clump was discussed. However, additional investigations at the site in late 2017 and 2018, subsequent to the report preparation, ended speculation with the discovery and excavation of six, cremation-related deposits from the south-western area of the Anglo-Saxon cemetery (see Fig. 9.1). All comprised the truncated remains of ceramic vessels containing generally small quantities of cremated bone. The remains are yet to be analysed but some – possibly all – of the deposits clearly represent the remains of urned cremation burials.

Skeletal Indices and Non-metric Traits/ morphological Variations

It was possible to estimate the stature of one of the adult males (?the younger) from Hawley's trench (cut 7011) from a left tibia. The estimate of 1.77 m (5' 9 ½") is close to the mean of 1.78 m calculated for the Early Bronze Age males from Amesbury Down and slightly higher than the mean of 1.75 m calculated for a range of sites from the Stonehenge Environs (McKinley forthcoming). Roberts and Cox gave a range of 1.67–1.77 m, with a mean of 1.72 m amongst Bronze Age males (2003, 86); a slightly higher mean of 1.74 m being recorded by Brothwell (1973, table 149). Over-interpretation of this single result should be avoided but its presence in the upper range of statures for the period – albeit similar to others from the region – could suggest the individual was sufficiently well nourished in his youth to attain an above-average height.

The only other skeletal index it was possible to calculate was the platycnemic index (a measure of lateral flattening of the tibia), from the same bone as used to estimate stature. At 67.6 this fell in the mesocnemic range, and is again similar to the range recorded for the Amesbury Down males (McKinley forthcoming).

Variations in skeletal morphology may indicate population diversity or homogeneity, though some traits have been attributed to developmental abnormalities or mechanical modification (Brothwell 1972, 92, 95–98; Molleson 1993, 156; Tyrrell 2000). Some variations, such as extra ossicles in the lambdoid suture (or wormian bones), are frequently observed, having been recorded in 34.8% of the Bronze Age skulls in Brothwell's 1973 survey (table 152), with a prevalence of 55.5% in the Early Bronze Age assemblage at Amesbury Down (McKinley forthcoming). Given their relatively high frequency such ossicles alone cannot reliably be used as an indication of a genetic link between individuals (Brothwell 1972, 95–6; 1973, 293). Metopic sutures were recorded in 30% of the skulls from Amesbury Down, including all five of the Middle Bronze Age individuals where the skull was recovered.

Pathology

Pathological lesions were observed in the remains of a minimum of six individuals, four unburnt and two cremated (Tables 5.1 and 5.2). Given the fragmentary and partial condition of the remains from Hawley's trench (cut 7011), it was difficult to ascribe all the lesions observed to any one of the three adults identified; hence in Table 5.1, where lesions could be confidently linked to a specific individual, the corresponding number appears in parenthesis after

Plate 5.1 Cremation burial 7023, fragment of femur shaft showing slight displacement and bony callusing indicative of a well-healed fracture

the listed lesion, but in most instances this was not possible. Similarly, with the cremation burial from grave 2680, although some of the joint diseases listed are most likely to be associated with the older of the two adults, this cannot be stated with confidence in all cases; consequently, lesions have not been specifically attributed to either individual.

The data pertaining to the Beaker period infant 6010 from grave 2396 was recorded by Simon Mays, and the discussion of the conditions observed are taken from his 2003 unpublished laboratory report, with a few additional comments by the writer. A more detailed version of his observations may be found in Mays 2008, which will not be repeated in full here.

Dental diseases

With the exception of the neonatal right mandible, no parts of the dentition were recovered from Hawley's trench (cut 7011). No lesions were recorded by SM in the remains from the Beaker burial. Although some fragments of tooth crown, numerous fragments of tooth roots and a minimum of 75 maxillary/mandibular sockets were recorded amongst the cremated remains, no lesions were observed.

Trauma

A fragment of what appears to comprise a femur shaft from cremation burial 7023 has evidence for a well-healed fracture. The x-radiograph shows a very faint, acutely oblique line, the bone itself showing slight displacement in two directions (?medio-lateral and ?posterior-anterior) with minor, very well-healed but still evident slight bony callusing (Pl. 5.1). The fragment is too small and incomplete to be sure exactly which part of the bone was affected. Possibly a childhood injury, such a fracture usually occurs as a result of a severe impact.

Enthesophytes, new bone growths which develop at tendon insertions, most frequently form as a consequence of repeat trauma from muscle exertion, and may be indicative of occupational stress or injury, though other causative factors can include advancing age or diseases stimulating skeletal hyperostosis (Rogers and Waldron 1995, 23–5, 53). The lesions are commonly seen – as here – in the posterior surface of the calcaneum (Achilles tendon attachment; one adult from cut 7011). Strenuous walking, particularly over rough ground, render the muscles of the lower limb prone to minor repetitive trauma, with an increase in extent and distribution as the individual ages. Minor sprains to the ankle may cause a degree of luxation between the distal ends of the tibia and fibula, demonstrated by enthesophytes in the interosseous ligament attachment of the fibula (as seen in one, possibly the same as that above, adult from cut 7011).

Infection

Destructive lesions and subsequent healing in the superior surface of an upper/central thoracic vertebral body from Hawley's trench (cut 7011) have created a 'melted' appearance, with woven new bone extending down the anterior side of body. There is a marked overall loss in body height (of 10–14 mm), the x-radiograph showing very faint areas of slight sclerosis in two areas (right central and small left dorsal), suggesting possible seats of infection; there is no indication of osteoporosis. As the bone was redeposited and cannot confidently be assigned to one or other of the MNI of three adults from this feature, or linked to any of the other pathological conditions observed (see Table 5.1), a possible diagnosis can only tentatively be offered. The lesions may be indicative of brucellosis, an acute or recurrent infectious disease caused by any species of *Brucella*, which is an occupational disease of individuals working with cattle or other animals which may form a host for these intercellular parasitic organisms (inter-personal transmission is uncommon). Though rarely fatal, infection can be debilitating and prolonged. Destructive and reparative processes tend to occur simultaneously, as appears to have been the case here (Aufderheide and Rodríguez-Martín 1998, 192–3; Rogers and Waldron 1995, 89–95).

Slight porosity in the endocranial surface of a fragment of neonatal temporal bone (dorsal portion) recovered from Hawley's trench 7011 is similarly open to interpretation. Very little of this individual was recovered (fragments of frontal, parietal and temporal vault and the right half of the mandible), and there are no associated lesions or confident lack of such to support a potential cause other than an obvious increase in vascular activity, which could have been highly localised or more widespread. The aetiology could include localised inflammation linked to one of several metabolic conditions (see below), infection or trauma-related haemorrhage (such as may occur due to the child being beaten around the head; Lewis 2002, 20–28).

Joint diseases

The various forms of joint disease represent the most commonly recorded conditions in archaeological skeletal material. Similar lesions – osteophytes and other forms of new bone formation, and micro- and macro-pitting – may develop as a consequence of one of several different disease processes, some also occurring as lone lesions largely reflective of age-related wear-and-tear (Rogers and Waldron 1995).

Schmorl's nodes (pressure defects resulting from a rupture in the intervertebral disc; Rogers and Waldron 1995, 27) were observed in two of the six vertebrae recovered from trench 7011; only the lumbar region was involved. Degenerative disc disease, resulting from the breakdown of the intervertebral disc, was recorded in both cervical and both thoracic vertebrae from trench 7011, all probably derived from the older adult male. Lesions were also seen in two cervical vertebral bodies from cremation grave 2680, both probably from the older adult, affecting 2/19 vertebrae from this grave or 2/28 from the cremated bone assemblage as a whole. Lesions indicative of minor osteoarthritis (Rogers and Waldron 1995, 43–44) were seen in one joint (1/58) from trench 7011, and two joint surfaces from cremation grave 2680.

Lone osteophytes (new bone growth on joint surface margins) often appear to be a 'normal accompaniment of age' (Rogers and Waldron 1995, 25–6). Slight lesions were seen on the margins of three joint surfaces from cremation grave 2680, together with one vertebral body surface margin, and on the margins of one joint surface and two vertebral body surface margins from trench 7011. Lone macro- and micro-pitting lesions were seen on two costal joint surfaces from cremation grave 2680.

Most of the few lesions recorded in this small prehistoric assemblage are slight, with the exception of those indicative of degenerative disc disease amongst both the cremated and the unburnt bone. In general they suggest changes reflective of advanced age rather than some exacerbating cause indicative of a particularly physically stressful lifestyle.

Metabolic diseases

The porotic and hypertrophic lesions, seen predominantly in the cranial elements of the infant from grave 2396, are due to haemorrhage of weakened blood vessels which characterises scurvy (Ortner and Eriksen 1997; Ortner *et al.* 1999, 2001; Ortner 2003). The condition is due to a deficiency of vitamin C, a prolonged deficiency of which is needed to produce disease; for example, haemorrhages, of the type for which there is bony evidence in this individual, only appear after about six months. The principal sources of vitamin C in the diet are fresh fruit and vegetables, but it is destroyed by boiling. Consequently, a dietary deficiency or elements of food preparation are indicated here.

The case appears to be the earliest so far confidently identified from the British Isles, though two other possible cases were observed amongst the Beaker–Early Bronze Age assemblage from Amesbury Down, affecting similarly young infants to that recorded here (McKinley forthcoming). Roberts and Manchester (1995, 172–3) reported a 1st-century BC case, and a few later cases have been documented (Lewis 2002; Roberts and Cox 2003; Brickley and Ives 2005). Earlier examples (Neolithic) are known from central Europe (Carli-Thiele 1996). Although the paucity of recorded cases of the condition may in part reflect its under-recognition in skeletal remains, infantile scurvy may genuinely have been rare prior to the 19th century AD (Mays 2007).

An almost complete (proximal end missing), moderately robust adult right femur shaft from trench 7011 has pronounced lateral bowing mid-shaft (15–20 degrees from perpendicular). Only two other lower limb shafts (a left tibia and fibula) in an almost complete state were recovered from the trench; neither has any plastic changes. Although the two larger bones are both masculine in character they may not have derived from the same male individual. Consequently, the femoral lesion appears in isolation. Whilst not conclusive, such plastic changes are characteristic of rickets, resulting from deficiency in vitamin D in early childhood. Vitamin D enables the body to absorb the calcium and phosphorus required for bone mineralisation in the growing child and adults, the majority of which is gained from solar irradiation absorbed through the skin and retina, with a smaller proportion being supplied by dietary intake of animal and fish oils. Rickets may reflect a number of factors, the most common of which is inadequate acquisition of the vitamin, leading to porosity and deformity of the 'soft', inadequately mineralised bone under mechanical stress. The most characteristic feature of the condition are changes in the weight-bearing bones which 'bend' under stress, the leg bones being affected if a child is at the toddling and walking stage (Aufderheide and Rodríguez-Martín 1998, 306; Brickley *et al.* 2005, 390–1; Mays *et al.* 2006; Molleson and Cox 1993, 45; Roberts and Manchester 1995, 173–4). Ready access to daylight should not have been a problem in the Early Bronze Age, where much of life would have been led in the open air, except in the face of prolonged inclement weather and/or the case of a sickly child kept indoors.

Miscellaneous

The anterior fontanelle of the Beaker infant from grave 2396 is open and unusually large for a child of this age (*c.* 60 mm transversely, 30 mm anterior-posterior). Closure of the anterior fontanelle is almost invariably by 2 years of age (Aisenson 1950; Lyall *et al.* 1991) and such sizable persistence is clearly abnormal; the posterior fontanelle presents a normal, fully closed appearance. A variety of conditions including rickets, hydrocephalus, hypothyroidism and cleidocranial dysostosis may delay closure of the fontanelle (Aisenson 1950), but there is no evidence of these conditions in this case and the cause is unclear (there is no connection with the recorded scurvy).

Pyre Technology and Cremation Ritual

Oxidation

Whilst the majority of the cremated bone from each deposit is white in colour, indicative of full oxidation of the bone, a substantial number of fragments from all three show some variation in colour, illustrating incomplete oxidation (Holden *et al.* 1995a and b). Between 10 and 14 elements from all skeletal areas were affected in each deposit (but never the entire bone), with the exception of burial 7019 where no axial skeletal elements were involved (though this may have been influenced by the smaller quantity of axial elements surviving within this deposit; 1.5% by weight of fragments identified to skeletal element compared with 7% from grave 2680 and 16.5% from grave 7022 – see below). The affected elements from grave 2680 were all adult, but they could not be attributed to one or other of the two adults from this deposit and it is possible that the remains of both were amongst those subject to variable oxidation levels.

The colour variations are inconsistent, ranging from black (charred) through hues of blue and grey, reflecting different levels of oxidation (a process affected by temperature and the length of time applied, and oxygen supply). The intensity of the latter two colours is also irregular, often being only slight. In the compact long bone shafts, particularly of the femur, the variations are commonly limited to the interior; both the medullary area and the centre of the compact bone itself creating a ‘sandwich’ effect. The skull vault was affected in all except burial 7023, with variations limited to the diploe in many instances. Facial bones were involved in two cases, affecting only the left side in burial 7023 (supra-orbit, malar and zygomatic processes and mandible), and both sides in burial 2679 (though this could include fragments from both adults). The discrete effect of differential oxidation is well illustrated by the nasal bones from grave 2680, the left half being white (fully oxidised) and the right half grey (incomplete oxidation). The bones of the hand were affected in two deposits, particularly burial 2679 (carpals, metacarpals and phalanges), but only one foot bone was involved. Two bones from burial 7019 subject to poor oxidation, fragments of radius and right proximal ulna (black and black/grey), show no dehydration fissuring, suggesting a particularly low temperature was experienced in parts of the pyre.

A variety of intrinsic and extrinsic factors may have an impact on the efficiency of oxidation (McKinley 1994a, 76–8; 2004c, 293–5; 2008b). Some skeletal elements are more prone to poorer oxidation due to their dense soft tissue coverage (eg, femur and proximal humerus) or potential peripheral position on the pyre (eg, head and hands; McKinley 2004c, 293–5), and both are likely to have been factors in the remains of at least two of the cremations which are present here. The femur was commonly involved in all cases, particularly in burial 7019, and to a lesser extent the humerus; these two areas require sustained heat to allow the dense soft tissues to burn away and expose the bone to the air thereby allowing oxidation to occur. The inclusion of a minimum of nine hand bones amongst the black, blue and grey bones from burial 2679 suggests either an overly narrow pyre with one or both hands on the periphery, flexion of the muscles in the early stages (‘pugilistic posture’; see Symes *et al.* 2008, figs 2.7 and 2.8) drawing the hands into a location insulated from the heat of the pyre from below, some other form of insulating material shielding the hands (see below), or a veering wind shifting the heat on the pyre away from the hand/s (less likely given the extent of variability in this case). Some of the same mechanisms could be responsible for the poor oxidation of the forearm bones from grave 7018. Skull vault fragments were not affected by variable oxidation to the degree often seen and nor are the bones of the feet, suggesting the pyres did not suffer from being too short. The preferential siding of poorly oxidised fragments from the left side of the face in burial 7023 suggests the oxygen supply to this area of the corpse was cut off or curtailed via some mechanism during cremation, eg, the head being laid on or wrapped in some form of insulating material (wood/leather/skins; pillow or hood). Alternatively, a strongly veering wind may have caused uneven collapse of the pyre prior to full oxidation of the bone, partially submerging the right side of face in the wood ash pyre base and thereby creating reducing rather than oxidising conditions. The relatively extensive variations generally seen here could reflect a shortfall in the quantity of fuel used to build the pyres, thereby affecting time/temperature towards the end of the cremation process (McKinley 2008b), and/or a change in the weather, such as rain curtailing cremation.

Variable levels of oxidation are commonly observed amongst Bronze Age cremated remains (eg, Bell 1988; Boyle 1999; McKinley 1997b; 2004d; forthcoming). Practical 'technological' issues aside, this suggests complete oxidation of the remains (both skeletal and probably some soft tissues) was not necessarily considered a requisite of the mortuary rite, the transformation process being a more fundamental consideration.

Weight of bone for burial

The weight of bone recovered from the three graves varied widely. Not surprisingly, the unurned burial remains from grave 2680 present the highest weight, including as it does the remains of three individuals; it was not possible to distinguish all the identifiable elements from one or other individual but a substantial proportion from each appeared to be spread throughout the grave fill suggesting none represented a 'token' or *memento mori* deposit within the burial (see McKinley 2013a). The great variation between the two single burials, however, is less readily understood. Undoubtedly some bone will have been lost from grave 7018 due to taphonomic factors (see above), but this is still unlikely to have redressed the 1737.8 g difference between these neighbouring, apparently contemporaneous deposits.

The weights presented in Table 5.2 were collated following the writer's standard procedure (McKinley 1994a, 5–6); all the bone from the 5 mm and 10 mm fractions together with the potentially identifiable skeletal elements from the 2 mm fraction, the latter generally including large amounts of extraneous material (pea grits/small stones) as well as bone which would take an unduly long time to extract in most instances. In the few cases where the 1 mm and 2 mm fractions have been fully sorted, the additional quantities of bone are relatively small with, for example, a range of 0.5–22% and an average 6% of the overall quantity of bone by weight in the 2 mm fraction (McKinley 2013b), compared with the 5–14%, average 7% seen here.

The condition of the deposits from Barrow Clump rendered it possible to include the estimated weights of bone from fractions generally either not recoverable from archaeological contexts and/or excluded from cremated bone weights for practical reasons (see above). The remains from the undisturbed urned burial 7023, which included very little intrusive soil, were dry sieved prior to wet sieving, thereby recovering the original bone 'dust' fraction (ie, <1 mm). Whilst this may include a minor soil component, most of the 143 g of material probably comprises bone 'dust' derived predominantly from the trabecular components of this very brittle, easily fragmented bone ash (see Pl. 5.2a–d). This would increase the weight of bone from this burial to 2275.6 g and account for 6.3% by weight of the total.

The small (1 mm and 2 mm) fraction residues were weighed and the proportion of bone estimated for each of the three burials. The increases in bone weight were not great but were potentially significant, and present information of potential use when analysing deposits from elsewhere where most of the trabecular bone has been lost due to taphonomic factors (see above). It was calculated that between 6% and 10% by weight of the overall bone weight would fall within these small, normally unmeasured fractions; in the case of burial 7023 this increased to 15% if the 'dust' fraction was included. Therefore, burial 2679 could have weighed up to 3276.5 g, burial 7019 up to 573.8 g (no bone in the 1mm fraction) and burial 7023 up to 2628.7 g (or 2771.7 g including 'dust' fraction).

The weights of bone recovered from the two singletons (as shown in Table 5.2) represent in the case of 7019 approximately 34% of the average expected from an adult cremation (1625.9 g excluding the <2 mm fraction; McKinley 1993). The weight of bone from grave 7022 is 43% above the average and close to the maximum of 2422.5 g recorded by the writer at modern crematoria (again, exclusive of the <2 mm fraction; the maximum inclusive of the latter is 3001.3 g but inevitably also contained a proportion of coffin dust). Clearly these proportions represent a guide rather than precise percentages given the variations in bone weights anticipated on the basis of age (eg, old adults often having less bone density), sex (males generally but not consistently having greater bone density), and body size/robusticity, but it is probable that a large proportion of the cremated skeletal remains from the adult female in grave 7022 were recovered from the pyre site for burial. In this case, the bone identified to skeletal element represents 48% of the total weight of bone recovered, and a plot of those skeletal elements indicate around 70% of the skeleton to be represented.

Full recovery of the cremated bone from the pyre site for formal burial does not appear to have been a consistent requirement of the rite in the Bronze Age (or at any other period in which it was practised in the British Isles). The weight recorded for burial 7023 places it at the higher end of the upper range of weights recovered from burials of this date, and amongst the consistently high range of weights recovered from the principal graves associated with barrows/ring-ditches (902–2747 g, average 1525.7 g; McKinley 1997b). Currently, this represents the only consistent pattern that has been detected with respect to the amounts of bone collected for burial, where there generally tends to be great disparity as is apparent at Barrow

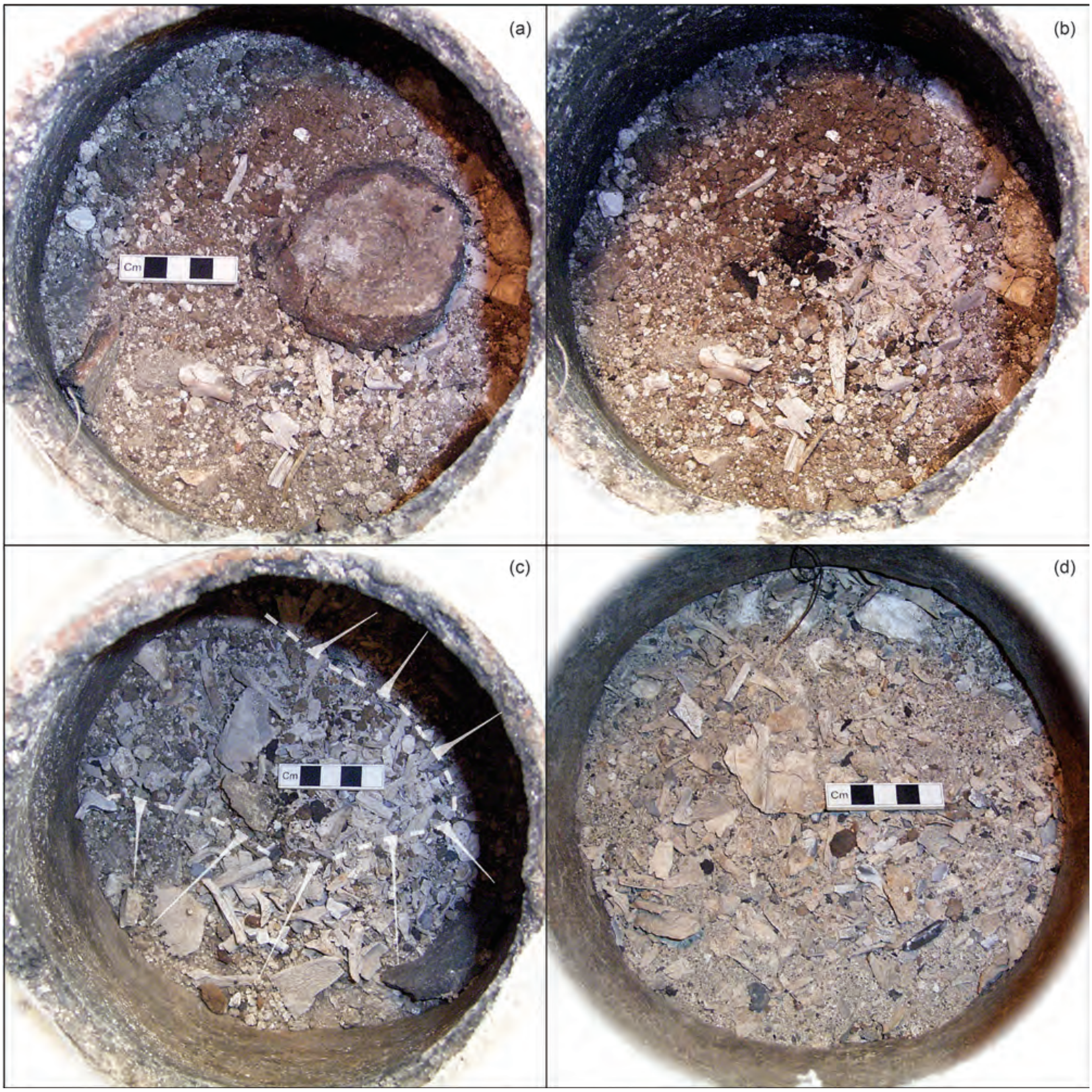


Plate 5.2 Urned cremation burial 7023 showing various excavation spit levels: a) top of spit 2 with collapsed-in base in situ*; b) after removal of vessel base revealing underlying dense deposit of bone; c) top of spit 3 showing uneven distribution of bone within this upper level, including annotations demonstrating break of slope and fall of bone towards vessel sides; d) top of spit 6 showing density of small fraction material*

Clump. It may be that the time and effort expended in collecting and burying such substantial proportions of the bone in these strategically located deposits is reflective of the 'high regard' in which the individuals were held by their community.

Fragmentation

The largest bone fragment recorded was 88 mm long (from the unurned burial in grave 2680), which falls within the lower range of maximum fragment sizes from modern crematoria prior to cremulation (McKinley 1993, table 1). The maximum fragments from the urned burials are 74 mm and 82 mm, the former showing a slight reduction from the maximum of 78 mm recorded in the *in situ* deposit (burial 7019).

The majority of the bone from all three burials was recovered from the 10 mm fraction, a slightly higher proportion from the two urned burials falling in this fraction (58% and 71% by weight) compared with the unurned burial (52%). Inclusion of the estimated weights of the smaller fractions normally excluded from these figures (see above) would still result in most of the bone falling in the 10 mm fraction but with a reduction in the proportions of between 3–8% (the higher figures where the dust fraction was also included).

There are a number of mechanisms which might affect the size of cremated bone fragments, the majority of which are exclusive of any deliberate human action other than that of cremation itself (McKinley 1994b). At Barrow Clump, the form of burial and its integrity seem to have been important factors. Although the largest fragment was recovered from the unurned burial, a greater proportion of the bone in the urned burials was recovered from the 10 mm fraction, as is often observed. This suggests that the protection from the external burial environment offered by the urn, in excluding soil from infiltrating amongst the dehydration fissures in the bone, was instrumental in preserving the bone in (or closer to) the state in which it was deposited. It is interesting to note, however, the fairly large quantity of small fraction bone (particularly 1 mm and smaller) that was present in the relatively undisturbed burial 7023 (Pl. 5.2a–d); this is markedly greater than has been observed by the writer in similar or even more protected deposits (pers. obs.). The inclusion of such small fraction material seems unlikely to be taphonomic, that is it is not reflective of a breakdown of the material after burial, but suggests that it was included in the burial in the first instance, and may indicate aspects of the mortuary rite associated with collection and storage of the remains prior to burial (see below). As is frequently observed, there is no indication of deliberate fragmentation of the bone prior to burial.

Skeletal elements

Between 50% (burial 7023) and 63% (burial 7019), average 57%, by weight of the bone from each of the burials was identifiable to skeletal element (the proportion is generally between 30–50%, pers. obs.). Identifiable elements from all four areas of the skeleton (skull, axial skeleton, upper and lower limb) were found in each of the graves.

The commonly observed over-representation of skull elements was seen in all three burials (28–32% by weight of the identified elements; 'normal' proportion would be 18%); this generally reflects the comparative ease of identification of even small fragments of the skull in preference to other areas of the skeleton, together with other taphonomic factors, rather than deliberate selection of skull for burial (McKinley 1994a, 5–6). In the case of burial remains 2679 and 7019, the imbalance is to the detriment of the axial skeletal elements which, as they predominantly comprise trabecular bone, tend to suffer preferential taphonomic loss (see above). The proportions were substantially lower than the 'norm' of 20% at 7% and 1.5% respectively, with 16% from burial 7023. In the latter case it appears to be the lower limb elements which are disproportionally diminished at only 30% compared with what would be the 'norm' at 38%, though it is questionable whether this reflects any deliberate under-selection. What can be classified as close to normal proportions of the upper limb elements (19–22% by weight of identified elements) were recorded in each case. There is no convincing evidence to suggest deliberate selection of particular skeletal elements or areas for inclusion in any of the burial deposits.

The small bones of the hands and feet are commonly recovered from the remains of cremation burials of all periods, and it has been suggested that their frequency of occurrence may provide some indication of the mode of recovery of bone from the pyre site for burial (McKinley 2000a; 2004c, 299–301). At Barrow Clump the greatest number of these elements, 143 (including phalangeal epiphyses), were recovered from grave 2680, which even if equally divided between the three individuals would give 48/person. Grave 7022 contained 73 of these elements, including almost all the hand bones and over half the foot bones. The smallest number was found in the grave with least bone, 24 small elements forming part of burial 7019.

The numbers recovered fall within or well above the average for the Bronze Age, the writer having generally recorded in the region of five to 20 such elements from Middle Bronze Age burials for example. Particularly high numbers such as those recorded from grave 7022 have occasionally been observed elsewhere, as, for example, in one of the Early Bronze Age burials (of a subadult female) from Amesbury Down which included 105 (McKinley forthcoming). It was concluded that such exceptional numbers demonstrated the extreme thoroughness exercised in recovering this young woman's remains from the pyre site for burial and the same may be said for burial 7023. The frequent inclusion of these small elements, as opposed to small fragments which could reflect post-recovery fragmentation, suggests that rather than hand collection of individual bone fragments, the material in the upper levels of the burnt-out pyre (including most of the bone) was raked-off and subsequently winnowed (by wind or water) which would enhance the ease of recovery of such small bones. An alternative could be that the remains were left on the pyre for several days, allowing natural winnowing by the wind to remove the fine fuel ash, leaving the cremated bone more exposed and easily accessible.

Pyre goods and pyre debris

Pyre goods, in the form of small quantities of cremated animal bone (1–26.4 g, 0.1–1.2% of the total bone weight in each case), were recovered from at least two, possibly all three of the graves (Table 5.2). It was not always possible to identify the species or elements represented, but a minimum of two species were present in grave 2680 – sheep (distal fore- and hindlimb bones) and pig (metatarsal), the medium-sized mammal remains (vertebrae and ribs) probably deriving from the same animal/s, and three in grave 7022 – sheep/goat (distal forelimb bones), cattle (scapula) and pig (femur: identifications by Lorrain Higbee). The elements present suggest they derived from joints of meat rather than the entire carcass and probably represent the remains of food offerings. The inclusion of animals or parts thereof on the pyre was a relatively common part of the rite, a survey of Bronze Age burials showing that an average of 16% contain small quantities of animal bone, with sheep/goat/pig being the most commonly recognised species (McKinley 1997b). The inclusion of cattle in grave 7022 may be taken as an indication of the high status of the mature adult female buried here, an idea already postulated on the basis of the great quantity of bone recovered and the location of the grave. The suggestion is not supported by the variable quality of the two burial urns, however, Last (this volume) noting that the vessel from grave 7018 is both better fired and more carefully decorated than that from grave 7022.

Fragments of several cremated artefacts were found in grave 2680, the fragments distributed within different areas of the grave together with the other burial remains. Joining fragments of two worked bone points came from the northern half of the grave (see *Formation Processes,* below) and a bone bead or toggle was recovered from the southern half. Three small unburnt bone possible beads were also recovered from the eastern half of the grave (see Mepham, Chapter 4, Fig. 2.11); whilst these items could represent grave goods rather than pyre goods – ie, they were only included at the burial stage of the rite not at cremation – it is possible for items to be placed on the pyre and suffer no apparent burning if they are located where they are insulated from the heat/flame and/or if they fall-off the pyre at an early stage only to be recovered for burial. Part of what may be a reused stone bracer or wristguard which possibly functioned as a pendant (see Mepham, Chapter 4, Fig. 2.11) also shows no evidence for burning. It was found directly above the burial remains when the bone was first exposed during excavation, suggesting it was a grave good added after the bone had been deposited.

Slight blue/green spot staining was observed on a few bones from graves 2680 and 7022. Such staining is suggestive of the presence of some form of copper-alloy object(s) overlying these parts of the body during cremation. The pattern seen here suggests a copper-alloy item around the wrist (?bracelet) in the case of burial 2679, though the forearm could also have been affected by an item on the shoulder or around the neck had the arms been flexed up over the upper chest. An object (?pendant) around the neck is also indicated for the female from grave 7022. This form of staining has been observed on cremated remains from both the Bronze Age and other periods, often where no remains of copper-alloy pyre goods were found (pers. obs.). Generally, the recovery of the human remains for burial is far less extensive than in this case from Barrow Clump, and it is probable that the remains of pyre goods were also overlooked (accidentally or deliberately) in this secondary part of the mortuary rite. If the temperature attained in the appropriate part of the pyre is sufficient (approximately 700–1000°C), the copper-alloy will reach a liquid state and all that may survive of it will be small re-formed globules which would be difficult to recover for burial.

Small fragments of fuel ash (charcoal) formed very rare components amongst the remains of both urned burials. Although the deliberate inclusion of pyre debris in the fill of Bronze Age cremation graves is frequently observed, at Barrow Clump the very small quantities undoubtedly represent material accidentally picked-up with the bone during collection for burial.

Formation processes

The majority (59% by weight) of the bone in grave 2679 was recovered from the northern half, with only 1.8% lying in the south-west quadrant, suggesting the bone may have been deposited in some form of organic container. The remains of all three individuals were spread throughout. There were no major differences in the distribution of different skeletal elements between the quadrants, with joins between bone fragments and pyre goods recovered from the different areas; for example, the joining fragments of the supra-orbital frontal bone from the two northern quadrants and the south-eastern quadrant (Pl. 5.3). The distribution suggests the remains of the three individuals were thoroughly mixed before burial, either during collection from the pyre site (see below) or during transfer to the container used for burial.

An average of 5% of Bronze Age cremation burials, from a sample of approximately 130 (predominantly examined by the writer) drawn from numerous sites, have been found to contain the remains of two or, rarely, more individuals (McKinley 1997b). Amongst the 23 examples (drawn from 13 sites) of multiple burials presented by Petersen (1981, 233–4), 32% were documented as including the remains of more than two individuals, though how well represented each individual was is not stated, and some may have been 'token'/*memento mori* deposits (see McKinley 2013a) rather than representative quantities indicative of burial remains *per se* as seen at Barrow Clump. It is interesting to note, however, that most of these examples derived from sites in Scotland, with just two in England (Northumbria and Berkshire), perhaps suggesting a geographic variation in practice.

The combination of an adult with an immature individual comprises that most frequently seen in examples from the British Isles. The cremation and

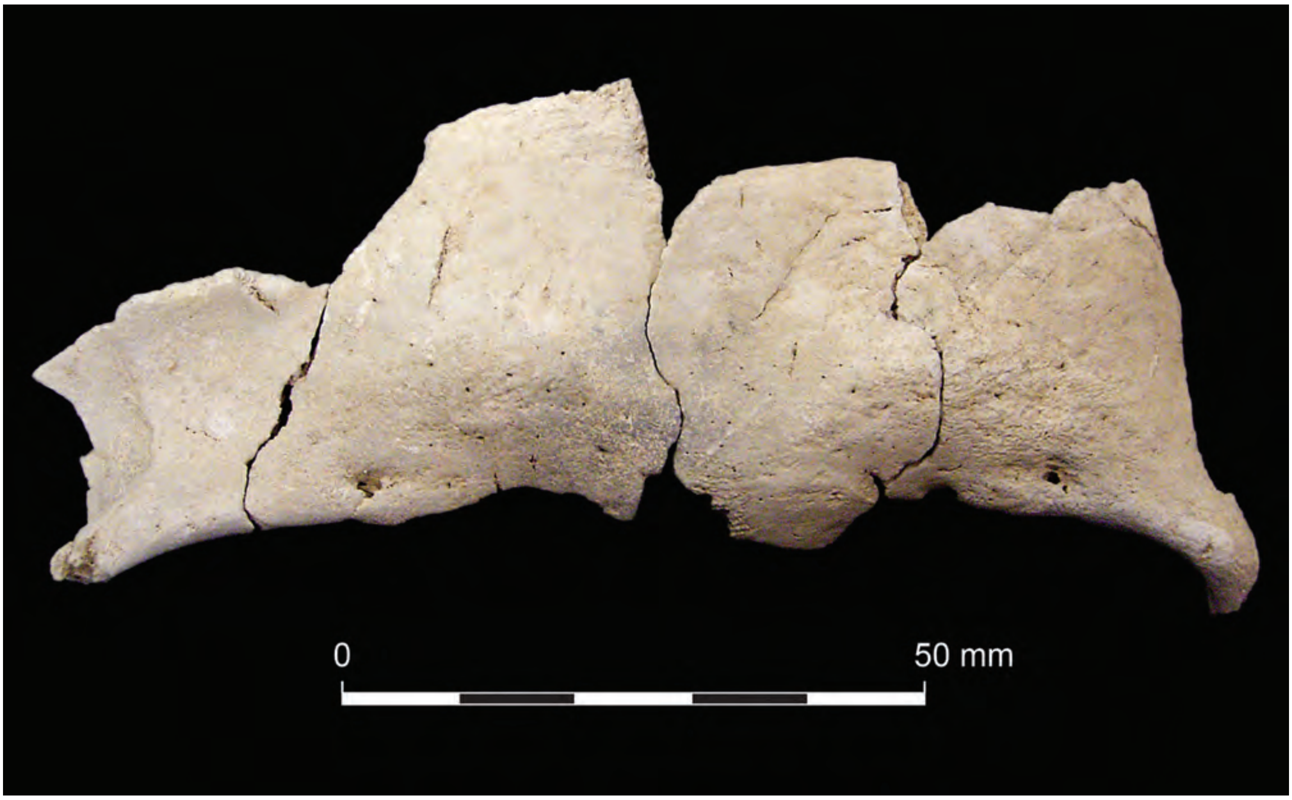


Plate 5.3 Cremation grave 2679, joining fragments of the supra-orbital frontal bone from the two northern quadrants and the south-eastern quadrant (L to R; NE quad., SE quad., 2 x NW quad)

burial of two adults together is rare in the writer's experience, though examples of Middle Bronze Age date were found at Knighton Heath, Dorset (Petersen 1981) and at Twyford Down, Hampshire (McKinley 2000b). Once again, Petersen's 1981 sample shows a higher incidence of multiple adult burials, 36% of his sample (which includes the Knighton Heath cases) including the remains of two adults (though with the same potential proviso already mentioned above concerning 'token' inclusions); half relate to multiple burials rather than duals, and over half were from Scottish sites, with one from Wales and three from England (Northumbria, Berkshire and Dorset).

The implication in most cases of dual burial, particularly those featuring the remains of an adult and an immature individual, is that dual cremation took place on a single pyre. The example from Twyford Down presents a marked departure from the commonly observed burial formation process, the remains of one adult clearly having been added to the urn before the remains of the second (though how long before is unknown). The Barrow Clump case presents something of a conundrum; the thorough mixing of the remains from grave 2679 is such as one might expect of material gathered for burial from the same pyre and could have been effected through either of the mechanisms suggested above, but more readily by the raking and winnowing method. It would, however, have required a sizable pyre to undertake such multiple cremations, and the circumstance under which this necessity might arise is debatable. To be buried together in this way suggests the possibility of a close family/comradely link between individuals who died within a short time of one another (perhaps from acute contagious infection or trauma). Another explanation might be the curation of remains from one or more earlier cremations (such 'inert' material readily lending itself to such treatment), the remains becoming mixed before burial with transference, potentially between several containers, before being placed in that used for final deposition.

In both urned burials, the sherds from the vessels' damaged bases and lower bodies (both being buried inverted) directly overlay the bone within them leaving substantial voids above the bone (7019, 60 mm depth bone; 7023, 160 mm, Pl. 5.2a–b). In the case of burial 7019, the vessel lay at a slight angle having being pressed into the underlying material on the east side, where slight damage to the vessel had also resulted in a 50 mm overlap of the body over the collar (Fig. 2.11). The concave interface between the bone and the underlying material (inside the rim) suggests an organic lid (textile/skin) was placed over the mouth of the vessel before it was inverted.

With burial 7023, the greatest depth of bone (excavated from the inverted base down towards the rim) lay in the centre, falling away towards the edges (Pl. 5.2c). The bone extended to the edges of the vessel only in the lower 60 mm depth, and ceased at rim level, none having filtered/fallen through into the underlying loose soil at the base of the grave (which appeared not to have been cleaned out before the burial was made). The presence of an organic lid is again suggested, and the lay of the bone within the vessel suggests it may have been placed in a bag before being added to the vessel, the contents of which settled against the sides in the lower levels after inversion. Most of the bone lay in this lower 60 mm depth (80% by weight). The various skeletal elements were distributed throughout the fill, with joins between fragments from different spits (spits 2 and 6, quadrant A) and quadrants (3A and 4B, 3B and 5D, 3D and 6A, and 5C and 6A).

It was observed above that the smaller fractions in both of the urned burial remains appear unusually high. Recovery of such small fraction material from the pyre site is improbable, any such material undoubtedly remaining with the rest of the pyre debris. Cremated bone is a very brittle material, given to break-down and collapse under any mechanism of disturbance. In these two cases from Barrow Clump it is known that the post-depositional disturbance was minimal and the burial environment conducive to good bone survival (see above). The small fraction observed *in situ* appears, therefore, to represent material originally included in the burial. The repeated handling of cremated bone inevitably leads to its breakdown; curation and decanting, potentially more than once, of this material between containers prior to burial would have produced the type of small fraction material observed. None of the three cremation graves excavated at Barrow Clump contained much pyre debris (see above), which may in itself signal the cremations were not undertaken in the immediate vicinity (see McKinley 1997b; 2013a), and suggest the remains were transported to the site for burial. The potential for curation has already been suggested for the remains from grave 2679 – possibly all three were subject to the same treatment.

Although the identifications are not conclusive, the two samples of unburnt bone from Hawley's trench taken for radiocarbon analysis both appear to have derived from adult males. A minimum of two males were identified amongst the MNI of four in the recent investigations, the MNI being one less than Hawley recorded. It may be that the earlier date (Marshall *et al.*, Chapter 3) does relate to the elderly male he identified within the presumably stratigraphically lower-most, Beaker cist grave, but this cannot be confirmed since there is nothing to corroborate the age (other than adult) of the sampled bone (and assuming Hawley's identification was correct). Similarly, the second sample could be from one of the group of three adults he documents at a likely higher, Early Bronze Age stratigraphic level, thereby partly corroborating his description. Unfortunately, the possibility that both samples derived from individuals buried at this 'higher' level cannot be dismissed; the dates could demonstrate that the three individuals, apparently buried at the same level (possibly in the same grave), were not buried at the same time, though potentially within a generation.

Fragments of unburnt animal bone were recovered with the unburnt human bone from Hawley's trench 7011. Most of the 9.1 g of bone fragments comprise unidentifiable elements of medium/large-sized mammal, together with a small fragment of antler and a fragment of rabbit distal tibia (identifications by Lorrain Higbee). The latter is undoubtedly intrusive, but the rest could have been associated with one or more of the burials excavated by Hawley, or have been redeposited within any of the grave fills; it could also have been introduced from outside the graves themselves. There are no notes regarding this material amongst Hawley's records.

Chapter 6
Animal Bone

by L Higbee

Introduction

Excavations at Barrow Clump have produced a small assemblage of animal bone comprising a total of 1788 identified fragments plus an additional 774 unidentifiable fragments. The assemblage includes material of Neolithic, Bronze Age, Iron Age, Anglo-Saxon and modern date, and has been sub-divided into six separate phases. These include pre-mound deposits (Phase 1), the Beaker mortuary site (Phase 2), Early Bronze Age barrow construction and use (Phase 3), later prehistoric/Romano-British activity (Phase 4), the Anglo-Saxon cemetery (Phase 5) and recent human activity (Phase 6). The contextual security of some deposits has been compromised by the burrowing activity of badgers, rabbits, foxes and rodents, the remains of which account for 65% of the assemblage (Table 6.1).

Methods

The following information was recorded for each identifiable fragment: species, element, anatomical zone (after Serjeantson 1996, 195–200; Cohen and Serjeantson 1996, 110–12), anatomical position, fusion state (after O'Connor 1989; Silver 1969), tooth eruption/wear (after Grant 1982; Halstead 1985; Hambleton 1999; Payne 1973), metrical data (after von den Driesch 1976; Payne and Bull 1988), gnawing, burning, surface condition, pathology and non-metric traits. This information was directly recorded into a relational database (in MS Access) and cross-referenced with relevant contextual information.

Caprines (sheep and goat) were differentiated based on the morphological criteria of Boessneck (1969), Payne (1985) and Halstead *et al.* (2002). All of the positively differentiated caprine bones belong to sheep; this term will, therefore, be used throughout the report to refer to all undifferentiated caprine bones.

Results

Preservation and Fragmentation

Observations of surface preservation and fragmentation suggest that a significant degree of mixing and contamination has taken place due largely to bioturbation by rabbits, foxes and badgers. The remains of these animals are relatively intact compared to bone fragments from other species.

Phase 1 – Pre-mound Deposits and Features

Most of the identified fragments recovered from pre-mound deposits belong to cattle. They include the frontal part of a skull with attached horn core, an axis vertebra, fragments of humerus, metacarpal and second phalanx, and several loose teeth. Other identified species include pig, sheep and horse, all of which are represented by loose teeth. A fragment of deer metatarsal and a few intrusive rabbit bones were also identified.

Three pieces of red deer antler came from Early Neolithic pit 2380/2925. Two of the fragments conjoin (ON 5440 and ON 5433) to form the base and brow tine from a left-sided antler (Fig. 4.3). ON 5440 is estimated to date to *3765–3640 cal BC (95% probability*; SUERC-67499; Fig. 3.1). The base of the antler had been modified through use as a percussive tool (see Harding, Chapter 4). This had formed two flat facets and battered the surface of the antler, wearing

Table 6.1 Number of identified animal bones (or NISP) by phase. Includes material from English Heritage 2003/2004 excavations (after White in Last 2006) and Operation Nightingale 2012–2014

			Phase				
Species	**1**	**2**	**3**	**4/5**	**6**	**US**	**Total**
cattle	13	14	146	25	42	27	267
sheep/goat	4	4	44	19	10	12	93
pig	8	1	35	3	11	10	68
horse	1	–	–	31	1	3	36
dog	–	–	3	–	–	–	3
?aurochs	–	1	3	–	–	–	4
?wild boar	–	–	1	–	–	–	1
red deer	3	2	6	–	1	1	13
roe deer	–	–	–	–	2	1	3
deer	1	–	–	–	–	–	1
hare	–	–	1	–	–	–	1
fox	–	–	13	41	12	9	75
badger	–	–	9	–	1	1	11
rabbit	6	8	182	143	209	524	1072
hedgehog	–	–	–	–	1	–	1
rodent	–	–	–	11	7	–	18
domestic fowl/pheasant	–	–	12	34	1	–	47
small corvid	–	1	7	4	25	29	66
pigeon/dove	–	–	1	1	–	1	3
partridge	–	–	–	1	1	3	5
Total identified	36	31	463	313	324	621	1788

KEY: Phase 1: pre–mound deposits, Phase 2: Beaker mortuary site,
Phase 3: EBA barrow, Phase 4/5: mound re–use – IA/RB and Anglo–Saxon cemetery,
Phase 6: recent

away the burr. The third antler piece (ON 5432) also comprises the base and brow tine but in this instance there are signs of use wear at the tip of the brow tine which has a rounded, battered appearance (Fig. 4.3). This type of wear is generally seen on antler picks.

Phase 2 – Beaker Mortuary Site

A small number of identified bone fragments were recovered from the inner ring-ditch 2583/2755/2825. Most of the bones belong to cattle and include loose teeth, a near complete scapula and fragments of radius, tibia, pelvis and second phalanx. Other identified fragments include sheep teeth, a pig first phalanx, a red deer antler tine, a bone from a small corvid and several intrusive rabbit bones. Butchery marks were visible on the near complete cattle scapula from the recut of the ring-ditch in Trench B/C (2583). A chop mark was clearly visible on the anterior edge and cut marks were noted either side of the spine and around the neck. The proximal end of the blade has a rounded appearance suggesting that the bone was used as a scoop or shovel (but see Last, Chapter 8). The scapula is considered, therefore, to be functionally related to its context, having possibly been used in the recutting of the inner ditch. The scapula is estimated to date to *2140–1960 cal BC (95% probability*; OxA-16642; Fig. 3.2) (see Marshall *et al.*, Chapter 3). A further fragment of bovine scapula from the inner ring-ditch is possibly from an aurochs (wild cattle).

Phase 3 – Barrow Construction

A relatively large number of bone fragments were recovered from the outer barrow ring-ditch and mound. Most of the identified bones belong to cattle. Most skeletal elements are present; however loose teeth and bones from the foot are over-represented which suggests that the assemblage includes bones from the initial stages of carcass reduction rather than the consumption of meat. Alternatively, the cranial and foot elements might originally have been attached to hides deliberately deposited on the mound. With the exception of a femur from a foetal calf, the majority of post-cranial bones came from adult animals. Age information from mandibles indicates that cattle were slaughtered as adult and old adult animals (MWS G and H), and this suggests that secondary products are likely to have been more important than meat production. Butchery evidence is scarce, but evidence for use of the burn and smash technique was noted on the proximal shaft of a metacarpal from mound deposits. Skinning marks were noted on a few phalanges, two of which are large enough to belong to aurochs rather than domestic cattle. A fragment of bovine metacarpal from the mound is also thought to be from an aurochs.

The small number of sheep and pig bones does not allow any comment regarding body part representation. Both adult and juvenile sheep and pig bones were recovered, and two sheep mandibles are from animals aged between 3–4 years. A large pig canine tooth from the turf core of the mound is possibly from a male wild boar.

Red deer remains were recovered from both the ring-ditch and the mound; they include two fragments of metatarsal, one of which is from a juvenile, two fragments of antler tine, one of which has a cut mark across its surface, and a mandible and loose third molar. A single bone from a hare was also identified.

The Phase 3 assemblage contains a relatively large number of bones (42% NISP) from burrowing animals; these include not just rabbits but also fox and badger. The bird bone assemblage includes domestic fowl/pheasant, small corvid and pigeon/dove. It is likely that some of these bones are intrusive finds from the tertiary fills of the ring-ditch and probably represent quarry brought back by foxes.

Phases 4 and 5 – Mound Re-use and Anglo-Saxon Graves

A total of 21 horse bones were identified from the middle and upper fills of the Phase 3 ring-ditch. The range of skeletal elements includes fragments of mandible, loose teeth, metapodials, carpals and phalanges. A radiocarbon date of 800–540 cal BC (2532±33; OxA-34178) was obtained from a horse first phalanx from layer 2650, the tertiary fill of the ring-ditch (see Marshall *et al.*, Chapter 3).

The rest of the assemblage largely consists of the bones from livestock species, in particular sheep and cattle. Loose teeth, foot and ankle bones dominate the assemblage but some bones from the fore- and hind-quarters are present. A few pig bones were also recovered. In addition, fragments of dog skull, mandible and a loose tooth are present, as well as a small number of domestic fowl/pheasant, small corvid, pigeon/dove and partridge bones.

The animal bone assemblage recovered from the upper fills of the Phase 3 ring-ditch and Anglo-Saxon grave backfills also includes a high proportion (49% NISP) of rabbit bones and some fox and rodent bones.

Phase 6 – Recent Human Activity and Unstratified Remains

The remains of burrowing animals, in particular rabbits, form a large proportion (71% NISP) of the animal bone assemblage recovered from deposits assigned to Phase 6. Bones from livestock species, in particular cattle, dominate the rest of the assemblage. Saw marks on some of the bones indicate that they are modern in origin; however, differences in preservation indicate that other fragments have been reworked from earlier deposits. The assemblage also includes horse, red and roe deer antler, domestic fowl/pheasant, small corvid and partridge.

Rabbit bones also account for a large proportion (84% NISP) of the unstratified material. Bones from livestock, horse, red and roe deer, fox, badger, small corvid, pigeon and partridge were noted as well.

Conclusions

Antler tools similar to those recovered from pit 2380/2925 have been recorded from a number of contemporary sites in southern Britain (Worley and Serjeantson 2014). Antler picks were used to dig pits and ditches, and worn or broken examples are often found at the base of these features (Serjeantson 2011, 77; Worley and Serjeantson 2014, 126–7). Cattle scapulae, like the one found in the inner ring-ditch, may also have been used as digging tools and deposited, and local examples include those recovered from Stonehenge (Serjeantson 1995, 428).

The small size of the animal bone assemblage and the degree of disturbance to some deposits limits the potential to provide an insight into the local farming economy, and the use and construction of the barrow. The dominance of cattle in the prehistoric phases of construction and use (Table 6.1) is generally in keeping with the wider farming economy of the period (Serjeantson 2011, 15). The number of loose teeth is particular high and while this is probably due to factors such as poor preservation, fragmentation and disturbance due to bioturbation, it is also possible the skulls, in particular those of cattle, were deliberately deposited in or on the barrow, as has been suggested at other barrows (*ibid.*, 70–2).

Chapter 7
Environmental Evidence

by Gill Campbell, Mark Robinson and Sarah F Wyles

Charred Plant Remains

by Gill Campbell and Sarah F Wyles

Introduction

In 2003–4 a number of samples were taken specifically for the recovery of charred plant remains, including charcoal, but samples from some of the Anglo-Saxon inhumation graves and those taken principally for the recovery of worked flint were also processed, giving a total of 50 flots available for assessment, in addition to charred material recovered from sorting residues. In 2012–14 a series of six flotation samples were taken from the Neolithic buried soil, the Early Neolithic pit (2380/2925) and four Early Bronze Age cremation-related deposits.

The samples were processed by standard flotation methods, the flots retained on a 0.25 mm (2003–4) or 0.5 mm mesh (2012–14) with residues fractionated into 4 mm and 2 mm (and in 2012–14 1 mm) fractions and dried. The flots were scanned under a binocular microscope at magnifications up to x50.

A summary of the numbers of samples available from each phase is given in Table 7.1. The numbers of charred plant remains present were very small, although a few samples did contain substantial numbers of charcoal fragments. Roots were present in all the samples and many also contained leaves and other modern plant material.

Results

Eight samples from the Phase 1 buried soil produced around 13 fragments of charcoal over 2 mm in size, most of which were rather small and poorly preserved. The sample from grid square 2463 was the richest, containing three charcoal fragments, a possible tuber fragment and two fragments of hazelnut shell. A moderate quantity of hazelnut shell fragments and a few indeterminate grain fragments were recorded within the sample from Early Neolithic pit 2380/2925.

Samples from Phase 2 included two from the Beaker burial, which produced very little, and seven from the inner ring-ditch, several of which produced fragments of hazelnut shell and a possible plant tuber fragment from deposit 2550. Only occasional rather poorly preserved charcoal fragments were present in these samples.

Samples from deposits associated with the barrow mound contained only very occasional small fragments of charcoal, with the exception of one of the samples from the cremation-related deposits, which contained a small number of hazelnut shell fragments, and two samples from possible hearths (2168 and 2174). While the sample from 2168 produced two fragments of hazelnut shell and the occasional charcoal fragment, fragments of beech charcoal were common in the sample from 2174, which suggests, by comparison with contexts assigned to later phases, that the burning observed in this deposit is of recent origin.

The 14 samples from the Anglo-Saxon graves were typified by varying amounts of oak and diffuse porous charcoal of either *Alnus*/*Corylus* type (hazel or alder) or Maloidae type (hawthorn, apple etc), although some samples clearly contained modern or recent material, for example fill 2379, which produced beech and very fresh conifer charcoal. The sample from grave fill 2535 produced oak charcoal which may represent the remains of a coffin or a burnt plank placed in the grave.

Two samples were taken from the ring-ditch in Trench A, one of which contained frequent fragments of charcoal, two fragments of hazelnut shell, a single *Triticum* sp. (wheat) grain and a piece of charred cereal straw. However, the presence of uncharrred modern straw in this sample would suggest that the charred straw, at least, is of recent origin.

Discussion

While some of the charred material recovered is likely to be of recent origin, reflecting the current vegetation cover, particularly the beech charcoal, the samples from Anglo-Saxon graves do appear to be characterised by small amounts of oak and possible

Table 7.1 Charred plant remains: flots available for assessment

Phase	Number
Phase 1: Pre-mound deposits	8
Phase 2: Beaker mortuary site	11
Phase 3: Mound construction	14
Phase 4: Later prehistoric and Roman activity	–
Phase 5: Anglo-Saxon cemetery	14
Phase 6: Recent	1
Unstrat	8
Total	56

Table 7.2 Mollusca from Trench A (column 3008)

Context	2042	2027 lower	2027 upper	2013	2008	2003	2001
Pomatias elegans (Müll.)	f	f	f	f	f	–	–
Carychium tridentatum (Ris.)	–	–	–	–	1	–	–
Cochlicopa sp.	15	89	24	1	–	–	8
Truncatellina cylindrica (Fér.)	1	2	–	–	–	–	–
Vertigo pygmaea (Drap.)	5	12	13	–	1	–	2
Pupilla muscorum (L.)	45	466	168	5	11	2	8
Vallonia costata (Müll.)	16	105	18	–	–	–	19
V. excentrica Sterki	13	74	57	1	2	–	10
Vallonia sp.	57	359	89	–	4	2	20
Ena montana (Drap.)	–	–	f	–	–	–	–
Punctum pygmaeum (Drap.)	–	18	1	–	–	–	6
Discus rotundatus (Müll.)	–	–	1	1	–	1	1
Vitrina pellucida (Müll.)	–	–	–	–	–	–	1
Vitrea sp.	–	–	–	–	–	–	3
Nesovitrea hammonis (Ström)	–	–	1	–	–	–	–
Aegopinella pura (Ald.)	6	4	–	–	–	–	–
A. nitidula (Drap.)	–	–	–	–	–	–	14
Oxychilus cellarius (Müll.)	–	1	–	–	–	–	4
Limax or *Deroceras* sp.	–	2	–	–	–	–	2
Clausilia bidentata (Ström)	f	2	f	–	–	–	–
Candidula gigaxii (Pfeif.)	–	–	–	–	–	1	3
Cernuella virgata (da Costa)	–	–	–	–	4	2	16
Helicella itala (L.)	3	45	14	–	3	–	–
Monacha cantiana (Mont.)	–	–	–	–	–	–	1
Trochulus hispidus gp	–	–	–	–	1	–	6
T. striolatus (Pfeif.)	–	–	–	–	–	–	38
Cepaea sp.	–	–	–	f	–	–	1
Total	161	1179	386	8	27	8	163

KEY: f – robust worn apices and shell fragments

hazel/alder and Maloidae-type charcoal, and the prehistoric contexts by the presence of hazelnut shell fragments, a few tubers and occasional small charcoal fragments. However, the likelihood that many of these represent redeposited material makes them unsuitable for dating.

Charred plant assemblages dominated by wild food remains, particularly hazelnut shell, are typical of those assemblages recovered from Neolithic and Beaker contexts in the Stonehenge area and beyond (Green 1981; 1990; Carruthers 1990; Fairbairn 1993). This may be indicative of the exploitation and general reliance on wild food resources during this period (Moffett *et al.* 1989; Stevens 2007).

Molluscs from the Barrow Ditches

by Mark Robinson

Introduction

The molluscan studies aimed to show the extent to which palaeoenvironmental evidence has been lost as a result of badger disturbance and to determine the environmental sequence for the monuments. To these ends, five sequences of samples were taken from the barrow ditches and the ring-ditch in Trench A.

Evans (1972) established molluscan analysis as a routine technique of palaeoenvironmental investigation on chalkland sites. In the absence of badger disturbance, the ditch sediments would have been regarded as having high potential for such studies.

Molluscan analysis is unnecessary to demonstrate badger damage where ancient sediments have been replaced with a tunnel filled with plant litter. However, they do have the potential to show whether apparently undisturbed ancient sediments have experienced some mixing or contamination with more recent material. There are several species of land mollusc which are now common in Wiltshire but were only introduced to Britain or reached the region from the Roman period onwards (Evans 1972, 200–1; Kerney 1966). There have also been changes to the open-country molluscan fauna of southern England since the Bronze Age (eg, Evans 1972, 177–8), for reasons which are not fully understood but were probably related to subtle differences between Bronze Age and more recent grassland habitats.

The Sample Sequence

Trench A

These sequences are from the ring-ditch then under cultivation which was sampled as a control (see Figs 1.3 and 1.4). There are no badger tunnels. Column 3008 is from the centre of the ditch and column 3009 from the edge.

Trench B/C

This sequence is from the Phase 2 Beaker ring-ditch subsequently buried beneath the Phase 3 barrow mound, and includes lower mound make-up context 2444. There are nearby badger tunnels.

Trench C

This sequence is from the outer ring-ditch of the main bell barrow where it had been tunnelled by badgers to the base, although the samples were all taken from apparently undisturbed sediment, including primary (Phase 3) fills 2208, 2232, 2230 and 2229, recut fill contexts 2224, 2223 and 2222, also assigned to Phase 3, and later fills 2221 and 2220, which are assigned to Phase 4. Context 2220 was cut by an Anglo-Saxon grave.

Trench E

This sequence is also from the outer ring-ditch. The contexts sampled are below the main badger disturbance in this sector of the ditch, including primary fills 2434, 2506 and 2448, recut fill context 2432, and Phase 4 fill 2370.

Table 7.3 Mollusca from Trench A (column 3009)

Context	2043	2027	2008	2003	2001
Pomatias elegans (Müll.)	–	f1	f	–	f
Carychium tridentatum (Ris.)	–	–	4	–	–
Cochlicopa sp.	4	37	2	–	11
Truncatellina cylindrica (Fér.)	5	–	–	–	–
Vertigo pygmaea (Drap.)	6	22	–	–	–
Pupilla muscorum (L.)	21	203	5	1	6
Vallonia costata (Müll.)	4	25	–	1	13
V. excentrica Sterki	21	73	4	–	13
Vallonia sp.	13	122	4	4	33
Punctum pygmaeum (Drap.)	1	–	–	–	4
Discus rotundatus (Müll.)	–	–	1	1	–
Vitrea sp.	–	–	1	–	–
Aegopinella nitidula (Drap.)	–	–	–	1	2
Oxychilus cellarius (Müll.)	–	–	–	–	6
Clausilia bidentata (Ström)	–	f	–	–	–
Candidula gigaxii (Pfeif.)	–	–	–	1	4
Cernuella virgata (da Costa)	–	–	–	3	17
Helicella itala (L.)	3	8	1	–	–
Trochulus hispidus gp	–	–	–	–	17
T. striolatus (Pfeif.)	–	–	–	–	24
Cepaea sp.	–	2	1	–	1
Total	78	493	23	12	151

KEY: f – robust worn apices and shell fragments

Methods

The column samples were processed following the standard methods for molluscan analysis. One kg of each sample was floated in water onto a 0.5 mm mesh. The residue which did not float was then sieved over a 0.5 mm mesh. Both flots and residues were dried and sorted under a binocular microscope for shells (other than *Cecilioides acicula*, a small species which burrows very deeply). The shells were identified at magnifications of up to x50 by comparison as appropriate with the collections of the Oxford University Museum of Natural History. The minimum number of individuals represented by the fragments of each species in each sample was calculated and the results given in Tables 7.2–7.6. It was noticed that *Pomatias elegans* and some woodland species tended only to be represented by robust shell apices and fragments. It is thought that these remains are likely to have been residual so their presence only was recorded. Nomenclature in the tables follows Anderson (2005).

Trench A Ring-ditch

Shells are well-preserved throughout both columns, although there is much variation in their concentration (Tables 7.2 and 7.3). Robust apices of *Pomatias elegans*, in some instances in the company of apices of *Ena montana* and *Clausilia bidentata*, are present in the Bronze Age contexts and some of the more recent contexts. *E. montana* now tends to be a species of old woodland. It is suggested that these shells are residual from a woodland phase prior to the construction of the ring-ditch and were present in the soil incorporated in the ditch. The samples from secondary silty fills 2043 and 2042 and flinty layer 2027 contain typical Bronze Age open-country faunal assemblages in which *Trochulus hispidus* gp. is absent and there is a presence of *Truncatellina cylindrica*. *T. cylindrica* is now extinct in the region (Kerney 1999, 89). The concentration of shells in the secondary chalky fill (2013) is much lower but the assemblage is still appropriate for a prehistoric date. The overlying layer (2008), however, contains *Cernuella virgata*, a snail which is probably an early medieval introduction to Britain and in the upper fill 2003 this is joined by *Candidula gigaxii*, another species regarded as a medieval introduction (Evans 1972, 179). The samples from context 2001 contain typical modern assemblages. *Monacha cantiana*, likely to have colonised the region in the late medieval or post-medieval period (Kerney 1970) is present in one of the samples and *Trochulus striolatus*, which only becomes common in the Roman or post-Roman period (Evans 1972, 177) is abundant. *Helicella itala* seems entirely to have been replaced by *C. virgata* and *C. gigaxii*. Although *Trochulus hispidus* gp. can be abundant in prehistoric contexts, the greater abundance of this group in context 2001 than in the earlier samples follows a trend that is often seen.

The molluscan sequences from the ring-ditch in Trench A show the trends which might be expected from sediments which accumulated over a long period of time from the Bronze Age onwards. While it is possible that there has been limited migration of shells down the soil profile, perhaps as a result of earthworm action, the lower sediments show no evidence of contamination with shells likely to be of medieval or more recent date. It is, however, possible that layer 2008 is of pre-medieval origin and the shells of *C. virgata* have been introduced by earthworms.

As has been noted, the shells from deposits 2043, 2042 and 2027 comprise faunas typical of Bronze Age open-country habitats on the Wessex Chalk. *Pupilla muscorum*, *Vallonia costata* and *V. excentrica*

Table 7.4 Mollusca from Beaker ring-ditch

Context	2569	2568	2546	2577/2569	2565	2571	2550	2536	2529	2444
Sample	3223	3224	3225	3214	3215	3222	3216	3217	3218	3221
Pomatias elegans (Müll.)	f	f	f	f	f	f	f	f	f	f
Cochlicopa sp.	–	2	9	8	4	7	15	13	2	11
Truncatellina cylindrica (Fér.)	–	–	12	10	5	1	5	6	1	1
Vertigo pygmaea (Drap.)	–	2	5	5	4	7	9	2	16	28
Pupilla muscorum (L.)	5	16	62	88	40	92	126	104	72	33
Vallonia costata (Müll.)	–	1	25	32	10	29	30	27	18	16
V. excentrica Sterki	4	10	17	31	11	28	44	40	31	61
Vallonia sp.	1	10	112	103	47	92	234	146	130	112
Punctum pygmaeum (Drap.)	–	1	1	1	–	2	2	2	4	5
Discus rotundatus (Müll.)	1	1	1	–	–	–	–	–	1	–
Vitrina pellucida (Müll.)	–	–	–	–	1	–	–	1	–	–
Vitrea sp.	1	–	–	–	–	–	–	–	–	–
Nesovitrea hammonis (Ström)	1	–	–	–	–	–	–	–	–	–
Aegopinella nitidula (Drap.)	–	–	–	–	–	–	–	1	–	–
Oxychilus cellarius (Müll.)	1	–	–	–	–	–	–	–	–	–
Cochlodina laminata (Mont.)	–	f	–	–	–	–	–	–	–	–
Clausilia bidentata (Ström)	–	f	f	–	–	–	f	–	–	–
Helicella itala (L.)	–	1	5	8	4	9	10	17	2	2
Arianta or *Cepaea* sp.	–	–	–	–	–	–	–	f	f	–
Total	14	44	249	286	126	267	475	359	277	269

KEY: f – robust worn apices and shell fragments

predominate along with *Cochlicopa* sp. and *Helicella itala*. There are very few shells of shade-loving species. Conditions are likely to have been short-turfed grassland, perhaps maintained by sheep grazing in the ditch. The results from later fills 2013, 2008 and 2003 suggest that conditions remained open.

While the toposil (2001) was an arable cultivation soil at the time of excavation, the shells from it do not comprise an arable fauna. Open-country species predominated and some, for example *Vallonia excentrica*, are able to withstand the effects of modern cultivation methods, while *Candidula gigaxii* and *Cernuella virgata* can tolerate cultivation and *Trochulus striolatus* often occurs at field edges. However, two members of the Zonitidae, *Aegopinella nitidula* and *Oxychilus cellarius*, which are characteristic of shaded habitats, comprise about 8% of the assemblages, a far higher proportion than in the earlier contexts. It is suggested that these shells are residual from a recent period of rough grassland or developing scrub prior to the onset of cultivation.

Table 7.5 Mollusca from main barrow ring-ditch (Trench E)

Context	2434	2434	2506	2448	2432	2370	2370
Sample	3207	3208	3209	3210	3211	3212	3213
Pomatias elegans (Müll.)	–	f	f	f	f	f	f
Cochlicopa sp.	–	–	–	2	17	13	1
Truncatellina cylindrica (Fér.)	–	–	–	1	–	–	–
Vertigo pygmaea (Drap.)	–	–	–	3	–	7	6
Pupilla muscorum (L.)	–	–	5	17	27	188	43
Vallonia costata (Müll.)	–	–	–	14	23	22	1
V. excentrica Sterki	–	–	1	18	18	79	20
Vallonia sp.	–	–	1	24	23	106	24
Punctum pygmaeum (Drap.)	–	–	–	2	–	4	4
Nesovitrea hammonis (Ström)	–	–	–	–	1	–	–
Aegopinella nitidula (Drap.)	–	–	–	–	1	–	–
Oxychilus cellarius (Müll.)	1	–	–	–	–	–	–
Limax or *Deroceras* sp.	–	–	–	–	–	1	–
Clausilia bidentata (Ström)	–	–	–	f	–	–	–
Cernuella virgata (da Costa)	–	–	–	–	1	–	–
Helicella itala (L.)	–	–	1	5	23	13	1
Trochulus hispidus gp.	–	–	–	1	1	46	11
T. striolatus (Pfeif.)	–	–	–	–	1	–	–
Cepaea sp.	–	–	–	–	1	–	–
Total	1	0	8	87	137	479	111

KEY: f – robust worn apices and shell fragments

Beaker Ring-ditch

Shells are well-preserved throughout the sequence and, with the exception of the lowest sample (2569), the concentrations are reasonably high (Table 7.4). Robust apices of *Pomatias elegans* and *Clausilia bidentata* are present in many of the samples, as is also the case for the Trench A ring-ditch samples, and they are likewise interpreted as residual from a woodland phase pre-dating the ditch (similar results came from the main barrow ring-ditch sequences in Trenches E and C). All the samples contain typical Bronze Age open-country faunal assemblages, with an absence of *Trochulus hispidus* gp. and *Truncatellina cylindrica* comprising up to 5% of the total shells. There is no evidence from the molluscs for any intrusive shells or animal disturbance to the ditch fills after the inner ditch was sealed by the barrow mound. Conditions remained very open throughout the period of infill of the ditch, with the development of a fauna of short-turfed grassland, Three species predominate: *Pupilla muscorum*, *Vallonia costata* and *V. excentrica*. In layer 2444, the top of the sequence, shells of *Vertigo pygmaea* are also numerous, perhaps reflecting the later date of this upper fill.

Bell Barrow Ring-ditch

Shells are well-preserved in the samples from Trench E, although concentrations are low in primary fills 2434 and 2506 (Table 7.5). Deposit 2448, the

Table 7.6 Mollusca from main barrow ring-ditch (Trench C)

Context	2208	2232	2230	2229	2224	2223	2222	2221	2220
Sample	3056	3055	3054	3053	3052	3051	3050	3049	3048
Pomatias elegans (Müll.)	–	f	f	f	f2	f	f	f	–
Carychium tridentatum (Ris.)	–	–	–	2	–	–	–	–	–
Cochlicopa sp.	2	–	8	2	2	23	1	2	5
Truncatellina cylindrica (Fér.)	–	–	–	2	–	2	1	–	–
Vertigo pygmaea (Drap.)	1	–	–	–	1	6	–	6	12
Pupilla muscorum (L.)	2	2	36	19	57	128	18	53	82
Vallonia costata (Müll.)	1	–	3	15	15	40	3	4	3
V. excentrica Sterki	2	1	8	1	18	46	9	27	16
Vallonia sp.	3	–	12	46	51	96	11	23	26
Punctum pygmaeum (Drap.)	1	–	–	5	–	10	–	–	–
Discus rotundatus (Müll.)	f	–	–	–	f	–	–	–	–
Vitrea sp.	–	–	–	–	–	–	–	1	–
Nesovitrea hammonis (Ström)	–	–	–	–	–	1	–	–	–
Aegopinella nitidula (Drap.)	1	–	–	–	–	–	–	–	–
Limax or *Deroceras* sp.	1	–	–	–	–	–	–	–	2
Candidula gigaxii (Pfeif.)	1	–	–	–	–	–	–	–	–
Cernuella virgata (da Costa)	2	–	–	–	–	–	–	2	–
Helicella itala (L.)	–	1	2	6	4	22	2	8	8
Trochulus hispidus gp.	2	–	–	–	–	1	3	10	11
T. striolatus (Pfeif.)	1	–	–	–	–	–	–	3	–
Cepaea sp.	–	f	1	–	–	–	1	–	–
Arianta or *Cepaea* sp.	–	–	–	–	f	–	–	–	–
Total	20	4	70	98	150	375	49	139	165

KEY: f – robust worn apices and shell fragments

uppermost layer of the primary ditch fill, contains a characteristic Bronze Age open-country assemblage with *Pupilla muscorum*, *Vallonia costata* and *V. excentrica* all well represented, a presence of *Truncatellina cylindrica* and only a single individual of *Trochulus hispidus* gp. There was no evidence for any intrusive shells in these fills. The fill of the recut (2432) likewise contains an open-country assemblage, although with a much higher proportion of *Helicella itala*. The two samples from upper fill 2370 are also dominated by open-country species but *Trochulus hispidus* gp., which can occur in both open and shaded habitats, rise to around 10% of the number of individuals, as might be expected in post-Bronze Age contexts. There is a single example of *Cernuella virgata*, one of the Helicellinae believed to be a medieval introduction to Britain, in the sample from 2432, which may be due to earthworm activity or the formation of cracks in soil during droughts.

Shells were also well-preserved in the column through the outer barrow ditch from Trench C, although the concentration of shells in 2232, one of the primary fills, is very low (Table 7.6). The earliest sample, from basal fill 2208, contains shells from species of open habitats, including *Vertigo pygmaea*, *Pupilla muscorum* and *Vallonia excentrica*. However, the assemblage is not of Bronze Age character: it also includes a couple of examples of *Cernuella virgata* and a specimen of *Candidula gigaxii*, both of which are regarded as medieval introductions. There are few shells of species of shaded habitats but one, of *Aegopinella nitidula*, had a fresh periostracum indicating it to be modern. A significant number of shells in this sample are quite clearly intrusive.

The remaining primary contexts (2232, 2230 and 2229) and the earliest fill of the recut (2224) contain typical Bronze Age open-country assemblages from which *Trochulus hispidus* gp. are absent. The proportion of *Helicella itala* increases substantially in 2223. There is no evidence of any intrusive shells in these contexts. The post-Bronze Age fills (2221 and 2220) contain open-country assemblages with a higher proportion of *Trochulus hispidus* gp. In addition, *Cernuella virgata* and *Trochulus striolatus* are present in 2221.

The results from layer 2232 suggest that badger tunnelling had introduced modern shells to the bottom of the ditch although, while badger runs are present in this context, the deposit sampled did not have any obvious signs of disturbance. Badger activity may also have introduced the shells of *Cernuella virgata* into layer 2221, although the shells of *Trochulus striolatus* in this context are not necessarily intrusive because this snail becomes more common in open habitats from the Roman period onwards and this context is certainly post-Bronze Age. The molluscs show the typical development of the dry-ground open-country fauna of the region from the Bronze Age into the Iron Age and perhaps the Roman period.

Molluscs from Other Features

by Sarah F Wyles

Molluscs were observed within six flots taken in 2012–14 from the Neolithic buried soil, Early Neolithic pit 2380/2925 and four Early Bronze Age cremation-related deposits (Table 7.7). Nomenclature is according to Anderson (2005) and habitat preferences according to Kerney (1999).

Table 7.7 Assessment of the 2012–14 molluscan remains

Context	7091	2927	7019	7021	7023	7024
Sample	3573	3514	3538	3536	3598	3540
Vol (L)	1	10	0.11	10	6.31	3
Flot size	175	100	35	250	100	60
Roots %	70	70	5	50	20	40
Open country species						
Pupilla muscorum	X	–	–	X	X	X
Vertigo spp.	–	–	–	X	X	X
Helicella itala	X	–	X	X	X	X
Vallonia spp.	–	–	–	X	X	X
Truncatellina cylindrica	–	–	–	X	X	–
Intro. Helicellids	–	–	–	X	X	–
Intermediate species						
Trochulus hispidus	–	X	X	X	X	X
Pomatias elegans	–	X	–	X	X	X
Cochlicopa spp.	–	X	X	X	X	X
Punctum pygmaeum	–	–	–	X	–	–
Vitrina pellucida	–	X	–	–	–	–
Shade–loving species						
Acanthinula aculeata	–	–	–	–	X	–
Discus rotundatus	–	X	–	–	X	X
Oxychilus cellarius	–	X	–	X	–	–
Aegopinella nitidula	–	X	–	X	–	–
Clausilia bidentata	–	X	–	–	–	–
Vitrea spp.	–	X	–	X	–	–
Burrowing species						
Cecilioides acicula	X	X	X	X	X	X

KEY: X= present

The mollusc assemblage from Early Neolithic pit 2927 included shells of the shade-loving species *Oxychilus cellarius, Aegopinella nitidula, Discus rotundatus, Clausilia bidentata* and *Vitrea* sp., and of the intermediate species *Trochulus hispidus, Vitrina pellucida, Cochlicopa* sp. and *Pomatias elegans*. The absence of open-country species within this assemblage may be indicative of a woodland environment in the vicinity of the pit.

The small numbers of shells recovered from the Neolithic buried soil (7091) were those of open-country species, while the assemblages from the Early Bronze Age cremation-related deposits were generally dominated by open-country and intermediate species. The presence of the obligatory xerophile *Truncatellina cylindrica* within two of the assemblages is noteworthy, indicating a well-established open, dry landscape. However, one of these assemblages, from context 7023, also contained shells of *Acanthinula aculeata*, a species typical of open deciduous woodland. As with the previous molluscan work on the site (see above), a level of mixing within a number of the assemblages was demonstrated by the presence of introduced helicellids.

These assemblages appear to be indicative of a generally well-established open environment with some areas of open deciduous woodland and longer grass in the vicinity during the Neolithic period and probably longer grass in the Bronze Age period. This pattern has been seen in other assemblages from the site (see Robinson above) and in assemblages from the wider area, such as south-east Amesbury (Wyles forthcoming).

Discussion

Much palaeoenvironmental evidence has already been lost in those parts of the monument which have been thoroughly tunnelled by badgers. However, the results from layer 2208 in Trench C show that damage has also been done to the integrity of the molluscan assemblage even though disturbance was not obvious from an inspection of a section through the part of the deposit to be sampled. Further problems are likely to arise as older badger tunnels collapse and they are filled by the surrounding soil. It will not necessarily be evident in any subsequent archaeological excavations the degree to which material has been moved.

The very damaged nature of the monument does not mean that all palaeoenvironmental information from the molluscs has been rendered useless. Indeed, it proved possible to establish a sequence which closely matches that of the nearby Trench A ring-ditch, which has not been tunnelled by badgers. This in part is facilitated by the simplicity of the sequence which throughout reflects open conditions. If there had been fluctuations between open and shaded conditions it would have been harder to establish the reliability of the interpretation.

The results from Trench A and all the sections through the barrow ditches show the same environmental sequence. The occurrence of residual robust fragments of shells of woodland species suggests an episode of tree cover at some time prior to the construction of the monuments. The Trench A ring-ditch, the Beaker fills of the inner ring-ditch beneath the barrow mound, the Bronze Age layers in the lower part of the main ring-ditch and the early fills of the recut all have molluscan assemblages characteristic of well-drained, short-turfed chalk grassland. They show the range and relative abundance of species typical of Bronze Age open habitats in the region. Some changes occur in the assemblages of the later, post-Bronze Age fills of the Trench A ring-ditch and the main barrow ring-ditch but conditions remained open. Modern deposits were only investigated from Trench A, where they suggest an episode of rough grassland or even the beginnings of scrub development prior to the cultivation of the present day.

This study suggests that burrowing by badgers can cause insidious degradation to the palaeoenvironmental potential of mollusc shells stratified within a monument, as well as the more obvious damage to those deposits which have been tunnelled away. Nevertheless, the study has also shown that it is sometimes possible to recover the palaeoenvironmental sequence given by molluscs from a monument which has already experienced severe badger damage. However, badger damage is progressive if the animals remain in residence and eventually there would come a time when even careful sampling is insufficient to recover reliable data.

Chapter 8
The Prehistoric Sequence – Discussion

by Jonathan Last

A 'Relational Place'

With its long history of activity from the Neolithic to the Anglo-Saxon period, Barrow Clump appears as a 'persistent place' in the landscape of Salisbury Plain. This is a term that archaeologists frequently employ to describe locations used by people over centuries or millennia. But that persistence is expressed here in the form of episodic or periodic returns rather than continuous occupation. Each phase of activity established a relationship with its predecessor, as well as with other places in the contemporary landscape. We can therefore also consider Barrow Clump as a *relational* place, its significance seen in the relationships established at the site across both time and space. Barrows can frequently be understood in such terms – they are monuments that make explicit reference to other sites, through their shared form and arrangement into groups and cemeteries; to other areas of the landscape, through the material they incorporate and the views they provide; and to earlier times, through the often lengthy sequences of construction and activity that led to the final form of the monument.

Aside from the Anglo-Saxon cemetery, which is discussed separately below, the excavations at Barrow Clump are perhaps most important for demonstrating the long (pre)history of a multi-phase monument at a location that remained significant from the Early Neolithic to the Early Bronze Age and beyond. The archaeological investigation of the barrow has been similarly episodic: although its complexity was hinted at by Hawley's discovery of both Beaker and Food Vessel funerary deposits more than a century ago, most of the story was completely unknown until the work by English Heritage and – following another, briefer hiatus – by Operation Nightingale, Exercise Beowulf.

Of course, the site was initially approached less because of this intrinsic interest (which was well concealed by the damaged state of the monument) than its ongoing disturbance by badgers. During the initial fieldwork in 2003 we did not really know what to expect. Progress was slow because the digging was done entirely by hand and we needed to metal-detect for bullets and ordnance. We soon understood the depth of disturbed deposits across much of the site and returned in 2004 armed with a mechanical excavator. This helped to reveal most of the key components of the monument and its basic story: Early Neolithic activity, Middle Neolithic occupation followed by a small Beaker barrow with graves both within and outside it, then the much larger bell barrow and finally its reuse in the early Anglo-Saxon period. The work also led to a good understanding of the monument's condition and the impact of the badger activity (see below).

It was the ongoing conservation problem of the badger activity that in 2012 also provided an opportunity to return and investigate a larger portion of the monument. Over the next three years, although focused primarily on establishing the extent of the Anglo-Saxon cemetery and recovering the burials at risk from burrowing, the Operation Nightingale project also revealed a number of things missed by or inaccessible to the previous phase of work, including the Early Neolithic pit, the mound of the Beaker barrow, the stake circles, the cremation burials inserted into the barrow mound, and the location of Hawley's excavation trench. Although some questions still remain, the story of the monument can now be reliably told.

The Neolithic

The earliest activity at Barrow Clump predates the burial monument by over a millennium, and comprises an Early Neolithic pit containing an unusual collection of objects (Figs 2.3, 4.2 and 4.3; Pl. 8.1). Although there are complications in understanding the detailed sequence (the fact that it was excavated in two 'goes', and the disturbance indicated by later pottery) the evidence that it was recut and marked by a capping, or perhaps even a cairn, suggests it was somewhere people returned to. It is unclear what prompted the initial pit digging and deposition, or whether there are further such features elsewhere in the vicinity of the barrow, but the long barrow visible as a cropmark some 500 m to the north-east (see Chapter 1) might provide a context for small-scale activity in the vicinity during the Early Neolithic. The 'toolkit' of hammers of sarsen, flint and antler in the pit suggests that the location was associated with percussive manufacturing activity of some kind, either directly or metaphorically. This appears to mark the beginning of a long, if episodic, association of the site with flint-working.

Numerous Neolithic pits have been found in the wider Stonehenge area, although those belonging to the Early Neolithic seem to be outnumbered by features of later date. The best known of the early

Plate 8.1 Early Neolithic pit 2380/2925, with adjacent Anglo-Saxon graves 2829 and 2922 (Trench 5), from the south-east

group is the 'Coneybury Anomaly' (Richards 1990; Barclay 2014). Dating probably to 3760–3700 cal BC, it is contemporary with or slightly earlier than the feature at Barrow Clump and was somewhat larger, measuring 1.9 m in diameter and 1.25 m deep. However, its contents were entirely different in type and quantity, with major assemblages of pottery, animal bone and worked flint, much of it carefully arranged and placed. Another, less spectacular Early Neolithic example is an elongated pit containing sherds of three Plain Bowl vessels that was found beneath a ploughed-out barrow (Amesbury 132) excavated by Vatcher in 1959 (Gingell 1988, 40–1). These records all relate to locations on the high plateau of Salisbury Plain; however, excavations at Bulford, 3.5 km south of Barrow Clump, have focused attention on prolonged Early Neolithic occupation within the valley bottoms (Wessex Archaeology 2019). A total of 12 pits containing pottery of the South Western regional ceramic tradition were found, eight of which were located on the lower valley slopes or in the valley bottom. The pits were filled with a range of domestic refuse including flint tools, animal bone and charred hazelnut shells. These discoveries have broadened appreciation of Early Neolithic activity to incorporate both high and low places within the Salisbury Plain landscape.

However, for comparable finds assemblages we have to look to somewhat later examples. The cluster of Middle Neolithic pits recently excavated at West Amesbury produced two fragments of worked sarsen and three antler tools, among much larger assemblages of flint and Peterborough Ware pottery (Roberts *et al.* forthcoming). A sarsen rubber fragment and pieces of worked antler were among the finds from a pair of Middle Neolithic pits excavated at Tilshead (Amadio 2010). Perhaps most similar to Barrow Clump in its contents is a Late Neolithic pit from Boscombe Down, south-east of Amesbury, which contained stone and antler hammers and is dated probably to the second quarter of the third millennium BC (Clarke 2013; P. Harding, pers. comm.). Also comparable is a pit excavated adjacent to the Cuckoo Stone in 2007 as part of the Stonehenge Riverside Project. This feature, which was radiocarbon dated to around 2900 cal BC, contained an antler pick, and antler rake and a cattle scapula, along with a series of worked flints (Parker Pearson *et al.* forthcoming). Another possible example is a pair of undated but presumably Neolithic pits at Bulford South which contained, respectively, an antler pick or rake and a hammer-stone (Wessex Archaeology 2015).

On the whole, Early Neolithic pits tend to contain generalised occupation refuse, while the selection of specific or special objects is more typical of the Late

Neolithic (Pollard 2001). However, it is conceivable that the pit at Barrow Clump, and the later features, are indicative of a long-lived tradition of depositing implements involved in making objects, which might parallel the relatively common finds of digging tools, such as antler picks, in the ditches of Neolithic monuments.

Although the pit was the only unequivocal cut feature of this phase, a number of tree-throw holes and other features of uncertain origin suggest this was a wooded area prior to the more extensive Middle Neolithic occupation. This is supported by the molluscan assemblage from the pit, which lacks open-country species and indicates a locally wooded environment (see Chapter 7). The other pre-barrow features lacked diagnostic finds but additional hints of early activity include a possibly residual blade core in the Middle Neolithic deposit and some sherds of Early Neolithic pottery as well as a leaf-shaped arrowhead from the barrow mound.

Whatever the perceived qualities or affordances of the place in the Early Neolithic, the Middle Neolithic flint scatter provides evidence of more substantial activity at least 250 years later, including flint-knapping and the use of pottery, predominantly Mortlake Ware – though no evidence of structures was found in the limited area where the scatter was preserved and accessible. Evidently the later barrow ensured the preservation of parts of the scatter within a buried soil, though the badger tunnelling had displaced a considerable amount of this. The integrity of the deposit was undoubtedly affected by the Bronze Age activity, though it was not wholly disturbed, as is demonstrated by the survival of discrete knapping events with refitting pieces. The size of the flint assemblage overshadows the small and scrappy collection of Peterborough Ware from the buried soil, but the latter is important for understanding the context and chronology of the activity.

It does not seem coincidental that the Middle Neolithic occupation took place at a site that was already marked in some way; as Ard and Darvill (2015, 26) put it, the deposition of Peterborough Ware 'was backward-looking, often focused on monuments and places in the landscape that already had some significance'. It is possible that the levelled barrow cemetery around Barrow Clump contains a Middle Neolithic monument, one candidate being the sub-square enclosure 250 m north-west of Barrow Clump (no. 8 on Fig. 1.3). This might be compared with a square enclosure recently excavated at the southern end of King Barrow Ridge, not far from the pit cluster at West Amesbury; although undated there is a strong possibility that this represents a Neolithic mortuary enclosure (Valdez-Tullett and Roberts 2017).

However, Peterborough Ware has been found fairly widely across the Stonehenge landscape (Darvill 2006, 115–6; Thomas 2005, 282), while monuments of this phase are scarce, so more work is required to elucidate why particular locations may have been selected for occupation or deposition. The pottery assemblage from the pits at West Amesbury, dated to the last third of the fourth millennium cal BC, comprised mostly Fengate Ware, which contrasts with the Mortlake Ware from Barrow Clump (Roberts *et al.* forthcoming). As with later Grooved Ware, the significance of the different sub-styles of Peterborough Ware remains unclear; the idea of a simple chronological development is unsupported by available radiocarbon dates, yet we have so far been unable either to replace the sub-types with a picture of continuous variation or explain their co-occurrence in the same landscapes. For both Peterborough and Grooved Ware 'the issue of multiple contemporary styles remains unresolved' (Thomas 2010, 4).

As for the landscape context of this activity, there is evidence for large tracts of open downland existing by the late fourth millennium BC (Hazell and Allen 2013, 26) with stable calcareous grassland dominant on downland slopes by the early third millennium, although a considerable woodland component persisted in other areas (French *et al.* 2012, 30). This may well have included parts of the Avon valley, as shown perhaps by the presence of a large badger sett adjacent to, and broadly contemporary with, the pit cluster at West Amesbury (Roberts *et al.* forthcoming). The molluscan evidence from the buried soil at Barrow Clump similarly suggests conditions were more open than in the Early Neolithic, but with some evidence for deciduous woodland (see Chapter 7).

Assuming the Middle Neolithic occupation predates 3000 BC, like that at West Amesbury Farm, it is unclear what took place at Barrow Clump during the first three-quarters of the third millennium BC, the heyday of Stonehenge and Durrington Walls. Some possible Grooved Ware in the make-up of the later barrow may be evidence for activity at the site, if we assume the mound material was locally derived (see below), and the same goes for some of the flintwork, including the presence of oblique arrowheads (see Harding, Chapter 4). The Avon and its valley must have been a significant corridor at this time, connecting the Stonehenge landscape to that around Marden, some 13.5 km to the north-west of Barrow Clump (Leary and Field 2012), as shown by a group of Grooved Ware pits at Bulford, 3.5 km to the south, with dates very early in the 3rd millennium cal. BC (Wessex Archaeology 2019). In Darvill's (2006, fig. 31) model of the sacred geography of Stonehenge, Barrow Clump overlooks the north-eastern 'entrance' to the Stonehenge landscape, close to the axis of the monument in its initial phase (Fig. 8.1). It therefore seems highly likely that this location continued to be frequented. Again, there may be clues among the other as-yet uninvestigated components of the barrow cemetery.

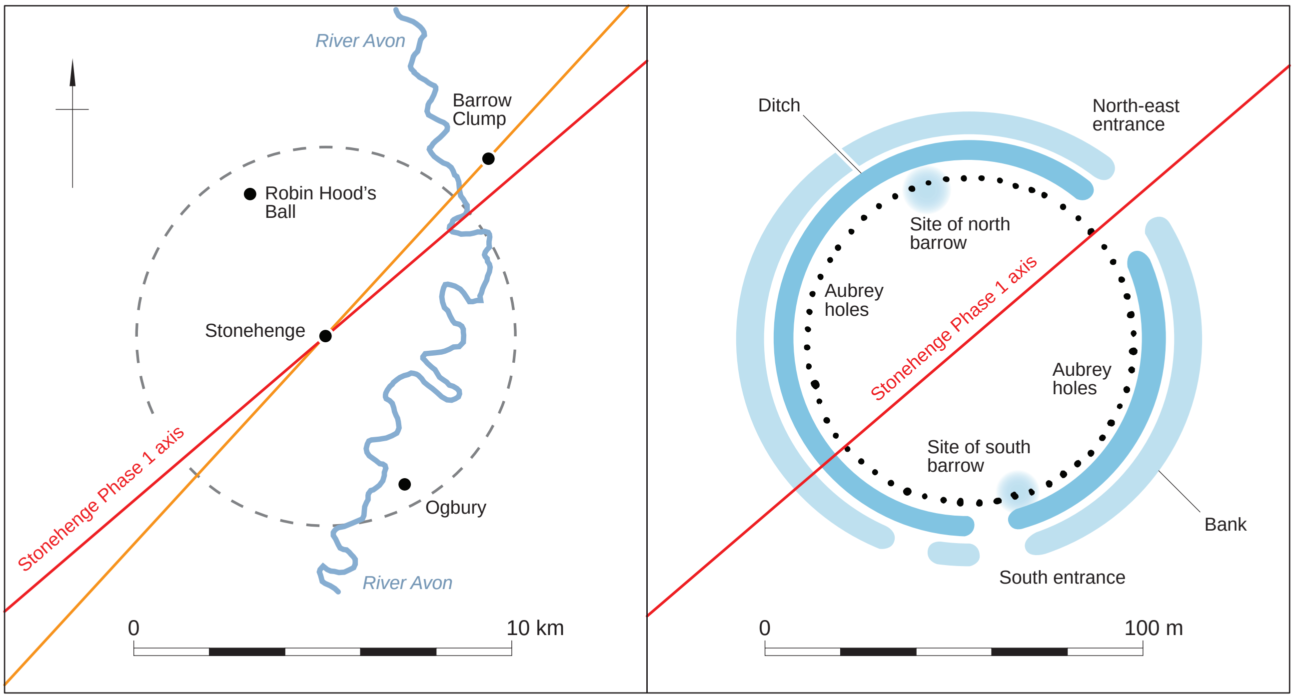


Figure 8.1 Approximate position of Barrow Clump in relation to the Phase 1 axis at Stonehenge (after Darvill 2006, fig. 31)

The Beaker Monument

By the time the Beaker activity commenced, probably in the final quarter of the third millennium, the significance of the Stonehenge landscape would have changed utterly compared to how it had been 1000 years before. The question that arises is whether the placement of the mortuary site was a fortuitous juxtaposition or a deliberate siting at a place of ancestral significance. It is certainly the case that a number of barrow sites in the Stonehenge landscape either incorporate or overlie Neolithic artefacts or features (Darvill 2006, 115–6) but it could be argued that the barrows 'are simply preserving a sample of earlier land surfaces, some of which happen to contain traces of earlier activity' (Darvill 2005, 45). However, more recently Ard and Darvill (2015, 20) have suggested that a

> 'case can be made for the siting of barrows over previously occupied ground with attendant symbolic values linking the places of the "living" with the "world of the dead", but to be convincing far greater attention needs to be given to the taphonomy of the assemblages, the contexts of deposition, and the circumstances of preservation'.

In the case of Barrow Clump, there can be no doubt that the Neolithic activity was substantial and would have been visible to anyone moving earth at the site, even if the significance of the location was no longer remembered. The spatial patterning visible in the distribution of material subject to gridded collection suggests the centre of the scatter more or less coincides with the location of the Beaker monument, strengthening the impression that the latter was deliberately sited over the earlier occupation. On the other hand, because we do not have fieldwalking data for the area around Barrow Clump, the extent of Neolithic material in the local landscape (and therefore the likelihood of a chance co-location) remains unclear.

While numerous barrows in the Stonehenge landscape – not all originating in the Beaker phase – were built over earlier material, Barrow Clump seems unusual in the size of its lithic assemblage (see Harding, Chapter 4). Greenfield's excavations at Wilsford 51 and 52 represent the two main ways in which older artefacts could be preserved: either brought to the site in the materials used to construct the mound, as with barrow 51, or like Barrow Clump, by sealing earlier occupation debris underneath the monument, as in the case of barrow 52 – although in this case it was contained within hollows rather than a buried soil (Smith 1991, 34–5). Both these sites produced Peterborough Ware but in each instance struck flints were rather rare.

Other comparable sites include the Snail Down barrow cemetery, where Peterborough Ware (and Grooved Ware) was found, though here the majority of pre-barrow occupation material is Beaker (Thomas 2005). Ashbee (1981, 31) notes two other cases in Wiltshire where barrows were built on earlier occupation sites: Avebury 55, which belongs to the developed Early Bronze Age, after *c.* 2000 BC

Plate 8.2 Chalk deposits of Beaker mound, cut by stakeholes (in foreground), with Hawley trench/central Beaker grave in background (Trench 10), from the south-east (scale = 2 m)

(Smith 1965a), and West Overton 6b, which like Barrow Clump had a primary Beaker grave (Smith and Simpson 1966). There is also Durrington 65b, a Beaker grave enclosed by a small ring-ditch that contained much occupation debris from the adjacent site at Durrington Walls (Stone *et al.* 1954), and the Beaker monument at Hemp Knoll near Avebury (Bishops Canning 81), where over 2600 flints came from five pits beneath the barrow (Robertson-Mackay 1980). Examples from further afield include the 'Great Barrow' at Bishop's Waltham, Hampshire, where it is suggested the artefacts (numbering around 1850) represent a deliberate admixture to the mound material (Ashbee 1957a), and a barrow on Arreton Down on the Isle of Wight, where over 13,000 flints were found in association with sherds of Peterborough Ware (Alexander *et al.* 1960). Neither of these two sites has a Beaker mortuary phase, however.

There is evidence elsewhere in the Stonehenge environs that Early Beaker communities were sometimes concerned to mark older monuments, including burials within or adjacent to long barrows Figheldean 31 and Wilsford 34, and next to the possible Neolithic round barrow Winterbourne Stoke 35a. Cleal and Pollard (2012) suggest that Beaker material was not closely clustered around Stonehenge, so Barrow Clump might mark a significant location at a suitably respectful distance upstream. In fact it appears to be on the edge of a diffuse cluster around Stonehenge, though this may in part reflect the greater number of excavated barrows within the World Heritage Site (WHS). A full list of Beaker burials within the Stonehenge WHS can be found in Bowden *et al.* (2015, table 3.2), though none are within 4 km of Barrow Clump. Within this list we need to distinguish burials which, like Barrow Clump, belong to the initial Early Bronze Age (*c.* 2200–2000 BC) from those of the Late Neolithic/Chalcolithic on the one hand, and the developed Early Bronze Age on the other. The former include the earliest interments at Wilsford 1, Wilsford 54 and Shrewton 5k, as well as the 'Amesbury Archer'. Later examples appear to include Amesbury 15, said to contain a primary Beaker inhumation, although the extant dagger from the grave is of Camerton-Snowshill type, which suggests a second millennium date (Woodward and Hunter 2015, 43), and Amesbury 18, where the cist contained cremations and incense cups as well as Beakers.

As well as the relationship with earlier activity, Barrow Clump also provides an important insight into the architecture of late third millennium Beaker funerary monuments. That these were generally small compared to the more numerous round barrows of the developed Early Bronze Age, after 2000 BC, is well-established (Garwood 2007a, 36; Fitzpatrick 2011, 199): many Beaker burials have been found beneath large barrows but as at Barrow Clump these are usually multi-phase monuments that had subsequently been enlarged. However, most recent excavations of Beaker monuments have involved plough-levelled sites (eg, Bennett *et al.* 2008) so Barrow Clump represents a rare opportunity to define and compare two phases of mound construction. There is a clear difference between the Beaker monument, which comprises numerous thin layers, the earlier ones generally being chalkier, and the turf/soil stack with chalk capping of the later barrow (Figs 2.5 and 2.6; Pl. 8.2). This stratified construction is reflected in the similarly layered fill of the Beaker ring-ditch; indeed some deposits are continuous between mound and ditch. Given the evidence for recutting of the ditch, the impression obtained is of a 'soft' mound, measuring some 13 m in diameter and perhaps 1 m high that was subject to slumping and periodic refurbishment.

Other Beaker burials near Stonehenge with evidence for small mounds include the ditchless barrow Wilsford 54, which was some 14 m in diameter (Smith 1991), and Winterbourne Stoke 43, where the inner ditch was about 12 m in diameter (Ozanne 1972). The 'Amesbury Archer' probably lay beneath a small ditchless barrow (Fitzpatrick 2011, 199). Where the make-up of the mounds is recorded, however, they often resemble later, Early Bronze Age monuments: at Shrewton 5k, 'the evidence from the ditch fill is for a mound with a turf core and chalk cap' (Green and Rollo-Smith 1984, 278) while barrow 5e is 'one of the typical, small, turf-and-chalk Beaker mounds of Wessex' (*ibid.*, 269). On the other hand, barrow 5a, which was the largest of those with Beaker primaries in the Shrewton group, measuring some 30 m in diameter, contained a Beaker burial over which the upcast chalk had been heaped to form a 'cairn' (*ibid.*, 260). Similarly Amesbury 51 initially comprised a small mound of chalk rubble over the grave, though this was quickly covered by 'varying tips of loam and weathered material' from the ditch, followed by a chalk envelope (Ashbee 1979, 10–12). The reference to 'tips' suggests a similarity to Barrow Clump, as does the description of the small (6 m diameter) primary mound at Wilsford 1, which was 'built of dumped earth and chalk' (Proudfoot and Peterson nd).

Further afield, the primary Beaker grave at Long Crichel 5, Dorset, was surrounded by a ditch *c.* 8 m in diameter within which ('reaching from ditch-lip to ditch-lip') was a low (0.3 m) chalk mound (Green *et al.* 1982, 41). The first phase of barrow 7 at the same site, which was probably later in the Beaker phase, comprised a turf and soil mound with chalk capping some 15 m in diameter and 1.5 m high, surrounded by a ditch with an internal diameter of 18 m, so in this case leaving a distinct berm (*ibid.*, 44). At Fordington Farm near Dorchester the first phase of a large barrow comprised a segmented ditch enclosing an area *c.* 10 m in diameter which contained a truncated mound of chalk rubble *c.* 8 m in diameter, leaving a berm of around 1 m (Bellamy 1991). Sometimes these monuments could be very small: at Chilbolton, Hampshire, a shallow inner and discontinuous outer ditch occupied an area little more than 5 m across (Russel 1990).

Just as there was variety in mound construction, so ditch form varied amongst Beaker barrows. Unlike Barrow Clump, a number of Beaker monuments in the Stonehenge area have segmented ditches, including Wilsford 51, Amesbury 51 and Shrewton 24 (Darvill 2006, fig. 54), and probably also Amesbury 50 (Amadio and Bishop 2010, fig. 11). Another example is the Early Beaker monument at Porton Down, about 10 km south-east of Stonehenge (Andrews and Thompson 2016). The Shrewton site was a two-phase monument with a mound derived from a series of quarry pits dug in a circle about 12 m in diameter around the grave pit (Green and Rollo-Smith 1984, 285–6). The relatively large mound of Shrewton 5a, mentioned above, was also surrounded by quarry pits which were later recut as a continuous ditch (*ibid.*, 260). The 'mini-henge' at Fargo Plantation (Stone 1938) is also probably best understood as a feature of this type.

It is possible that ring-ditch 9 in the Barrow Clump group, as revealed by the geophysical survey (Fig. 1.3), is a segmented monument of this kind. However, there is no evidence that the ditch at Barrow Clump itself was anything other than continuous, albeit recut in places. This may be because segmented ditches are particularly associated with Early Beaker burials that predate Barrow Clump (Fitzpatrick 2011, 199). On the other hand, the Early Beaker monument at Wilsford 1 had a penannular inner ditch some 9 m in diameter, with a north-west-facing entrance (Fig. 8.2; Proudfoot and Peterson nd) and we do not know for sure that the Barrow Clump ditch did not take this form. Interestingly, the causeway at Wilsford 1 was subsequently the focus of mortuary activity, which is discussed below. Proudfoot and Peterson (nd) recognise the anomalous nature of this feature since other sites with penannular ditches tend to post-date the Beaker phase. However, a number of plough-levelled sites with possible (blocked) penannular ditches representing early phases in complex round barrows are known beyond Wessex (Last 2007, fig. 12.3). Another Beaker monument in the Stonehenge landscape with a small, apparently continuous ring-ditch is Durrington 65b, which had a diameter of 12 m (Stone *et al.* 1954).

The Barrow Clump ring-ditch is unusual not only for its complex recutting but also, since deposits in Beaker ditches are rare, the presence of the cattle scapula in its south-western quadrant. At first glance this appears to be a case of a digging implement left in the feature it was used to create, like the antler picks in many Neolithic ditches and pits (and it is discussed as such, above: see Chapters 3 and 6. The six or seven scapulae from Woodhenge, all showing signs of use

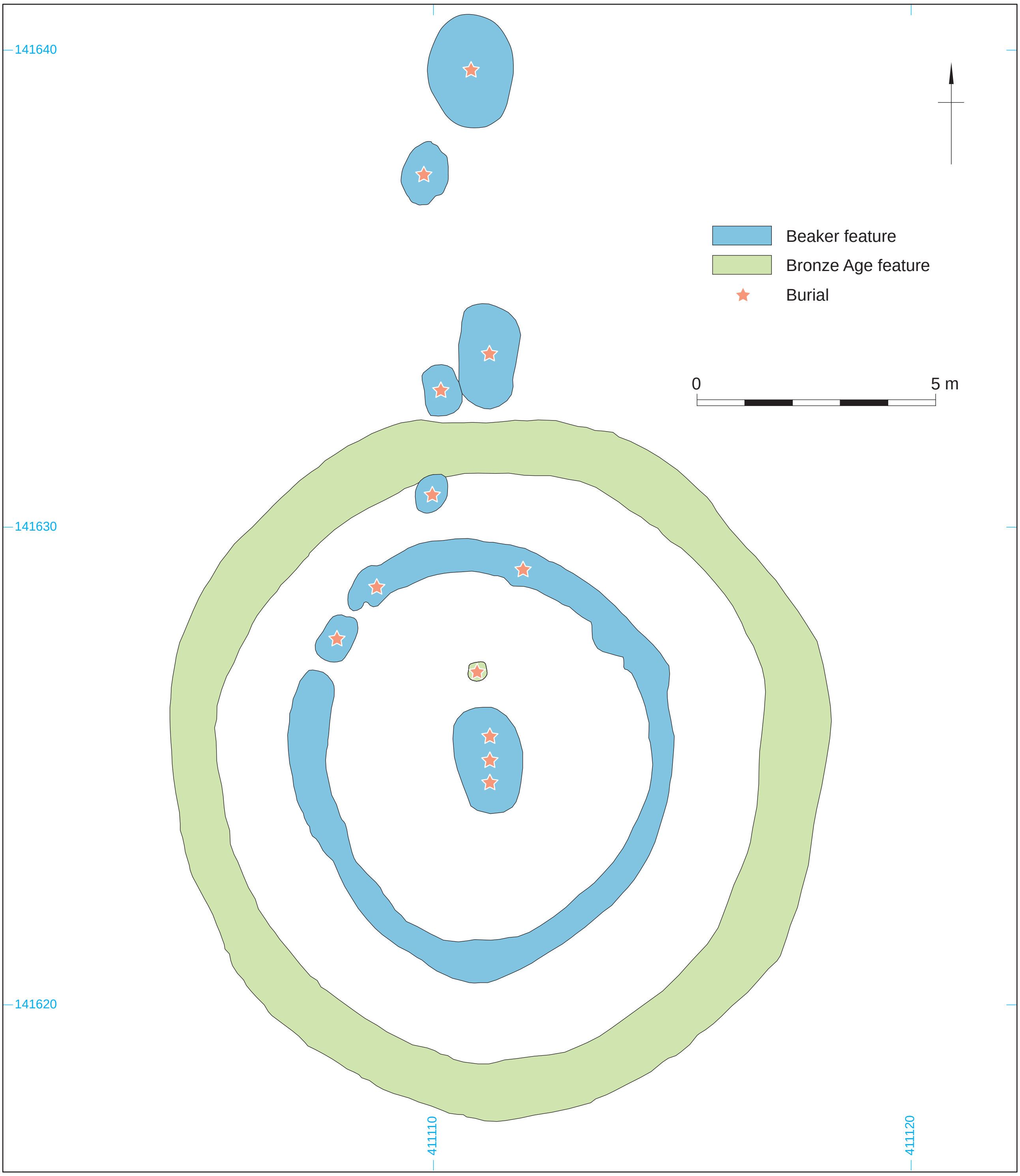


Figure 8.2 The Beaker phase (blue) at Wilsford 1 (after Proudfoot and Peterson nd). Two burials discovered more recently (Leivers and Moore 2008, 25) are not shown on the figure

(Cunnington 1929, pl. 20), are usually interpreted in these terms, as well as several cattle scapulae found at Stonehenge. However, the evidence that the latter were used as shovels is slight (Serjeantson 1995, 428) and replicas did not function well in experiments (Ashbee and Cornwall 1961). While we might be sceptical that it was useful as a shovel, the object from Barrow Clump had clearly been selected, and possibly modified, so what else might it represent? It is tempting, if somewhat tenuous, to draw analogies with the use of scapulae for shamanic rites in Asia (Russell 2011, 130–3). Other barrow or burial contexts in which they have been found in Britain include South Street long barrow, where four scapulae were incorporated into the mound (Ashbee *et al.* 1979, 247); the barrow at Fordington Farm, where an Early Beaker grave contained four scapulae, one beneath the head of the buried individual (Bellamy 1991); and a Beaker cist at Achavanich in Caithness, which contained a scapula that lacked signs of wear or modification (Hoole *et al.* 2018, 95).

The Beaker Burials

The two graves at Barrow Clump, excavated more than a century apart, were both deep pits containing a single crouched inhumation with a Beaker. Hawley's (1910) report notes that the Beaker grave was 5 feet (1.5 m) deep, while that excavated in 2004 was 0.75 m below the level of the chalk. Deep graves are characteristic of the Beaker phase in the Stonehenge area (Bowden *et al.* 2015, 48). As to the finds, Hawley records that the skeleton of the 'old man' had 'a pot of badly baked coarse brown ware… ornamented with a thumbnail marking and a few rough diagonal lines' at the feet and a flint knife under the head, and that 'the position and mode of interment [was] very similar to that in No.1 Barrow [on Bulford Down]', ie, contracted on its left side; the child burial from 2004 had the same arrangement of body and pot, at the feet being the most common position for Beakers in children's graves in Wessex (McLaren 2011, 186).

The main difference between the two graves, apart from the ages of those interred, was in their positions, the adult within and the child outside the ring-ditch, apparently unmarked. The Beaker flat grave is a relatively common phenomenon, though given the evidence for some having small ditchless mounds, as discussed above, one might wonder how many were originally marked in this way and have simply been ploughed flat in a later period. In some cases mounds and ditches may subsequently have been constructed over and around what had originally been a flat grave: this seems to be the case with the Beaker primary in Shrewton 5k, where the later ring-ditch is relatively large, measuring about 20 m in diameter. But in other cases, as with the Barrow Clump child, flat graves lay in the vicinity of mounded burials, the most notable example locally being Wilsford 1, which had at least four burials lying beyond the outer ring-ditch of the barrow (Fig. 8.2; Proudfoot and Peterson nd; Leivers and Moore 2008, 25). It seems likely that the child burial at Barrow Clump is secondary, and this is not contradicted by the radiocarbon date from what we assume is Hawley's 'old man' (UBA-31687) (Table 3.1).

Another difference between the two burials was the presence of nine flint nodules around the child's body, perhaps in lieu of the coffin structures commonly seen in Beaker graves. The use of this material, including one nodule that had been 'tested', hints at the earlier flint-working history of the site, though it is impossible to say if the reference was deliberate. Comparable arrangements appear to be rare locally, though at Shrewton 5k, a number of chalk blocks surrounded the primary (adult) inhumation, including one that was inscribed (Green and Rollo-Smith 1984, 275). At West Overton in north Wiltshire, the primary Beaker grave was lined by sarsen boulders, while one of the child burials had been placed in a polygonal cist of small sarsen slabs (Smith and Simpson 1966). There are more parallels for the use of flint in Dorset, notably disc barrow Kingston Russell 6g, where a line of large flints had been placed parallel to the back of a child aged about 4 and the adjacent primary adult female Beaker burial had a corresponding line of flints in front of the body (Bailey 1980). Also in Dorset, a (secondary) adult male burial was enclosed by two lines of large flints at Long Crichel 7 (Green *et al.* 1982, 44).

The presence of a fossil sea urchin (echinoid) on one of the nodules (Pl. 8.3), placed behind the head of the child, is an unusual feature that echoes, if only faintly, the famous burial of a young woman and child on Dunstable Downs, Bedfordshire, recorded by Worthington Smith (1894), which seems to have contained at least 200 echinoids as well as a fragmented Beaker (but see Leeming 2015). A few other prehistoric examples are discussed by McNamara (2007); it is notable that one of the Neolithic graves at Whitehawk Camp causewayed enclosure was also a female with a young child, while the Romano-British examples from Cranborne Chase are similarly associated with infants. Is it possible Barrow Clump is another example of a longstanding idea that these fossils had some apotropaic power in relation to children, perhaps even linked to the much later folk belief that they 'protected the unchristened child against being "changed"' (McNamara 2007, 289)? Brück and Jones (2017) have suggested that Early Bronze Age grape cups may copy the form of fossil echinoids, and show that fossils in general, 'encountered while building earthen barrows… were one of a number of heterogeneous materials incorporated into barrows' (*ibid.*, 255). One other notable feature of the nodule in the grave at Barrow Clump is its vaguely figurative form, with the echinoid in the place of the head. Whether this likeness was recognised in the Bronze Age cannot be known, but its inclusion within a group of flints of varied shape suggests not.

The presence of fingernail-decorated (FN) vessels in both of the excavated Beaker graves at Barrow Clump is a further point of similarity between them, and one wonders if this might indicate a genetic relationship. McLaren (2011, 185) notes that plain or rusticated wares are particularly associated with children; FN Beakers have been found in children's graves at Wilsford 51 and 52 (Smith 1991) and within a small flat cemetery on Overton Down near Avebury (Fowler 2000). Russel (1990) notes a link between FN Beakers and females accompanied by children;

one inevitably wonders about Hawley's identification of the primary burial at Barrow Clump as male, though the disarticulated remains recovered from his trench are consistent with his analysis (see Chapter 5). The idea that such Beakers are 'domestic' vessels remains moot given our limited knowledge of Beaker settlements but it is tempting to conclude that young children (and their mothers?) were seen as particularly associated with the domestic sphere, while adults participated in the wider social networks encapsulated in more formally decorated pots. So could there be an alternative explanation for the rusticated vessels? It is tempting to speculate that the same reasons which guided this community to establish a burial site on an ancient flint scatter might have led them to imitate the decoration of the Peterborough Ware they would have spotted there, a further link with past practices.

Other infants and young children buried with Beakers in the Stonehenge landscape include the primary interment, said to be 2–3 years old, in the large barrow Wilsford 40, which was excavated by Cunnington and Colt Hoare (Bowden *et al.* 2012, 10). The Beaker is not extant but was described as 'simple'. A number of secondary interments were also found, which suggests the mound may have been enlarged in the same manner as Barrow Clump. At Wilsford 1 a child aged about 18 months was buried in the northern terminal of the primary, penannular ditch and a child of about nine was buried with an infant in the space between the terminals. Another infant (4–6 months), with a plain Beaker (again symbolic of the baby's lack of a social identity?), was buried in the northern segment of the ditch (Fig. 8.2; Proudfoot and Peterson nd). It is tempting to see parallels with the peripheral location of the child at Barrow Clump, though Wilsford 1 is an earlier monument, since the ditch pre-dates 2200 cal BC. Another Early Beaker example is the collective grave of the group known as the Boscombe Bowmen, at least three of whom were children: one infant (cremated) and two aged around 5–7 years (Fitzpatrick 2011, 20).

Children are under-represented in the Bronze Age mortuary data from Wessex, so to have such a careful interment of a child at Barrow Clump is unusual. However, it conforms to some of the patterns among the known child burials. Garwood (2007b, 71) has noted that in southern Britain 'far more child burials date to the period *c.* 2200–1800… than the preceding or succeeding periods.' He has also shown that some age groups are better represented than others: the child from Barrow Clump is at the upper end of his 0–2 age group, which is relatively common in the burial record, while children aged 2–4 are far less common; the numbers then increase again in the 4–8 age group. Similarly, McLaren (2011, 160) notes that in Wiltshire 'children under two years of age are strongly represented, encompassing 20% of the inhumation burials'.

Plate 8.3 The fossil echinoid on a flint nodule from the child's grave at Barrow Clump

Garwood (2007b, 78) suggests that infant burials mark:

> deliberate choices by living adults to incorporate within the central symbols and repositories of group existence a category of children who might be seen to represent life, vitality and its loss, but could not in a straightforward way symbolize growth (being un-grown), group identity (unlearnt), continuity (broken by death) or reproductive potential (unformed and invisible).

But, in an era of high child mortality, why was this particular individual selected for formal burial? Perhaps the child had some connection to the adult in the primary grave, and had inherited some of his status. The formal burial would then have provided an opportunity for a lineage to assert its importance as much as for family and community to mourn their loss. Garwood may be correct in asserting that the body of a child was a symbolic resource but we should also recognise the emotion of the occasion: this was a (potential) person lost to its parents and the wider social group. Maybe the funeral served as a means of compensating in death for troubles in life, with the evidence that the child suffered from scurvy (Mays 2008) certainly suggestive of difficulties in its upbringing. Whatever the intentions of the people burying their child, it is unlikely they could have conceived of their choices contributing to him or her being remembered and discussed 4000 years later.

The Bronze Age Barrow

At some point in the first quarter of the second millennium, probably more than 200 years after the establishment of the Beaker site, the monument was

Figure 8.3 Reconstruction of the bell barrow under construction (drawing by Eleanor Winter)

expanded into a large bell barrow through the digging of an outer ring-ditch, with a diameter of around 53 m externally and 44 m internally, which provided material for an enlarged mound (Fig. 8.3). Measuring about 33 m across (with a berm of 5–6 m), the mound served to entirely seal the Beaker monument, though the interments that Hawley records in association with the bell barrow phase presumably involved removing part of the earlier monument. Subsequent insertions of urned and unurned cremation burials into the mound show that the monument's funerary role continued probably for another century or more.

Other Beaker monuments that were subsequently expanded into large bell or bowl barrows include Durrington 67 near Woodhenge (Cunnington 1929, 42–4), and possibly Wilsford 40 in the Lake barrow group (Bowden *et al.* 2012, 9–10), Wilsford 62 in the Wilsford group (Bowden 2010, 6) and Winterbourne Stoke 10 in the Crossroads group (Bax *et al.* 2010, 33–4). Wilsford 1 was also expanded although it remained a relatively small monument, with the later ring-ditch having a diameter of 14 m (Proudfoot and Peterson nd). Two small Beaker barrows on Launceston Down in Dorset, Long Crichel 5 and 7, were also expanded into bell barrows with ditch diameters of 21 m and 25 m respectively, while the monument at Fordington Farm was enlarged twice, becoming first a bowl barrow with a diameter of *c.* 23 m and then a bell barrow with a ring-ditch enclosing an area *c.* 42 m in diameter (Bellamy 1991). Numerous other sites across England, now mostly plough-levelled, also have evidence of small-scale Beaker beginnings and later expansion into large barrows (Last 2007).

Recent work on barrows has focused on their construction and architecture as much as on bodies and grave goods. It has emphasised the properties of the materials used and the modes of construction that were employed (eg, Owoc 2004). A focus on substances and assemblages has the advantage of not privileging burials over other forms of material practice enacted at the site. In these terms the Bronze Age use of the site at Barrow Clump, where burials were embedded in processes of making and remaking the monument, can be contrasted with the Anglo-Saxon phase, which is focused on a repetitive pattern of inhumation burials without evidence for other forms of construction and deposition.

Underlying the mound, but almost certainly belonging to this phase, were at least two arcs or rings of stakeholes. Stake circles and settings have long been recognised as part of the structure or construction process of round barrows, though their variability and the quality of the record at the time led Ashbee (1957b) to be rather pessimistic about our ability to resolve exactly what their purpose was. They could have been for laying out the barrow, retention or revetment of the mound, or served as structural features that defined the ceremonial area and were sometimes later replaced (in Ashbee's Welsh examples) by stone cairns, rings or kerbs. Stake-rings seen at two of the mounded barrows at Snail Down were interpreted as serving different purposes: enhancing the appearance of the monument (site XV = Collingbourne Ducis 3) or retaining the mound and preserving the berm (site XIX = Collingbourne Ducis 4) (Thomas 2005, 304). Since Ashbee wrote, lowland barrows like Deeping St Nicholas, Lincolnshire (French 1994) and Buckskin, Hampshire (Allen *et al.* 1995) have revealed freestanding stake circles, which perhaps supported hurdle fences. In the former case the first phase of stakes had already rotted *in situ* before the mound was constructed, while in the latter they are suggested to represent a fence enclosing the central area of the monument while it was open, rather than a revetment of the later mound.

At Amesbury 71 stake settings seem to have been present in all phases of the monument and are again seen as temporary structures in their own right rather than revetments; Christie (1967, 355) suggests 'widely or closely spaced concentric circles under barrows are associated mainly with food vessels', which fits what we know about the primary mortuary deposit of this

Plate 8.4 Early Bronze Age barrow ditch (bottom left) and remnants of turf mound and chalk capping (right), with Anglo-Saxon graves in berm (Trenches 7 and 8), from east

phase at Barrow Clump. Multiple rings were also present at Shrewton 5d, where they are interpreted as preceding barrow construction (Green and Rollo-Smith 1984, 312–3) and at Fordington Farm in Dorset, where probably four concentric circles of stakes were associated with the addition of a turf stack over the earlier Beaker mound (Bellamy 1991). Allen *et al.* (1995) question how necessary revetments would have been for the generally quite stable turf and chalk mounds that are common in Wessex, but at Fordington Farm they are plausibly interpreted as a revetment to stabilise the turf mound as it was constructed over the earlier mound and ditch (Bellamy 1991). Barrow Clump could therefore be interpreted in a similar way. Assuming the outer stakeholes, in Trenches 6 and 7, represent the same feature it might indicate that the circle was not centred on the same point as the Beaker monument but offset slightly to the north and east; this fits Hawley's (1910) description of the Beaker grave as being to the south-west of the Food Vessel burials.

Whereas the Beaker mound with its multiple layers of make-up seems to represent a continuous process of construction and refurbishment, also shown by the complex ditch fill and partial recutting, the main Bronze Age mound incorporated the earlier monument in a typical downland barrow of turf or soil with a chalk capping (Darvill 2006, 170; Thomas 2005, 302) (Pl. 8.4). In this case, of course, the 'core' is itself built over an earlier core – the Beaker mound. The enlarged chalk-capped mound would have served as a visual cue in the landscape when freshly constructed: a bright white hemisphere visible across and along the valley. But it also represented an inversion of the everyday world where chalk was revealed beneath soil and turf. At Barrow Clump the turves not only held the Beaker monument but also contained earlier material, from the buried soil and a variety of residual finds, spanning the Neolithic. As we have seen, at Wilsford 51 and elsewhere, the incorporation of such material into barrow mounds, separately from any underlying occupation, has often been seen as a deliberate act, though Barrow Clump lacks the 'profuse scatters' that characterise some other sites in the region (Ashbee 1986, 72–3). Other examples of mounds incorporating earlier material include Amesbury 39, with finds of pottery within the truncated core of the mound spanning the Early Neolithic to Early Bronze Age (Ashbee 1981, 31), Amesbury 70 (Christie 1964) and Winterbourne Stoke 45 (Christie 1970), both of which contained large quantities of flint. Ashbee (1981, 31) suggests

Plate 8.5 Early Bronze Age barrow ditch with, left to right in berm, Early Neolithic pit 2380/2925, Anglo-Saxon graves 2818, 2829 and 2922, and L-shaped military trench (Trench 5), from the south-east

that the deliberate incorporation of occupation soil may be one parallel between long barrows and round barrows, and suggests that material could have been deliberately brought in from earlier sites, which in the case of Amesbury 39 included Grooved Ware from Durrington Walls.

At Barrow Clump it is clear that the area where the new mound was constructed, outside the Beaker ring-ditch, was not stripped of soil because the Neolithic material survived. However, the turves could have been taken from the area of the berm and ditch, or brought from further afield: Ashbee (1981, 9) notes that the ditch of Amesbury 39 was inadequate for building the loam core and would have produced only about a quarter of the material required. The chalk capping was presumably quarried from the ditch, but erosion of the monument leaves somewhat open the question of whether it formed a dome that completely enclosed the turf stack or a ring that left a raised platform into which secondary interments could more easily be inserted. There are parallels for both, with Amesbury 70 having a chalk ring that served as a revetment to its carefully constructed turf stack but no evidence of any chalk over the turf (Christie 1964, 41), and Amesbury 71 being the clearest example of a mound serving as a raised platform for further activity (Christie 1967). At Barrow Clump the fill around the cut for cremation urn 7023 is described as 'chalk mound material', but the context into which this grave was dug (and that for the more truncated vessel 7019) is interpreted as material eroded from the Beaker mound, suggesting there was not a great depth of 'new' mound on top of the Beaker feature.

Moving outwards, the next feature of the bell barrow is the berm, up to 7 m wide, which served as an open ring between mound and ditch. The purpose or significance of berms is unclear; Grinsell (1953) saw them as a way of overcoming the tendency with bowl barrows for the mound 'to overspread and fill the surrounding ditch', but if the mound was stable they could also have served as spaces for ongoing ritual activity within the sacred enclosure, or for privileged spectators. In this respect we can note the possible postholes in the outer berm area that predate the Anglo-Saxon graves, though given the evidence of later prehistoric/Romano-British activity they need not be associated with the primary use of the monument.

The large ring-ditch appears to have been cut as a single, uniform feature (Pl. 8.5). There is no sign of an outer bank, though this is a rare feature in Wessex anyway (Grinsell 1958, 99). The key characteristics of the ditch are its flat base; the possible recut after a primary fill had accumulated, with a distinctive flinty deposit in the base of this; and stabilisation prior to the gradual accumulation of the upper fill in post-Bronze Age times. Broad, flat-based ditches are

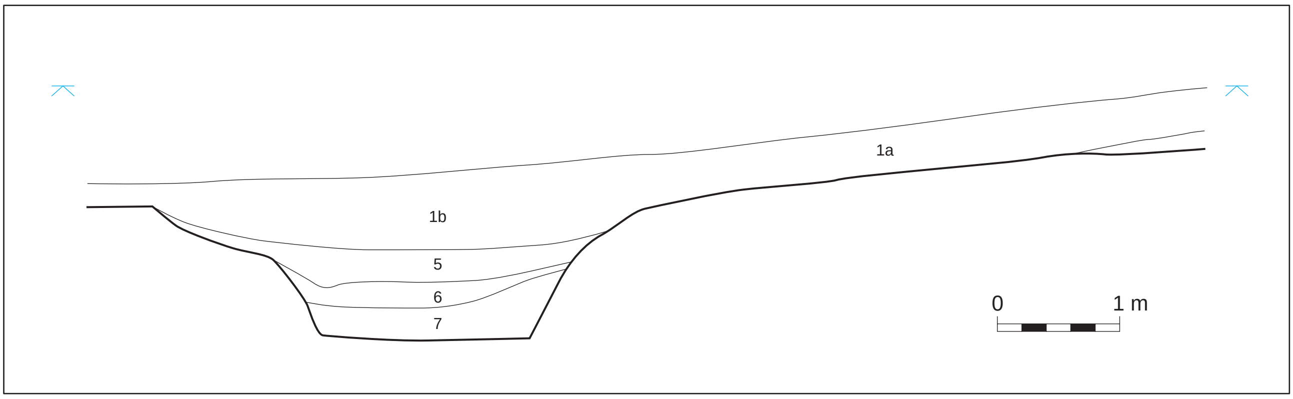


Figure 8.4 Ditch section of Amesbury 58 showing modern ploughsoils (1a/1b), humic infill (5), 'loam, chalky rainwash and flint nodules' (6) and 'primary chalk rubble silt' (7) (after Ashbee 1984, fig. 4)

common in the Stonehenge landscape, though some barrow ditches are narrower than Barrow Clump, eg, Durrington 67 (Cunnington 1929, 42–3), Amesbury 70 (Christie 1964) and 71 (Christie 1967); and others are shallower, eg, the majority of the ditch around Amesbury 39 (Ashbee 1981). Amesbury 58, also a bell barrow, provides a close parallel (Ashbee 1984, 45), down to the 'accumulations of flint nodules … which lined the declivity at the top of the primary chalk rubble silt' and were considered to be 'derived from the disturbed and broken chalk … into which the ditch had been dug'. Ashbee does not associate this deposit with any recut and it may be that it is just the weathering process at Barrow Clump which gives this impression, though the 'declivity' is certainly more pronounced in several sections here compared to Amesbury 58 (cf Fig. 2.10 and Fig. 8.4). Across the valley from Barrow Clump, investigation of a plough-levelled barrow near Alton Magna Farm recorded two sections of a similarly steep-sided and flat based ring-ditch, though greater variability seems evident here, with the more northerly section having a lot more chalk in its fills than the one to the south (Graham and Newman 1993, 11–12).

We have little information about the main burial of this phase at Barrow Clump beyond Hawley's

Plate 8.6 Urned cremation burial 7018 in foreground, with top of vessel in grave 7022 just visible in left background, and Hawley trench beyond (Trench 10), from the south-west (scale = 0.5 m)

Plate 8.7 Urned cremation burial 7022 under excavation (Trench 10), from the north

(1910) description of the three apparently young adult individuals buried 'almost touching one another', with an infant skeleton above them, as well as signs of burning and a coarse pot – the Food Vessel later published by Newall (1929). This unusual multiple inhumation (apparently unique in the Stonehenge landscape) was north-east of the Beaker grave so may have lain in the part of the barrow that was not investigated during the recent work. Since Food Vessels in the Stonehenge landscape are primarily associated with cremation burials, it seems unlikely that the pot was directly associated with the triple adult inhumation. While it is possible that the 'signs of burning' represent an unrecognised cremation (and see McKinley, Chapter 5) there are parallels for small Food Vessels accompanying child or infant inhumations, including Amesbury 71 (Christie 1967) and Porton Down (Andrews and Thompson 2016), so this seems a more likely association.

We now know that these inhumation burials did not mark the end of the Bronze Age funerary activity at the site. In the period after the construction of the barrow, at least three cremation burials, two with urns, were inserted into the barrow mound (Pl. 8.6). Both the urns were inverted, a relatively common but not universal practice; we can perhaps see this as a recreation of the barrow mound in miniature, and/or as an inversion of the domestic order for the mortuary sphere, just as the barrow itself is an 'inverted world' in which chalk overlies turf. The dating model and the very different character of the three burials – one with a fine vessel (Pl. 8.7), one with a much coarser pot, and one without a ceramic container – suggest a series of unrelated events over an extended period of several generations. What prompted these occasional returns to the monument to deposit interments is impossible to gauge but it is eminently plausible that long-term memories of the history of the monument were maintained and the relevant community returned at appropriate times and/or with the remains of appropriate people.

For Barrett (1994, 125–8) the shift towards cremation focused attention on the funeral and the ancestral monument where the ashes were interred, rather than the grave deposit *per se*, which he linked to a different mode of remembrance where relationships to the original burials were general and ancestral rather than specific and genealogical. While emphasising the complexities of both inhumation and cremation burial in the Early Bronze Age, Appleby has also investigated the changing temporalities of burial practice, suggesting that an emphasis on the funeral 'would have removed the function of barrows as a place of continued renegotiation of relationships with the dead' (Appleby 2013, 93). Thus we can see the enlargement of the mound at Barrow Clump, followed by the insertion of cremation burials, as stages in its transition from a place of active creation and construction to one of (increasingly distant) remembrance.

The Barrow in its Landscape

There are more than 670 round barrows in the Stonehenge landscape, as defined by Darvill (2006), with Barrow Clump right on its northern edge (*ibid.*, fig. 57). Darvill estimates that about 40% have been excavated, although most of these were investigated in the 19th century, so information on many sites is limited. However, there are still numerous comparable monuments, many of which have been mentioned above. Moreover, Barrow Clump is also part of a wider 'barrowscape' – that of Salisbury Plain, though far fewer of these monuments have been investigated (Fig. 8.5). McOmish *et al.* (2002, fig. 2.28) show that Barrow Clump is fairly central in a concentration of barrows to the north-east of Stonehenge that spans 15 km from west to east; 550 of the 700 barrows and ring-ditches in the Salisbury Plain Training Area (SPTA) are found in this eastern part. The density of barrows falls off sharply to the north of Fittleton, west of Rollestone and east of Sidbury Hill. The overlapping Stonehenge and SPTA distributions are both clearly focused on the river Avon and its tributary dry valleys and winterbournes, especially the Nine Mile River (McOmish *et al.* 2002, 50).

There are different ways of looking at the place of Barrow Clump within its landscape. The distribution of Beaker burials has already been mentioned. We can also look at the distribution of bell barrows, which might have been places of congregation if they facilitated gatherings on the berm. Grinsell (1958, 98) suggests that there were 250 to 300 bell barrows in Wessex, representing perhaps 6–7% of all Wessex barrows. However, he notes a few concentrations of bell barrows, including one around Stonehenge. They are somewhat scarcer within the SPTA, east of the Avon, though McOmish *et al.* (2002, 39) note that

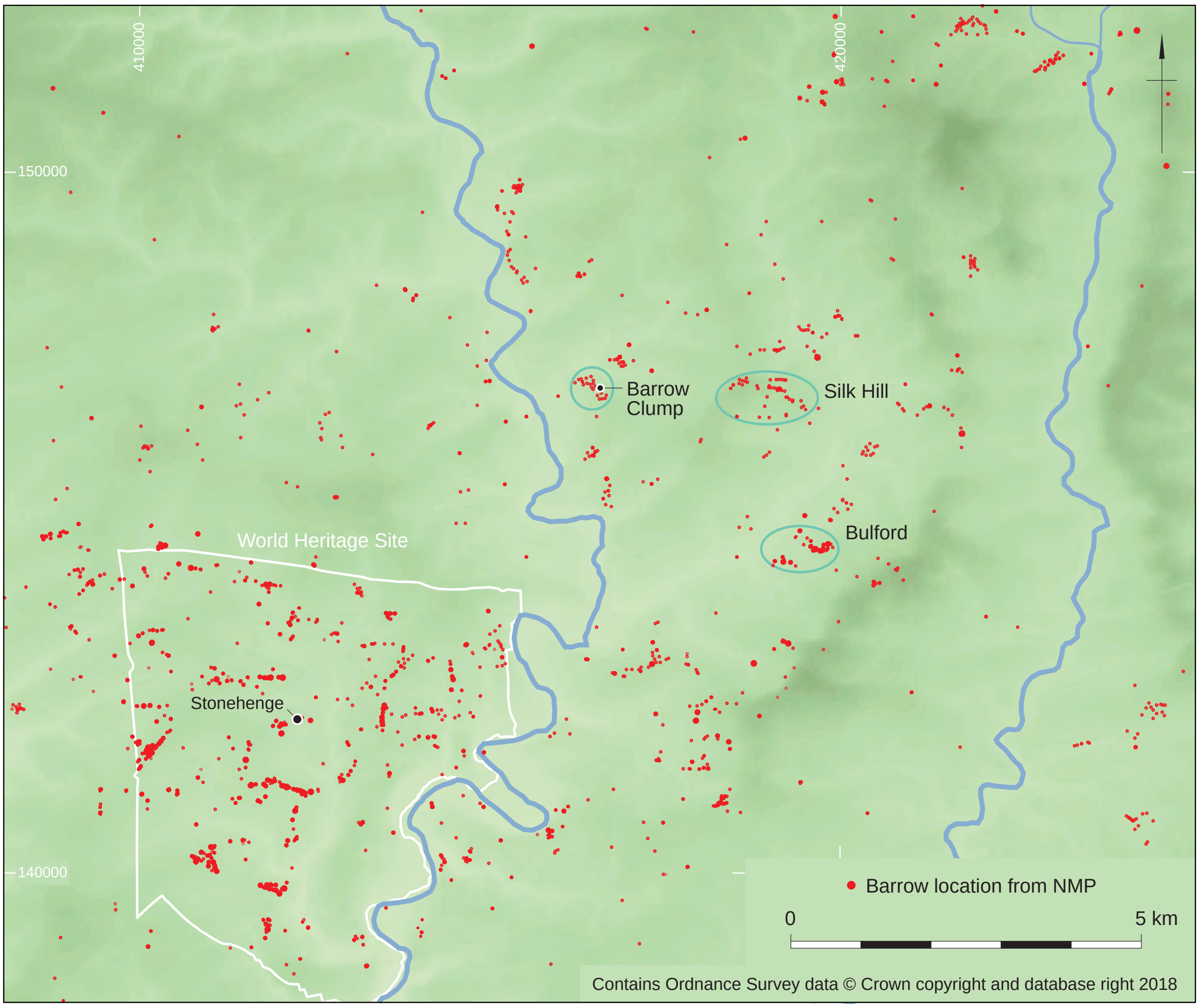


Figure 8.5 Barrow distributions around Stonehenge and on Salisbury Plain

some eroded bell barrows may 'have been wrongly classified as bowls' – which is exactly what happened at Barrow Clump, of course. McOmish *et al.* (*ibid.*, 39) also argue that the classic typology of mounded barrows as bowl, bell or disc forms is inadequate; and cite previous attempts to define several types in each case. The key point is that variability is greater than can be easily accommodated in a simple scheme, especially with complex, multi-phase monuments like Barrow Clump. The complexity of many barrows in the Stonehenge landscape has also been noted by Bowden *et al.* (2015), whose careful earthwork surveys have revealed evidence for multiple phases at many sites, with bell barrows in the Stonehenge WHS often showing evidence for enlargement (Bowden 2010, 13).

Size is another way of looking at barrows but this aspect has been less systematically studied. McOmish *et al.* (2002, 33–4) used size to sub-divide the main group of bowl barrows in the SPTA, distinguishing three categories based on height and width, which they term wide, low and high. Bell barrows can perhaps then be distinguished as a fourth category within the mounded barrow group, while 'enclosure barrows', comprising pond, disc and saucer forms, represent a second major class (cf. Jones and Quinnell 2014).

The size of the monument at Barrow Clump is certainly exceptional, though not unprecedented in the Stonehenge landscape: other bell barrows with overall diameters in the order of 50 m include Amesbury 15, 43, 45 and 55, Wilsford 17, 25 and 43, and Winterbourne Stoke 4 and 5. The New King Barrows (Amesbury 27–32) are also similar in scale (44–54 m in overall diameter). While some of these have larger berms and therefore mounds of lesser diameter than Barrow Clump, many of them are probably considerably taller than Barrow Clump before it was damaged. On Salisbury Plain there are also a number of large bell barrows with diameters over 40 m, including Bulford 47, Collingbourne Kingston 13 (Snail Down), Enford 3, Everleigh 1 and 2, Fittleton 15, Milston 3 (Silk Hill) and Milton Lilbourne 4. The largest of all, with an overall diameter of around 70 m, may be the unusual barrow at Silk Hill with a two-phase mound and a bank inside the ditch (Milston 12; see McOmish *et al.* 2002, fig. 2.19). Further south a number of bell barrows of varying size are found to the east of Amesbury, including Amesbury 58 (see above), 62, which had evidence of an outer bank 60 m in diameter, and 74.

The size of a barrow is unlikely to be a simple reflection of its significance, but it must say something about the scale of the group that came together to build it, so Barrow Clump in its bell barrow phase was clearly an important monument. It forms part of a scatter of large bell barrows across this part of the Plain, although it is the only definite example on the east bank of the Avon north of its confluence with the Nine Mile River (though other bell barrows in this area may have been levelled by the plough), emphasising Barrow Clump's liminal position between the Stonehenge and Salisbury Plain barrowscapes. There is also a pair of possible bell barrows (Figheldean 34 and one un-numbered) opposite Barrow Clump on the west bank of the Avon near Alton Magna Farm, though these are considerably smaller, the excavated example discussed above having an external diameter of 27 m (Graham and Newman 1993, 11–12).

While mapping barrows of similar form and size tells us something about the significance of Barrow Clump, in such a dense barrow landscape no individual site can be understood solely on its own, typological terms. A comparative approach is required, along with a landscape perspective. There is a basic distinction around Stonehenge between those barrows organised into cemeteries (linear, nucleated or dispersed) and those which are more isolated. The 'linear' cemeteries are a particular feature of the immediate Stonehenge environs between the Avon and the Till, while that around Barrow Clump falls into the 'nucleated' category, representing one of the exceptions to Darvill's (2006, 166) generalisation that cemeteries of this type mostly lie to the south of Stonehenge. McOmish *et al.* (2002, 40–6) note that at least nine, mostly plough-levelled, cemeteries lie on the slopes along the east bank of the Avon, and another 15 surviving cemeteries are found along or around the head of the Nine Mile River. Most of the latter also fall within the nucleated category but some, including Cow Down, Snail Down and Silk Hill, contain linear elements in a similar way to Barrow Clump (see Chapter 1), as do smaller groups like Everleigh. The distinction may therefore overstate the degree of difference between clusters: decision-making about where to situate a new barrow would have considered many factors, including not just alignments within the cemetery but also local topography and more distant viewsheds given that, from the Beaker phase onwards, the molluscan evidence from Barrow Clump shows open conditions with short-turfed, grazed grassland in the vicinity; which is consistent with the regional picture (French *et al.* 2012).

McOmish *et al.* (2002, 46) conclude that the barrow builders had 'an overriding concern with valley slope locations that provided good drainage and an association with watercourses'. There may also be associations with prominent landmarks such as Beacon Hill and Sidbury Hill, whose visual and symbolic significance has been articulated by Tilley (2010, 63–97). He sees the Avon as key to articulating the landscape around Stonehenge, but suggests the Nine Mile River attracted more barrows because as a winterbourne, with its unpredictable flows, it may have been understood in terms of the activities of ancestral beings. We can perhaps see Barrow Clump and the other cemeteries on the east bank of the Avon as marking a transition between the Stonehenge landscape and that of the high places and winterbournes up on the Plain. The alignment of Barrow Clump with the Stonehenge axis has been noted (Fig. 8.1) but if this is extended it connects Barrow Clump with the head of the Nine Mile River and the Snail Down barrow cemetery, which is located on a re-entrant above the river Bourne.

Within the cemetery Barrow Clump must have been one of the key monuments, and to emerge as the only earthwork survivor it must also have been one of the largest; indeed none of the other ring-ditches in the cemetery appear to exceed about 40 m in diameter. With its Beaker origins it was probably among the earliest monuments, though there are hints of possible Neolithic precursors in a group of oval and sub-rectangular forms (nos 4, 8 and 9 on Fig. 1.3) and there is at least one other double ring-ditch (no. 7). It is possible that Barrow Clump could have served as a 'founder" burial within its cemetery, although it does not appear to belong to the earliest phase of Beaker burials in the Stonehenge landscape, and we might also note Ashbee's (1979, 26) observation of groupings of Beaker barrows in the Cursus group and at Crichel Down in Dorset. There may therefore be other Beaker burials within the cemetery, including the possible grave within the ring-ditch investigated in Trench A (Fig. 1.4) (this was confirmed in 2019). However, it is notable that the barrows built over Beaker monuments mentioned above (Durrington 67, Wilsford 40, Wilsford 62 and Winterbourne Stoke 10) also formed parts of larger cemeteries. The history of a place may well have been a key factor not just in the development of individual monuments but also of cemeteries.

Afterlife

By 1600 cal BC the mortuary use of Barrow Clump had probably ceased and it seems likely, by analogy elsewhere, that the adjacent field system (Fig. 1.2) was laid out around this time. As in many other cases, the barrows were utilised or respected in the layout of the field boundaries, which are mainly visible on the slopes below the cemetery. The features visible in the aerial and geophysical surveys have somewhat different orientations, probably indicative of more than one phase of fields (seen also in the fields to the south, where a linear earthwork overlies a ditch visible as a cropmark) but they share a focus on ring-ditch 14, on the edge of the cemetery to the west of Barrow Clump (see Fig. 1.3).

Just as areas of the landscape were parcelled up in the Middle to Late Bronze Age and given a function, so barrow mounds and ditches frequently seem to have been used in a more utilitarian way, for flint extraction and knapping (cf. Cooper 2016, 307). While the finds from the upper fills of the Barrow Clump ring-ditch appear to represent the dumping of flaking waste, the ring-ditch in Trench A included some core preparation debris (see Harding, Chapter 4), perhaps indicating the extraction of flint nodules from the side of the ditch. Similarly, at Alton Magna, just across the valley, large quantities of later Bronze Age knapping debris were recovered from layers immediately above the primary chalk rubble fill of the ring-ditch, again probably representative of dumping (Harding 1993, 36–8). The (mostly unworked) flint filling the 'declivity' or recut in the Barrow Clump ring-ditch remains something of a mystery, however; does it represent a purely natural accumulation, as Ashbee (1984) suggests, or is it somehow connected to the later prehistoric activity?

While the barrows were respected by the earliest field systems, at some point arable agriculture encroached into the barrow cemetery and ultimately all the monuments except Barrow Clump were levelled; Hawley's report mentions 19th-century earth-moving which had partly destroyed the mound, but it seems all the other barrow mounds had disappeared much earlier, given their non-appearance on 18th-century maps. Some barrows around Stonehenge may have been lost during later prehistory; this was Cunnington's (1929, 41) interpretation of the ring-ditches she investigated near Woodhenge, arguing that they were levelled before the Roman period. The same may be true of the ring-ditch in Trench A, which unlike Barrow Clump lacked any Roman or later finds. Although that needs to be treated with caution, given the very small proportion of the ditch that was excavated, the rammed chalk upper fill might suggest deliberate backfilling at a relatively early date, rather than the gradual accumulation of agricultural soil. More often, however, as at Barrow Clump, secondary and tertiary ditch fills contain quantities of Roman material, perhaps suggestive of an increase in arable agriculture and/or manuring at this time. At Alton Magna there were also a number of Romano-British finds from secondary fills (Graham and Newman 1993, 11–12). The accumulation of the upper fills at Barrow Clump clearly began before the Roman period, however, given the presence of pottery spanning the Middle Bronze Age to Late Iron Age, and the occurrence of Early Iron Age horse bones. This last aspect is perhaps not too unusual given that horse regularly makes up 5% of Early Iron Age assemblages in the Thames valley (Mulville and Powell 2005), but in this context and given the general paucity of animal bone it does beg the question of whether a specific depositional event is represented, and the barrow may therefore have retained some non-utilitarian significance.

Conclusion: the Prehistoric Phases

Barrow Clump represents a rare recent opportunity to investigate an earthwork barrow in the Stonehenge area and perhaps to re-energise a discussion about round barrows that was dynamic in the 1960s to 1980s, when many Wiltshire barrows were excavated and published, but has faded recently as research within the Stonehenge WHS has focused on investigation of earlier and later features. Studies of Bronze Age graves and grave goods have never gone out of fashion, of course, but with few upstanding round barrows being investigated in development-led fieldwork generally, their architecture and construction sequences have seen less discussion.

Although lying 3 km outside the World Heritage Site, Barrow Clump and this part of the Avon valley clearly form part of the wider Stonehenge landscape. Nevertheless, this is a story of activity in that landscape which largely bypasses Stonehenge itself. It demonstrates that there are many, equally interesting stories to be told which are not directly connected to the stone circle and the other major monuments.

Any detailed study of barrows that sets aside typology will quickly show that no two monuments are the same. Barrow Clump had its own complex 'back story', as we have seen, as well as a particularly significant phase of re-use, which is discussed below. However, as mentioned at the start of this discussion, no barrow is entirely unique either: there are always features that invite comparison and therefore various similarities with other sites in the Stonehenge landscape and beyond have been explored. The key to a meaningful narrative is the integration of the generalities and specifics to present a picture of a monument that both conforms to a type and reveals its particular history. A relational approach does not mean simply fitting the monument into a category as if these were pre-determined, however. Rather than being planned in advance, the form of the monument emerged from the sequence of events and decisions taken during the time the site was in use; in other words the barrow was created out of a series of relationships (in time and space) between people, materials and the landscape. Rather than seeking to create a monument of a specific type, as implied by our categorisation of round barrows, the builders responded to the affordances and history of a place as they were encountered.

So rather than dwell on form and function, which have been well addressed above, we might conclude by considering pattern and process. The appropriation of a space that was already marked in some way is not unusual for round barrows, as we have seen, but in this case it was the digging of a pit in the Early Neolithic woodland that set in train a sequence of specific actions and choices that culminated in Barrow Clump becoming the location of an Anglo-Saxon burial ground 4000 years later. The Neolithic pit contained objects and materials associated with transformative, percussive activity at a point when the landscape was itself being fundamentally transformed and opened up. The pit clearly fits the pattern of Neolithic deposits while also representing an apparently unique combination of objects for this period.

The fruits of the clearance activities perhaps symbolised by the pit deposit were the affordances of this location for occupation in the Middle Neolithic, which in turn reflected an awareness of the earlier marking of place. We do not know exactly how such occupation was organised but it is likely that mobility was a key component, and remained so until the end of the Early Bronze Age. One question for future research is to understand whether flint scatters like Barrow Clump and pit clusters like that at West Amesbury Farm (Roberts *et al.* forthcoming) represent different modes of occupation, or just different archaeological expressions of the same thing, a reflection of post-depositional processes. In either case, 'persistent places' in the Neolithic, whether monuments or settlement sites, were locales of periodic return rather than permanent occupation.

Just as Middle Neolithic occupation may have been organised with an eye to past patterns of activity, so Beaker communities were keen to make connections with earlier sites, despite the novelties of burial rite and material culture introduced at the turn of the Bronze Age. Despite fitting this pattern, however, the burial monument at Barrow Clump has no obvious local parallels in being sited directly upon an already ancient flint scatter. The monument itself comes towards the end of a tradition of small Beaker burial monuments which are otherwise rather variable. Most evident at Barrow Clump is the difference of this monument from standard Wiltshire round barrows in the composition of the mound, the shape and recutting of the ditch, and the presence of the scapula 'shovel', all perhaps harking back to aspects of Neolithic practice; as also may the use of flint nodules and rusticated pots in the graves. However, the burials with their focus on selected individuals and their relationships represent a new idea in the landscape: the specific genealogy rather than the community of ancestors.

Also relatively common practice, but not a universal occurrence, is the incorporation of Beaker mortuary sites into later, larger round barrows. The significance of Barrow Clump in the second millennium BC might relate as much to its location between the two barrow landscapes of Stonehenge and Salisbury Plain as to its history. By now the open downland landscape allowed the sort of readings outlined by Darvill (2006) and Tilley (2010) in which monuments made reference to landscape features and to one another, often over considerable distances. However, this further layering of the history of the site was a respectful process in which the turf stack was carefully constructed, with revetments, over and around the earlier monument, before being sealed by a chalk envelope. The bell barrow represents Barrow Clump at its most 'standardised', linked to numerous similar monuments across the wider landscape and locally within the barrow cemetery. Yet within this outward conformity to a pattern its deeper history remained known for 500 years, with cremation urns inserted into the top of the Beaker mound held within the barrow.

This lengthy history of deposition, construction and reworking – entangling materials, objects, structures, the living and the dead – produced a particularly notable monument in a particular location, which unlike its companions survived the expansion of arable agriculture in the Iron Age and Roman period. The ditch silted up but the mound remained visible, overlooking the settlements in the Avon valley from where came the Anglo-Saxon community that chose this ancient place to bury their dead. It is unclear whether they inherited any specific knowledge of the monument but they were certainly aware that here was an appropriate, ancestral place.

The Archaeology of Badgers

There remains a gap in the account above – a literal void, in the form of the tunnels and chambers of the badger sett which the excavators tracked across the site and tried to avoid falling into. We have presented Barrow Clump both as academic research and as therapeutic activity, but the project was initially about conservation and that theme remains key.

We initially approached the monument with the expectation that it would be heavily disturbed and its legibility compromised. While the former was certainly true, the disturbance was more delimited and clear than expected: a Swiss cheese riddled with holes rather than a crumbled chocolate cake. The main stratigraphic layers could still be followed, emphasising that even a site which looks badly damaged on the surface might still retain considerable integrity, particularly given the stiffness and solidity of the Early Bronze Age turf mound. However, other elements were seen to be more vulnerable to the burrowing. Unfortunately, the level at which the pre-mound deposits are preserved – the interface between the base of the mound and the natural chalk – coincided with the highest density of animal burrows (Pl. 8.8; see also Pls 1.4 and 1.11); rather than continuing down into the solid chalk, animals burrowing through the mound naturally preferred to run straight along at this basal level. Because of their history of ploughing, ancient buried soils rarely survive on the chalk downland other than underneath later monuments; barrows frequently therefore serve as 'time capsules' preserving fragments of the pre-Bronze Age occupation landscape. As Darvill (2005, 61) puts it, 'The importance of these old ground surfaces preserved below round barrows of the second millennium BC can hardly be overestimated'. Yet they are clearly at risk from burrowing animals.

The other unfortunate consequence was that the soft fills of the Anglo-Saxon graves, both within the upper ditch fill and underlying and beyond the slumped mound material in the berm area, proved very attractive to the badgers and several burials were severely damaged (Pls 1.12 and 8.9). The animals may indeed prefer to tunnel along at the interface with the natural chalk but they will readily dip down into discrete features with soft fills that they encounter along the way. The intrusive graves, therefore, like the pre-mound deposits, appeared particularly susceptible to damage, more so than the relatively deep, chalk-filled Beaker grave which was undisturbed by burrowing. And because they are small, discrete features, unlike mound make-up or ditch fills, the graves are vulnerable to being almost entirely destroyed. At a site like this, therefore, it is the details that disappear first: the potential for fine-grained spatial analysis of artefacts and palaeoenvironmental remains in a buried soil, or the exact disposition of a body and its grave goods. The structure of the mound and its phases remain legible but they will eventually become like a lost story where the basic plot is known but the prose can no longer be read.

Or at least that is one way of looking at it. This approach to understanding badgers and other burrowing animals as a 'risk factor' or mode of 'damage' to earthwork monuments is the typical heritage management approach. According to Historic England's Heritage at Risk programme, 'degradation and decay as a result of natural processes, such as scrub and tree growth, erosion and burrowing animals, remain the second greatest threat' to historic sites after arable agriculture. When we record archaeological remains, burrows are represented as disturbances, voids or the absence of deposits. But what if we were to turn this around and view the badgers not as 'natural processes' or 'absences' but just as integral a part of the site's history as the Neolithic or Anglo-Saxon phases. Can we envisage an 'archaeology of badgers' or even an 'archaeology by badgers'? Seen in these terms badger activity is no more 'damage' than any other process of decay or transformation that has taken place at Barrow Clump over the millennia. Indeed, if the badger sett was itself ancient, it would be of great archaeological interest as evidence of past environments and ecosystems; coincidentally one of these has recently been investigated a few kilometres to the south in West Amesbury (Roberts *et al.* forthcoming). So where exactly is the cut-off between archaeological resource and heritage at risk?

Plate 8.8 Animal burrows in the buried soil in Trench B looking north-east

Plate 8.9 Anglo-Saxon grave 2366 disturbed by a badger tunnel

We might suggest that there is as much scope for an archaeology of badgers on this site as there is of humans. The barrow builders may not have realised they were creating an ideal badger sett for the future but that is what they achieved. How long have the animals been there? How many of them were present? How did the sett develop? Which areas of the surrounding landscape do the badgers use or exploit? Some of this, as we have seen, can inform our understanding of what types of site and deposit might be most vulnerable elsewhere, and therefore deserving of efforts to exclude badgers or (better) pre-emptively prevent them getting in. We may not actively want badgers rearranging deposits in our barrows but there is value in trying to understand this activity.

So perhaps it is time to reinstate the badgers as agents and creators rather than as risks and absences. They are also archaeologists of a sort: it was the badgers bringing human remains to the surface that first indicated the presence of the Anglo-Saxon cemetery; and the badgers' preference for soft, deep fills that showed us, from the distribution of sett entrances, where the ring-ditch was on a site that was not suitable for aerial or geophysical survey. The warren of burrows that criss-crossed the buried soil even provided a kind of ready-made sampling grid for artefact collection. Viewed in this light the archaeology of and by badger activity is useful both (potentially) as evidence of ecological relevance, that can perhaps be compared with ancient setts, and as something that can be translated into management approaches.

Finally, there is political value in attempting to understand the badger activity as part of the history of the site rather than simply an erasure of that history. The landscape is always in flux; arresting change is as futile (and as ahistoric) an objective as stopping time. Moving badgers from one site is quite likely to put others 'at risk'. The question is how best to manage the historic dimension of the landscape in the interests of all 'stakeholders', human and animal. While ecological and archaeological objectives may sometimes be presented as being in conflict they are never necessarily so and there are always ways to work better together. Indeed that is essential if we are to ensure a united front in the larger environmental battles that surely lie ahead. If heritage conservation were branded as 'multi-species archaeology' (Harris and Cipolla 2017, ch. 9) rather than 'heritage at risk' we would have the opportunity to develop approaches to and understandings of archaeological sites in which humans and animals, as well as plants and the materials of the earth, are mutually entangled in the creation of landscape.

Part 2
The Anglo-Saxon Cemetery and After

Chapter 9
The Cemetery

by Phil Andrews

Introduction

The evidence presented here comprises a summary of the results of the 2003–4 and 2012–14 excavations. Grave numbers assigned in 2012–14 did not duplicate the sequence from the earlier excavation.

Subsequent to this, two further programmes of cemetery excavation have taken place at Barrow Clump, in 2017 and 2018, under the aegis of Defence Infrastructure Organisation and Breaking Ground Heritage/Operation Nightingale, with support from Wessex Archaeology. These were responding to continued disturbance caused by badger burrowing, as well as the threat of compaction of graves by wheeled and tracked vehicles just beyond the south-western limit of the scheduled monument. The results of this later work, revealing a further 40 Anglo-Saxon graves, come too late to be included here, but it is proposed that they be published in a separate, summary article in the county journal, along with an on-line grave catalogue (there were no prehistoric features and only a small quantity of struck flint). The main findings are noted below, these recording the first Anglo-Saxon (urned) cremation burials at the site, amounting to six in total, the first pottery vessels (three examples) to be found in graves and, as anticipated, showing that the cemetery does extend further to the south-west than previously established, with several infant, juvenile and mainly male, adult burials appearing to define the maximum extent here, some 25 m beyond those previously found. Amongst the finds, a further sword can be noted and, especially, a large seax, possibly the earliest of its type yet found in Britain. These most recent discoveries bring the overall total of excavated inhumation and cremation graves to approximately 110, and it can be surmised that the cemetery population as a whole (ie, including graves currently inaccessible beneath trees) to somewhere in the order of 150 burials.

Soil Sequence

The topsoil generally comprised an approximately 0.25 m deep mid–dark greyish brown silty clay loam with common chalk and flint inclusions. The underlying mid-greyish brown clay loam subsoil (up to 0.15 m deep) survived only in some peripheral parts of the site away from the barrow mound, the turf core of which was exposed at the surface in the centre. The natural chalk bedrock was fairly heavily weathered, broken-up in places by roots and animal burrows, which had caused extensive mixing of the overlying subsoil and topsoil.

Cemetery Features

The archaeological sequence was relatively uncomplicated with the majority of graves cut into the natural geology, or in the remaining cases, into the upper fills of the Early Bronze Age barrow ditch (Fig. 9.1). There were few examples of clear intercutting between cemetery features (see below). Animal burrowing, particularly by badgers (and to a lesser extent by rabbits) was particularly detrimental to the state of the archaeological remains, whilst some disturbance by root activity was common (Pl. 9.1), and earlier ploughing and more recent military activity had resulted in some impact.

The excavated cemetery features included 70 inhumation graves and one possible cremation-related deposit. No activity can certainly be assigned to the 5th century, and the main use of the cemetery appears to span the 6th century, with probably sporadic, unaccompanied burial taking place in the 7th century and perhaps continuing into the 8th (see below).

Inhumation Graves and Burials

Full details are in the Grave Catalogue (Chapter 10).

The Early Bronze Age barrow had a major influence on the layout of the cemetery, besides being its focus.

Plate 9.1 Badger and root damage to grave 2884 (Trench 8), from the north

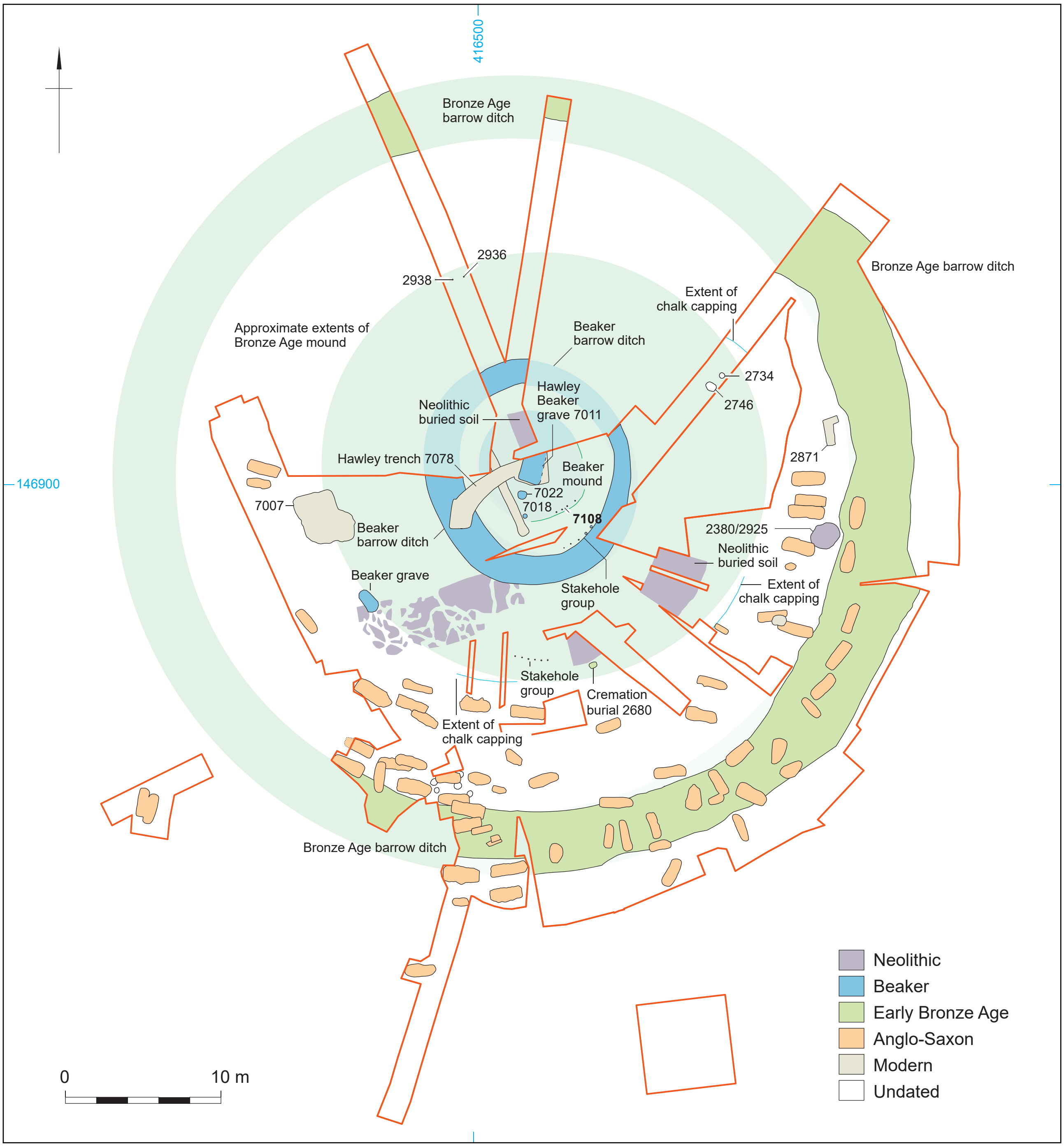


Figure 9.1 The Anglo-Saxon graves in relation to earlier features

However, the barrow did not lie at the centre of the cemetery, but rather the graves were concentrated on the berm and ditch in the southern half of the monument, with some lying beyond to the south-west (Pl. 9.2). Significantly, perhaps, there was no evidence of burials within the barrow mound itself, and it seems certain that at least parts of some graves in this area would have survived subsequent truncation by ploughing and erosion.

On the southern side of the barrow lay 70 inhumation graves, 58 found in 2012–14 and 12 recorded in 2003–4 (Fig. 9.2). Two of the graves were empty, one of them (2764) for an infant from which no bone had survived, and the contents of another (2621) entirely removed by recent military activity; two others (2800 and 7044) had no *in situ* remains surviving. There were two graves (2722 and 6003/6004) containing two burials, a rare occurrence in mortuary provision.

The graves were distributed such that there were 33 in the berm of the Early Bronze Age barrow, four more cut the inner edge of the ditch and two the outer edge, with 22 in the ditch itself, and a further nine lay beyond this to the south and south-west

Plate 9.2 Anglo-Saxon graves outside (left) of Early Bronze Age barrow ditch, with further graves in berm (centre) (Trenches 7 and 8), from east

(Pl. 9.3). Clusters of graves may represent defined cemetery plots, some of which could have focused on earlier graves (Stoodley, Chapters 12 and 15). A few unaccompanied burials to the south-east (eg, 2818 and 2829) and at least one to the west (7036) appear to form the latest group in the sequence, these of likely mid–late 7th-century date, while the remainder are broadly assigned to the 6th century.

Intercutting between graves was rare, and there were very few instances of an earlier burial having been disturbed by a later grave. There were six examples of one grave being just clipped by another (2605 and 2642; 2681 and 2715; 2829 and 2922; 2866 and 2899; 2885 and 2873; and 7016 and 7085) and three where the impact was somewhat greater (2699 and 2807; 2847 and 2908; and 2902 and 2915). Grave 2701 truncated parts of three otherwise undated postholes, and adjacent grave 2699 truncated another, all of which belonged to a cluster of five similar postholes (see above), representing the only direct stratigraphic relationship between the graves and other possible cemetery features.

Where observable, most graves were sub-rectangular in plan, usually with rounded ends. The majority of graves had flat bases and straight, steep sides, where this could be ascertained (it was often not clear where the graves had been cut into the upper fills of the barrow ditch); a few examples of less steep or concave sides, and sloping or concave bases, were also recorded. Graves containing the remains of adults survived to an average depth of 0.46 m within the

Plate 9.3 Anglo-Saxon graves under excavation within Early Bronze Age barrow ditch and berm (right) (Trench 2), from north-east

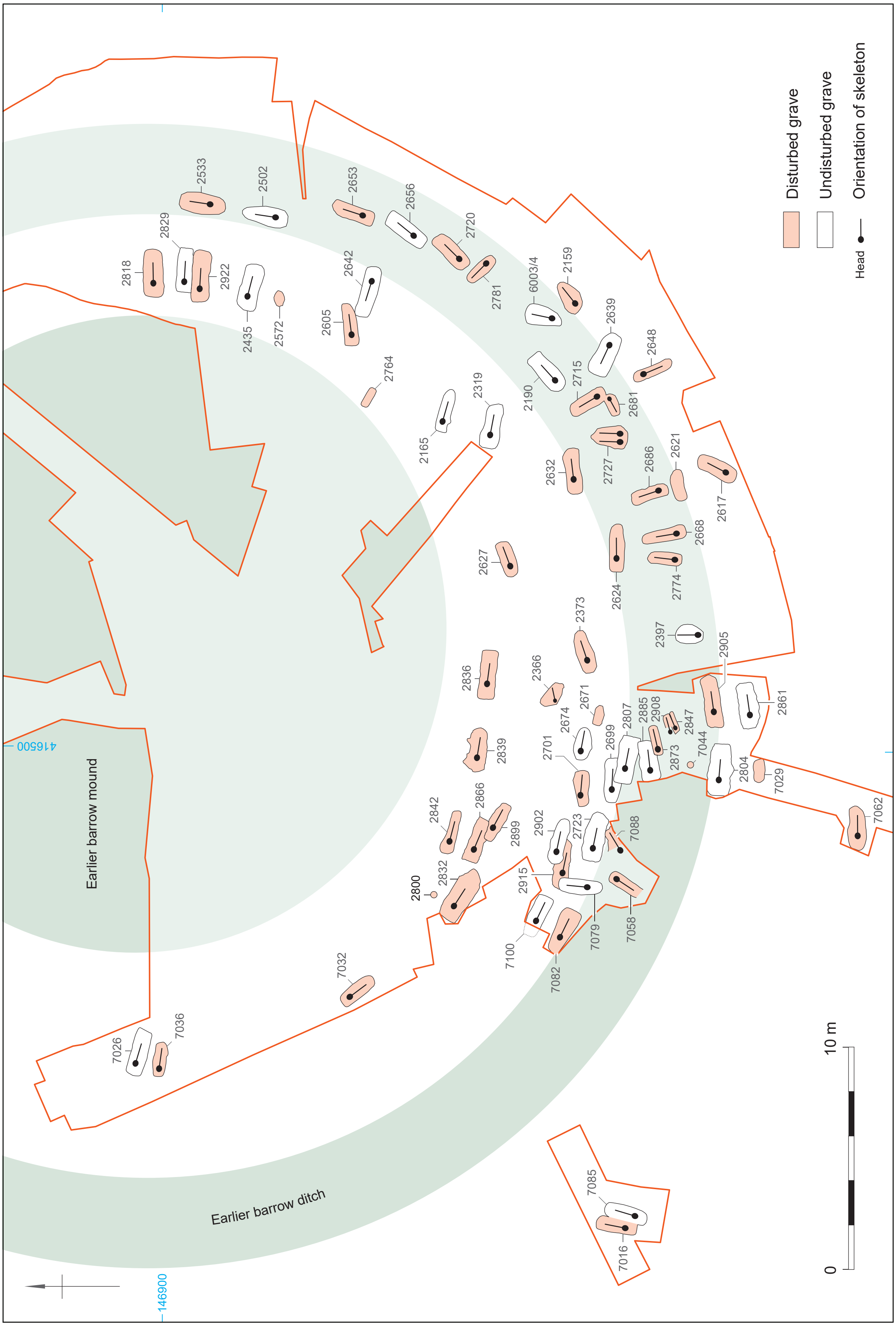


Figure 9.2 Plan of Anglo-Saxon graves

berm of the barrow, where they were cut into chalk, and were on average 2.05 m long and 0.74 m wide. Graves of adults buried in the ditch were less clearly defined but had an average depth of approximately 0.35 m, and were on average 1.92 m long and 0.73 m wide. There were no integral features such as steps or shelves within any of the graves.

The orientation of the graves was variable, this being largely controlled by the presence of the ring-ditch and associated mound. Determining factors for grave orientation can include the season, time of day, method of ascertaining north, cultural preferences, and points of reference in the cemetery and wider landscape, but here is likely to strongly reflect the topography and form of the Early Bronze Age barrow. See Stoodley (Chapter 15) for further discussion.

The 70 graves contained 68 *in situ* burials, most of which had been subject to varying degrees of animal and/or tree root disturbance. A significant quantity of redeposited bone was also found, deriving from these and probably a small number of other graves either completely destroyed or inaccessible beneath mature beech trees on the south-west side and, therefore, not excavated. See the human bone report (Egging Dinwiddy, Chapter 11) for minimum number of individuals.

As far as could be ascertained, all but three bodies had been placed in a supine position, with legs extended. The remaining identifiable positions comprised one flexed and on the right side, and one on the left. The burial in grave 7036 was the only one to have been made in a crouched position (Pl. 9.4).

No conclusive evidence for coffins was recorded, but the structure of grave 2699 is very suggestive of the former presence of a rectangular container of some sort. The short length of charred split timber, probably from a mature oak, found in grave 7016 may have been a piece of a coffin or perhaps pyre structure; it was from this grave that the only possibly Anglo-Saxon cremated bone (though a tiny amount) and remains of what could have been pyre goods were recovered. Graves 2533 and 6003 also had what may have been fragments of similar pieces of charred wood, though surviving in very poor condition. In addition, grave 2642 was partly lined with flint nodules, and a small number of other graves also contained one or more apparently deliberately placed nodules (Pl. 9.5).

Grave goods, comprising personal equipment, personal ornamentation and clothing, weapons and other items, were found in 40 graves (57% of the 70 graves). See the Grave Catalogue (Chapter 10) and Stoodley (Chapter 12) for details.

Personal equipment comprised almost entirely knives and toilet implements, with the rare exception of a spoon made of debased silver (grave 2159). Knives were the most common item of personal equipment, being found in 15 graves, the majority with males. Toilet items were found in four graves and comprised at least one pair of tweezers and, unusually, three cosmetic brushes.

Plate 9.4 Crouched burial in grave 7036 (Trench 10), from the west

Plate 9.5 Grave 2723 with flint nodules around edge of base (Trench 7), from the south (scale = 2 m)

Jewellery (beads, brooches, rings, bracelets and pins) was recovered from 17 graves (24%). In the majority of cases, their location indicated that the items were worn on the body at the time of burial. Of especial interest is the unique occurrence in Britain of a burial accompanied by a Visigothic brooch (Fig. 10.37 and Pl. 12.15), here worn as a fastener, with other items including a bone hairpin and a relatively large number of glass and amber beads (grave 7062).

Plate 9.6 Finds assemblage from grave 2159

Other noteworthy items include the gilt great square-headed brooch from grave 2159, found with a pair of gilt saucer brooches, beads, a chatelaine, the debased silver spoon and a composite iron bridle bit, the only one from the county (Fig. 10.2 and Pl. 9.6).

Weapons, comprising shields, spears and a sword, were found in 11 graves. Shields were predominantly placed over the torso, whilst spears were found along the side of the grave. The sword was placed along the left side of the corpse (grave 7082), this burial also accompanied by a shield and spear.

The burial of a probable male subadult made in grave 2668 included a bucket, while the infant (6004) in a grave which also contained an adult female (6003) appears to have been accompanied by at least one cup or other small vessel. Four other graves contained probable vessel bindings or fittings.

Cremation-related Deposits

Cremation-related material comprising 0.3 g of cremated bone and possible fuel ash was recovered from a single Anglo-Saxon inhumation grave (7016). This might be considered as redeposited prehistoric material were it not for the distance between the grave and the nearest known Early Bronze Age cremation burial (approximately 30 m to the east), and also the presence towards the north-east end of the same grave of a small droplet of melted copper alloy, a fragment of probable Roman glass, and 18 sherds of Anglo-Saxon pottery that could represent the remains of a funerary vessel. Together, this small assemblage may represent a 'token' or *memento mori*, possibly bagged and interred with the corpse, or material accidentally incorporated into a later feature. McKinley (Chapter 5) and Mepham (Chapter 14) discuss the context and nature of this material; further details are in the Grave Catalogue (Chapter 10).

The subsequent discovery, in 2017 and 2018, of six Anglo-Saxon urned cremation burials approximately 20 m to the south-west raises the likelihood that the cremated deposits in grave 7016 come from a disturbed cremation burial of this period.

After the Cemetery (Phase 6)

Following the last burials made in the cemetery, perhaps in the later 7th century or possibly the 8th, there is no evidence for anything other than probably agricultural activity until around the end of the 19th

Plate 9.7 Hawley trench 7011/7078, with central Beaker grave to right (Trench 10), from the east

century. However, the presence of two Mid-Saxon strap ends, both metal-detector finds from badger-disturbed topsoil, may not derive from graves of this period; no Mid-Saxon finds were found in graves and it appears that the later burials of this date were unaccompanied. Instead, the possibility that the strap ends were lost at this time by mourners can be suggested, either at a burial ceremony or perhaps revisiting graves sometime later. Alternatively, these items may have been lost by people coming to this location in the 7th or 8th century or after when it could have been used as a meeting place.

Post-medieval features include a relatively large, shallow pit (7007) on the west side of the barrow, partly within the berm but encroaching on the mound (Fig. 9.1), which was probably of 19th-century date, on the basis of the few sherds of pottery recovered, but its purpose is uncertain. It may relate to the report of local villagers digging into the mound at the end of the 19th century, in addition to the burrowing by rabbits, both of which Hawley records and responded to.

The location and extent of Hawley's late 19th-century excavation trench was confirmed in 2014, in the centre of the barrow mound, and a quantity of redeposited unburnt human bone was recovered from the backfill. This bone almost certainly derives from the four adults and infant that he records finding (see Last, Chapter 2; McKinley, Chapter 5), and the central, Beaker grave was identified in 2014 in Trench 10. Hawley's method of investigation was clear, comprising a narrow, curving 'prospection trench' approximately 15 m long and up to 1 m wide (7078), which had been dug to locate the central grave (7011) within the Early Bronze Age barrow (Fig. 9.1; Pl. 9.7). Once the central grave had been found, a shaft was sunk within the grave to excavate and remove the contents. Full re-excavation of the backfill of the deep feature interpreted as the central Beaker grave was not possible in 2014 due to the presence of a substantial tree stump occupying the north-east part of the grave. Prospection trench 7078 contained three deposits (7061, 7072 and 7073), apparently redeposited material from the turf core of the main barrow mound; each of them contained struck flint and context 7061 also produced a Neolithic sherd.

There were several small military features in various parts of the site, all probably of World War II or later date, which had caused only limited damage to the earlier archaeological deposits. These included a single, short length of slit trench within the barrow berm to the north-east (2871) (Fig. 9.1), and the remains of possibly one other in the centre of the mound – which only just avoided impacting on the Bronze Age urned cremation burials (not numbered on Fig. 9.1). However, one pit had entirely removed the contents of an Anglo-Saxon grave (2621) within the berm to the south. Two further pits lay just to the north of the Anglo-Saxon graves on the east side of the monument. Other recent intrusions in the upper part of the mound were seen best in Trench B since that was dug entirely by hand. These comprised a number of pits (not illustrated), including an irregular cut on the south side of the trench which contained dumps of recent military refuse and one which had been mechanically excavated with a toothed bucket, narrowly missing the Beaker satellite grave and clipping the south end of grave 7032 to the west. Another possible military feature cut the mound deposits towards the north end of Trench C.

From the topsoil came a range of military items spanning the late 19th to the late 20th centuries, largely comprising blank rounds, ration tins etc. However, there are a small number of items of particular personal or historical interest including a fork that belonged to a British PoW who perished in the Far East in World War II and a German Mauser round from the late 19th century (see Khan, Chapter 16).

A large deposit of badger sett spoil near the centre of the mound (2101) was the first context excavated in Trench B. Only a few faunal specimens were positively identified as badger, in contrast to the greater numbers of rabbit (leporid) and fox (canid) bones. Rather than casting doubt on the extent of badger activity, this probably reflects the behaviour of the animals, which do not usually die within the setts and if they do, the chamber in question is not disturbed by the other animals, so dispersed badger bones would not necessarily be expected.

Radiocarbon Dating

by Peter Marshall, Christopher Bronk Ramsey, Elaine Dunbar and Paula Reimer

The full radiocarbon dating report is presented above in Chapter 3, but the relevant sections pertaining to the Anglo-Saxon cemetery are repeated here.

Given that the vast majority of the excavated Anglo-Saxon burials were accompanied by grave goods dating from the 6th century AD, no radiocarbon dating was undertaken on samples from these burials. However, samples from a small group of similarly aligned burials without grave goods were dated in order to clarify their chronological relationship with the accompanied burial group. Measurements from graves 7036; OxA-34488 and UBA-31685; 2829; OxA-34177; and 2818; UBA-31686) are not statistically consistent ($T'=14.8$; $T'5\%=6.0$; $\nu=2$) and therefore represent inhumations of different ages (see Fig 3.1 and Table 3.1).

The small number of unaccompanied Anglo-Saxon burials date from the late 6th–late 8th centuries cal AD (see Fig. 3.4) and may therefore post-date the bulk of the inhumations in the Anglo-Saxon cemetery.

Chapter 10
Grave Catalogue

by Nick Stoodley, with a contribution by Matt Bunker

Further details of the human skeletal remains are presented in Chapter 11, the metalwork in Chapter 12, the mineral preserved organics in Chapter 13 and other finds in Chapter 14. Details of the x-ray fluorescence analysis of the 2003–4 metalwork is presented in Appendix 1. See Figure 9.1 for location of graves.

Key: D – diameter; ON – Object Number; SF – Small Find; s.a.u.l. – skull, axial, upper limbs, lower limbs (where not all elements recovered); * – illustrated bead

Grave 2159 (burial 6000; fill 2147)
(Figs 10.1 and 10.2; Pl. 10.1)
SW–NE, sub-rectangular with rounded E end and W end truncated by animal burrow. 2.07 x 0.95 m, 0.80 m deep. Abundant flint nodules in fill.
Human remains: Extended supine, right arm across body, lower legs/feet removed by animal burrow. 20–40% adult *c.* 25–35 yr. female.
Grave goods:

ON 4401: copper alloy (bronze; see Appendix 1: XRF) great square-headed brooch that was mercury gilded (see Hines, Chapter 12). Broken below the side lobes and repaired in antiquity. Catchplate of leaded bronze attached to brooch with a ?tin solder. Small area of mineral-preserved textile on the pin mount. Hines Group I. Length 139 mm, maximum width 65 mm (head-plate).

ON 4402: copper alloy (?gunmetal) saucer brooch (unidentical pair with 4403), in skull. Slight damage to the leading edge of the rim. The front was originally mercury gilded. Inner four-legged whirligig, which is surrounded by a plain ring and in turn by a ring of radial bars, the whole enclosed by a pair of concentric rings. Hinge and catch with iron corrosion probably deriving from a pin. Dickinson Group 2.3. Diameter 38 mm, rim height *c.* 5 mm, angled at *c.* 40°.

ON 4403: copper alloy (bronze or gunmetal) saucer brooch (unidentical pair with 4402), area of right clavicle. Slight damage to the leading edge of the rim. The front was originally mercury gilded. Inner four-legged whirligig, which is surrounded by a plain ring and in turn by a ring of radial bars, the whole enclosed by a pair of concentric rings. Hinge and catch with the remains of an iron pin. Dickinson Group 2.3. Diameter 38 mm, rim height *c.* 5 mm, angled at *c.* 40°.

ON 4404: fragmentary debased silver spoon: bowl, handle and small triangular-shaped fragment from bowl, below pelvis, right side. The bowl has three perforations and the handle one, possibly evidence of a repair in antiquity as a fibre was also recovered, or an attempt to use the spoon as a 'skimmer.' The handle has a looped, crook-headed terminal made from bending the debased silver strip back on

Plate 10.1 Grave 2159 (Trench D), from the south-east (scale = 1 m)

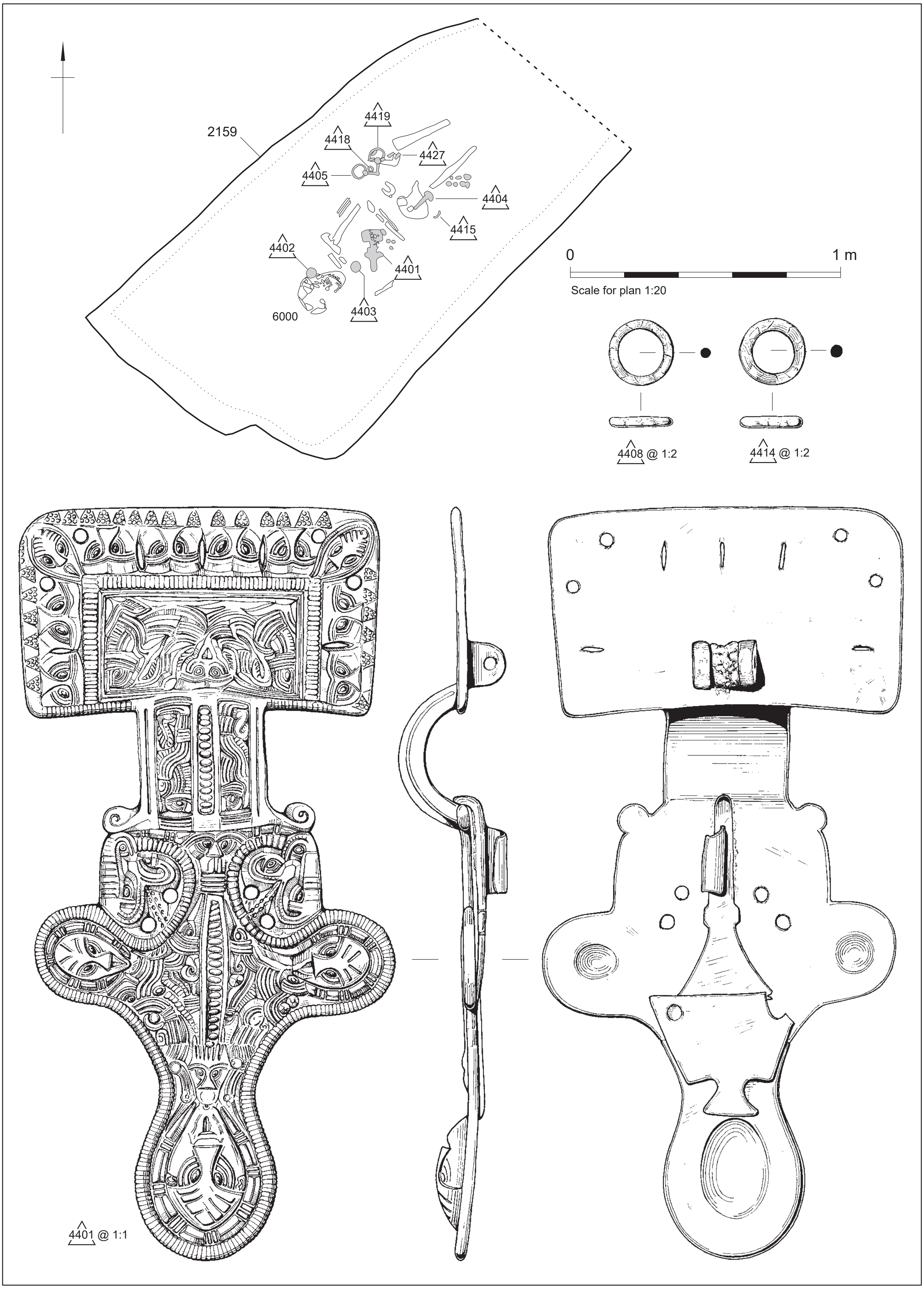


Figure 10.1 Grave 2159 and selected grave goods

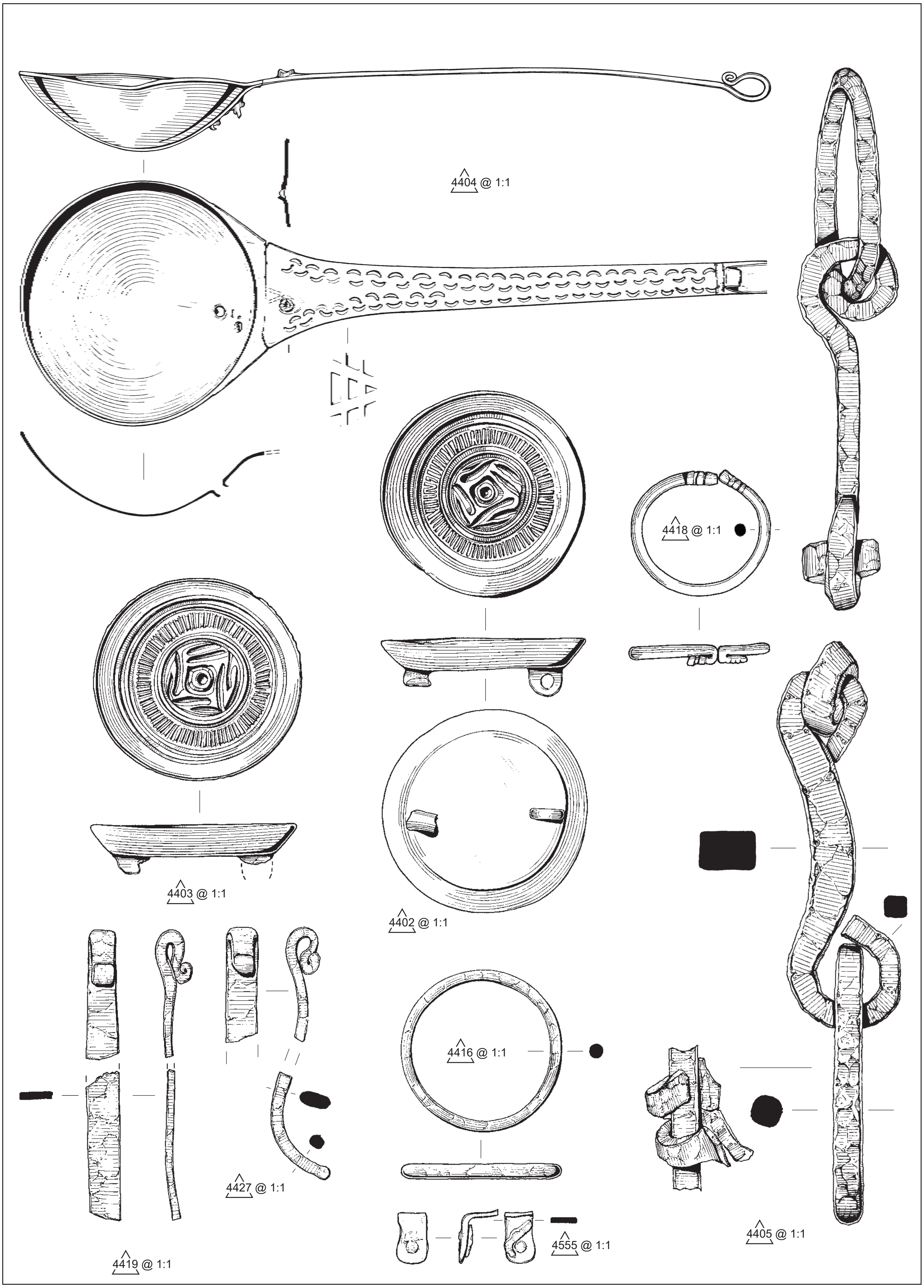


Figure 10.2 Grave 2159 selected grave goods (continued)

itself and is decorated along each edge of its upper surface with a series of interlocking semi-circular stamps. Length 142 mm, diameter of bowl 45 mm, depth of *c.* 13 mm.

ON 4405: fragmentary composite iron bridle-bit, over pelvis, left side. a) A pair of rings joined by a mouthpiece made up of two jointed bars. The bars are joined together by bending the terminals over to form loops that interlock. The other ends of the bars have been folded over to create loops which encircle the rings. b) The intact ring has two smaller iron rings attached that are rein- and harness-connectors. Fragments of leather from the headstall and reins remain on the bit. Diameter of intact loop 55 mm; length of bit to intact loop 73 mm; length of second bit to intact loop 70 mm; maximum width of bit 13 mm.

ON 4408: possible iron buckle, by right tibia, with fragment of ?pin across the centre. Diameter 28 mm.

ON 4414: possible iron buckle, waist area right side, with fragment of ?pin across the centre. Diameter 24 mm.

ON 4415: two iron fragments (not illus.), probably part of the loop and pin of a buckle, between right side of pelvis and grave wall. ?Loop 26 mm x 7 mm; ?pin 17 mm x 6 mm.

ON 4416: iron ring, below pelvis, right side. Diameter 31 mm, width 3 mm.

ON 4418: copper alloy (bronze) penannular brooch, over pelvis, left side. Sub-circular band; the ends are folded back on themselves to create the terminals, each of which has two transverse grooves. Pin missing, small patches of corrosion indicate that it was probably iron. Fowler Type D1. Mineral preserved fibres. Diameter 26 mm, diameter of band *c.* 2 mm.

ON 4424 (not illus.): monochrome glass bead; medium, globular, opaque green; found in chest area.

Plate 10.2 Shield boss from grave 2190 (the metal fragments lower right, attached to the flange, appear unrelated to the boss)

ONs 4426 (torso), 4549 (torso), 4563 (torso sample), 4564, 4565 (not illus.): Five monochrome glass beads; drawn, small, globular segmented (one of 1 segment, three of 2 segments, one of 3 segments), colourless; all found in chest area.

ONs 4406, 4407, 4409–13, 4420–3, 4425, 4429 (not illus.): 13 amber beads, small to large, A01, A02 and A04; seven found in chest area, five by right thigh, one unlocated in grave.

ON 4430 (not illus.): coral bead; unlocated in grave.

ONs 4419, 4451, 4556, 4557, 4560: possible binding (numerous iron fragments consisting of iron strips of up to *c.* 10 mm width (two riveted together)) for a wooden vessel/box. ONs 4419 and 4427, below, with crook-headed terminals, may have served as uprights.

ON 4427: fragmentary iron strip, with a terminal made by bending the strip back on itself (22 mm x 6 mm); iron ring (*c.* 25 mm x 3 mm).

ONs 4533, 4534, 4531, 4528, 4550, 4527, 4536, 4561 (not illus.): iron fragments.

ONs 4555, 4559, 4558, 4551, 4552: numerous tiny and fragmentary copper alloy pieces, unlocated.

Only ONs 4419 and 4427 amongst these various iron fragments were located on the plan and both were found in the area of the animal burrow that enters at the foot-end of the grave. It is possible that they were originally part of an artefact that had been placed in the region of the lower legs, such as a wooden vessel/box.

Grave 2165 (burial 6001; fill 2166, 2167)

(Not illustrated)

NW–SE, sub-rectangular with rounded ends. 1.98 x 0.50 m, 0.64 m deep.

Human remains: Extended supine, left leg angled towards right. 80+% adult *c.* 25–35yr. male.

Grave goods: None.

Grave 2190 (burial 6002; fill 2162)

(Fig. 10.3; Pl. 10.2)

SW–NE, sub-rectangular with rounded SW end and rounded corners in NE. 1.95 x 0.90 m, 0.45 m deep.

Human remains: Extended supine. 60–80% adult *c.* 20–25 yr. male.

Grave goods:

ON 4469: iron shield boss and fragmentary grip, over chest (Pl. 10.2). A low narrow boss; the cone is convex with overhanging carination; profile of the wall is straight. The apex is a small disc-headed type. The rim has four, possibly five rivets. Dickinson and Härke Group 3. Height from rim to top of apex of 80 mm, diameter of *c.* 154 mm. The grip is short with flanged ends (Dickinson and Härke Group Ia 1), length 121 mm, width 16 mm and was attached by two rivets. Fragments of the wood adhere to the front of the grip and to the boss, and leather identified above the wood found under one of the grip rivets.

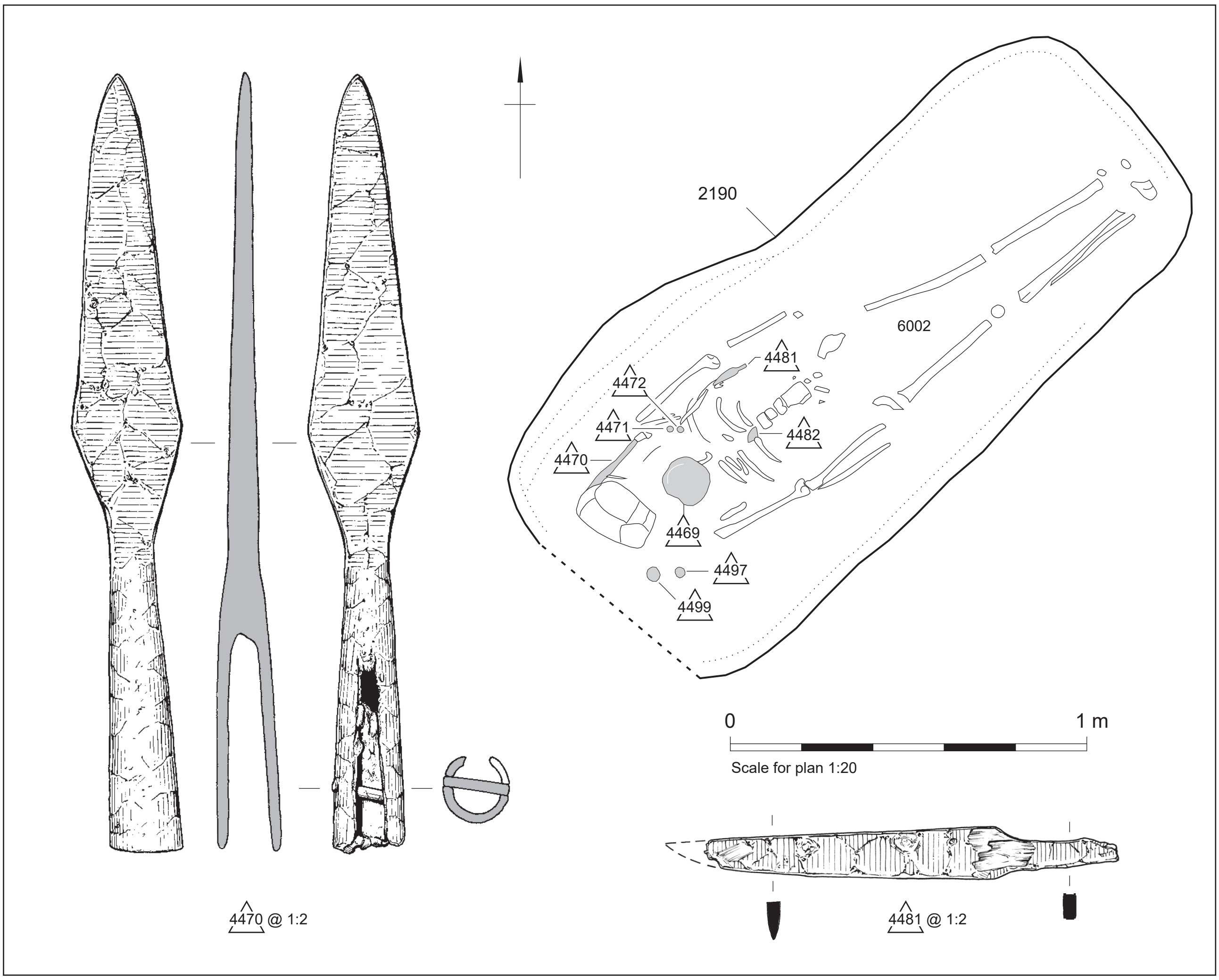


Figure 10.3 Grave 2190 and selected grave goods

Small area of textile on grip. Area of textile (2/2 twill, possibly wool) from small iron fragment attached to flange.

ON 4470: iron angular spearhead, left of skull. Probably concave-sided, Swanton Type H1, or transitional H1/H2 Type. Length 219 mm, width 33 mm (at the blade angle). Two areas of textile on the blade, possibly a wrapping or from clothing; leather from the shaft possibly evidence of a wrapping or rings; mineral preserved wood (hazel) in the socket.

ON 4471: iron board rivet (circular plate with nail; not illus.), over ribcage (left side). Diameter 29 mm. Impressions of wood.

ON 4472: iron board rivet (circular plate with curved nail; not illus.), over ribcage (left side). Diameter 22 mm. Impressions of wood.

ON 4481: blade and tang of an iron knife, over end of left humerus. Blade has a straight back and a curved cutting edge, Böhner type B/Evison type 2. Length 115 mm; height 14 mm; width ?Mineral preserved horn on tang.

ON 4497: probable shield stud (missing).

ON 4499: iron disc-shaped object with possible rivet (not illus.), location unknown. Diameter 30 mm. Probable shield stud. Mineral preserved wood.

ONs 4482, 4538, 4539, 4529, 4543, 4544: iron fragments, locations unknown.

Grave 2319 (burial 6005; fill 2314)

(Not illustrated)

NW–SE, rectangular with rounded corners. 2.10 x 0.78 m, 0.60 m deep.

Human remains: Extended supine. 60–80% adult *c.* 35–45yr. male.

Grave goods: None.

Grave 2366 (burial 6007; fill 2367)

(Fig. 10.4)

W–E, sub-rectangular (disturbed). 1.60+ x 0.35 m, 0.23 m deep.

Human remains: Extended supine; skull, right arm and some ribs *in situ*. 20–40% adult >50yr. male.

Grave goods:

ON 4690: copper alloy (leaded bronze) Roman Colchester Derivative Harlow brooch (Mackreth Type

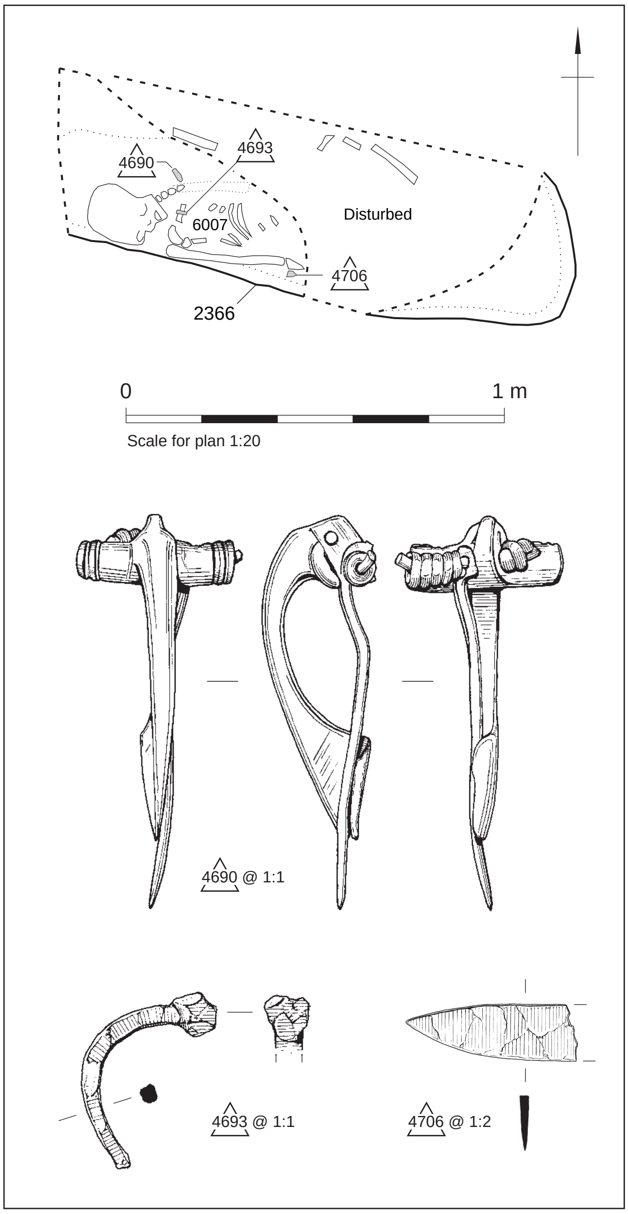


Figure 10.4 Grave 2366 and grave goods

3.a2), bow and crossbar, on left of chest. The crossbar is decorated by two inscribed lines at either end. Catch-plate located centrally behind the foot. Spring is held by a central lug behind the head. Spring and pin made of bronze. Perforation above the spring at the top of the head. Height 52 mm.

ON 4693: iron fragment, a bent shaft of a nail or pin, on right of chest. Length 35 mm.

ON 4706: fragmentary iron knife, by lower right arm. Blade has a curved back and curved cutting edge, Böhner type A/Evison type 1. Length 44 mm; height 28 mm; width 4 mm.

Grave 2373 (burial 6006; fill 2374, 2379)

(Fig. 10.5)

SW–NE, sub-rectangular with rounded ends. 1.90 x 0.70 m, 0.50 m deep.

Human remains: Probable extended supine, only lower left arm and upper left leg bones *in situ*. <20% adult possible female >18yr.

Grave goods:

ON 4641: copper alloy disc brooch, possibly tinned, head area. Decoration consists of a quincunx of small perforations, each one surrounded by a ring ('bulls' eyes'), around the outer edge is a ring of stamped semi-circles. Pierced central dot. Hinge and corrosion with the mineral preserved textile impressions suggests an iron pin. Diameter 38 mm, thickness 1 mm.

ONs 5000, 5023–7, 5029–40 (not illus.): 18 monochrome glass beads; wound, medium, annular, translucent dark blue; all recovered from samples taken from very disturbed grave fill.

ON 5028 (not illus.): amber bead, large; found in head area.

ON 5020 (not illus.): fragment of curved iron sheet, location unknown. Length 24 mm, width 16 mm.

ON 5043 (not illus.): tiny iron fragment, location unknown.

Grave 2397 (burial 6008; fill 2398)

(Fig. 10.6)

S–N, sub-rectangular with rounded S end and N end truncated by animal burrow. 1.50 x 0.56 m, 0.32 m deep.

Human remains: Extended supine burial, left arm across pelvis, feet removed by animal burrow. 60–80% subadult *c.* 16yr. ?female.

Grave goods:

ON 4711: copper alloy (brass) Roman Mainstream Trumpet brooch (Mackreth Type 1.5b), at neck, cast with a highly arched bow and a moulding at the waist which continues round the back of the bow. The lower bow ends in a moulded and slightly upturned foot. The spring was sprung on a bar passing through a lug behind the head. Height 53 mm.

ON 4712: iron clip, chest, right side. 20 mm x 6 mm.

ON 4713: iron buckle with oval loop, at waist (not illus.). Iron pin and a rectangular plate with a rivet near the foot of the plate. The plate is folded around the loop and the tongue is wrapped around the loop. Marzinzik Type II 19.a. Length 40 mm, height of loop 29 mm, length of plate 22 mm, width of plate 20 mm.

Grave 2435 (burial 6011; fill 2408, 2430)

(Not illustrated)

NW–SE, sub-rectangular with rounded ends. 2.10 x 0.82 m, ? deep.

Human remains: Extended supine, legs crossed at ankles. 60–80% adult *c.* 35–45yr. male.

Grave goods:

ON 5011: iron fragment, unlocated in grave.

ON 5057: amber bead (fragment only); sample find, unlocated in grave.

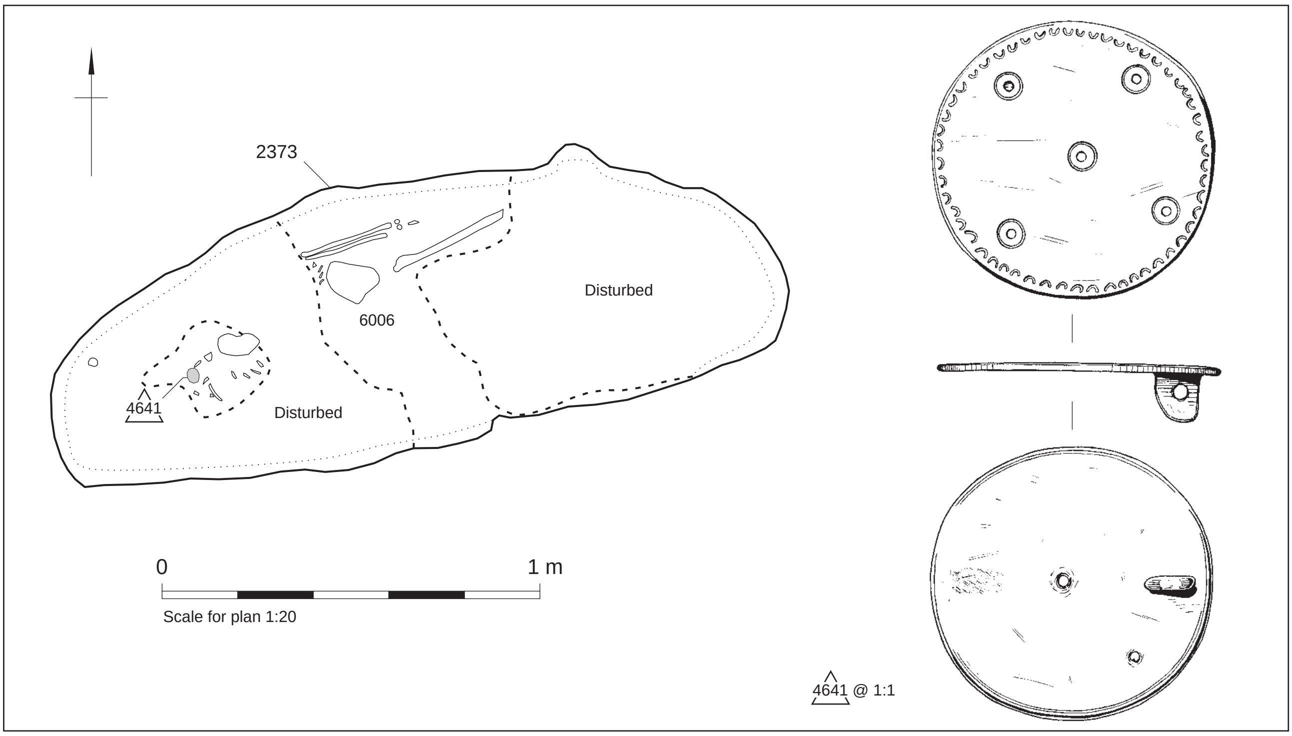


Figure 10.5 Grave 2373 and selected grave goods

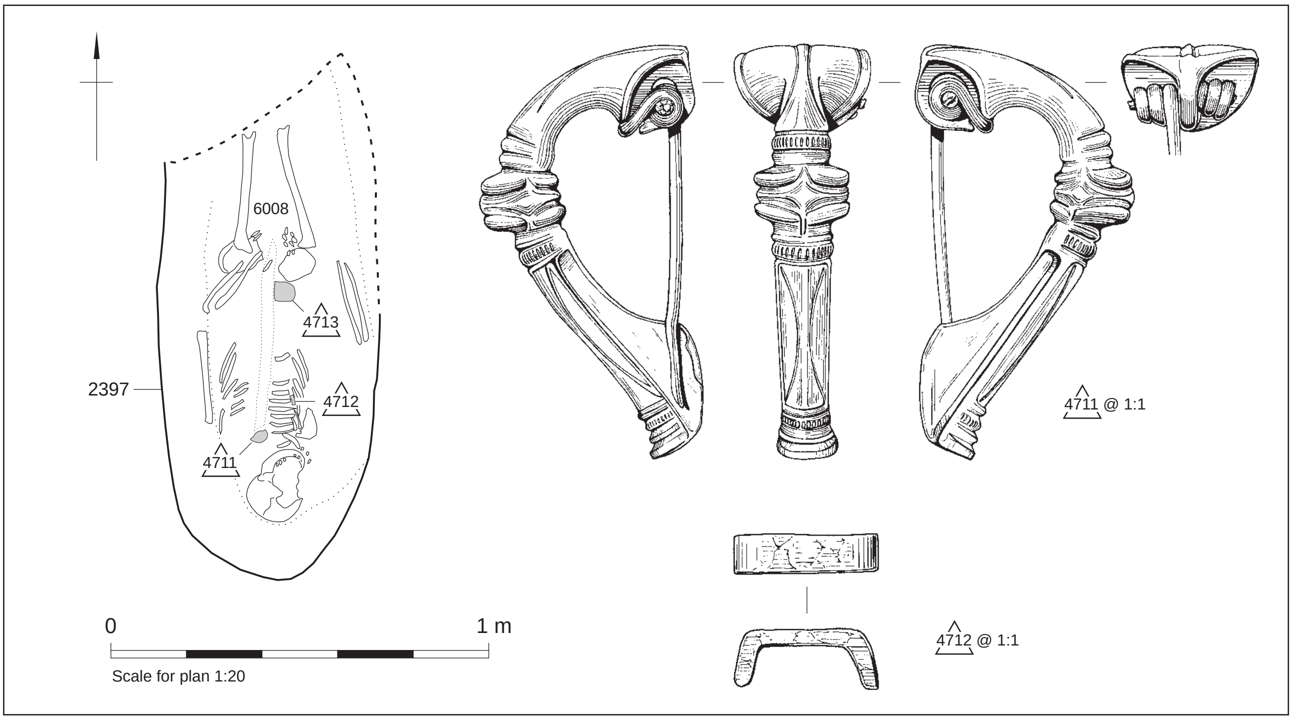


Figure 10.6 Grave 2397 and selected grave goods

Grave 2502 (burial 6012; fill 2457)
(Fig. 10.7)
SW–NE, sub-rectangular with rounded ends (E edge unclear). 2.00 x 0.70 m, 0.48 m deep.
Human remains: Extended supine, right arm across body. 80+% adult *c.* 35–50yr. female.
Grave goods:
ON 4972: fragment of a possible iron buckle loop or ring, upper right arm. Length 21 mm; width across section 3 mm.
ON 4977: iron ring, chest right side. Diameter 10 mm. Found with beads and was probably threaded on to the necklace.
ON 4978: copper alloy strip perforated at one end and decorated with three ring-and-dot motifs, chest, right side. Length 19 mm, width 5 mm.

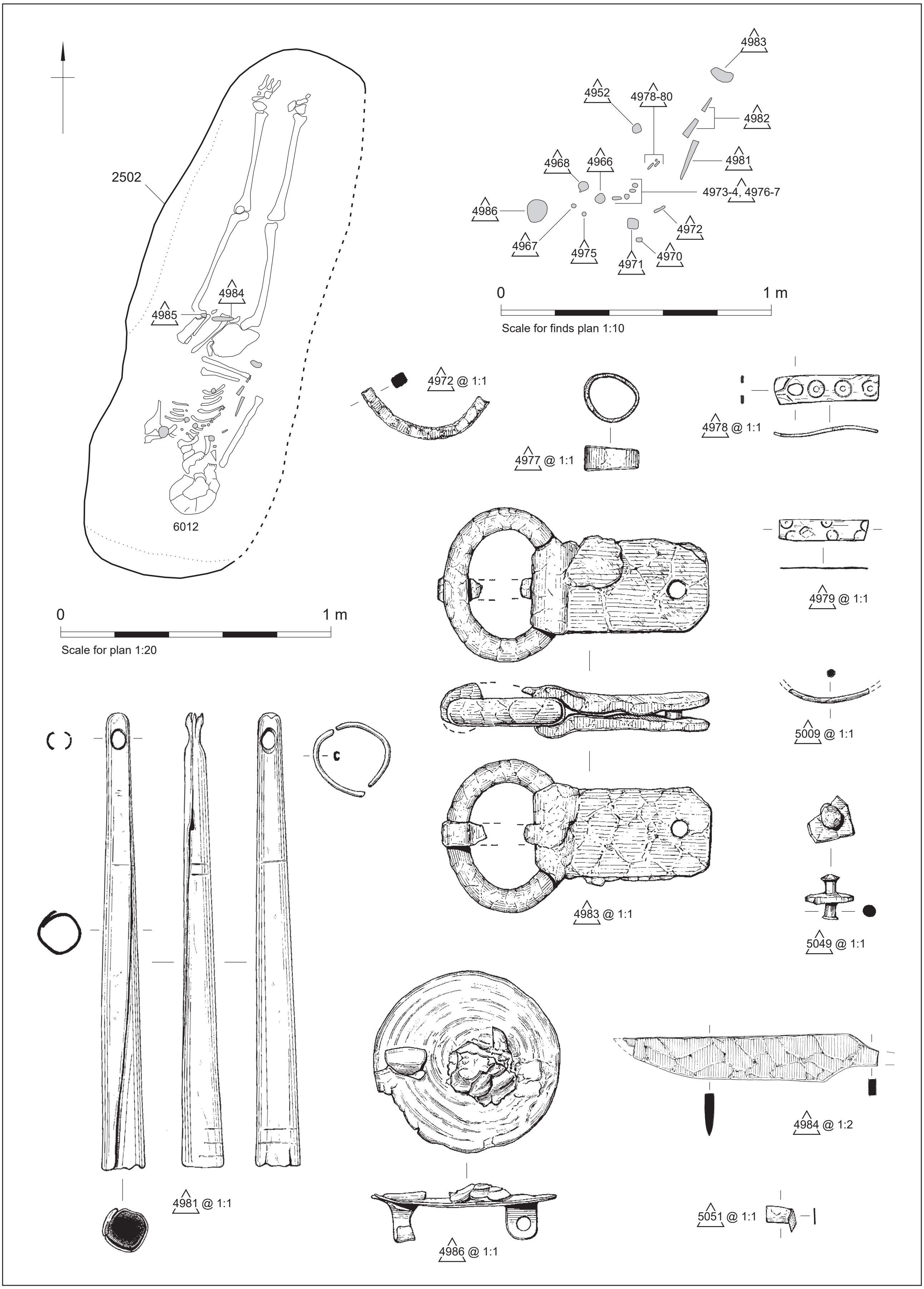


Figure 10.7 Grave 2502 and selected grave goods

ON 4979: fragmentary copper alloy strip, chest, right side Length 16 mm, width 4 mm.

ON 4981: copper alloy (?bronze) handle of a 'cosmetic brush', perforated at top for suspension (ON 4981b: fragmentary copper alloy wire ring), upper right arm. Fracture 20 mm from the top. The handle is made from a folded strip making a cylinder, decorated on the exterior by horizontal incised lines at repeating intervals. Fibres identified inside the cylinder. Handle 85 mm in length, diameter 8 mm.

ONs 4982, 5045, 5047, 5046, 5055 (not illus.): fragmentary iron pin, hook-ended, waist, right side. Length approx. 101 mm, width 6 mm.

ON 4983: iron buckle loop, fragmentary pin and rectangular plate, waist right side. The plate has one rivet and traces of organic material. Marzinzik Type II.19.a. Height of loop *c.* 35 mm, width *c.* 30 mm; fragment of plate 25 mm x 18 mm.

ON 4984: fragmentary iron knife; blade welded to knife back, lower pelvis. The blade has a straight back and a curved cutting edge. Böhner type B/Evison type 2. Length 93 mm, height 18 mm, width of blade 5 mm. Mineral preserved horn survives on tang; mineral preserved leather sheath on blade.

ON 4985 (not illus.): small lump of iron pyrites, over left pelvis.

ON 4986: back-plate (?gunmetal) from an applied disc brooch, left clavicle. Fragmentary face, the decoration is not legible but was a repoussé decorated foil, attached with a lead solder. Hinge and catch plate now separate, iron corrosion products from a probable pin. Diameter 35 mm, thickness <1 mm.

ON 5014 (not illus.): tiny fragment of an iron sheet/strip, unlocated. Length 10 mm; width 5 mm.

ONs 5013, 5048 (not illus.): tiny iron fragments, unlocated.

ON 5049: iron rivet attached to a fragment of iron plate, unlocated. At each end is a disc-shaped terminal. Length 9 mm; width of head 5 mm.

ONs 4952, 4966, 4967, 4970, 4971, 4973–6, 5010, 5052 (not illus.): 11 amber beads, small to large, A01, A02 and A04; 10 found in chest area, one by head.

ON 4968 (not illus.): a sub-circular object (D), 21 mm x 13 mm. With beads, possible necklace fitting.

ON 4980 (not illus.): copper alloy fragments. With beads, possible necklace fitting.

ON 5009: fragmentary copper alloy wire ring. Length 15 mm. (Not located on plan, probably part of a wire necklace ring).

ON 5051: tiny copper alloy fragments, unlocated.

Grave 2533 (burial 6013; fill 2504, 2535)

(Fig. 10.8)

SW–NE, rectangular with rounded corners. 2.00 x 0.90 m, 0.60 m deep.

Human remains: Extended supine, of upper body fragments of skull and arms remain. <20%, a, l, adult *c.* 30–40yr. female.

Grave goods:

ON 4997: fragmentary blade and tang of iron knife, left of waist. Blade back appears to angle down to meet the blade, possible Böhner type C or Evison type 3. Length 110 mm; height 13 mm; width 2.5 mm. Mineral preserved horn on the tang and it is possible that fragments of a leather sheath adhere to the blade.

ON 4998: copper alloy (leaded bronze) Roman Colchester Derivative Hinged pin brooch (unclassified), area of left clavicle. Bow and crossbar decorated by two inscribed lines at either end of the head-bar and ribbing over the central part of the bow. Three rectangular enamelled cells below the mid-bow moulding, two red and one blue. Small upturned moulded foot. Catch-plate behind the foot; pin held by an axial bar in the head-bar. Height 47 mm, length of bow 31.5 mm.

ON 4999: fragmentary iron crook-headed pin (Ross 1991, Type XIX); upper chest. Length 77 mm.

ONs 5015, 5018 (not illus.): numerous iron fragments, unlocated.

ONs 5016, 5019: tiny copper alloy fragments, unlocated.

ON 5017 (not illus.): glass bead fragment, from sample from area of legs.

ON 5044 (not illus.): iron fragment. Shaft from a nail or pin, unlocated. Length 20 mm.

ON 5100: iron buckle with oval loop and iron pin wrapped around the loop, right of waist. Height of loop 35 mm; width of loop 25 mm; length of pin 31mm. Marzinzik Type I.11 a.

ON 5101: fragmentary back-plate of copper alloy applied disc brooch, area of right clavicle. Surface covered with a tin foil soldered with lead. Decoration is not legible. Separate hinge and catch plate. Diameter *c.* 35 mm, thickness <1 mm.

Grave 2572 (burial 6014; fill 2573)

(Not illustrated)

NW–SE, oval. 0.56 x 0.32 m, 0.20 m deep.

Human bone: Possibly extended supine. 40–60% neonate *c.* 34–36 wks.

Grave goods: None.

Grave 2605 (burial 2606, fill 2607)

(Not illustrated)

W–E, sub-rectangular cut with vertical, irregular sides and a flat base. 2.05 x 0.65 m, 0.55 m deep.

Human bone: Extended supine. *c.* 55% adult >50yr. female.

Grave goods: None.

Grave 2617 (burial 2616; fill 2615)

(Fig. 10.9; Pl. 10.3)

SW–NE, sub-rectangular cut with steep sides and a flat base, 1.98 x 0.80 m, 0.4 m deep. Considerable tree root disturbance.

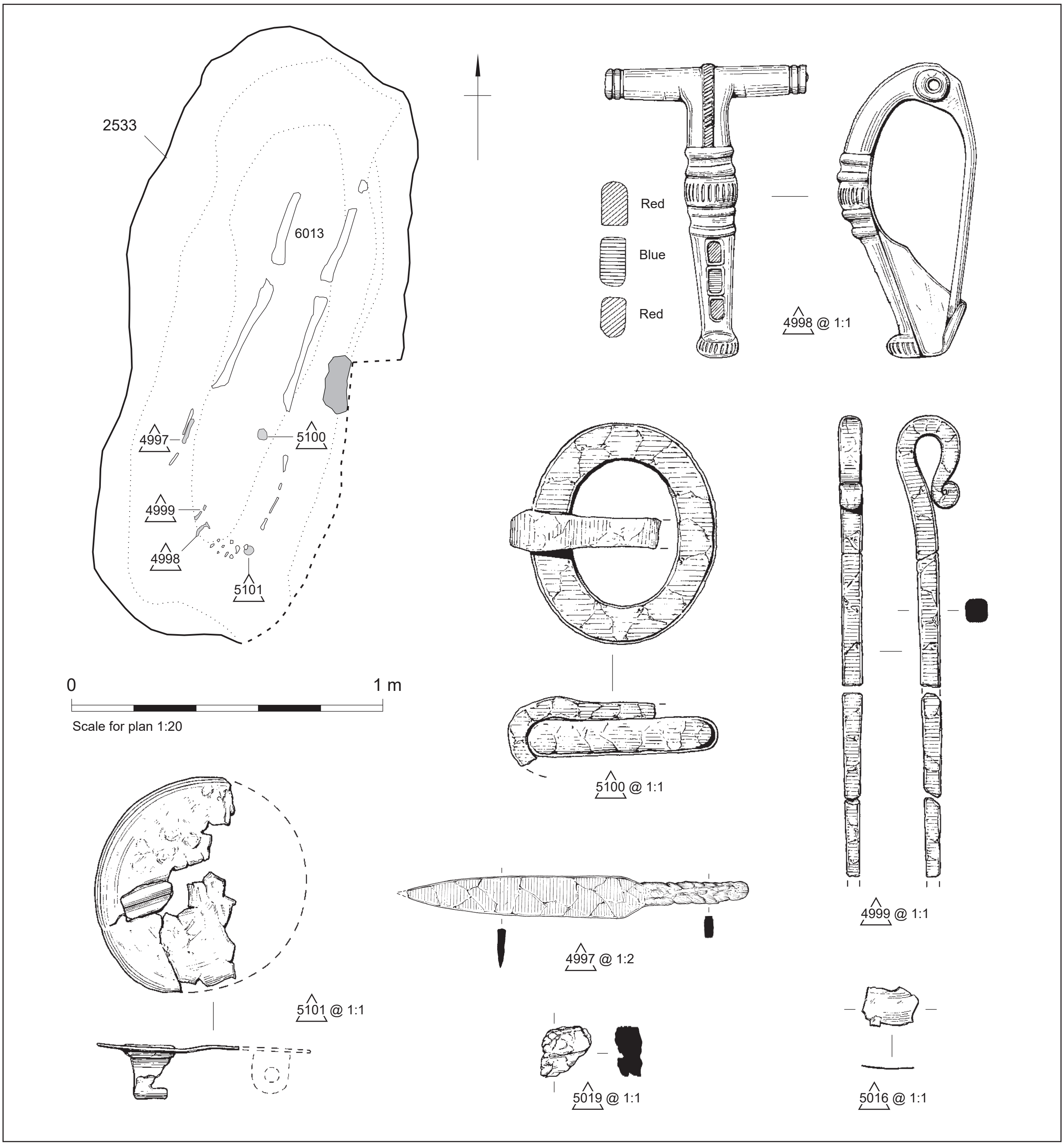


Figure 10.8 Grave 2533 and grave goods

Human remains: Extended supine. *c.* 70% adult *c.* 40–50yr. female. *Redep*. *c.* 2% juvenile *c.* 10–11yr.
Grave goods:

ON 5313: possible fragmentary iron buckle loop (?D), near left knee. Height 27 mm. Textile fibres (possible twill) on back.

Grave 2621 (burial ?; fill 2620)

(Not illustrated)

ENE–WSW, sub-rectangular cut with steep sides and a flat base. 1.4 x 0.5 m, 0.4 m deep. Grave contained modern backfill of military rubbish including trip flare cases, hexi-burners and blank 7.62 mm rounds.
Human remains: None.
Grave goods: None.

Grave 2624 (burial 2623; fill 2622)

(Not illustrated)

W–E, sub-rectangular cut with steep sides and a flat base. 1.84 x 0.65 m, 0.44 m deep.
Human remains: Extended supine, left forearm possibly flexed over hip. *c.* 45% adult >45yr. ?female.
Grave goods: None.

Grave 2627 (burial 2626; fill 2625)
(Fig. 10.10)
WSW–ENE, sub-rectangular cut with steep, truncated sides and a flat base. 1.8 x 0.7 m, 0.4 m deep.
Human remains: Supine? (exact posture unknown due to extensive animal disturbance). *c.* 20%, s.a.l., adult *c.* 40–45yr. female. *Redep. c.* 5% a. adult *c.* 17–25yr. ??male.
Grave goods:
*ON 5316: three amber beads, large (?D), one irregular, two A04 (two illustrated); found by the left hip.

Grave 2632 (burial 2631; fill 2630)
(Fig. 10.11)
WSW–ENE, rectangular cut with vertical sides and an undulating base. 2.09 x 0.63 m, 0.46 m deep.
Human remains: Extended supine. *c.* 35%, a.u.l., adult *c.* 18–20yr. male.
Grave goods:
ON 5361: iron shield boss and fragmentary grip, placed over the left shoulder. A low narrow boss. The cone has a straight profile with no carination and the profile of the wall is straight. The apex is pointed. The rim originally had four rivets (fragments of shield board associated with one rivet). Dickinson and Härke Group 4. Height from rim to top of apex 100 mm, diameter *c.* 132 mm. The grip has expanded terminals (Dickinson and Härke Group Ia 1), length *c.* 119 mm, width of grip 13 mm, width of terminal 32 mm. Mineral preserved wood (possibly willow or poplar) with leather on the front and back [of the board].
Also present is a copper-alloy diamond-head rivet (29 mm x 25 mm) that probably decorated the board.

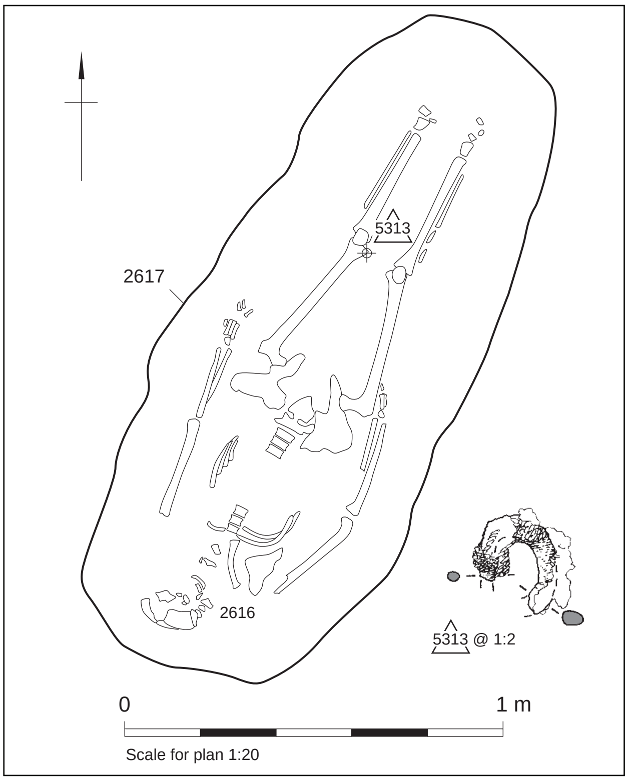


Figure 10.9 Grave 2617 and iron buckle

Grave 2639 (burial 2638; fill 2637)
(Fig. 10.12; Pl. 10.4)
SE–NW, sub-rectangular cut with steep sides and a flat base. 2.06 x 1.00 m, 0.50 m deep.
Human remains: Extended supine. *c.* 88% adult *c.* 30–40yr. male. *Redep. c.* 5%. Adult >25yr. ?female; 1 frag foetus/neonate.


Plate 10.3 Grave 2617, heavily matted with fine roots (Trench 2), from the south-east (scale = 1 m)

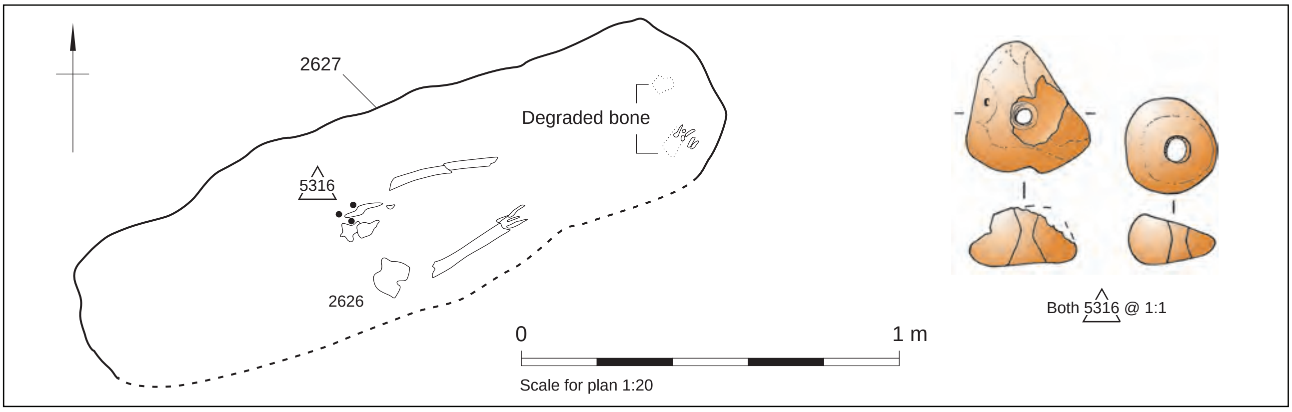


Figure 10.10 Grave 2627 and amber beads

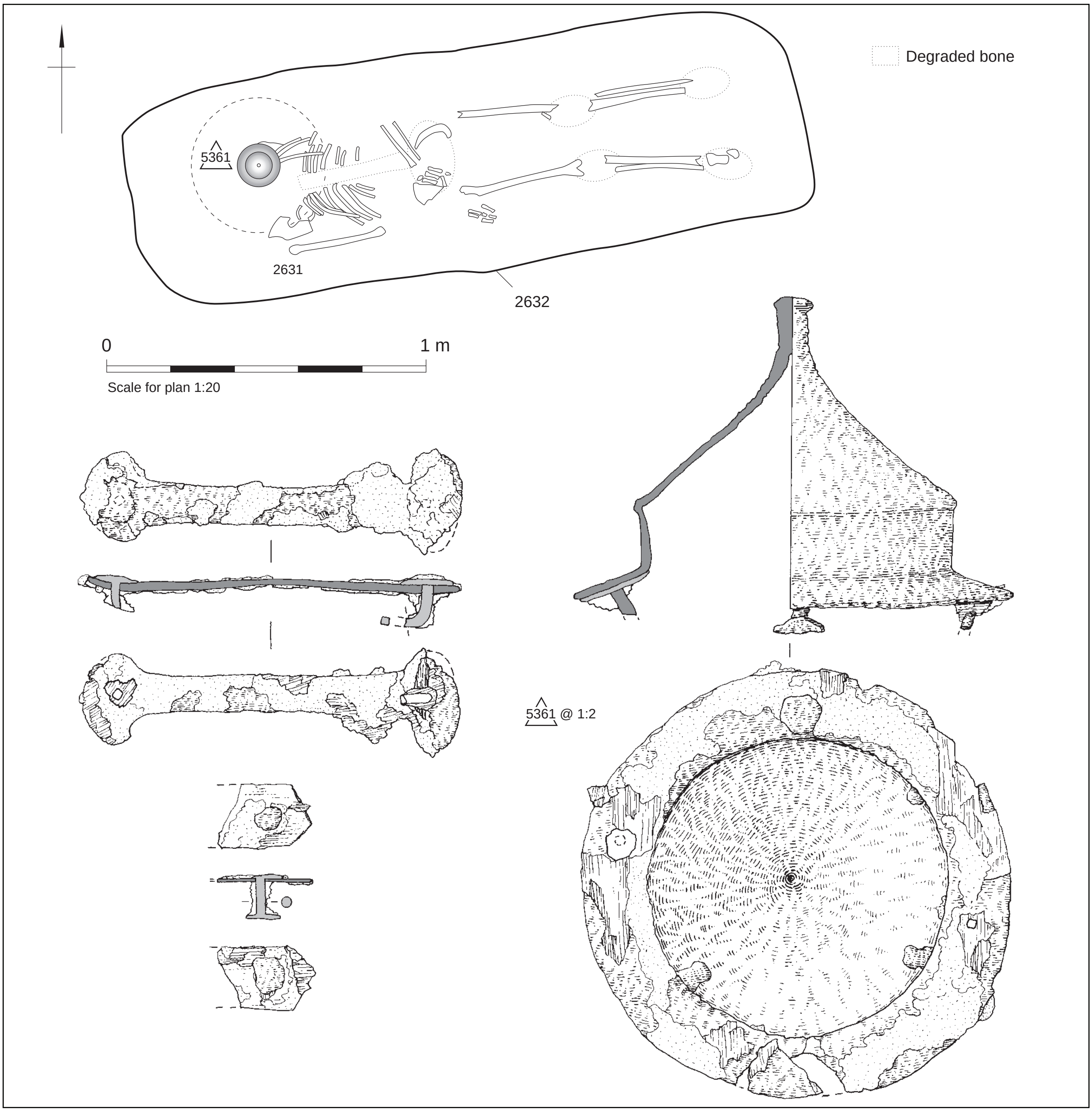


Figure 10.11 Grave 2632 and iron shield boss

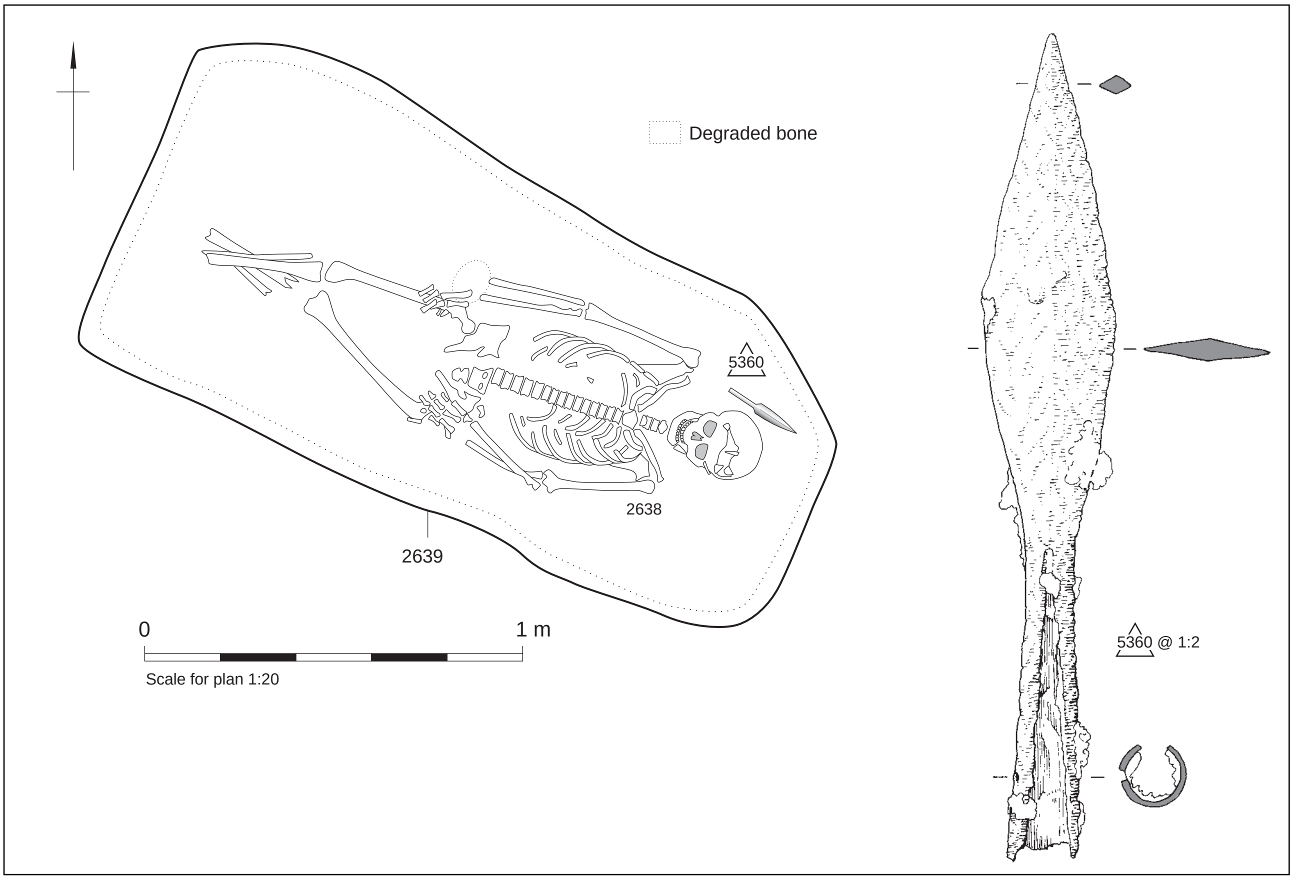


Figure 10.12 Grave 2639 and iron spearhead

Plate 10.4 Grave 2639 in foreground, with narrow grave 2648 behind (Trench 2), from the north-west (scales = 0.2 m and 0.5 m)

Isotope sample taken: Local?
Grave goods:
ON 5360: iron spearhead (cleft socket), near the right-hand side of the skull. Appears to be an angular straight-sided spearhead, which if correct, identifies it as a Swanton Type E2. Length 195 mm, maximum width of 26 mm (at the blade angle). Possible rivet through socket.

Grave 2642 (burial 2641; fill 2640)
(Not illustrated)
ESE–WNW, rectangular cut with vertical sides and a flat base. 2.45 x 0.65 m, 0.45 m deep. Several large flint nodules around edge of grave indicate probable flint lining.
Human remains: Extended supine. *c.* 90% adult *c.* 40–45yr. male. *Redep*. 2 frag u. adult >18yr. female.
Grave goods: None.

Grave 2648 (burial 2647; fill 2646)
(Fig. 10.13)
NNW–SSE, narrow rectangular cut with curved ends, straight sides and a flat base. 1.92 x 0.51 m, 0.49 m deep.
Human remains: Extended supine. *c.* 85% juvenile *c.* 12yr. ?female.
Isotope sample taken: Local?
Grave goods:
ONs 5319 and 5320: two joining fragments of iron scoop, right-hand side. Total length 85 mm, width 3 mm (shaft), 7 mm (scoop).

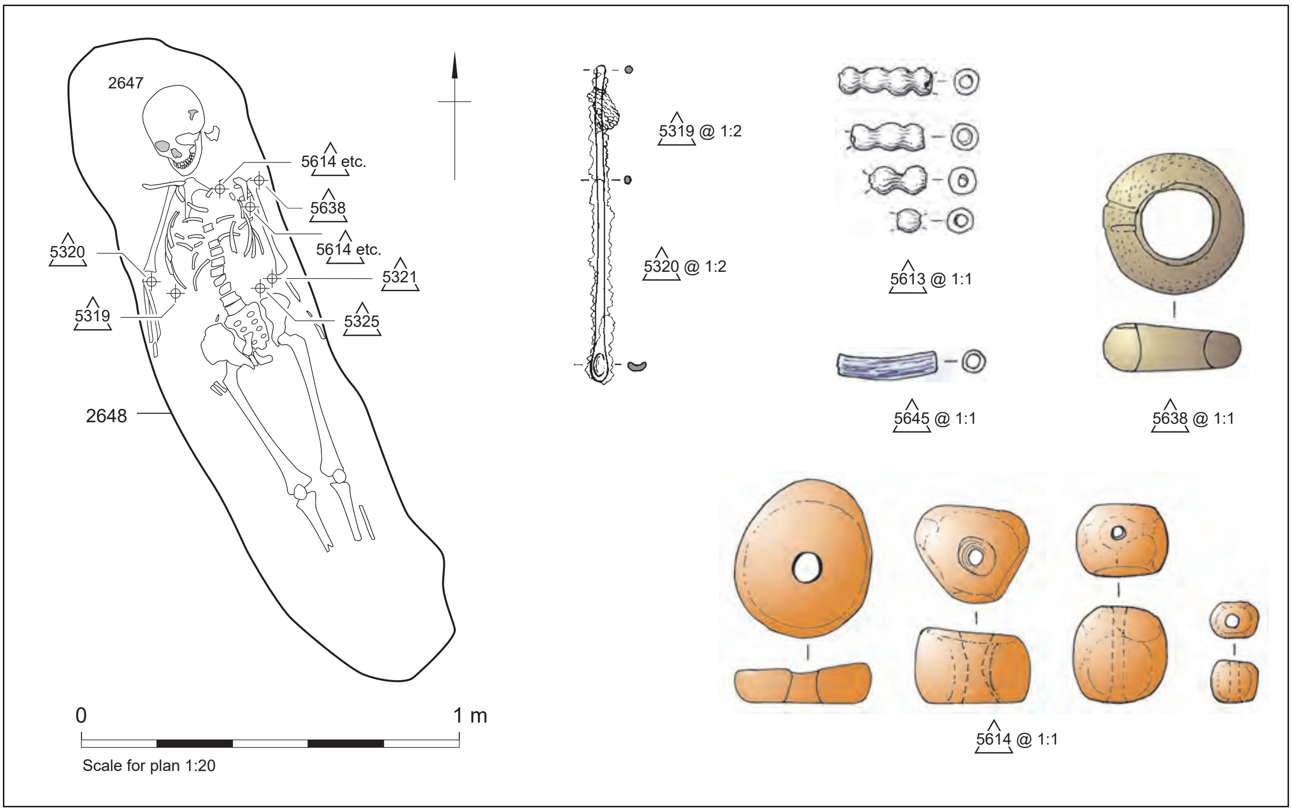


Figure 10.13 Grave 2648 and selected grave goods

ON 5321: fragmentary iron rod (not illus.), left-hand side, bent back on itself creating looped terminal, possible tweezers. Length 20 mm, width 4 mm.

ON 5325: fragmentary iron rod (not illus.), left-hand side. Length 36 mm, width 7 mm.

ONs 5319, 5320, 5321 and 5325: objects could be associated with the beads and probably comprise a toilet set.

ONs 5322, 5611, *5613: 30 monochrome glass beads; drawn, small, globular segmented (10 of 1 segment, nine of 2 segments, 10 of 3 segments, one of 4 segments; four illustrated), colourless; 13 found in neck/upper chest area, one (ON 5322) by left shoulder, 16 unlocated sample finds (ON 5611).

*ON 5645: monochrome glass bead; drawn, small, cylindrical, green-blue; unlocated sample find.

ONs 5317, 5326, *5614, 5646: 28 amber beads, small to large, 18 A01, 6 A02 and four A04 (four illustrated); 27 found in neck/upper chest area, six by left shoulder; three unlocated sample finds (ON 5646).

*ON 5638: monochrome glass bead, large, annular, translucent yellow-brown; found by left shoulder.

Grave 2653 (burial 2652; fill 2651)

(Fig. 10.14)

SSW–NNE, sub-rectangular cut with steep sides and an undulating base. 1.95 x 0.67 m, 0.22 m deep.

Human remains: Extended supine, with head angled to the left. *c.* 65% adult *c.* 30–40 yr. female.

Isotope sample taken: Local?

Grave goods:

ON 5328: copper alloy disc brooch, on top of left clavicle. Minor damage to the leading edge of the rim. The front was originally silvered; much of this has now worn away. It is decorated by eight irregularly placed single ring-and-dot motifs and one central motif of the same design. Hinge and catch and fragment of iron pin. Possible organic remains (not identified) associated with iron pin. Diameter 34 mm.

ON 5329: copper alloy Roman Colchester Derivative Harlow brooch (Mackreth Type 1.a1), on top of upper ribs on right side. An almost complete brooch with copper alloy pin. The bow and crossbar are cast in one; there is a catch-plate, with perforations, placed centrally behind the foot. The spring is held by a central lug behind the head. A moulded line runs down the entire length of the bow. Crossbar decorated by two inscribed lines at one end; the other end has broken away at the terminal. The artefact has a height of 38 mm; extant width (head-plate) 19 mm.

Grave 2656 (burial 2655; fill 2654)

(Fig. 10.15; Pl. 10.5)

SW–NE, sub-rectangular cut with steep sides and an undulating base. 2.04 x 0.60 m, 0.20 m deep.

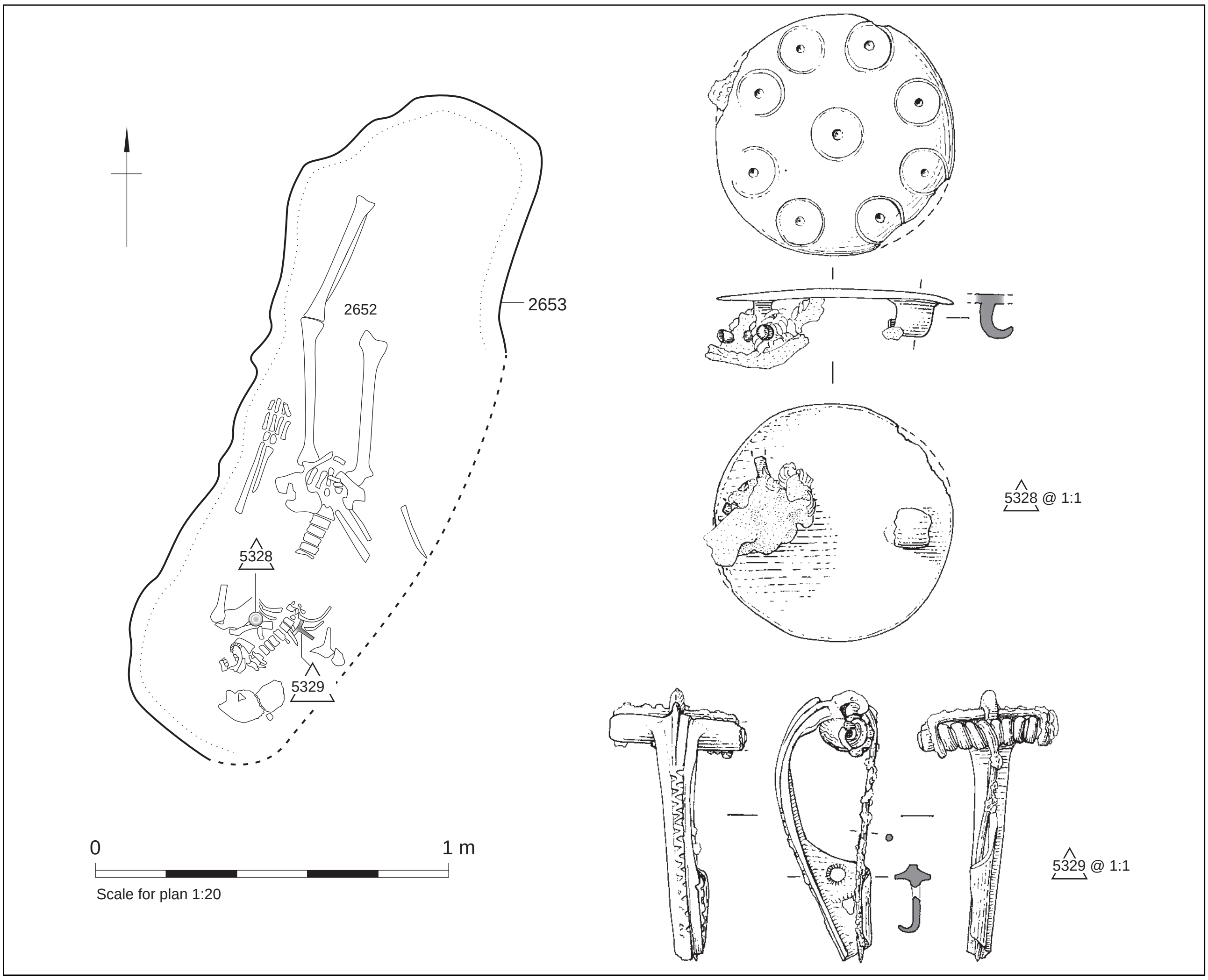


Figure 10.14 Grave 2653 and grave goods

Plate 10.5 Grave 2656 (Trench 1), from the north-west (scale = 0.5 m)

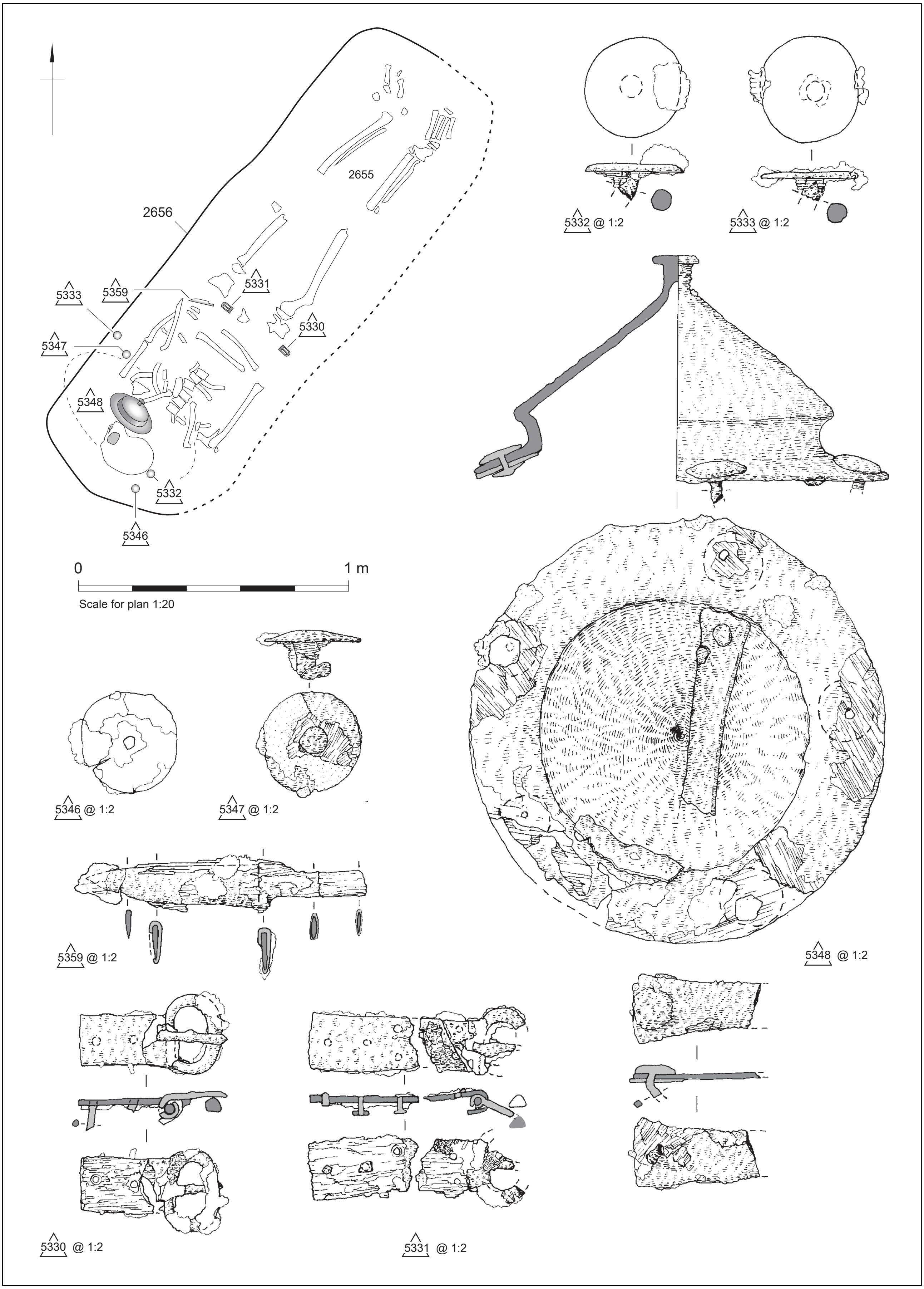


Figure 10.15 Grave 2656 and grave goods

Human remains: Extended supine, with head angled to the left. *c.* 75% adult *c.* 20–25yr. male.
Isotope sample taken: Local?
Grave goods:

ON 5330: fragmentary iron buckle and plate on the right side of the pelvis. The buckle and pin are intact; the rectangular plate has broken away. The plate was folded around the loop and the tongue is wrapped around the loop. Two rivets visible on the plate. Marzinzik Type II 19.a. The overall length of the artefact is 50 mm; length of plate *c.* 28 mm; width of plate 20 mm. Textile fibres (plain tabby) on back.

ON 5331: fragmentary iron belt buckle and plate on left side of the pelvis. The plate is folded around the loop and the tongue is wrapped around the loop. Four rivets visible on the plate and a further two on the fragment of plate attached to the buckle loop. Marzinzik Type II 19.a. The overall length of the artefact is *c.* 80 mm; length of plate 59 mm; width of plate 20 mm. Textile fibres (2/2 twill) on back.

ON 5332: circular iron shield board stud with fragmentary iron rivet *in situ*, above right shoulder. Diameter 38 mm.

ON 5333: circular iron shield board stud with fragmentary iron rivet *in situ*, above left shoulder. Diameter 39 mm.

ON 5346: circular iron shield board stud with fragmentary iron rivet *in situ* (associated are two small fragmentary rivets), near right shoulder. Diameter 38 mm.

ON 5347: circular iron shield board stud with fragmentary iron rivet *in situ*, near left shoulder. Diameter 38 mm.

ONs 5332, 5333, 5346 and 5347 associated with ON 5348.

ON 5348: iron shield boss and fragmentary grip, found covering mandible. A low boss: the cone has a straight profile with overhanging carination and the profile of the wall is concave. The apex is intact and of a small disc-headed type (diameter 17 mm). Dickinson and Härke Group 1.1. Height of boss from rim to top of apex 85 mm, diameter of *c.* 157 mm. Fragments of the shield board adhere to the underside of the boss. One end of a grip with an expanded terminal survives: length 47 mm, width of grip 19 mm, width of terminal 25 mm. Dickinson and Härke Group Ia 1. Textile fibres (indistinguishable weave) on detached end of shield grip; leather on the front and back.

ON 5359: knife blade, from above left pelvis. Fragments of blade and tang. Tang slopes up to back of blade and down to cutting edge. Back of blade possibly curving down to cutting edge. Possible weld line where blade joins tang. Type unidentified. Overall surviving length 117 mm; height 19 mm; width 4 mm.

Plate 10.6 Grave 2668 (Trench 2), from the north

Grave 2668 (burial 2667; fill 2666)
(Fig. 10.16; Pl. 10.6)
SSE–NNW, rectangular cut with steep sides and a flat base. 2.03 x 0.63 m, 0.30 m deep.
Human remains: Extended supine. *c.* 90% subadult *c.* 16–17 yr. ?male.
Isotope sample taken: Local?
Grave goods:

ON 5323: iron spearhead (cleft socket) on top of bucket (ON 5324) on the right-hand side of the skull. An angular concave-sided spearhead of Swanton Type H2. Length 233 mm, maximum width 31 mm (at the blade angle). Possible rivet through socket.

ON 5324: a largely intact copper alloy bound wooden bucket found on the right-hand side of the skull, comprising three hoops and four uprights, all of which are decorated by rows of repoussé dots along the margins. A separate U-shaped section rim holds the upper edge of both the hoop and wooden (yew) staves in place and is secured by five U-shaped clips each of which is held in place by a rivet. Four of the clips are similar and are regularly placed but the fifth is a larger and of a different form. A fragmentary hoop encircles the girth of the vessel, while there is a further one around the base. The ends of both the bottom and median hoop overlap and although the rivets are missing, holes demonstrate that they were riveted together. No evidence for the

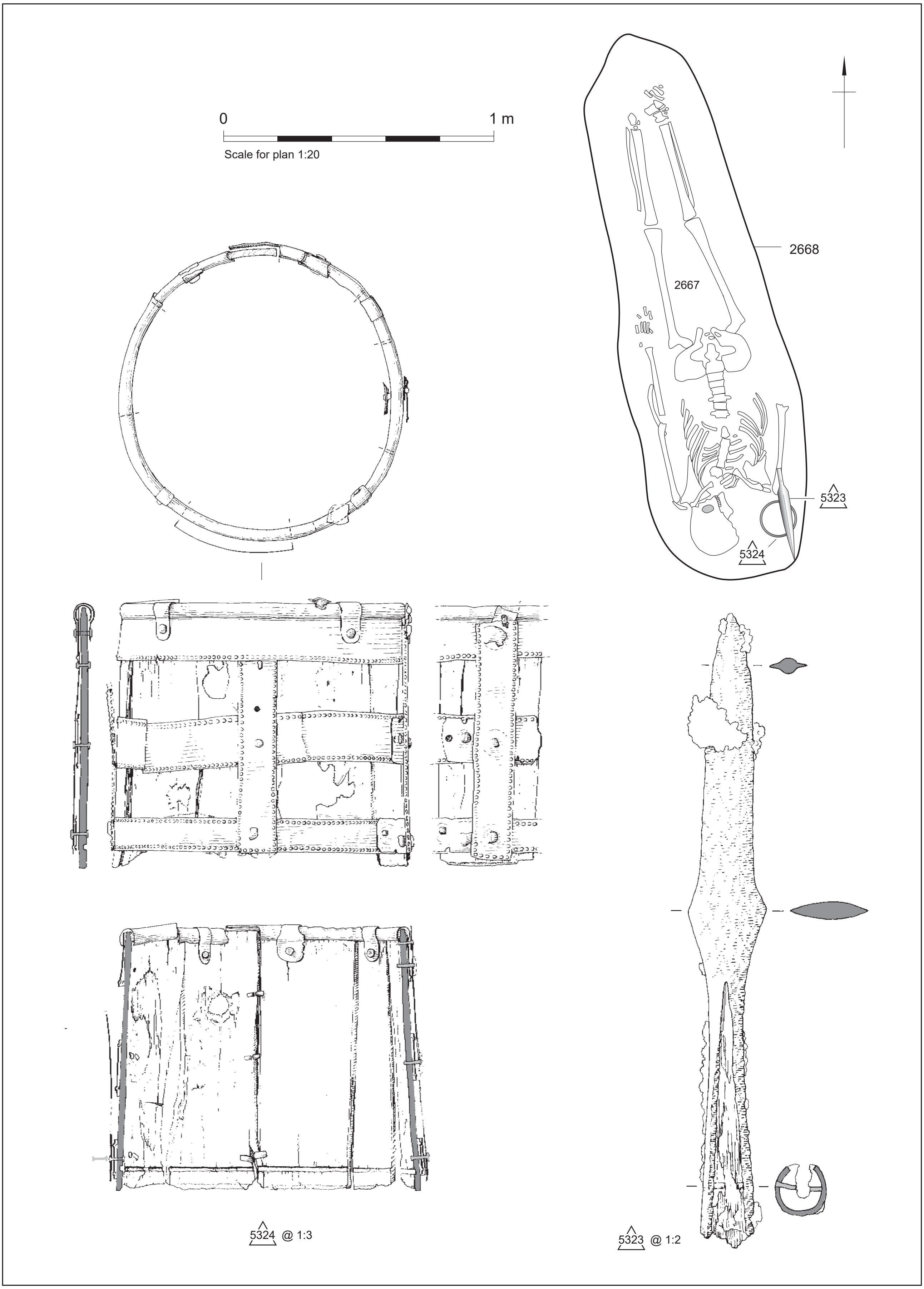


Figure 10.16 Grave 2668 and grave goods

handle survives but the upper terminals of two opposing uprights are broken indicating where the handle lugs would originally have been located. Further evidence that these uprights supported the lugs is provided by the fact that they are more substantial than the other pair and are also outside the upper hoop, not secured beneath it as is the case with the other two. The uprights are secured by three split-pins. Height of vessel: 95 mm; diameter 103 mm. Width of upper hoop 22 mm; middle hoop 19 mm; base hoop 12 mm. Width of uprights (handle) 18 mm; other two uprights 15 mm. An iron fragment of the spearhead, which rested on the vessel, is corroded onto the upper surface of the rim.

ON 5608 (not illus.): monochrome glass bead; small, uncertain form; opaque dark colour (poor condition, in two fragments); found by feet, possibly redeposited.

Grave 2671 (burial 2670; fill 2672)
(Not illustrated)
WNW–ESE, sub-oval cut with steep, irregular sides and a flat base. 0.96 x 0.42 m, 0.32 m deep.
Human remains: Unknown posture due to very small quantity of bone present. *c.* 2% s. infant *c.* 6–9 months.
Grave goods: None.

Grave 2674 (burial 2673; fill 2672)
(Not illustrated; Pl. 10.7)
WNW–ESE, oval cut with vertical sides and a flat base. 1.44 x 0.70 m, 0.42 m deep. Flint nodules along two sides.
Isotope sample taken: Local?
Human remains: Extended supine. *c.* 70% juvenile *c.* 6–7yr.
Grave goods: None.

Grave 2681 (burial 2678; fill 2682)
(Not illustrated)
ENE–WSW, sub-rectangular cut with moderate sides and a rounded base. 1.03 x 0.51 m, 0.13 m deep. Skull possibly supported by flint.
Human remains: Extended supine. *c.* 45% infant *c.* 2yr. *Redep*. 1 bone l. adult *c.* >18yr.
Grave goods: None.

Grave 2686 (burial 2685; fill 2684)
(Not illustrated)
SSE–NNW, rectangular cut with steep sides and a flat base. 1.76 x 0.60 m; uncertain depth.
Human remains: Extended supine. *c.* 70% subadult *c.* 15–16yr. ??male.
Grave goods: None.

Grave 2699 (burial 2692; fill 2700)
(Fig. 10.17; Pl. 10.8)
W–E, sub-rectangular cut with steep/vertical sides and a flat base. 2.09 x 0.90 m, 0.46 m deep. The distinctly rectangular plan and different nature of the central fill of grave 2699 suggest the possibility of a coffin, with chalk rubble backfill around the edges.
Human remains: Extended supine, with head tilted over right shoulder and facing right. *c.* 85% adult 18–21yr. female.
Isotope sample taken: Local?
Grave goods:

ON 5373: copper alloy button brooch, found in the pelvic area (see also ON 5388). Very slight wear to the edge of the rim. Gilded face, striations to the border. A human mask that is separated from the rim by a pair of rings. The mask consists of a rounded helmet with hair limited to the central

Plate 10.7 Grave 2674 (Trench 3), from the east (scale = 0.5 m)

Plate 10.8 Grave 2699 (Trench 3), from the north

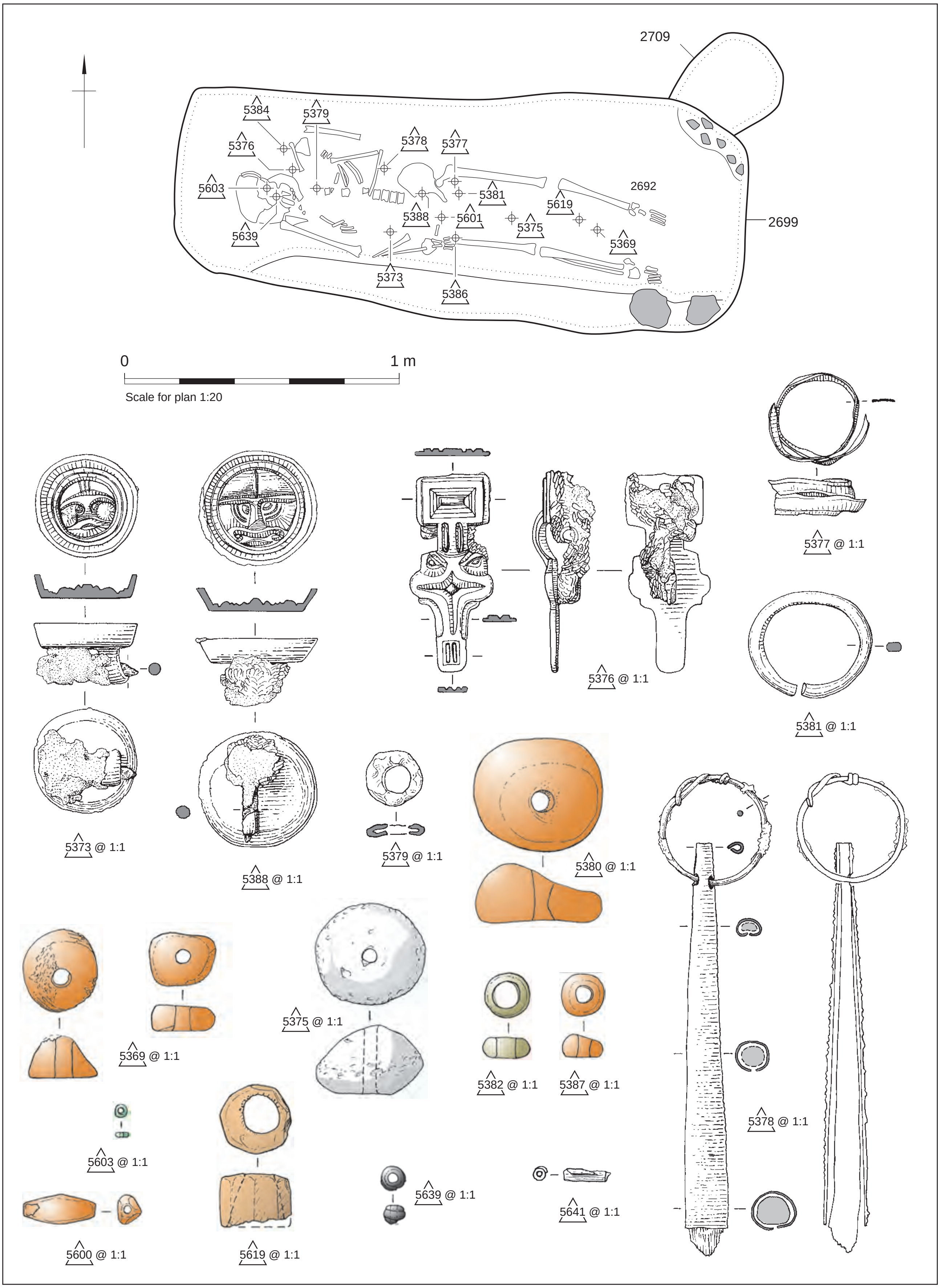


Figure 10.17 Grave 2699 and selected grave goods

part; straight eyebrows; round eyes; rounded cheeks; flaring nose and an open mouth. Suzuki Class B1. Hinge and catch cast in one with the brooch; iron pin. The artefact has a diameter of 18 mm and a maximum rim height of *c.* 4 mm. Textile fibres (2/2 twill) on iron pin and hinge.

ON 5376: small square-headed copper alloy brooch, found on top of right-hand shoulder, and consists of a head-plate, bow and foot-plate, gilded all over. Rectangular head-plate with raised moulding, flattened on the surface; in the moulding is a single raised line following the same outline. In the centre is a horizontal raised line. Fluted bow: carinated in front, ?flat behind, divided vertically, each field containing a raised vertical line in a rectangular recess. Expanded foot tapering in outline towards the terminal. In the centre is a cruciform-shaped moulding. In the upper corners of the foot-plate are the eyes of a rudimentary Style I mask; the upper arms of the cross creating its nose and mouth; the latter is punctuated by a 'tongue'. The terminal is rectangular containing three vertical lines. Aberg Type 131. Hinge and catch cast in one with the brooch; iron pin. Length 36 mm, maximum width 14 mm (head-plate). Textile fibres (plain tabby) on pin and hinge.

ON 5377: copper alloy finger ring, on finger bone of left hand near pelvis, fashioned out of a strip of metal. Spiral band, flat section, with pointed terminals. Diameter 17 mm; width of ring 4 mm.

ON 5378: copper alloy 'cosmetic brush' handle attached to a copper alloy knotted wire suspension ring through a hole in its top, found in thorax area above the pelvis. The handle made from folding a strip of copper alloy to make a cylinder. Length 46 mm, maximum diameter 8 mm. Diameter of ring 19 mm.

ON 5379: copper alloy 'washer', found on the right-hand side of left clavicle, below the jaw bone. Possibly part of the necklace from this grave. Diameter 10 mm; diameter of perforation 4 mm.

ON 5381: silver finger ring, found on finger bone of left hand near pelvis, with abutting ends. Flat section. Diameter 21 mm; width 2 mm.

ON 5384 (not illus.): small geode, placed above left clavicle.

ON 5388: copper alloy button brooch, found under left-hand side of pelvis (see also ON 5373). Very slight wear to the edge of the rim. Gilded face, striations to the border. A human mask that is separated from the rim by a pair of rings. The mask consists of a rounded helmet with ?hair limited to the central part; straight eyebrows; round eyes; curved eye rings; rounded, bounded cheeks; flaring nose; down-turned moustache and an open mouth. Suzuki Class B3. Hinge and catch cast in one with the brooch, iron pin *in situ* and complete. Diameter 18 mm, maximum rim height of *c.* 4 mm. Textile fibres (indistinguishable weave) on iron pin and hinge.

ONs 5372, 5391, *5603, 5617, 5643–4: 94 monochrome glass beads (one illustrated); wound, very small, semi-translucent green-blue; 82 found in head area (two behind skull), six from chest, six from central grave fill sample.

*ON 5382: monochrome glass bead, wound, medium, annular, colourless; found in pelvis area.

ON 5389 (not illus.): monochrome glass bead; wound, ?disc (poor condition, damaged), opaque blue-white; found in pelvis area.

ONs 5392, 5393, 5604, 5618, *5639, 5642: 37 monochrome glass beads (ON 5639 illustrated); wound, very small, ?opaque dark colour; 33 found in head area, one from chest, one from pelvis, three from central grave fill samples.

*ON 5641: monochrome glass bead; drawn, small, annular, colourless; found in head area.

ON 5386 (not illus.): polychrome glass bead; medium, disc, translucent blue crossing waves and opaque red dots on opaque white ground; found by right hip.

ON 5362 (not illus.): two amber beads, medium, spindle-shaped; found at neck.

*ON 5369: six amber beads (two illustrated); three medium spindle-shaped, three large irregular; found between calves.

ONs 5601, 5605, 5620 (not illus.): six amber beads, medium to large, poor condition (form unknown), plus fragments; one found in pelvis area, one from central grave fill sample; one unlocated (ON 5601).

ON 5374 (not illus.): amber bead; found between thighs.

*ON 5380: amber bead, large, A04; found by right hip.

ON 5383: amber bead, medium, fragmentary (form unknown), in poor condition; found by right calf.

ON 5385: amber bead, large, A03, fragmentary; found by left calf.

ONs 5390 (pelvis), *5600 (unloc.), 5606 (unloc.), 5607 (neck), 5640: eight amber beads (one illustrated); small to medium, spindle-shaped; plus fragments.

*ON 5387: amber bead, medium, A03; found in mid-chest area.

*ON 5375: rock crystal bead, large, bun-shaped; found between thighs.

*ON 5619: bone bead; large, cylindrical; found between calves.

Grave 2701 (burial 2698; fill 2702)

(Not illustrated)

WNW–ESE, sub-oval cut with steep sides and a rounded base. 1.65 x 0.64 m, 0.52 m deep. Dark greyish sandy silt loam fill with common chalk and occasional flint fragments. Animal disturbance indicated by modern iron rim from tin.

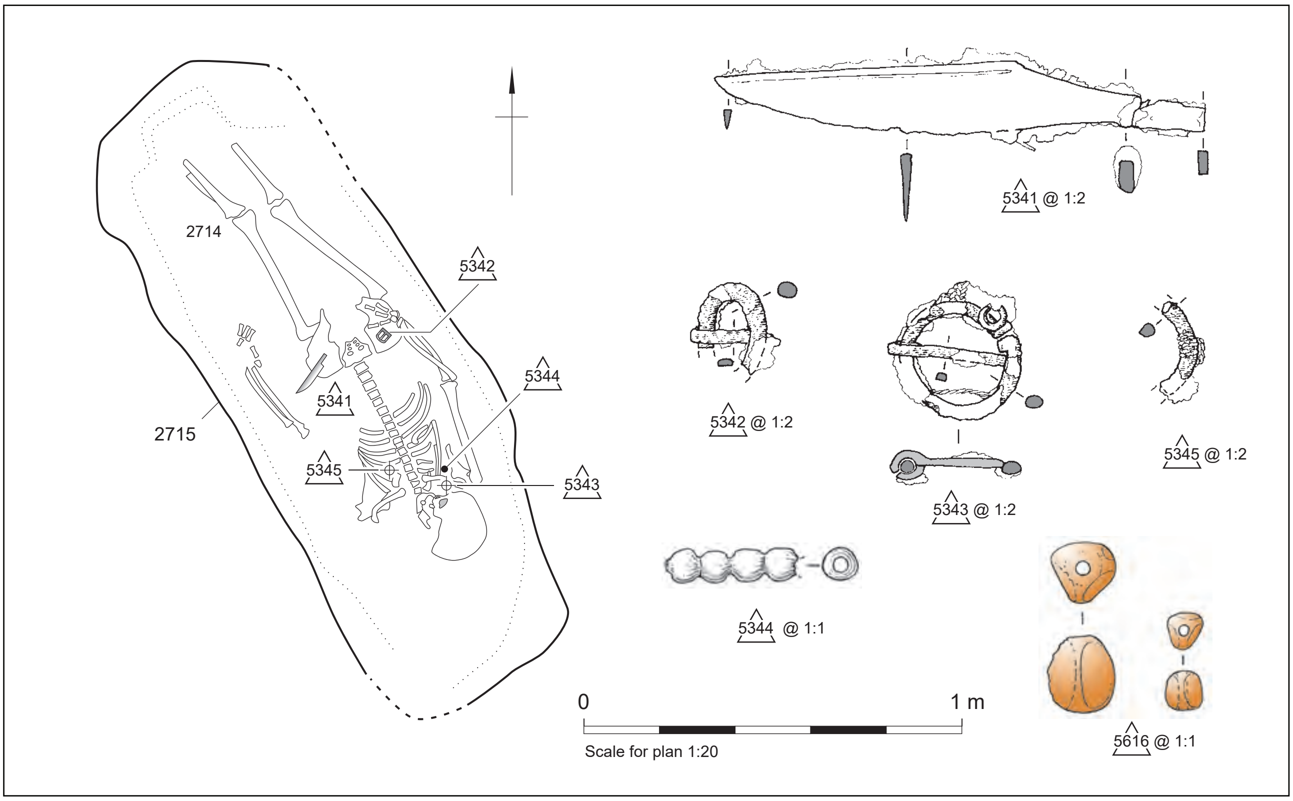


Figure 10.18 Grave 2715 and selected grave goods

Human remains: Extended supine. *c.* 20%, s.u.l., juvenile *c.* 5yr.
Grave goods: None.

Grave 2715 (burial 2714; fill 2713)
(Fig. 10.18)
SE–NW, sub-rectangular cut with steep sides and a flat base. 1.78 x 0.66 m, 0.23 m deep.
Human remains: Extended supine. *c.* 88% adult *c.* 50–60yr. female.
Grave goods:
ON 5341: fragmentary iron knife, near left-hand side of pelvis. Tang is angled up to back of blade and slopes down to cutting edge. The knife blade has an angled back and a curved cutting edge. Böhner Type C/Evison Type 3. Length 135 mm; height 24 mm; width 5 mm.
ON 5342: fragmentary iron buckle loop near right-hand side of pelvis. Part of loop and tongue. Height of loop *c.* 34 mm. Textile fibres (possible twill) on front and back.
ON 5343: iron penannular brooch with pin, near right-hand side of skull. Pin is looped around ring and rests on opposite side of ring. Diameter 31 mm. Type unidentified. Textile fibres (possible twill) on front and back.
*ON 5344: monochrome glass bead; drawn, small, globular segmented (four segments), colourless; found at neck.
ON 5345: iron probable fragment of buckle tongue. Length 28 mm.
ON 5610, *5616: seven amber beads (two illustrated), small to medium, rounded, six A01, one A02; six found at neck, one unlocated (ON 5610).

Grave 2720 (burial 2719; fill 2718)
(Figs 10.19 and 10.20)
SW–NE, sub-rectangular cut with vertical sides and a flat base. 2.00 x 0.60 m, 0.20 m deep.
Human remains: Extended supine. *c.* 55%, a.u.l., adult *c.* 35–40yr. male. *Redep. c.* 20% adult *c.* 25–35yr. male.
Grave goods:
ON 5354: fragmentary copper alloy stud, circular, uncertain location. Diameter 33 mm.
ON 5355: iron fitting (not illus.), from neck of body.
ON 5356: iron rivet with possible tinned/silver cap (not illus.), from fill directly above body. X-ray appears to show a clip (to secure a cap) on one edge of the artefact. Diameter 19 mm.
ON 5357: domed iron rivet from outside of right humerus, possibly related to ON 5358 and ON 5364. X-ray appears to show a small rectangular-shaped plate attached to a rivet with a circular head. Diameter *c.* 25 mm.
ON 5358: spiral of iron wire from outside of right humerus. Diameter 17 mm.
ON 5364: domed iron rivet from outside of right humerus, possibly related to ON 5357. X-ray appears to show a small rectangular-shaped plate attached to a rivet with a circular head. Diameter *c.* 20 mm.
ONs 5354, 5355, 5356, 5357 and 5364 may have been associated with the shield.

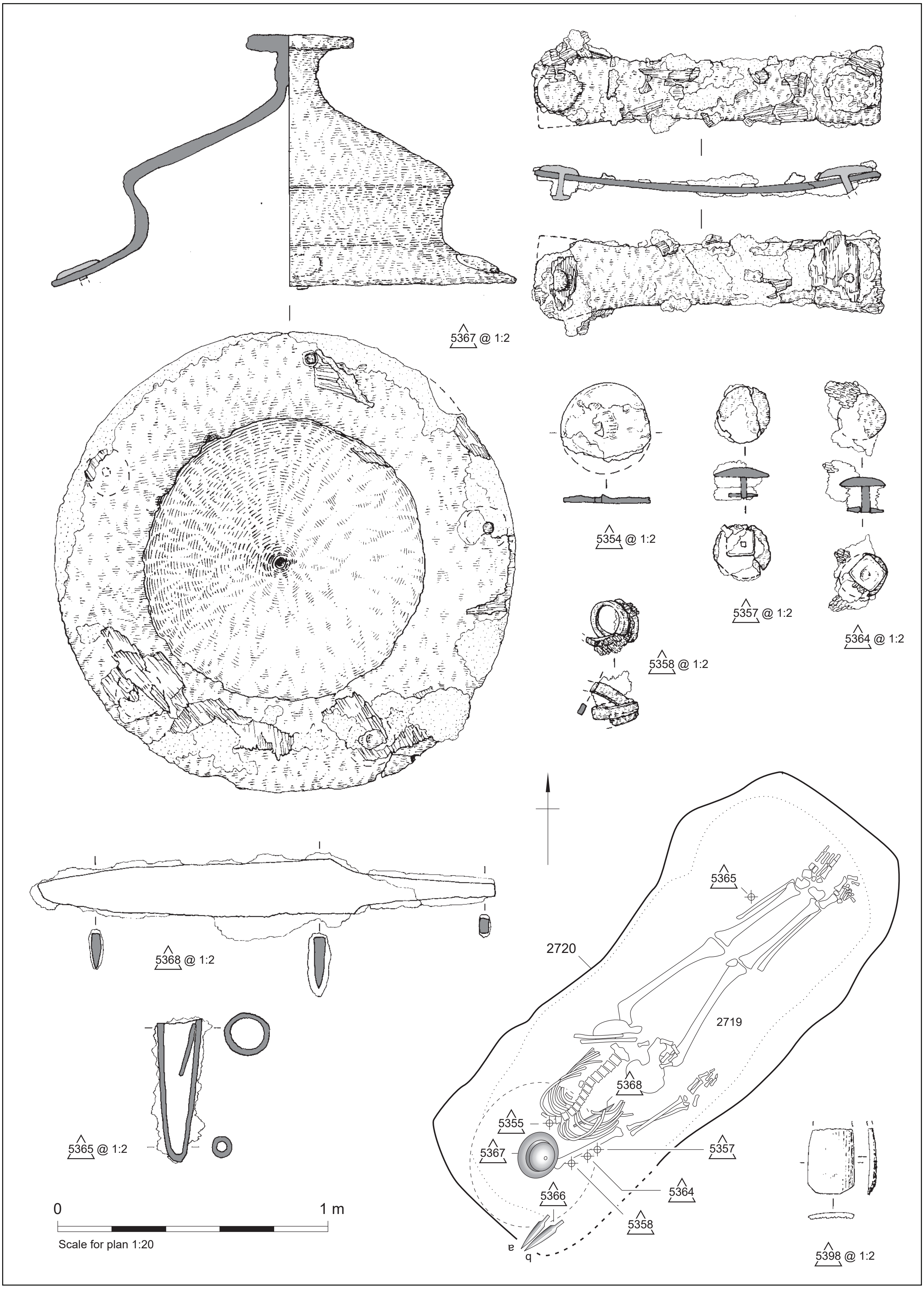


Figure 10.19 Grave 2720 and grave goods

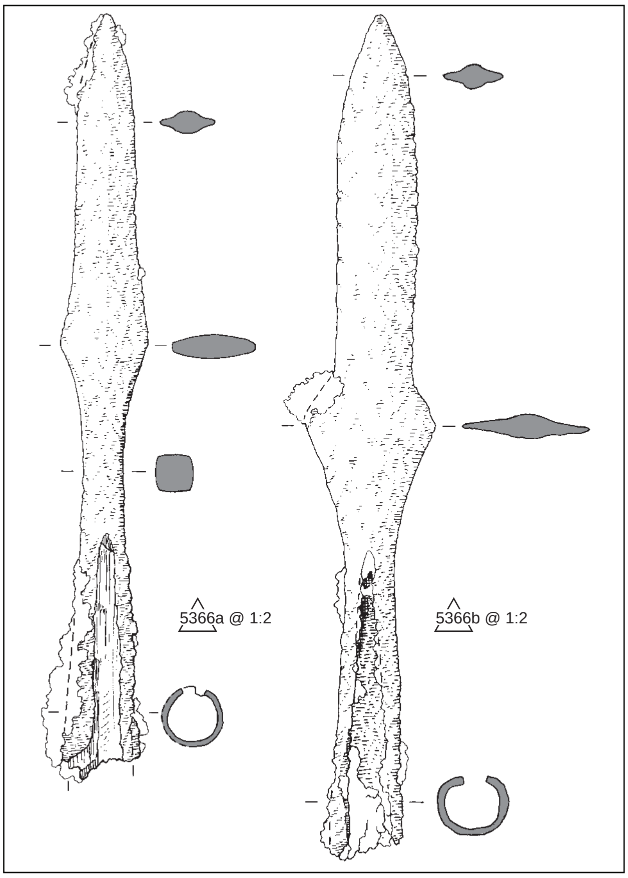


Figure 10.20 Grave 2720 iron spearheads

ON 5365: cleft iron ferrule, found to left of the left lower limb. Length 65 mm, diameter (hole) 20 mm.

ON 5366: 2 iron spearheads, found to the right above the body. a) An angular, probably concave-sided spearhead, of Swanton Type H1. Length 195 mm, width 26 mm (at the blade angle). b) An angular blade with concavity, of Swanton Type H2. Length 223 mm, width 32 mm (at the blade angle). Mineral preserved wood (possibly hazel) in the socket of spearhead.

ON 5367: iron shield boss and fragmentary grip, found where the skull would have been expected. Animal run along left of skeleton probably responsible for missing skull. A low boss with a cone that has a straight profile with overhanging carination, profile of the wall is concave. The apex is of a disc-headed type (diameter 32 mm). The rim originally had five rivets. Dickinson and Härke Group 1.1. Height from rim to top of apex 92 mm, diameter of *c.* 170 mm. Fragments of the shield board (probably alder) adhere to the underside of the boss and on the grip, the latter with a possible strap of leather or skin present. The grip probably had expanded terminals (Dickinson and Härke Group Ia 1), length 130 mm, width grip 22 mm.

ON 5368: fragmentary iron knife, found under right ribs of skeleton. Tang is angled up to back of blade and down to cutting edge. The blade appears to have a curved back and cutting edge which if correct identifies it as a Böhner Type A/Evison Type 1. X-ray reveals line where tang and blade join. Organic material collected from vicinity. Surviving length is 172 mm; height 30 mm; width 7 mm.

ON 5398: subrectangular bone strip of uncertain function, possibly part of connecting plate from composite comb, or mount; possibly cattle rib. From animal burrow adjacent to grave 2720.

Grave 2723 (burial 2722; fill 2724)
(Not illustrated)
WNW–ESE, sub-rectangular cut with rounded corners, steep to vertical sides down to a flat base with slight slope running E to W. 2.33 x 0.88 m, 0.40 m deep. Some occasional large flints in fill.
Human remains: Extended supine, with right arm across abdomen. *c.* 90% adult *c.* 30–35yr. female. *Redep.* a) 6 fragments, s.a.u., adult *c.* 25–40yr. b) 1 fragment, l., juvenile/subadult *c.* 10–17yr.
Isotope sample taken: Non-local, various UK locations.
Grave goods: None.

Grave 2727 (burials 2726 and 2728; fill 2725)
(Not illustrated)
SSW–NNE, sub-oval cut with moderate, irregular sides and a concave base. 1.66 x 1.00 m, 0.10 m deep.
Human remains: Contains two burials, side by side.
Burial 2726: Extended supine, with left arm extended across the body and the right arm folded over the chest. *c.* 75% juvenile *c.* 11yr. ??female. *Redep.* 10 fragments, u.l, adult >18yr.
Burial 2728: Extended supine. *c.* 45% juvenile *c.* 5–6yr.
Grave goods: None.

Grave 2764 (burial –; fill 2765)
(Not illustrated)
NW–SE, sub-rectangular, 1.00 x 0.45 m, 0.25 m deep.
Human remains: No surviving human bone.
Grave goods: None.

Grave 2774 (burial 2773; fill 2772)
(Not illustrated)
S–N, sub-rectangular cut with shallow side and a flat base. 1.60 x 0.60 m, 0.10 m deep.
Human remains: Extended supine. *c.* 45% adult *c.* 25–30yr. female.
Grave goods: None.

Grave 2781 (burial 2780; fill 2779)
(Fig. 10.21)
SE–NW, approx 1.7 x 0.8 m, no depth recorded, no discernible edge to grave cut but it had a flat base.
Human remains: Extended supine. *c.* 80% adult *c.* 35–40yr. ?female.

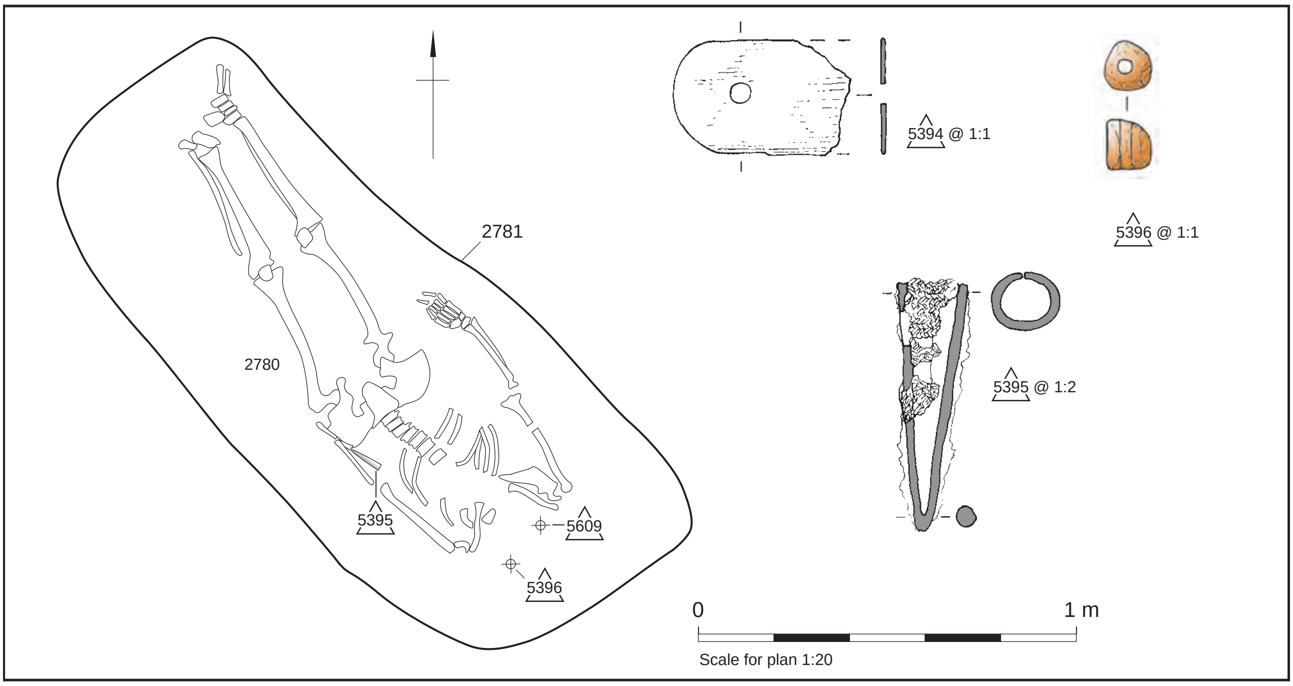


Figure 10.21 Grave 2781 and grave goods

Grave goods:

ON 5394: copper alloy, fragment of pierced strip. Uncertain location. Length 21 mm; width 15 mm; diameter of perforation 3 mm.

ON 5395: cleft iron spear ferrule, near left wrist. Length 53 mm, diameter (hole) 19 mm. Textile fibres (2/2 twill) on one side.

ON *5396, 5609: Two amber beads (one illustrated), medium, rounded, A01; found at neck.

Grave (burial 2800; fill –)

(Not illustrated)

No discernible grave cut – truncated horizontally.

Human remains: Disturbed, *c.* 25%, a.u.l., juvenile *c.* 8–12yr.

Grave goods: None.

Grave 2804 (burial 2803; fill 2805)

(Fig. 10.22)

W–E, sub-rectangular cut with rounded corners, irregular almost vertical sides to a flat base. 2.15 x 0.90 m, 0.62 m deep.

Human remains: Extended supine, with left hand resting on pelvis. *c.* 65% adult >45yr. ?female. *Redep.* 1 bone, l., adult >18yr. ?male.

Isotope sample taken: Non-local (west of England, Cornwall, Cumbria).

Grave goods:

ON 5406: copper alloy saucer brooch on left clavicle (pair with ON 5407). The front is gilded. Decorated with floriated cross motif and hearts. Dickinson Group 3; closest to subtype 3.1, but appears unique. Hinge and catch cast in one with the brooch, iron pin. Diameter 33 mm. Textile fibres (pain tabby) associated with iron pin and on the front and rear of the rim of the artefact.

ON 5407: copper alloy saucer brooch (pair with ON 5406) on right clavicle with small amount of fabric attached. The front is gilded. Hinge and catch cast in one with the brooch, iron pin. Diameter 33 mm. Textile fibres (plain tabby) are visible across the front of the brooch and are also associated with the iron pin and on the front and rear of the rim of the artefact.

ON 5410: copper alloy finger ring on left hand. Copper alloy strip; not obvious where the ends join so possibly cast. Diameter 21 mm; width 3 mm.

*ON 5414: three amber beads (two illustrated), large, irregular; found at left and right hips.

ON 5416, *5644: Nine monochrome glass beads (one illustrated); one (ON 5416) wound, medium, annular, translucent dark blue; eight found at base of spine, one unlocated (ON 5444).

Grave 2807 (burial 2806; fill 2808)

(Fig. 10.23)

WNW–ESE, sub-rectangular cut with rounded corners, steep sides to a flat base. 2.14m x 0.85 m, 0.75 m deep.

Human remains: Extended supine, with legs crossed and arms laid over abdomen. *c.* 60% adult *c.* 25–35yr. female. *Redep.* 3 fragments plus scraps, adult >18yr.

Grave goods:

ON 5404 [a & b]: a) copper alloy tweezers from left side of chest. Head formed into a loop; the arms expand slightly towards the bottom where they curve outwards and then turn inwards to form the jaws. Length 46 mm; maximum width 5 mm. b) Remains of copper alloy suspension loop. Diameter *c.* 15 mm.

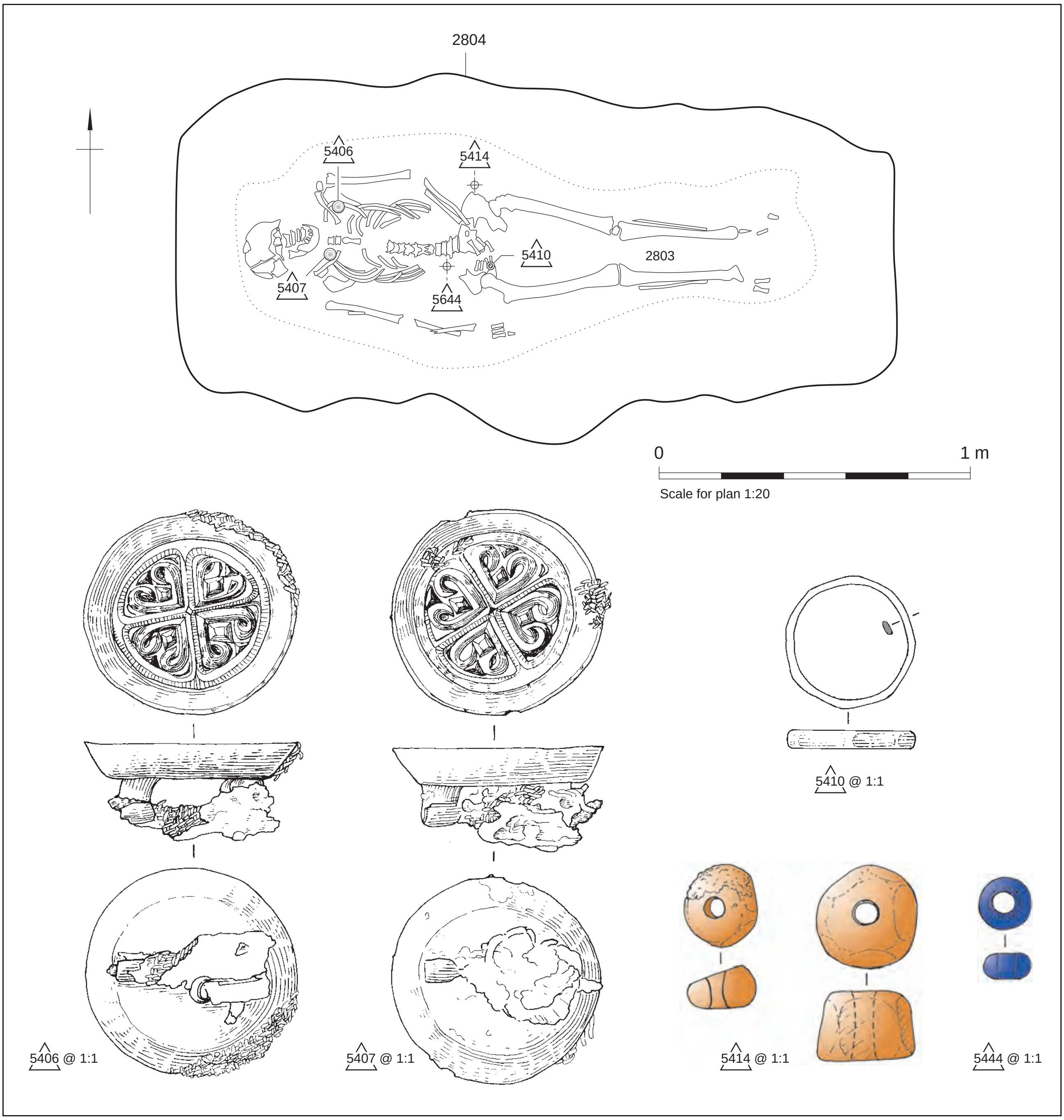


Figure 10.22 Grave 2804 and grave goods

ON 5409 [a & b]: two copper alloy spiral finger rings from left hand. Both are formed from copper alloy strips. a) Sub-circular ring. Diameter 18 mm. b) Sub-circular spiral ring with the terminal of each end folded back. Diameter 18 mm.

ON 5436 (not illus.): fragment of copper alloy possible pin shaft; not located.

*ON 5402: seven monochrome glass beads (one illustrated); wound, medium, annular, translucent blue; found behind skull.

*ON 5621: monochrome glass bead; wound, medium, ribbed, translucent blue; found behind skull.

*ON 5408: three amber beads (one illustrated), large, A04; found at neck.

Grave 2818 (burial 2820; fill 2819)

(Not illustrated)

W–E, sub-rectangular cut with rounded corners, regular straight, vertical sides and a flat base. 2.00 x 0.90 m, 0.73 m deep.

Human remains: Extended supine, with right-hand across pelvis. *c.* 65% adult *c.* 40–50yr. ?female.

Isotope sample taken: Non-local (various UK)

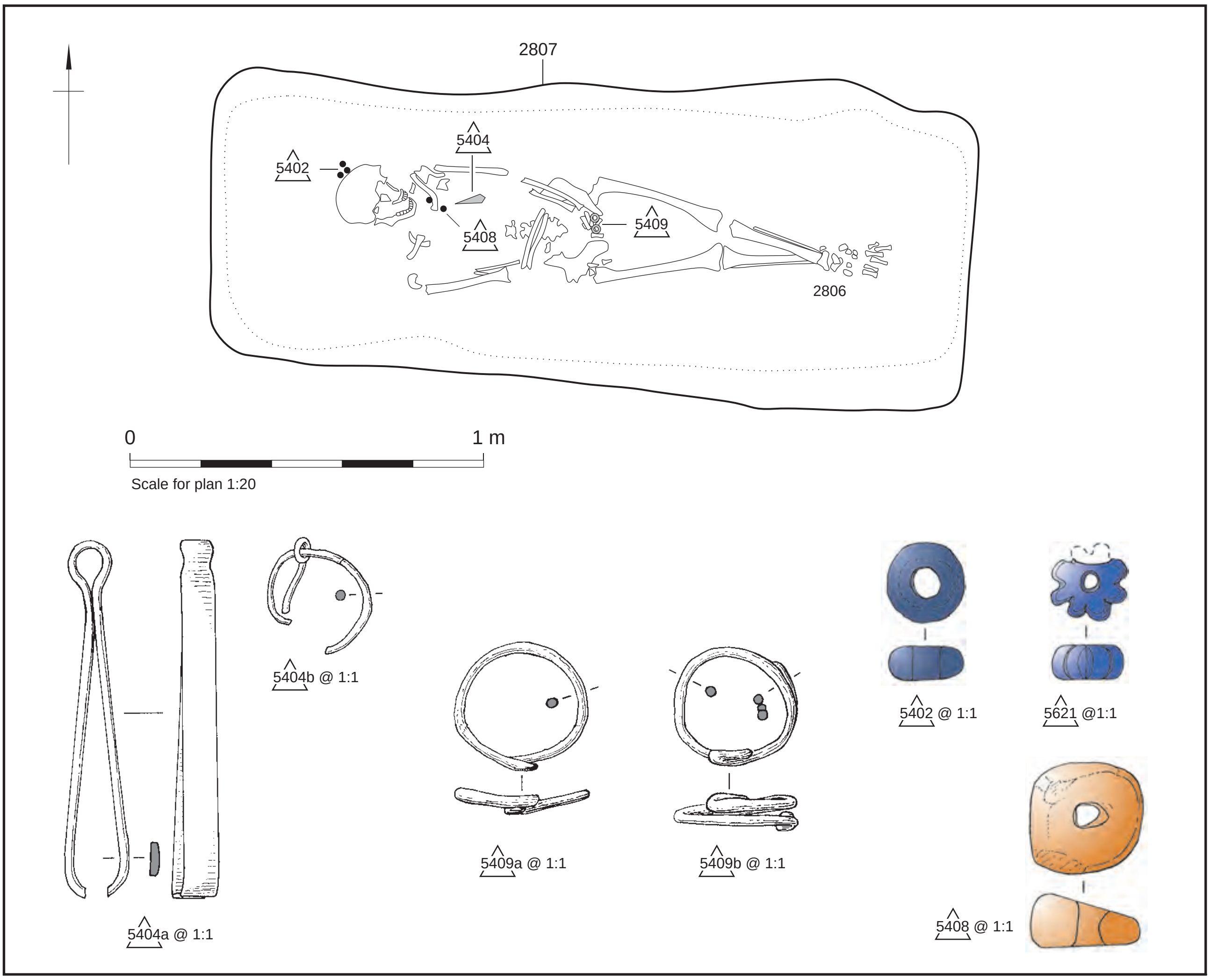


Figure 10.23 Grave 2807 and grave goods

Estimated date: cal AD 540–660 (95% probability; UBA-31686).
Grave goods: None.

Grave 2829 (burial 2831; fill 2830)
(Not illustrated)
W–E, sub-rectangular cut with rounded corners (north edge cut by adjacent grave), straight vertical sides to a flat base sloping E to W. 2.10 x 0.60 m, 0.27 m deep.
Human remains: Extended supine, with tight positioning possibly indicating the body was wrapped in a shroud. *c.* 88% adult *c.* 40–45yr. male. *Redep.* 1 bone, u., adult >18yr.
Isotope sample taken: Local?
Estimated date: cal AD 645–720 (87% probability; OxA-34177) or *cal AD 740–760 (8% probability).*
Grave goods: None.

Grave 2832 (burial 2834; fill 2833)
(Figs 10.24 and 10.25; Pl. 10.9)
NW–SE, sub-rectangular cut with irregular sides and an irregular base. 2.57 x 1.04 m, 0.55 m deep.
Human remains: Extended supine. *c.* 90% adult *c.* 40–45yr. male. *Redep. c.* 15% adult >35 yr.
Isotope sample taken: Local?
Grave goods:
ON 5411: fragmentary iron spearhead (cleft socket, possible rivet through socket) on right side above skull. It appears to be an angular straight-sided spearhead, which if correct, identifies it as Swanton Type E2. Length 263 mm, maximum width 39 mm (at the blade angle).
ON 5412: iron shield boss and fragmentary grip on right side of chest. A low boss; cone of convex profile with slight overhanging carination; wall profile is straight. The apex is of a small button type (diameter *c.* 9 mm). The rim originally had five rivets (one missing). Dickinson and Härke Group 6. Fragments of the shield board (alder) adhere to the underside of the boss. Height from rim to top of apex 85 mm, diameter of *c.* 125 mm. Fragmentary grip with an expanded terminal (Dickinson and Härke Group Ia 1), length 114 mm, width 14 mm, width of terminal 20 mm.

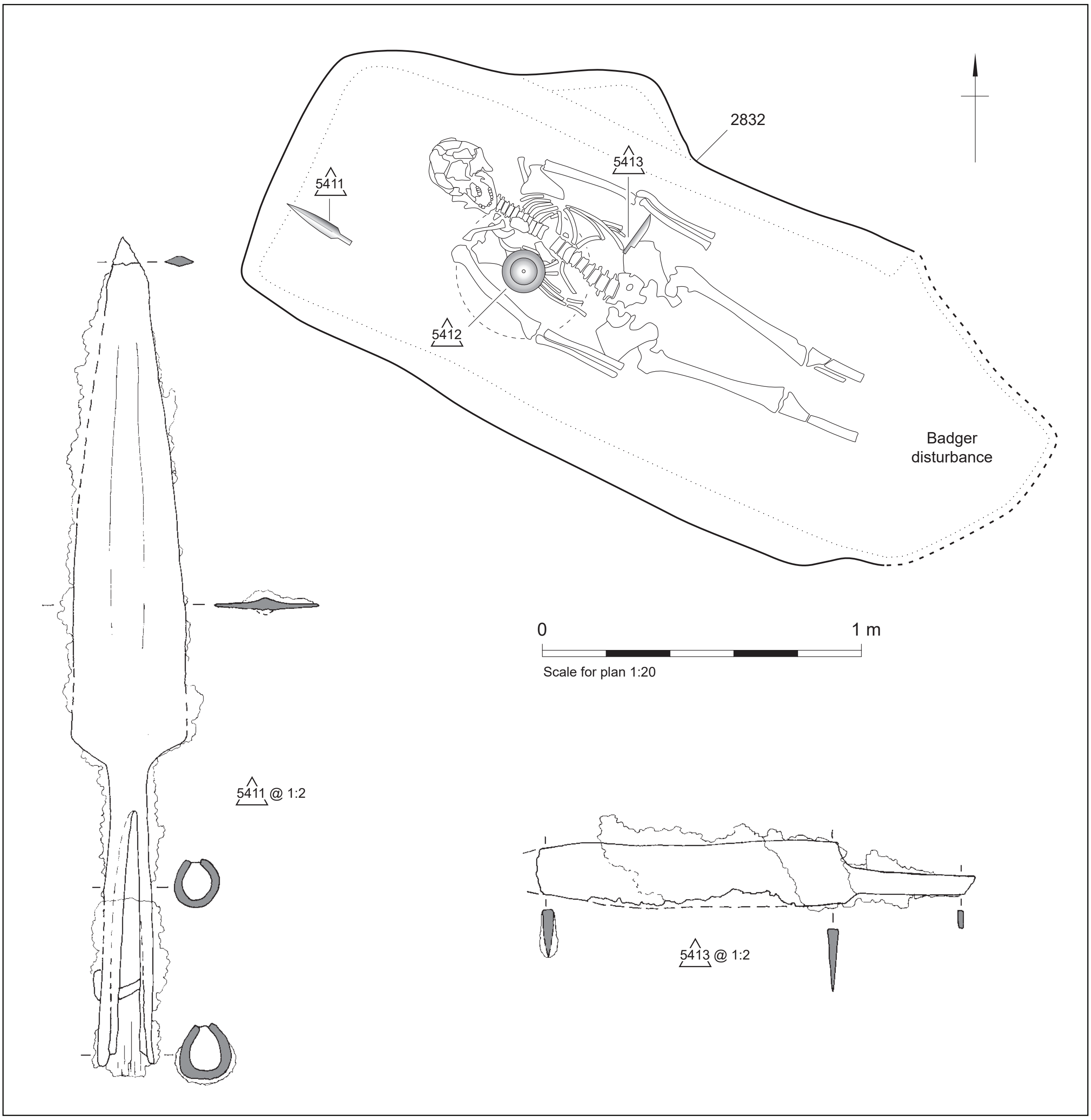


Figure 10.24 Grave 2832 and grave goods

Plate 10.9 Grave 2832 (Trench 7), from the north-east (scale = 0.5 m)

ON 5413: iron knife. Tang and fragmentary blade (tip missing) on left pelvic bone. Tang is angled up to back of blade and is possibly in line with cutting edge. Profile of the blade unknown. Surviving length 136 mm; height 23 mm; width 4 mm.

Grave 2836 (burial 2838; fill 2837)

(Not illustrated)

W–E, sub-rectangular cut with rounded corners, and straight, steep sides to a flat base. 2.16 x 0.66 m, 0.50 m deep.

Human remains: Badly disturbed by animals; leg bones bent at knee as if lying on left side. *c.* 30% adult >45yr. female.

Isotope sample taken: Local?

Grave goods: None.

Grave 2839 (burial 2841; fill 2840)
(Not illustrated)
W–E, sub-rectangular cut with very irregular north edge due to animal damage, straight vertical sides to the south and a flat base. 1.90 x *c.* 0.80 m, 0.55 m deep.
Human remains: Extended supine, with most bones displaced by animal disturbance. *c.* 30% adult *c.* 40–50yr. female.
Grave goods: None.

Grave 2842 (burial 2844; fill 2843)
(Not illustrated)
WNW–ESE, sub-rectangular cut with rounded ends, irregular sloping sides and a flat base sloping to the W. 1.96 x 0.48 m, 0.15 m deep.
Human remains: Extended supine. *c.* 88% adult *c.* 35–45yr. male.
Grave goods: None.

Grave 2847 (burial 2821; fill 2822)
(Fig. 10.26)
WNW–ESE, grave cut in ditch fill clear on S side but indistinct on N side due to animal burrows. Estimated dimensions 1.07 x 0.30 m, depth uncertain.
Human remains: Extended supine, disturbed by animals. *c.* 30%, a.u.l., infant/juvenile *c.* 4–5yr.
Grave goods:
ON 5415: rectangular iron plate, perforated by a rivet towards one end, by left pelvic bone. Length 50 mm; height 28 mm. Textile fibres (indistinguishable weave) at one end on both faces.

Grave 2861 (burial 2860; fill 2862)
(Not illustrated)
W–E, sub-rectangular cut with straight side to N and irregular side to the S, sloping down to a flat base. 2.03 x 0.90 m, 0.65 m deep.
Human remains: Extended supine, with right hand resting on right leg and left hand on centre of pelvis. *c.* 90% adult *c.* 30–35yr. male.
Grave goods: None.

Grave 2866 (burial 2868; fill 2867)
(Fig. 10.27)
WNW–ESE, sub-rectangular cut with irregular, shallow sloping sides and an irregular base. 2.07 x 0.75 m, 0.30 m deep.
Human remains: Extended supine. *c.* 40% subadult/adult *c.* 17–20 yr. female.
Grave goods:
ON 5418: iron buckle on right side of pelvis. Oval loop of oval section; a fragment of pin is wrapped around it and a fragment is fused to the opposite side. Marzinzik Type I 11a-i. Height 31 mm.
ON 5420: fragment of iron strip above left shoulder. Length 31 mm; height 9 mm.

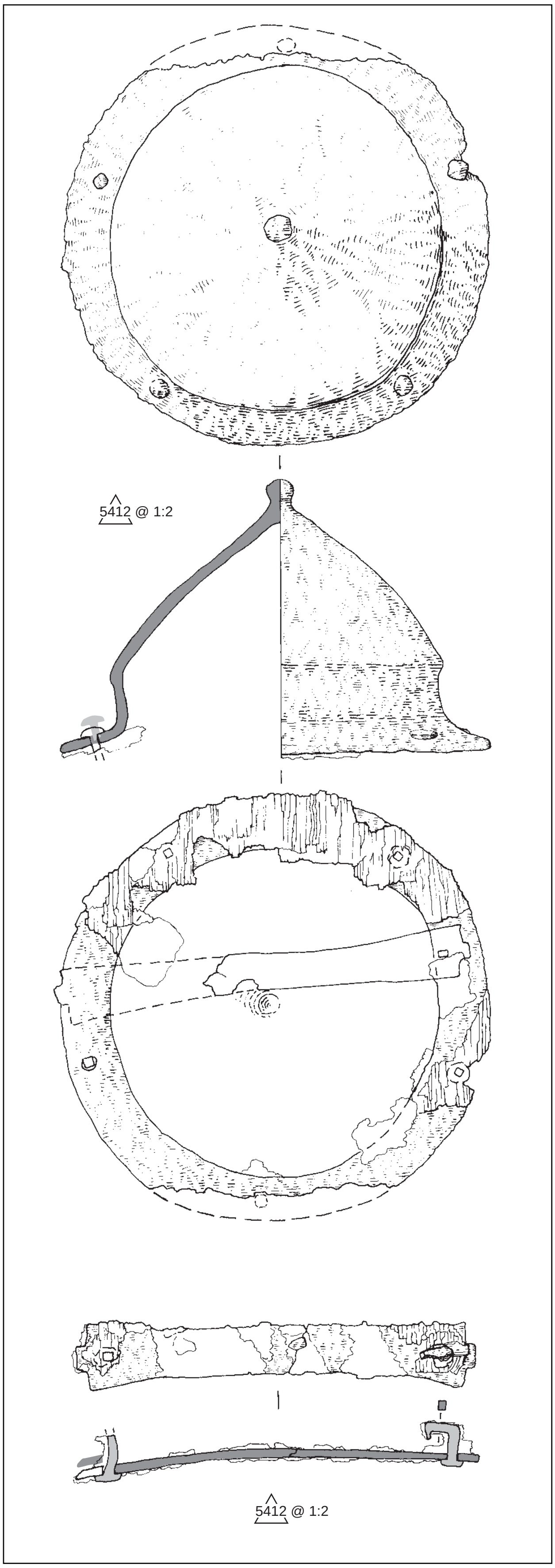


Figure 10.25 Grave 2832 iron shield boss

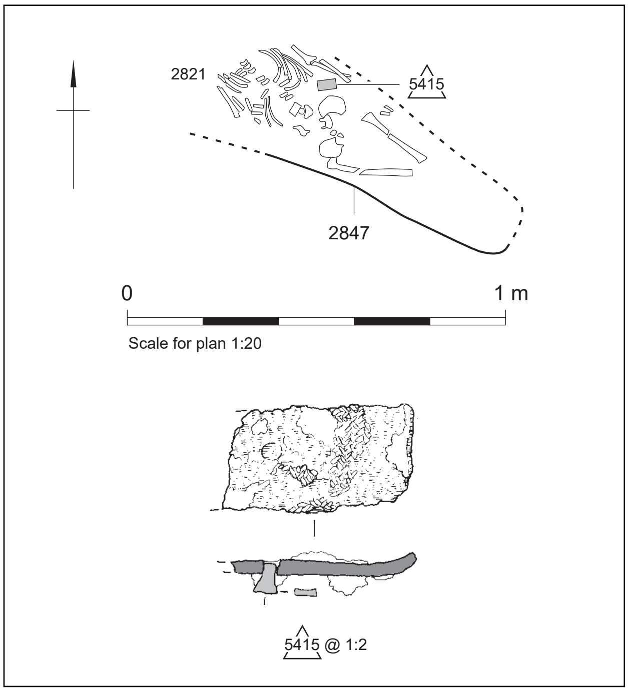


Figure 10.26 Grave 2847 and iron strip

Grave 2873 (burial 2859; fill 2874)
(Fig. 10.28)
WSW–ENE, rectangular cut with steep sides and a flat base; extent of cut unclear. *c.* 1.15 x *c.* 0.44 m, depth uncertain.
Human remains: Extended supine, with arms crossed over abdomen. *c.* 45% juvenile *c.* 10yr.
Isotope sample taken: Local?
Grave goods:
ON 5419: tang and fragmentary blade (tip missing) of iron knife, on left lower arm. Tang is angled up to back of blade and slopes down to cutting edge. The blade back appears to be sloping down to the cutting edge. Possible Böhner Type A/Evison Type 1. Length 133 mm; height 18 mm; width 5 mm.
ON 5422: small iron strip with incurving end (not illus.), on right shoulder. Length 10 mm, width 5 mm.
ON 5423: possible iron strip (not illus.), length 12 mm, width 8 mm (with ON 5419).

Grave 2885 (burial 2884; fill 2886)
(Not illustrated)
W–E, sub-rectangular cut with rounded corners, steep straight sides to an irregular, flat base. 1.78 x 0.80 m, 0.26 m deep.
Human remains: Extended supine burial with head turned to the right and knees bent to right and arms crossed over the chest. *c.* 70% juvenile *c.* 10yr.
Grave goods: None.

Grave 2899 (burial 2901; fill 2900)
(Not illustrated)
NW–SE, sub-rectangular cut with irregular vertical sides sloping down to an irregular base which slopes up to the E end. 1.80 x 0.60 m, 0.37 m deep.
Human remains: Extended supine, badly damaged by animals; left hand over pelvis. *c.* 35% adult *c.* 40–50yr. female.
Grave goods: None.

Grave 2902 (burial 2903; fill 2904)
(Not illustrated)
WNW–ESE, sub-rectangular cut with rounded corners to the south-east, and irregular, steep sides to an irregular base. 2.24 x 0.75 m, 0.45 m deep.
Human remains: Extended supine. *c.* 88% adult >45yr. male.
Redep. 5 fragments, a.l., infant *c.* 2–4yr.

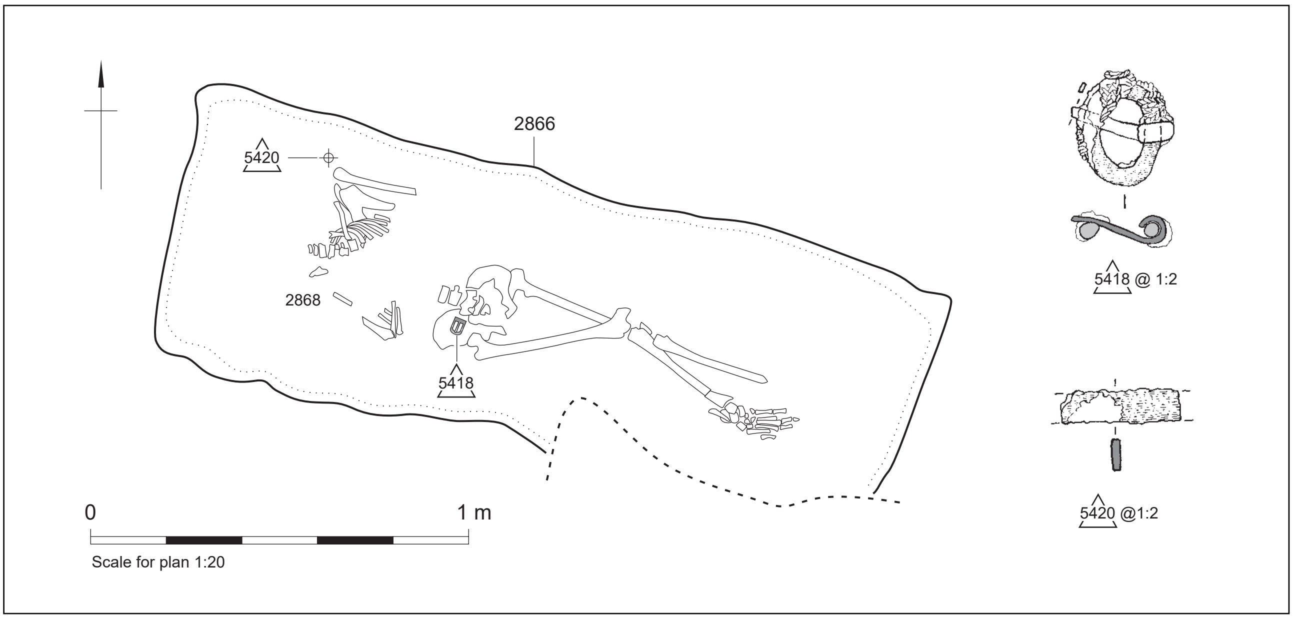


Figure 10.27 Grave 2866 and grave goods

Isotope sample taken: Non-local (various UK locations).
Grave goods: None.

Grave 2905 (burial 2907; fill 2906)
(Fig. 10.29)
W–E, sub-rectangular cut with rounded corners, and straight vertical sides to a flat base. 2.46 x *c.* 0.62 m, 0.58 m deep.
Human remains: Extended supine. *c.* 40% adult *c.* 35–45yr. male.
Grave goods:
ON 5425: fragmentary iron strip, left pelvic area. Possible attachment ring and possible pin/rivet; projections at either side of the narrow end, perhaps where it would have joined with the ring. Possible spatula. Length 151 mm; height 14 mm.

Grave – 0000 (burial 2908; fill 2909)
(Not illustrated)
W–E, no visible grave cut. Badly disturbed by animals.
Human remains: c. 8%, l., adult >25yr. ??female.
Grave goods: None.

Grave 2915 (burial 2916; fill 2917)
(Fig. 10.30)
NW–SE, sub-rectangular cut with rounded ends, and straight, steep sides to a concave base. 2.10 x 0.65 m, 0.54 m deep.
Human remains: Extended supine. *c.* 45% adult >45yr. male.
Grave goods:
ON 5429: fragmentary iron spearhead (cleft socket, possible rivet through socket), tip missing. At top of skull. It appears to be an angular straight-sided spearhead, which if correct, identifies it as Swanton Type E2. Length 216 mm, maximum width 30 mm (at the blade angle). Mineral preserved wood (ash) in the socket.
ON 5430: iron buckle, left of pelvic area. Fragmentary oval buckle loop, possibly oval section with possible fragment of iron pin. Marzinzik Type I 11a-i. Height *c.* 32 mm.

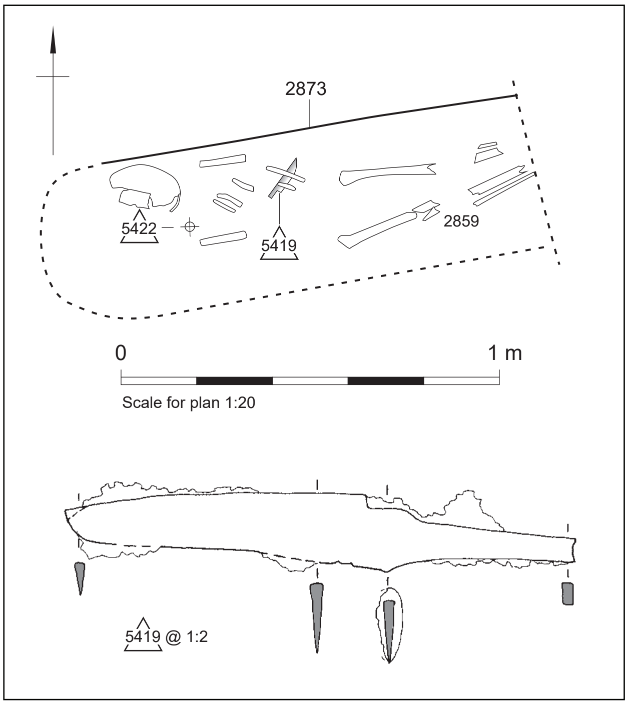


Figure 10.28 Grave 2873 and selected grave goods

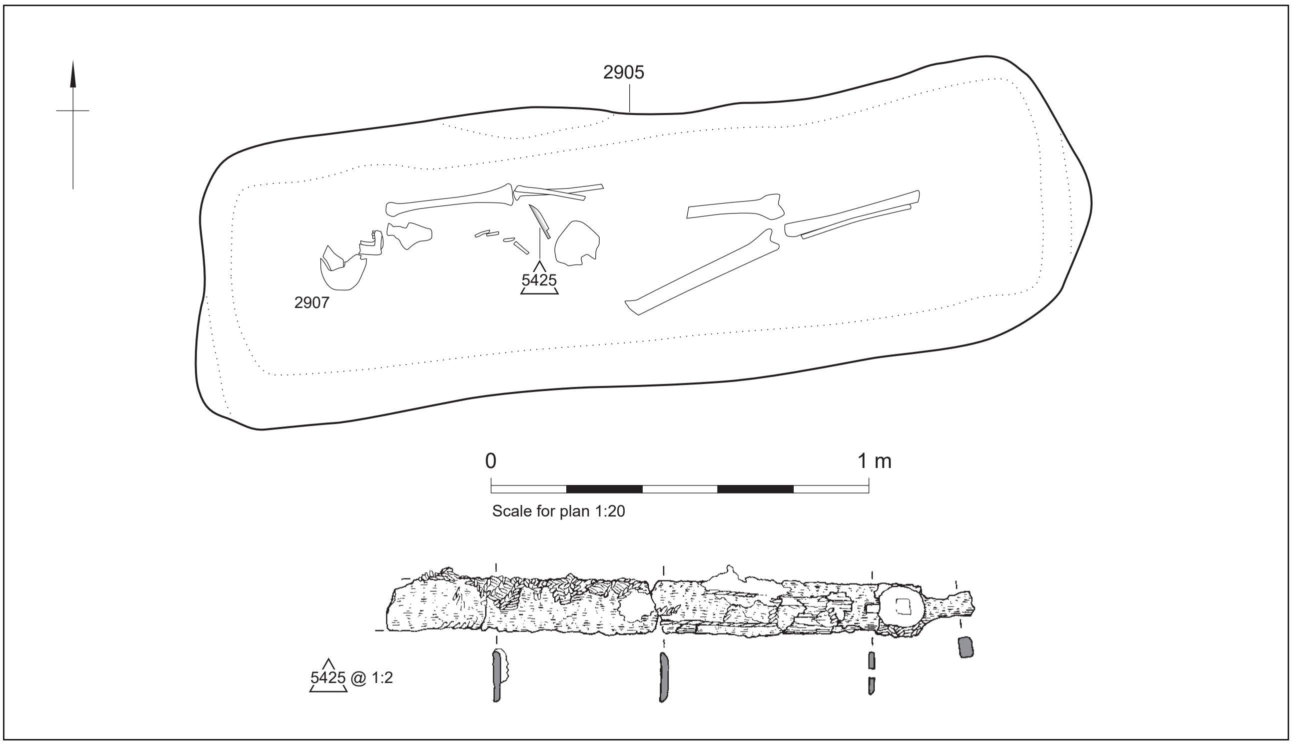


Figure 10.29 Grave 2905 and iron strip

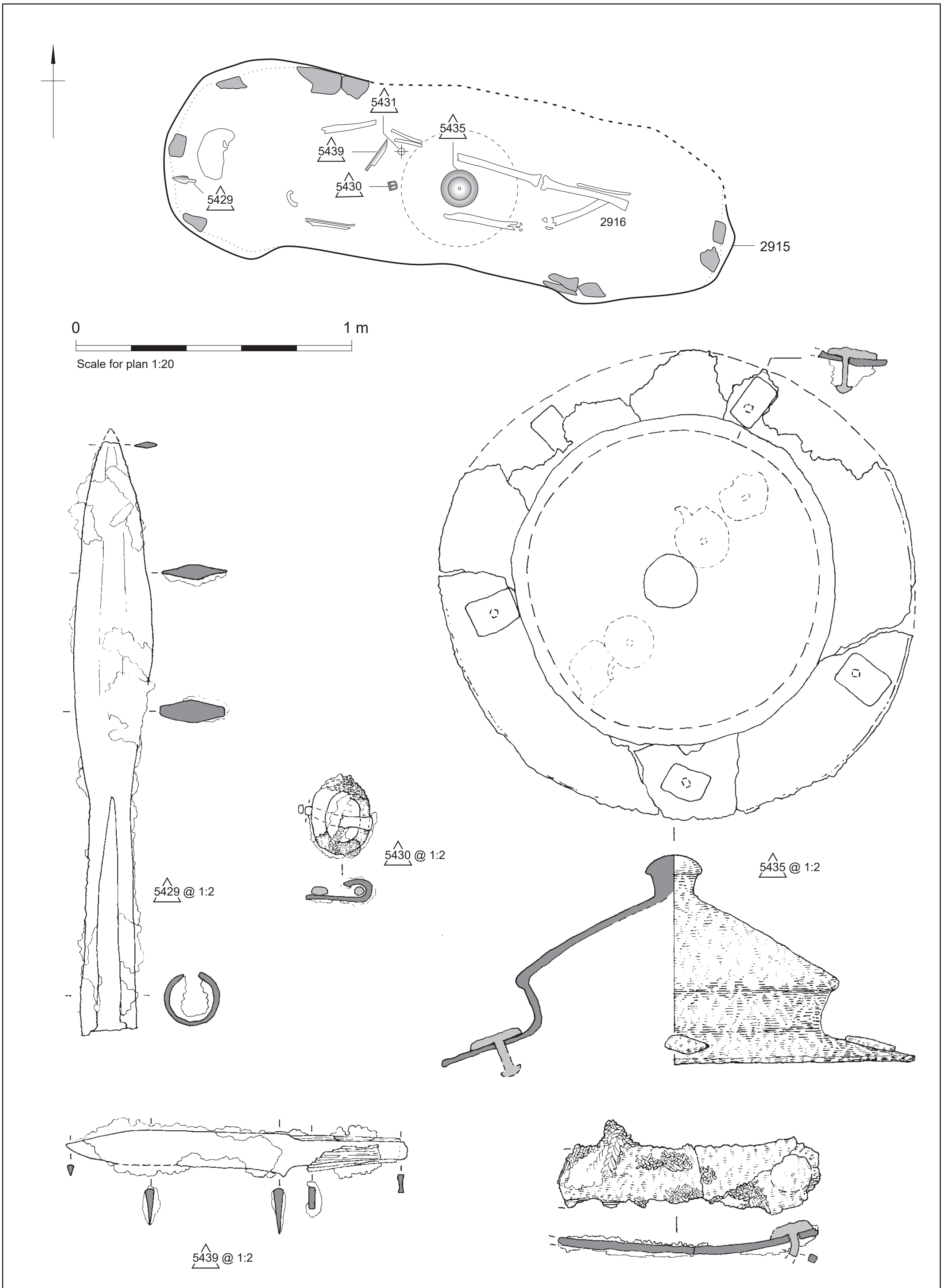


Figure 10.30 Grave 2915 and grave goods

ON 5431 (not illus.): copper alloy stud, right of pelvic area. Discoid head with fragment of off-centre shank to the rear. Diameter 18 mm. Textile fibres (indistinguishable weave) on front.

ON 5435: fragmentary iron shield boss and grip, between upper leg bones. A low boss; cone has a straight profile with overhanging carination; wall profile concave. The apex is round-headed. The rim originally had four rivets (one missing). Dickinson and Härke Group 1.1. Fragments of the shield board (lime) are present, with leather on the front. Height from rim to top of apex of *c.* 70 mm, diameter of *c.* 172 mm. The grip probably had expanded terminals (Dickinson and Härke Group Ia 1). Textile fibres (2/2 twill with tablet woven border) on outside of grip. X-ray shows three circular objects in earth in underside of boss.

ON 5439: Iron knife, by left ribs. Tang and blade. Tang is angled up to back of blade and down to cutting edge. The blade appears to have a curved back and cutting edge which if correct identifies it as a Böhner Type A/Evison Type 1. Length is 123 mm; height 19 mm; width of blade 5 mm.

Grave 2922 (burial 2924; fill 2923)

(Not illustrated)

W–E, sub-rectangular cut with rounded corners, regular straight, vertical sides to a flat base. 2.32 x 0.80 m, 0.60 m deep.

Human remains: Extended supine. *c.* 55% adult *c.* 35–45yr. ?male.

Grave goods: None.

Grave 6003 (burials 6003 and 6004)

(Fig. 10.31)

SW–NE, shape and size of grave not known. Contains two burials, side by side.

Human remains: burial 6003 on right side with legs flexed. 60–80% adult *c.* 30–40yr. female; burial 6004 probably extended supine. <20% infant *c.* 2yr.

Grave goods:

All objects with burial 6003 unless stated otherwise. Difficult to establish with certainty the provenance of some grave goods in the vicinity of the legs of the two individuals.

ON 4485: copper alloy (leaded brass) handle of a 'cosmetic brush' attached to a copper alloy knotted wire suspension ring, over chest. This ring is attached to a smaller copper alloy wire ring. The handle is made from a folded strip making a cylinder and decorated on the exterior by horizontal incised lines at repeating intervals. Handle 49 mm in length, diameter 6 mm. Diameter of larger ring 20 mm, the smaller one 10 mm. Fibre attached to a ring, possibly from method of suspension.

ON 4486: fragmentary iron buckle loop (rounded section) and pin (not illus.), near skull of burial 6004. Length of largest fragment 41 mm, width *c.* 5 mm.

ON 4488: small copper alloy ring, waist/hands area of burial 6004. Diameter 22 mm; thickness 2.5 mm.

ON 4489: fragmentary copper alloy strip with three perforations and rivet. Length 34 mm, width 12 mm.

ON 4490 (not illus.): fragmentary circular copper alloy band. Rivet hole near end. Length 60 mm, width 6 mm.

ON 4491 (not illus.): diamond-shaped iron fragment, in area of probable container. Length 25 mm, width 13 mm. Function unknown, although they do tend to occur around the waist area and with other objects (Parfitt and Brugmann 1997, 68–9).

ON 4492: curved iron fragment, with probable vessel. Length 17 mm, width 9 mm.

ON 4493: fragmentary circular copper alloy band. Rivet hole near end, possibly for securing overlap. Diameter 111 mm, width 7 mm.

ON 4500: fragmentary copper alloy strip with three irregularly spaced perforations. Length 35 mm, width 11 mm.

ON 4501: fragmentary circular copper alloy band. Rivet hole near each end. Diameter 130 mm, width 6 mm.

ONs 4489, 4490, 4493, 4500, 4501 are probable fittings for a wooden box and/or cup or other small vessel, located by thighs and body/legs of burial 6004.

ONs 4502–4; 4509–12 (not illus.): rectangular iron fragments/object(s), three with curved section.

ON 4506: copper alloy saucer brooch (unidentical pair with 4518), near right clavicle. The front was originally gilded. The decoration consists of a single field of Style I ornamentation surrounding a small central boss. The field is separated from the rim by a notched ring, and another with three pairs of more or less equally spaced notched radial lines. Hinge and catch. Iron corrosion probable evidence of the pin and slight traces of mineral preserved textile impressions are visible in the corrosion. Dickinson Group 7. Diameter of 40 mm, rim height *c.* 4 mm, angled at *c.* 45?

ON 4518: copper alloy saucer brooch (unidentical pair with 4506), left clavicle. Face obscured by mineral preserved organic material (possibly human skin), some evidence of gilding. The decoration consists of a single field of Style I ornamentation surrounding a small central boss separated from the rim by two outer rings ornamented as 4506. Hinge and catch. Iron corrosion probable evidence of the pin and slight traces of mineral preserved textile impressions are visible in the corrosion. Dickinson Group 7.

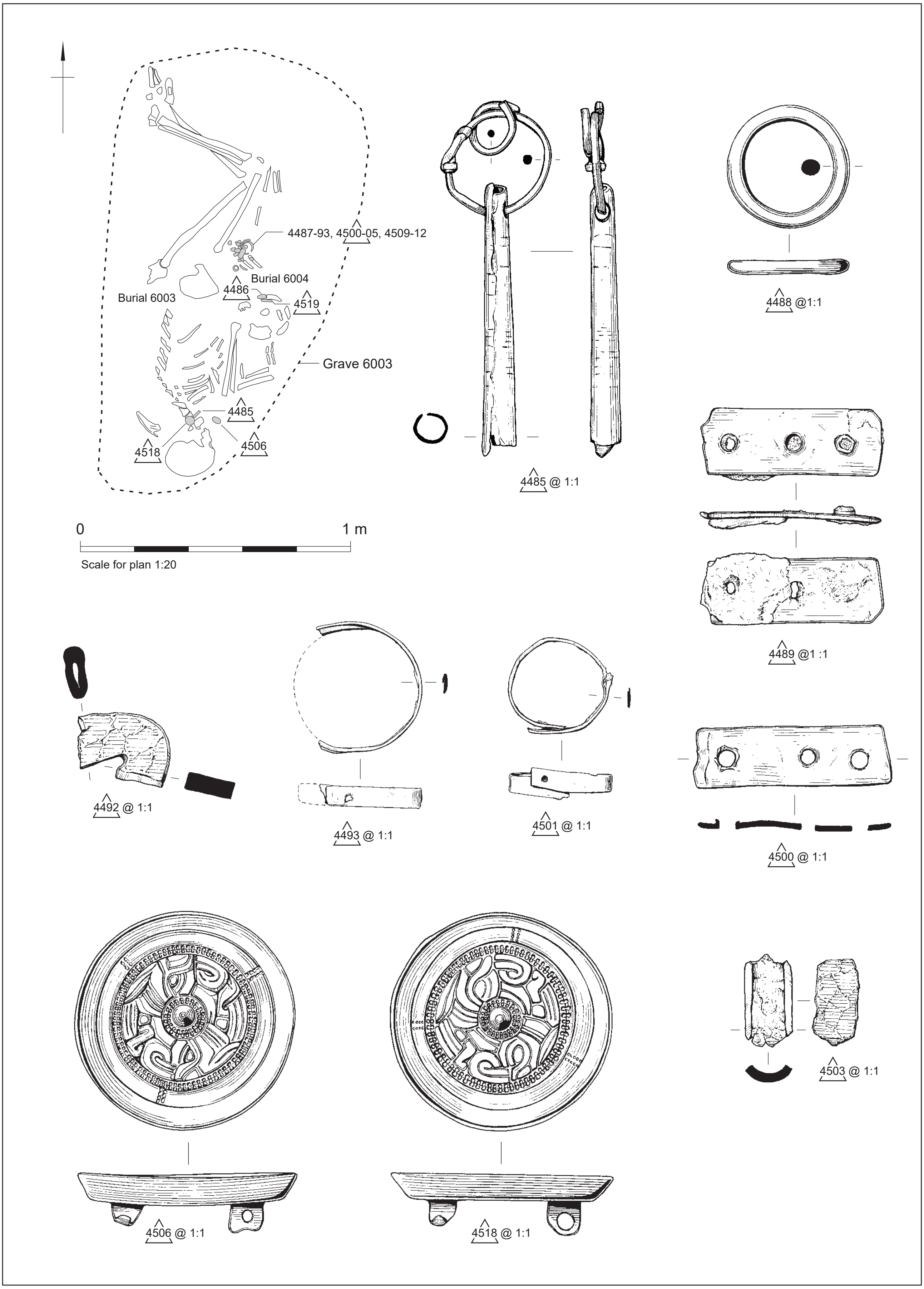


Figure 10.31 Grave 6003 and selected grave goods

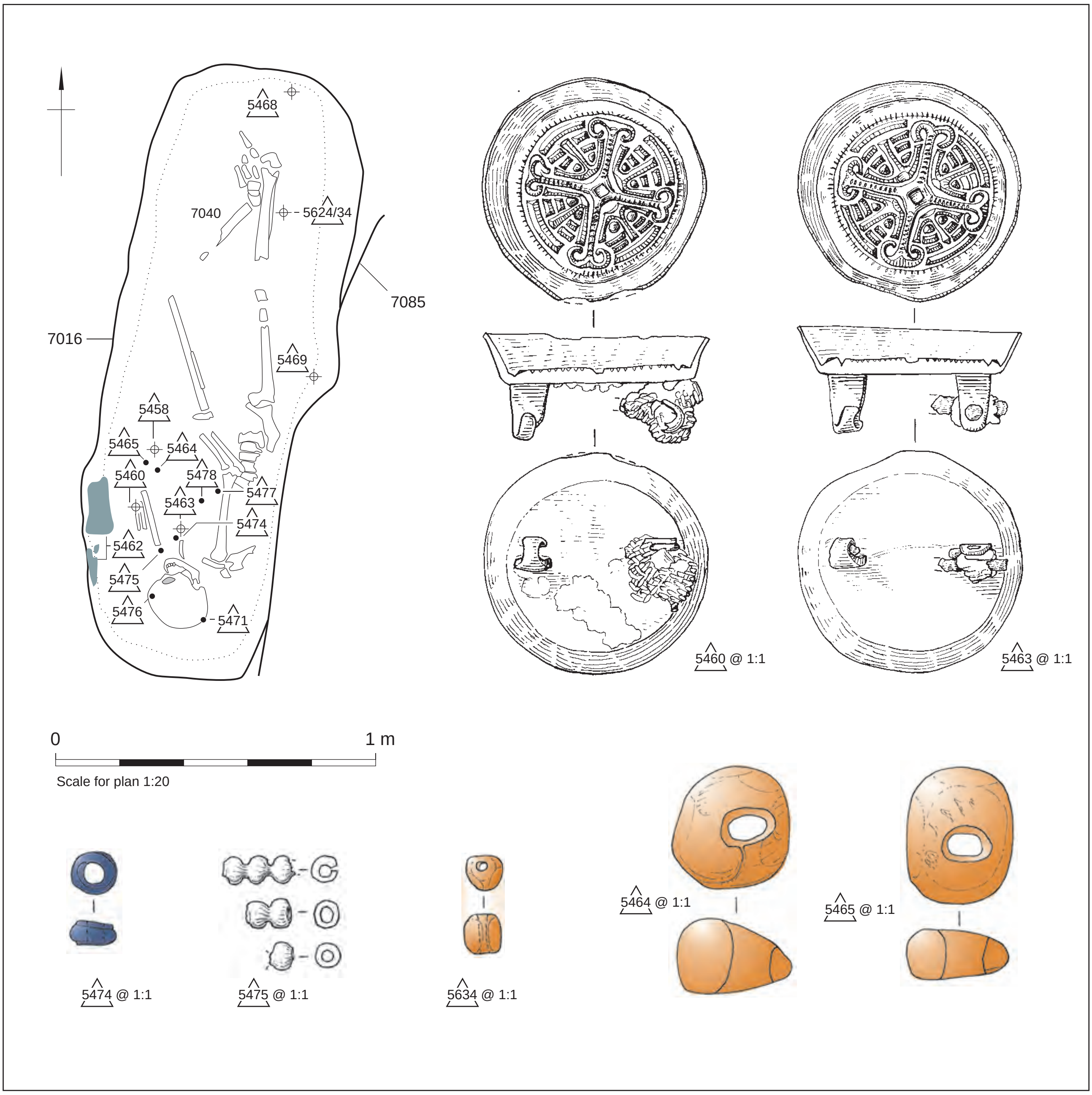


Figure 10.32 Grave 7016 and selected grave goods

Diameter 40 mm, rim height *c.* 4 mm, angled at *c.* 45°.

ON 4519 (not illus.): fragment of curved iron rod, by disturbed jaw bone of burial 6004.

ON 4542 (not illus.): fragment of curved iron rod, location unknown.

ONs 4523–5, 4530, 4532, 4540, 4548, 4540, 4542, 4546 (not illus.): iron fragments, location unknown.

ONs 4487, 4505, 4522, 4541, 4546 (not illus.): five amber beads, small to medium, A01 and A02, one fragmentary; two in adult torso area, two by thighs, one from body/legs of infant.

ONs 4502, 4503, 4504, 4509, 4512 (not illus.): iron fragments found with glass and amber beads. Possible necklace fittings.

Grave 7016 (burial 7040; fill 7017)

(Fig. 10.32)

S–N, sub-rectangular cut with rounded corners, straight very steep sides and a flat base. 2.00 x 0.70 m, 0.25 m deep.

Human remains: Burial slightly flexed on left side. *c.* 45% adult >65yr. female. 0.3 g of cremated bone and fuel ash slag in grave backfill.

Grave goods:

ON 5458: iron strip fragment (not illus.).

ON 5460: copper alloy saucer brooch, left shoulder. The front is gilded and decorated with a floriate cross and masks. Dickinson Group 3; subtype 3.2.1. Pin catch and hinge cast in one with the brooch, fragmentary iron pin. Diameter 34 mm.

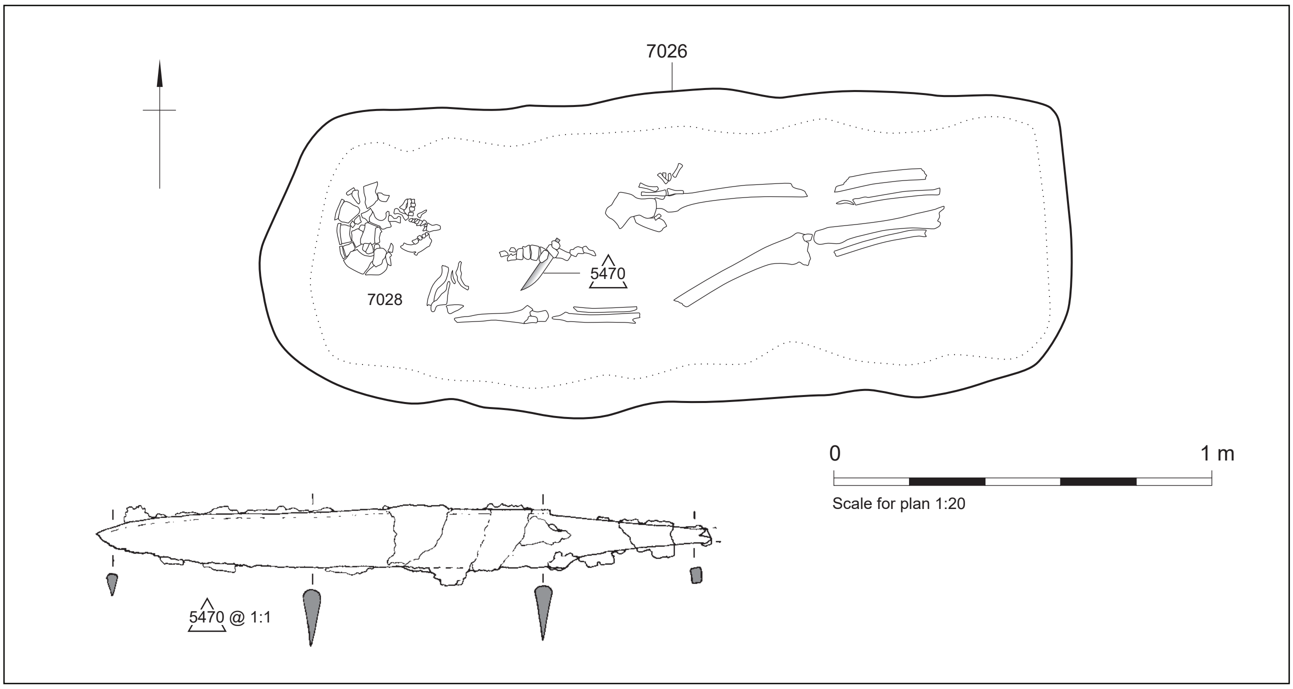


Figure 10.33 Grave 7026 and iron knife

Remains of organic material associated with the pin. Textile fibres (possible twill) caught in the brooch hinge.

ON 5462: charred wood (plank?).

ON 5463: copper alloy saucer brooch, right shoulder. The rim is slightly dented. The front is gilded and decorated with a floriate cross and masks. Dickinson Group 3; subtype 3.2.1. Pin catch and hinge cast in one with the brooch, fragmentary iron pin. Diameter 35 mm. Remains of organic material is associated with the pin fragment.

ON 5468: vessel glass fragment (not illus.); small, colourless, probably Roman; found in grave fill at foot-end.

ONs 5471, 5476: two amber beads, small, fragmentary (form unknown; missing – not included in bead catalogue); found either side of skull in temple area.

ONs *5464, *5465: two amber beads, large, A02 and A04; found in chest area.

ON 5469: copper alloy droplet, 1 g (not illus.); from grave fill.

*ON 5474: monochrome glass bead; wound, medium, annular, translucent dark blue; found in upper chest area.

*ON 5475: seven monochrome beads (three illustrated); wound, small, globular segmented (three with 1 segment, two with 2 segments, two with 3 segments), colourless; found in upper chest area.

ONs 5477, 5478: two amber beads, fragmentary (form unknown) (not illus.); found in chest area.

ON 5623, *5634, 5635: five amber beads (one illustrated), small, rounded, A01; three found in upper chest area; two sample finds.

ON 5624, 5636: four monochrome glass beads; wound, small, globular segmented (one segment), opaque dark colour (not illus.); two found in upper chest area, two sample finds.

ON 5633, 5637: seven monochrome glass beads; wound, small, globular segmented (one segment), colourless (not illus.); sample finds.

Grave 7026 (burial 7028; fill 7027)

(Fig. 10.33)

W–E, sub-rectangular cut with rounded corners, regular straight, vertical sides and a flat base. 2.05 x 0.80 m, 0.38 m deep.

Human remains: Extended supine, with arms lying alongside the body. *c.* 60% adult *c.* 35–45yr. male.

Grave goods:

ON 5470: iron knife blade and fragmentary tang, at waist. Tang curves up to back of blade and slopes down to cutting edge. Curved blade with straight back. Böhner Type B/Evison Type 2. Length 160 mm; height 15 mm; width 4 mm. Remains of textiles.

Grave 7029 (burial ?; fill 7030)

(Not illustrated)

E–W, grave cut identified but no skeleton found. Grave rectangular in shape with straight sides and flat base. 1.20 x 0.50 m, 0.50 m deep.

Human remains: None identified within the grave cut.

Grave goods: None.

Grave 7032 (burial 7035; fill 7033, 7034)

(Fig. 10.34)

NW–SE, sub-oval cut with vertical, straight sides and undulating base. 1.69 x 0.69 m, 0.36 m deep.

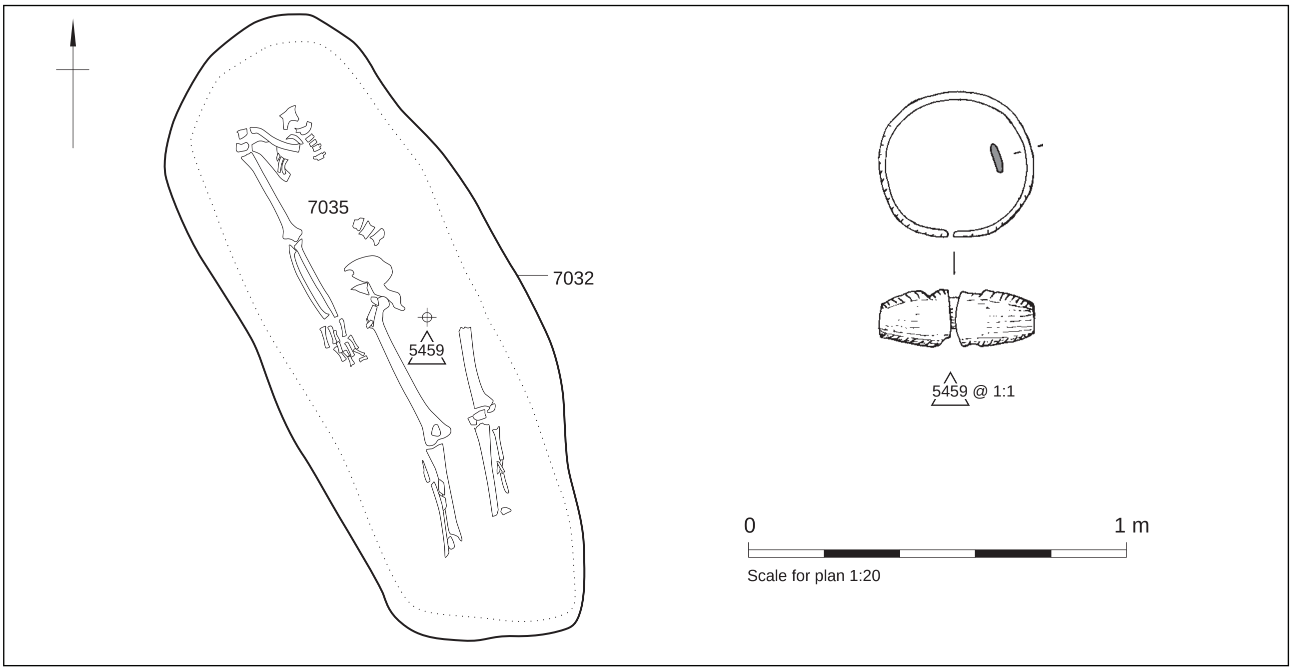


Figure 10.34 Grave 7032 and copper alloy ring

Human remains: Extended supine, with feet removed by modern military trench; head, left arm, trunk and upper left leg removed by animals. *c.* 45%, with approximately 10% of probably the same individual from grave fill, adult *c.* 40–45yr. female.

Grave goods:

ON 5459: copper alloy finger ring, from upper fill of grave. Open copper alloy band, flat in section expanding to terminals. Diameter 20 mm; max. width (at terminal) 8 mm.

Grave 7036 (burial 7038; fill 7037)

(Fig. 10.35; Pl. 10.10)

W–E, sub-rectangular cut with curved ends, straight, vertical sides to a flat base. 1.53 x 0.62 m, 0.36 m deep.

Human remains: Tightly crouched on the right side and slumped. *c.* 99% subadult *c.* 15–16yr. ?male.

Estimated date: cal AD 655–720 (85% probability) or *cal AD 745–765 (10% probability)* (weighted mean OxA-34488 and UBA-31685).

Grave goods: None.

Grave 7044 (burial 7045; fill 7046)

(Not illustrated)

E–W, animal damaged grave, cut into side of ditch. 1.5 x 1.00 m, 0.60 m deep.

Human remains: Possibly extended supine, fragments of lower leg bones only. *c.* 15% adult >18yr. *Redep.* 1 bone, l., infant *c.* 1–4yr.

Grave goods: None.

Grave 7058 (burial 7060; fill 7059)

(Fig. 10.36; Pl. 10.11)

NNE–SSW, probably sub-rectangular but extent/dimensions uncertain.

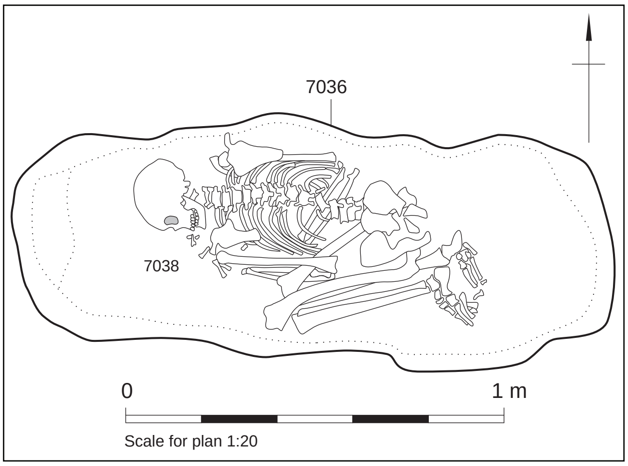


Figure 10.35 Grave 7036

Plate 10.10 Grave 7036 (Trench 10), from the south (scale = 0.5 m)

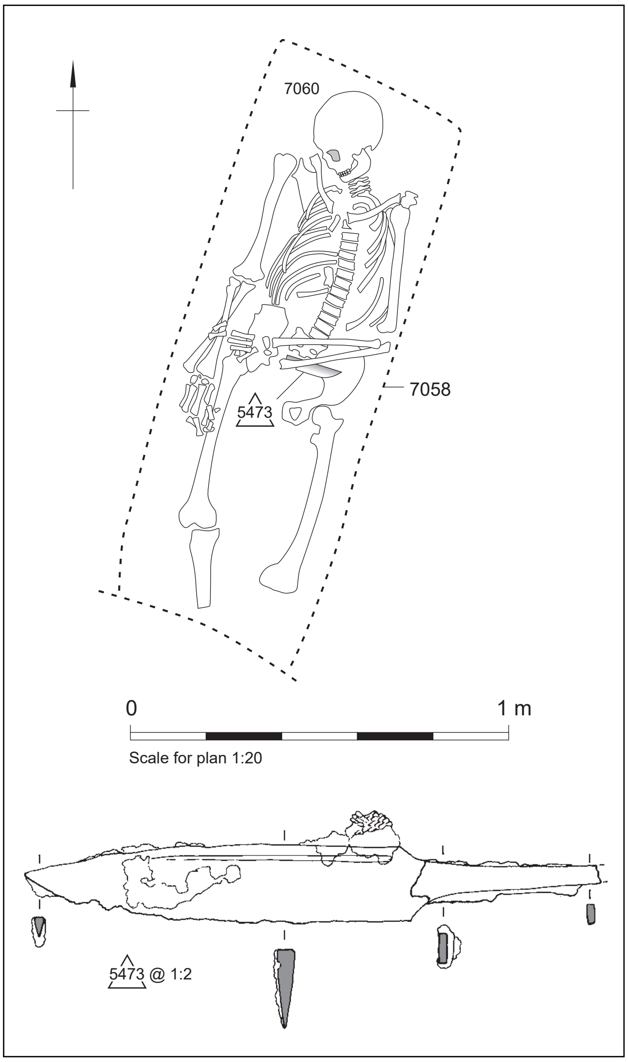


Figure 10.36 Grave 7058 and iron knife

Plate 10.11 Grave 7058 (Trench 12, from the east (scale = 0.5 m)

Human remains: Extended supine, on slope with head higher than feet and left shoulder higher than right. *c.* 75% adult *c.* 50–60yr. male. *Redep.* 1 fragment, u., adult >18yr. ?female.

Grave goods:

ON 5472 (not illus.): fragment of copper alloy rivet head and fragment of shank, not located. Length 10 mm; width not recorded.

ON 5473: iron knife, at waist, horizontal, blade to left. Tang slopes up to back and down to blade. Curved blade with angled back. Böhner Type C/Evison Type 3. Length 165 mm; height 22 mm; width 6 mm. Weld line where blade joins back. Remains of mineralised textile.

Grave 7062 (burial 7064; fill 7063)

(Fig. 10.37; Pl. 10.12)

WSW–ENE, sub-rectangular cut with rounded corners (E end cut straight, W end more rounded), very steep/vertical sides and flat base. 1.87 x 0.74 m, 0.51 m deep

Human remains: Extended supine, incomplete resulting from tree root damage. *c.* 65% adult *c.* 40–50yr. female. *Redep.* 2 fragments, teeth, s., subadult/adult *c.* 15–25yr.

Grave goods:

ON 5482: bone pin or needle; perforated head, broken across perforation; species unidentifiable; found by left shoulder.

ON 5483: iron bow brooch, right shoulder. Brooch inlaid with transverse wires of unknown material but probably brass. Knobs at the end of the foot and each end of the pin axis bar are probably brass/covered with brass. Visigothic brooch, Type Estagel (see further below; Pl. 12.15). Length 77 mm; width across axis bar 25 mm. Textile fibres (plain tabby) on front and back.

ON 5484: fragmentary iron rod, above abdomen. Circular section; the end appears to narrow to a point; the other end has been curled back on itself to make a looped terminal, probable pin. Length 71 mm. The x-ray appears to show three faint transverse grooves near the point.

ONs 5479, *5487: five monochrome glass beads (one illustrated); wound, medium, annular, dark blue; found at neck.

ON 5480: two monochrome glass beads; wound, medium, annular, blue (not illus.); found in group by left shoulder.

ON 5481: monochrome glass bead; wound, large, annular, opaque dark (not illus.); found by left elbow.

ON 5485, *5658: two monochrome glass beads (one illustrated); wound, medium, disc, opaque red; one found by left elbow, one at pelvis.

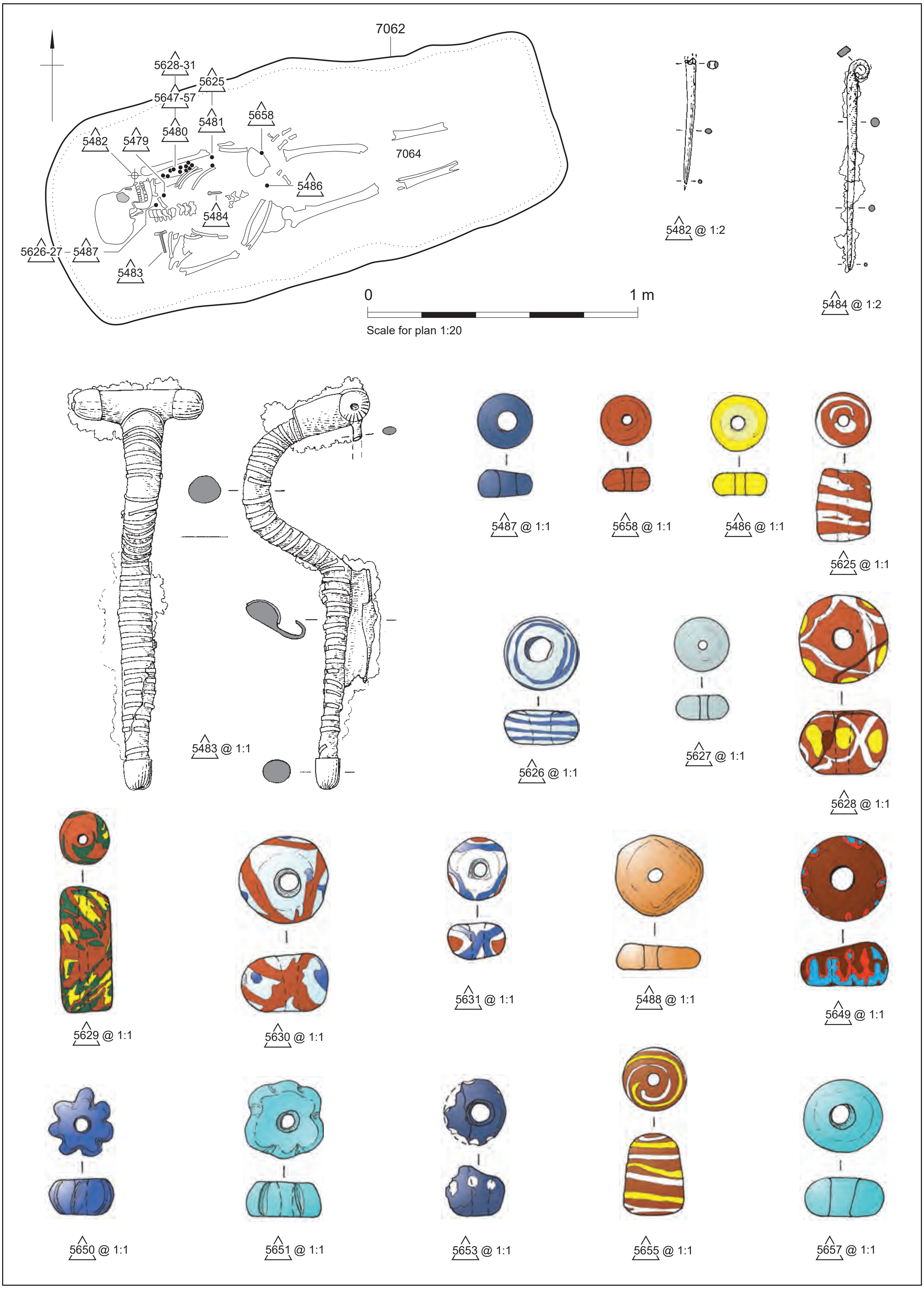


Figure 10.37 Grave 7062 and grave goods

Plate 10.12 Grave 7062 (Trench 13), from the south-west

*ON 5486: monochrome glass bead; wound, medium, disc, opaque yellow; found at pelvis.

*ON 5625: polychrome glass bead; wound, medium, thick-walled cylinder; opaque white trail on opaque red body (Koch42); found by left elbow.

*ON 5626: polychrome glass bead; wound, large, disc, translucent blue trail on opaque white body (Brugmann BlueGreenSpiral); found at neck.

*ON 5627: monochrome glass bead; wound, medium, disc, opaque blue-white; found at neck.

*ON 5628: polychrome glass bead; wound, large, globular; opaque white crossing waves and opaque yellow dots on opaque red body (Brugmann Dot34); found in group by left shoulder.

ONs *5629, 5648: two polychrome glass beads; wound, medium, thick-walled cylinder; opaque red, opaque yellow and translucent dark green/black (Brugmann Streaked Traffic Light); found in group by left shoulder.

*ON 5630: polychrome glass bead; wound, large, globular; opaque red crossing waves and blue dots on opaque white body (Koch20); found in group by left shoulder.

*ON 5631: two polychrome glass beads (one illustrated); wound, medium, disc; blue crossing waves and opaque red dots on opaque white body (Brugmann Dot34); found in group by left shoulder.

ON 5647: glass bead, possibly polychrome; wound, large, globular; possibly Brugmann Traffic Light, but very degraded (not illus.); found in group by left shoulder.

*ON 5488: amber bead, large, A04, fragmentary.

*ON 5649: polychrome glass bead; wound, large, disc; blue wave on opaque red body (surface degraded to black); found in group by left shoulder.

*ON 5650: monochrome glass bead; wound, large, ribbed, blue; found in group by left shoulder.

*ON 5651: monochrome glass bead; large, wound, ribbed, transparent pale blue; found in group by left shoulder.

ON 5652: monochrome glass bead; medium, form uncertain (very degraded); opaque dark (not illus.); found in group by left shoulder.

*ON 5653: possible polychrome glass bead; wound, large, annular; dark blue body with possible opaque white dots (degraded); found in group by left shoulder.

ON 5654: monochrome glass bead; wound, medium, disc, colour uncertain (degraded) (not illus.); found in group by left shoulder.

Plate 10.13 Grave 7079 (Trench 12), from the west

*ON 5655: polychrome glass bead; wound, large, thick-walled cylinder; opaque white and opaque yellow spiral trails on opaque red body; found in group by left shoulder.

ON 5656: monochrome glass bead; wound, medium, annular, possibly blue-green but degraded (not illus.); found in group by left shoulder.

*ON 5657: monochrome glass bead; wound, large, disc, transparent pale blue-green; found in group by left shoulder.

Grave 7079 (burial 7081; fill 7080)

(Fig. 10.38; Pl. 10.13)

S–N, sub-rectangular cut with straight, vertical sides and flat base. 2.10 x 0.69 m, 0.32 m deep.

Human remains: Extended supine. *c.* 80% subadult/adult *c.* 15–18yr. ?male. *Redep.* a) single tooth, adult 20–40yr. b) single rib, infant *c.* 1–3yr.

Grave goods:

ON 5535: fragmentary iron spearhead (cleft socket), by upper left arm. It appears to be an angular concave-sided spearhead, which if correct, identifies it as Swanton Type H2. Length 308 mm, maximum width 29 mm (at the blade angle).

ON 5536: iron shield boss and fragmentary grip, over knees. A low boss; cone has a straight profile with overhanging carination; wall profile straight. The apex is of a button type. The rim originally had five rivets. Dickinson and Härke Group 2. Fragments of leather adhere to the underside of the boss (ie, the front of the shield board). Height from rim to top of apex 80 mm, diameter of approx. 140 mm. Fragmentary grip with an expanded terminal (Dickinson and Härke Group Ia 1), length approx. 114 mm, width 20 mm. Fragments of wood and other organics/textiles adhere to grip.

ON 5537: iron rivet with circular head, right side of boss. Length 15 mm, diameter 20 mm.

ON 5562 [a & b]: iron board fitting, right side of boss. Circular iron stud (diameter 20 mm), flat with central rivet. Fragment of wood? at end of shank.

Grave 7082 (burial 7084; fill 7083)

(Figs 10.39, 10.40 and 10.41; Pl. 10.14)

NW–SE, sub-rectangular cut with straight sides and a flat base. 2.19 x 0.87 m, 0.67 m deep.

Human remains: Extended supine. *c.* 70% adult *c.* 30–40yr. male.

Grave goods:

ON 5493 (not illus.): fragmentary iron strip of flat section with curving end that narrows to a point. Iron shield fitting, location not recorded. Length 55 mm; width 13 mm.

ON 5495: iron shield boss and fittings, over lower legs. A low boss. Cone has straight profile and overhanging carination; wall profile concave. The apex is of a disc-headed type. The rim has five rivets. Dickinson and Härke Group 1.1. Height from rim to top of apex 96 mm, diameter of approx. 156 mm. Fragments of the shield board (alder) adhere to the underside of the boss, with leather on the front and back of the wood. Medium length fragmentary grip but with characteristics of a Dickinson and Härke long grip, ie, Group IIIa. Length >200 mm, width of grip approx. 20 mm. Textiles associated with grip.

Also associated (no ON) is a circular iron board stud: flat with central rivet and topped

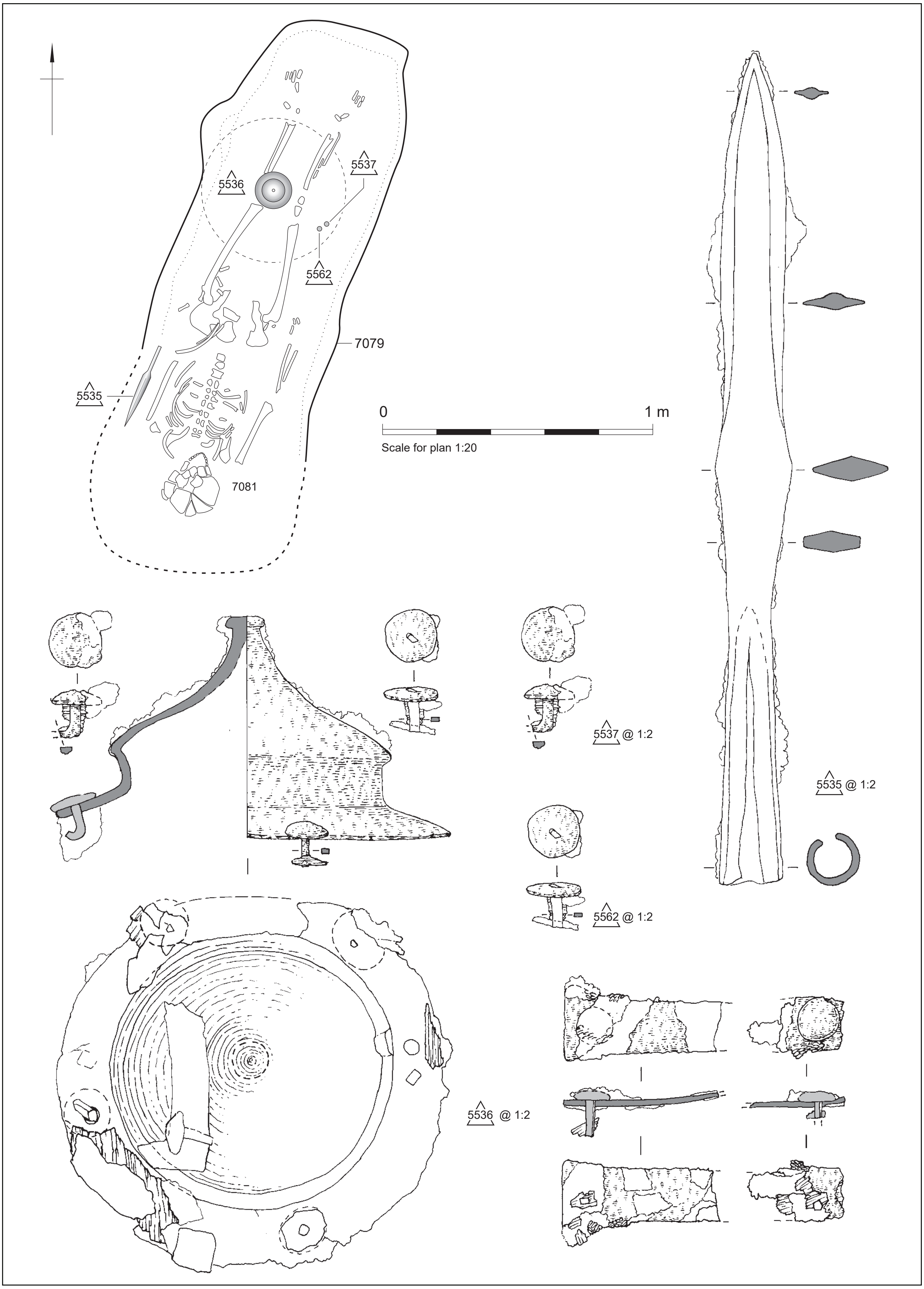


Figure 10.38 Grave 7079 and grave goods

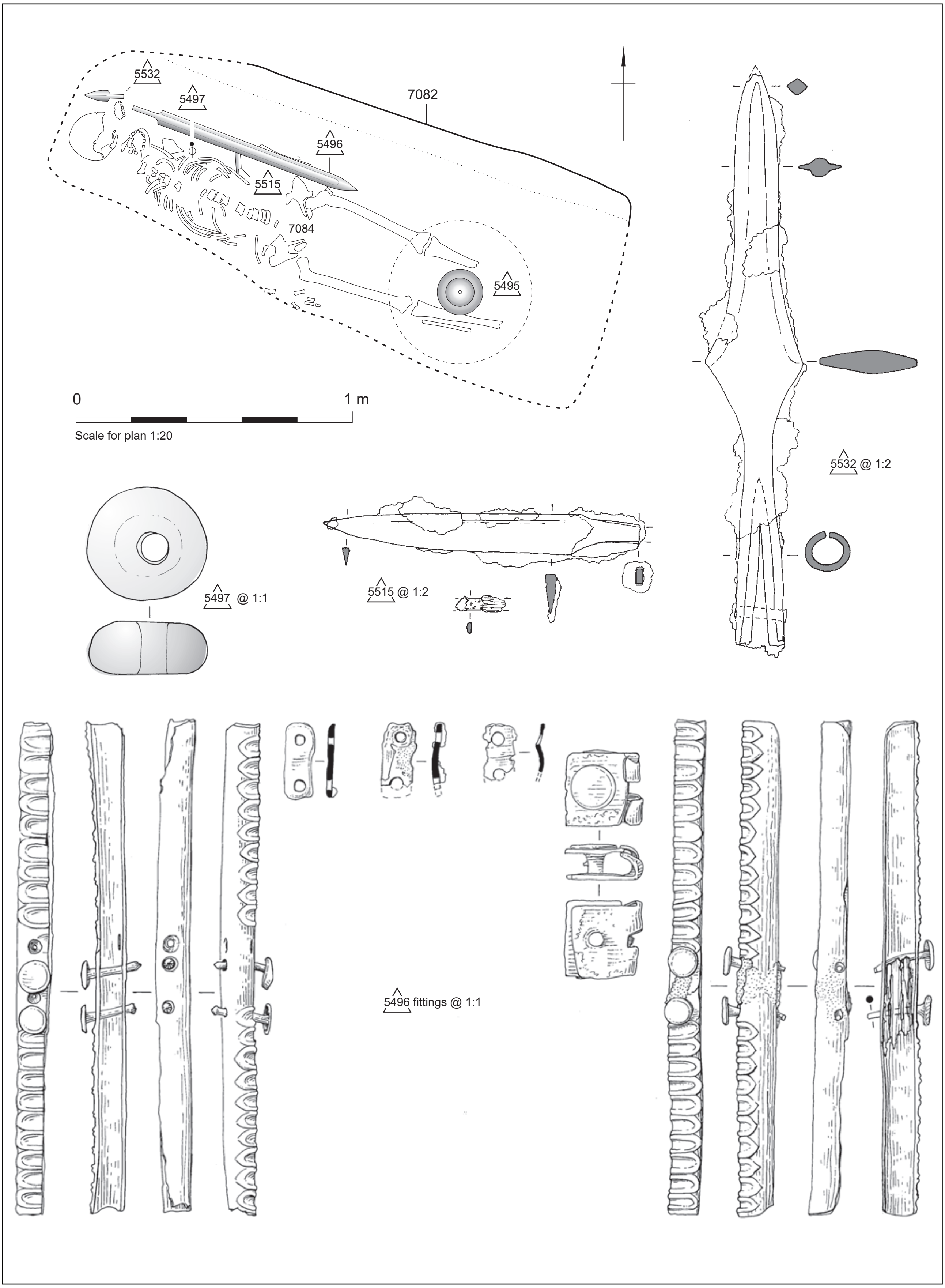


Figure 10.39 Grave 7082 and grave goods

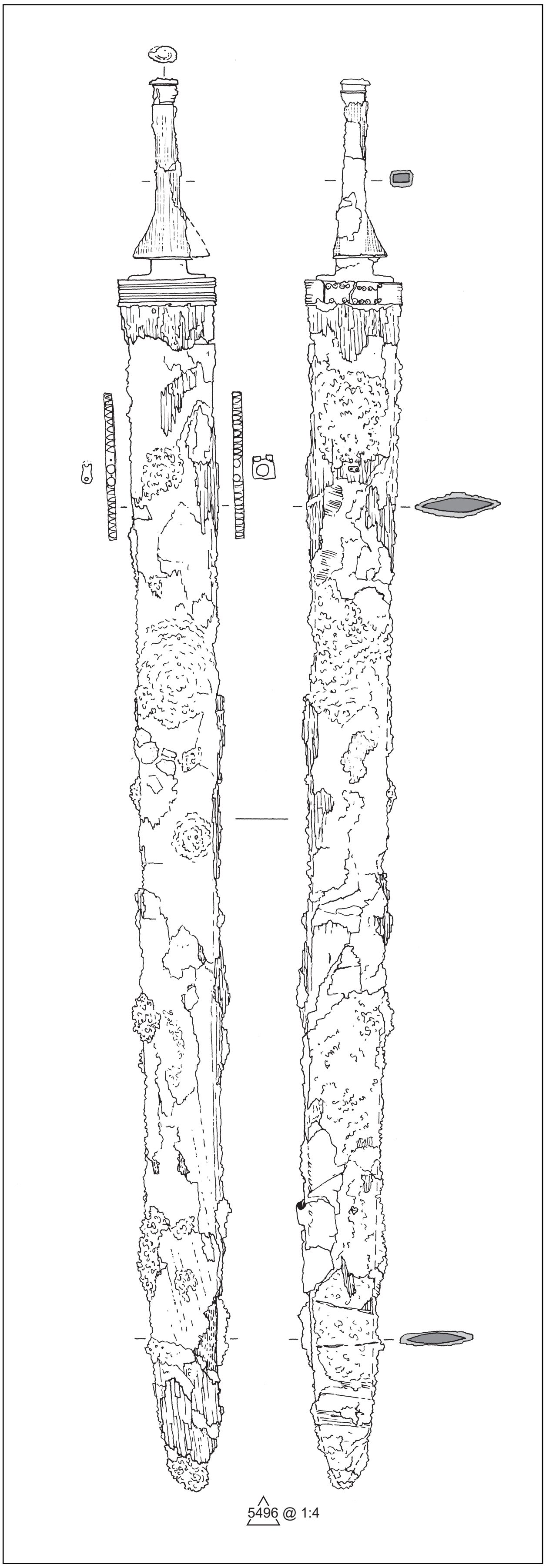


Figure 10.40 Grave 7082 sword

Plate 10.14 Grave 7082 (Trench 12), from the south-east

with tinned copper alloy plate. Diameter 25 mm.

ON 5496 (*by Matt Bunker*; see also Chapter 12; Pl. 12.3): iron sword with remains of wood and leather scabbard, remains of horn grip on the tang and some associated copper alloy and iron fittings. Found to the left of the burial, possibly overlaying the left arm.

a) Iron sword. Overall length, 866 mm. Length of blade from tip to shoulder 749 mm. Width of blade at shoulder 50 mm. Length of tang 117 mm. Width of tang at shoulder 20 mm, tapering to 10 mm at the peened end. X-rays show that the blade is pattern-welded, seemingly a three-bar uninterrupted continuous herringbone pattern (Paul Mortimer, pers. obs.). The tip of the tang is peened over what seems to be a near round iron washer, diameter 20 mm. Mineralised remains of horn lower and upper guards visible on tang. Upper guard thickness 11 mm. Lower guard thickness 13 mm. Judging by the amount of blade visible above the mouth of the scabbard, the top 3 mm of the blade sat within a slot cut into the base of the lower guard. Mineralised remains of horn grip also present on tang. Grip length 94 mm. There is a thin copper alloy spacer between the two guards and each end of the grip.

b) Gilded copper alloy mouthband. Menghin Type 3b. Length 60 mm; height 13 mm.

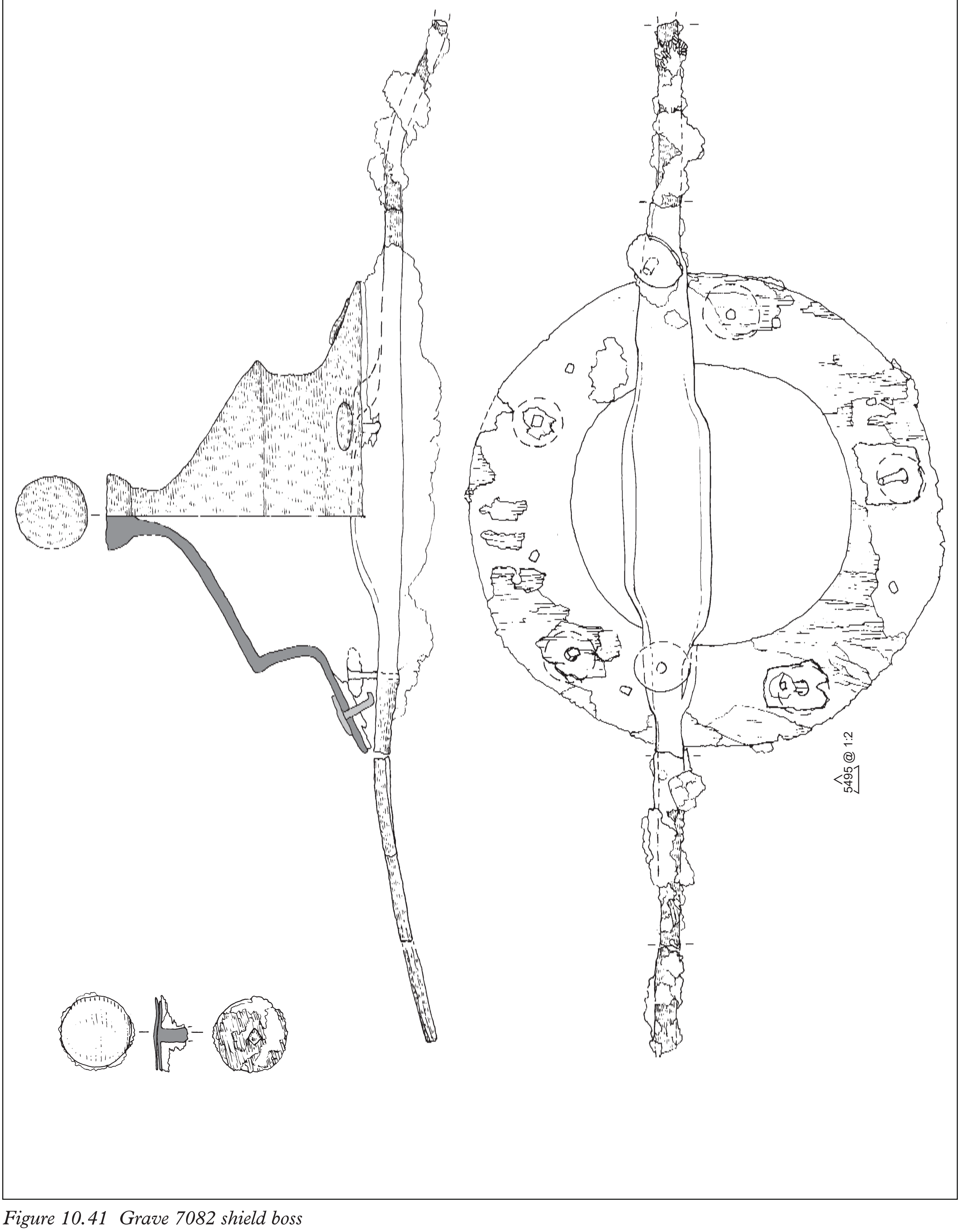


Figure 10.41 Grave 7082 shield boss

Plate 10.15 Grave 7085 (Trench 14), from the east (scale = 1 m)

Decorated on the front face with seven lateral ridges which extend around the sides and with two rows of ring and dot decoration on the rear.
c) Two gilded copper alloy U-shaped edge strips. Menghin Type 1a. Length 89 mm. Each secured to the scabbard by two disc headed rivets which pass through the wooden core (evidenced by mineralised remains of wood still located within one strip) and are peened over the rear face. Rivet length 10 mm, shank diameter 2 mm. Head diameters 6 mm.
d) A folded copper alloy plate, seemingly from a small buckle (Marzinzik Type II.21a), with the buckle loop missing. A single, disc-head rivet passes through the plate. Found to the left of the scabbard. Length 14 mm, width 14 mm with a 5 mm gap between the front and back face.
e) Three small rectangular copper alloy plates of similar dimensions, two broken and one complete. All are pierced at both ends. One was found beneath the scabbard, one to the right of the scabbard and one was unlocated. Length 14 mm, width 6 mm, hole diameter 2 mm. Assumed to be part of the scabbard suspension system.

ON 5497: large monochrome glass bead; wound, large, annular; translucent clear; found by hilt of sword (next to head/neck of individual). Sword bead.

ON 5515: blade and fragmentary tang of iron knife, left waist area. Tang slopes up to back and down to blade. Curved blade with straight back. Böhner Type B/Evison Type 2. Length 117 mm; height 15 mm; width 4 mm. Remains of wooden? handle on tang.

ON 5532: iron spearhead (cleft socket, rivet through socket), left of skull. It is an angular concave-sided spearhead, Swanton Type H1. Length 210 mm, maximum width of 36 mm (at the blade angle). Fragments of wooden spear shaft inside socket; possible remains of organic material over blade.

Grave 7085 (burial 7087; fill 7086)
(Fig. 10.42; Pl. 10.15)
S–N, sub-rectangular with vertical, concave sides and an irregular base. 2.1 x 0.65 m, 0.45 m deep.
Human remains: Extended supine. *c.* 99% adult *c.* 40–45yr. female.
Grave goods:

ON 5522: fragmentary tang and blade of iron knife, left waist, blade down. Tang is angled up to back of blade and down to cutting edge. The blade has an angled back and curved cutting edge. Böhner Type C/Evison Type 3. Length 141 mm; height 19 mm; width of blade 4 mm. Remains of organic material and wood/horn handle on the tang.

ON 5527: complex of fragmentary iron objects, possible girdle objects, left hand. Tip of knife blade: back curving down to straight blade (Evison Type 4). Length (largest fragment) 38 mm; height 16 mm; width 4 mm. Also present a fragmentary crook-headed pin (cf ON 4999, grave 2533), approximate length 140 mm, and a rod with pointed end. Textile fibres (plain tabby repp) on one face of one object, along with a small ball of textile (possible twill) with another.

ON 5561: oval iron buckle loop of oval section, right abdomen. Pin is wrapped around loop. Marzinzik Type I 11a-i. Height 30 mm; width 24 mm.

*ONs 5523–5, 5533: four monochrome glass beads (one illustrated); wound, medium to large, ribbed, blue; found in group by left hip.

*ON 5531: monochrome glass bead; wound, large, annular, blue; found in group by left hip.

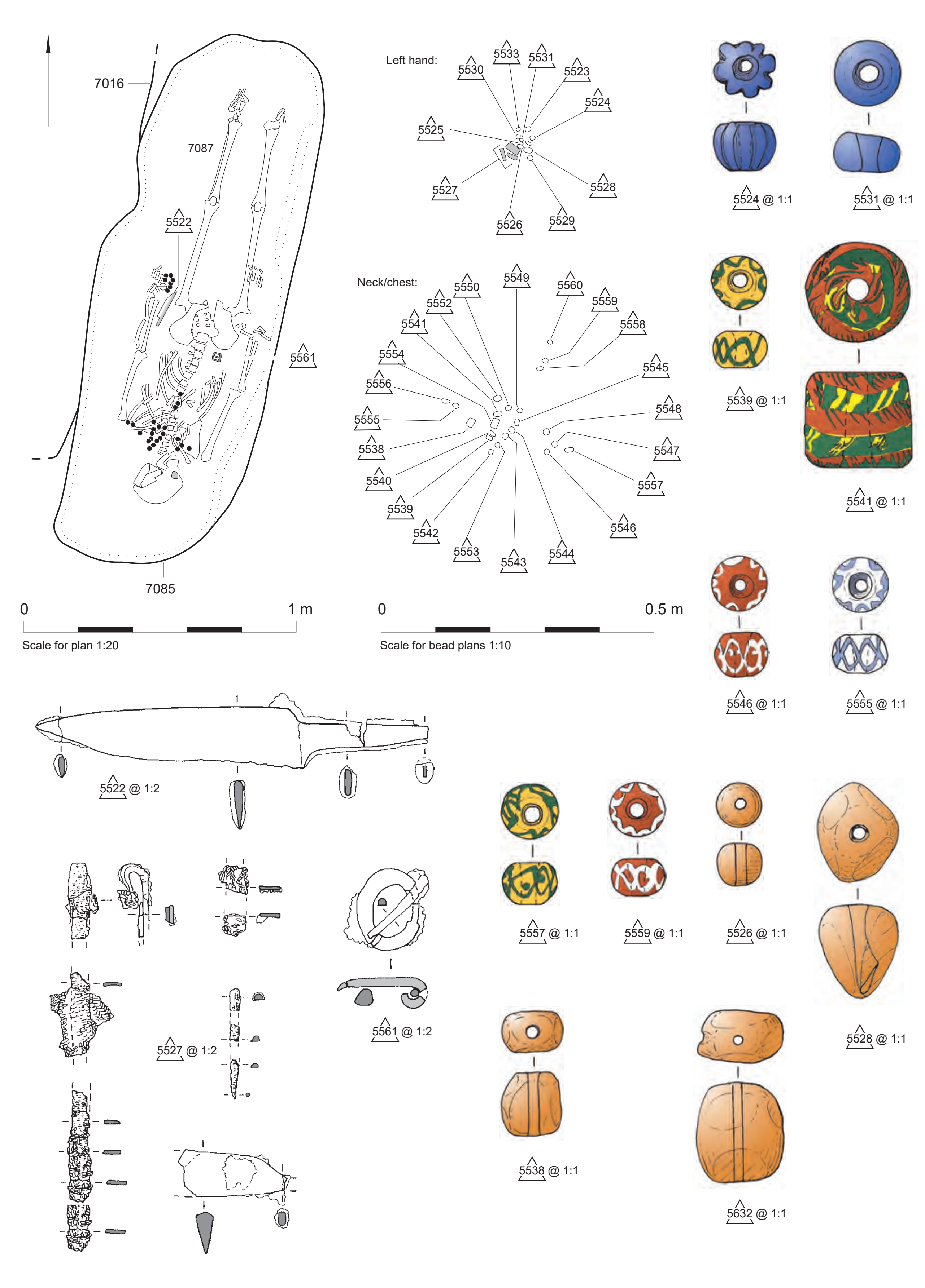


Figure 10.42 Grave 7085 and grave goods

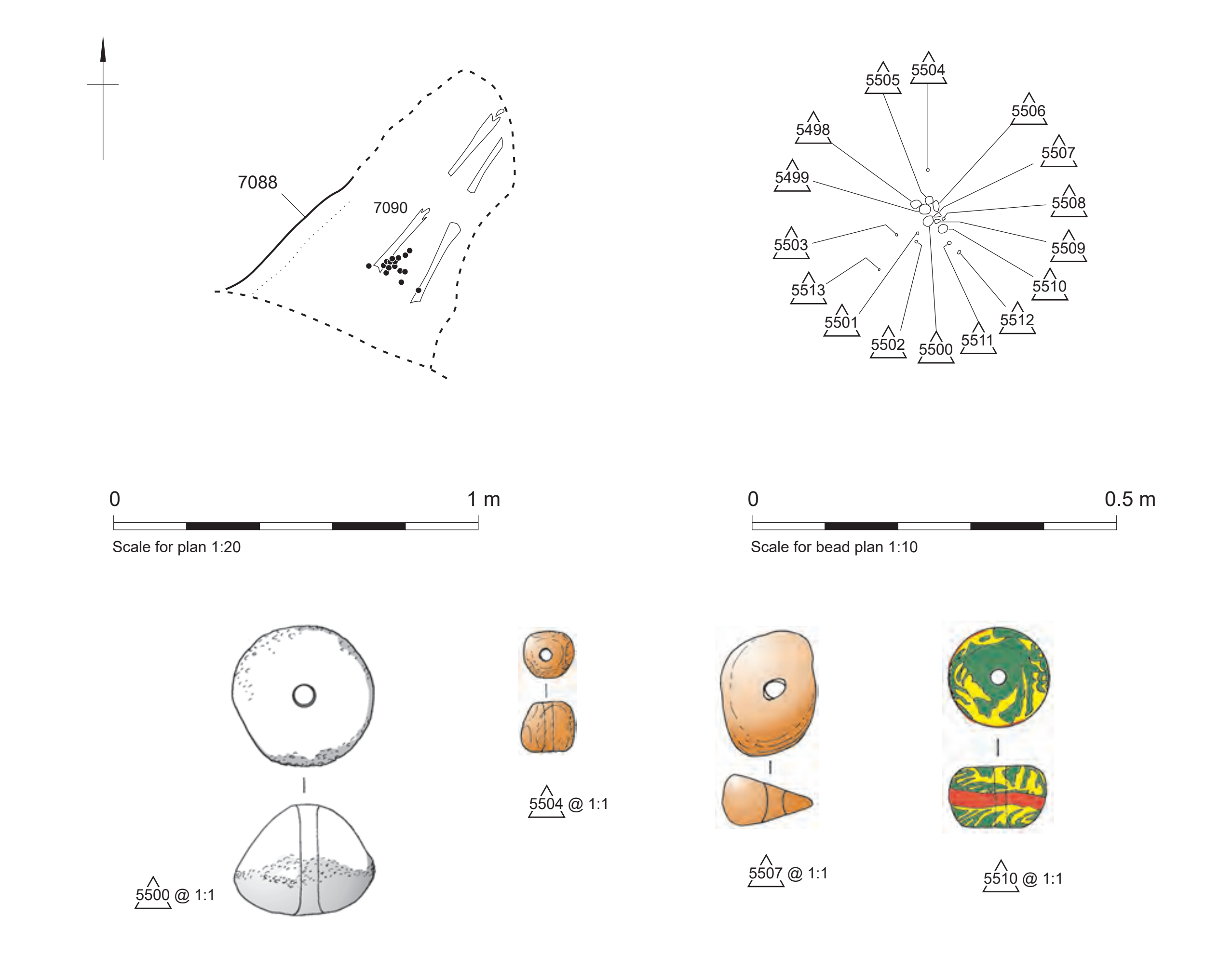


Figure 10.43 Grave 7088 and grave goods

ONs *5539–40, 5558: three polychrome glass beads (one illustrated); wound, medium, globular; translucent dark green/black crossing waves on opaque yellow body; found in group at neck/ upper chest.

*ON 5541: polychrome glass bead; wound, large, thick-walled cylinder; opaque red, opaque yellow and translucent dark green/black (Reticella) (degraded); found in group at neck/upper chest.

ONs 5545, *5555: two polychrome glass beads (one illustrated); wound, medium, globular; pale blue crossing waves on opaque white body (Koch34); found in group at neck/upper chest.

*ON 5546: polychrome glass bead; wound, medium, globular; opaque white crossing waves and dots on opaque red body (Koch34); found in group at neck/upper chest.

ONs 5548–9, 5552–4, *5559–60, 5661: eight polychrome glass beads (one illustrated); wound, medium, globular; opaque white crossing waves on opaque red body (Koch34); found in group at neck/upper chest (one sample find).

ON 5551: monochrome glass bead; blue, fragments only.

*ON 5557: polychrome glass bead; wound, medium, globular; translucent dark green/black crossing waves and opaque red dots on opaque yellow body (Brugmann Dot34); found in group at neck/upper chest.

ONs *5526, *5528–30, *5538, 5542–4, 5547, 5550, 5556, *5632, 5660: 13 amber beads (four illustrated), medium to large, 3 A01, 8 A02, 1 fragmentary; ON 5632 in poor condition but possibly re-bored; four found in group by left hip, seven in group at neck/upper chest, 2 sample finds? (ON 5632, 5660).

Grave 7088 (burial 7090; fill 7089)
(Fig. 10.43)
SW–NE, cut has been disturbed by animals and the shape and size are unclear, steep sides and irregular base. 0.75 x 0.38 m, no depth recorded.
Human remains: Supine with upper body missing; legs badly disturbed by animals and roots. *c.* 28% juvenile *c.* 5–7yr.
Grave goods:
ONs 5498–9, 5501, 5521: four amber beads, medium, A04, three incomplete.

Plate 10.16 Grave 7100 (Trench 12), from the south-west (scale = 1 m)

*ON 5500: rock crystal bead, large, biconical.

*ONs 5502–4, 5511–3, 5516–20, 5659: 14 amber beads (one illustrated), small to medium, rounded, A01.

*ONs 5505–8, 5514: five amber beads (one illustrated), large A04.

*ON 5510: polychrome glass bead; wound, large, disc; opaque red, opaque yellow and translucent dark green/black (Brugmann Streaked Traffic Light); all beads found in group between upper thighs (three sample finds).

Grave 7100 (burial 7101; fill 7102)

(Fig. 10.44; Pl. 10.16)

NW–SE, sub-rectangular, with straight, vertical sides and flat base. 1.90 x 0.75 m, 0.45 m deep.

Human remains: Extended supine. *c.* 98% adult *c.* 35–40yr. male. *Redep*. 8 bones/fragments, a.u.l., adult >25yr. male.

Grave goods:

ON 5563: iron shield boss, over top of chest/neck. A low boss. Cone has a straight profile with overhanging carination; wall profile is concave. The apex is of a disc-headed type. The rim probably had four rivets. Dickinson and Härke Group 1.1. Height from rim to top of apex 80 mm, diameter of approx. 137 mm. Fragmentary grip of Dickinson and Härke Group Ia 2. Length approx. 96 mm, width 20 mm. Textile fibres on the grip.

ON 5564: circular iron shield board stud with central rivet, right side of boss. Remains of organic material to upper surface; fragments of board to underside. Diameter 39 mm.

ON 5565: circular iron shield board stud with central rivet, right side of boss. Fragments of board to underside. Diameter 40 mm.

ON 5566: circular iron shield board stud with central rivet, left of skull. Remains of organic? material to upper surface; fragments of board to underside. Diameter 40 mm.

ON 5567 [a & b]: circular iron shield board stud with central rivet; from west end of grave, location uncertain. The rivet is bent at a right angle to the disc and extends beyond its edge (length 31 mm). Diameter of disc 37 mm. Also present is a separate fragmentary rivet/nail, length 19 mm.

Unstratified Metalwork – Probable Grave Goods

A number of pieces of metalwork were unstratified. They are described below and illustrated in Figure 10.45.

SF 200304218: iron spearhead (cleft socket, with cross pin visible; no mineral preserved wood). It has a length of 205 mm and a maximum width of 32 mm (at the blade angle). It is an angular blade with marked concavity of Swanton Type H1, date range 5th century to mid-6th, with a wide distribution. No decoration visible on the x-ray.

ON 5300: disc brooch, cast in one piece out of copper alloy; it is in fair condition, but in several places

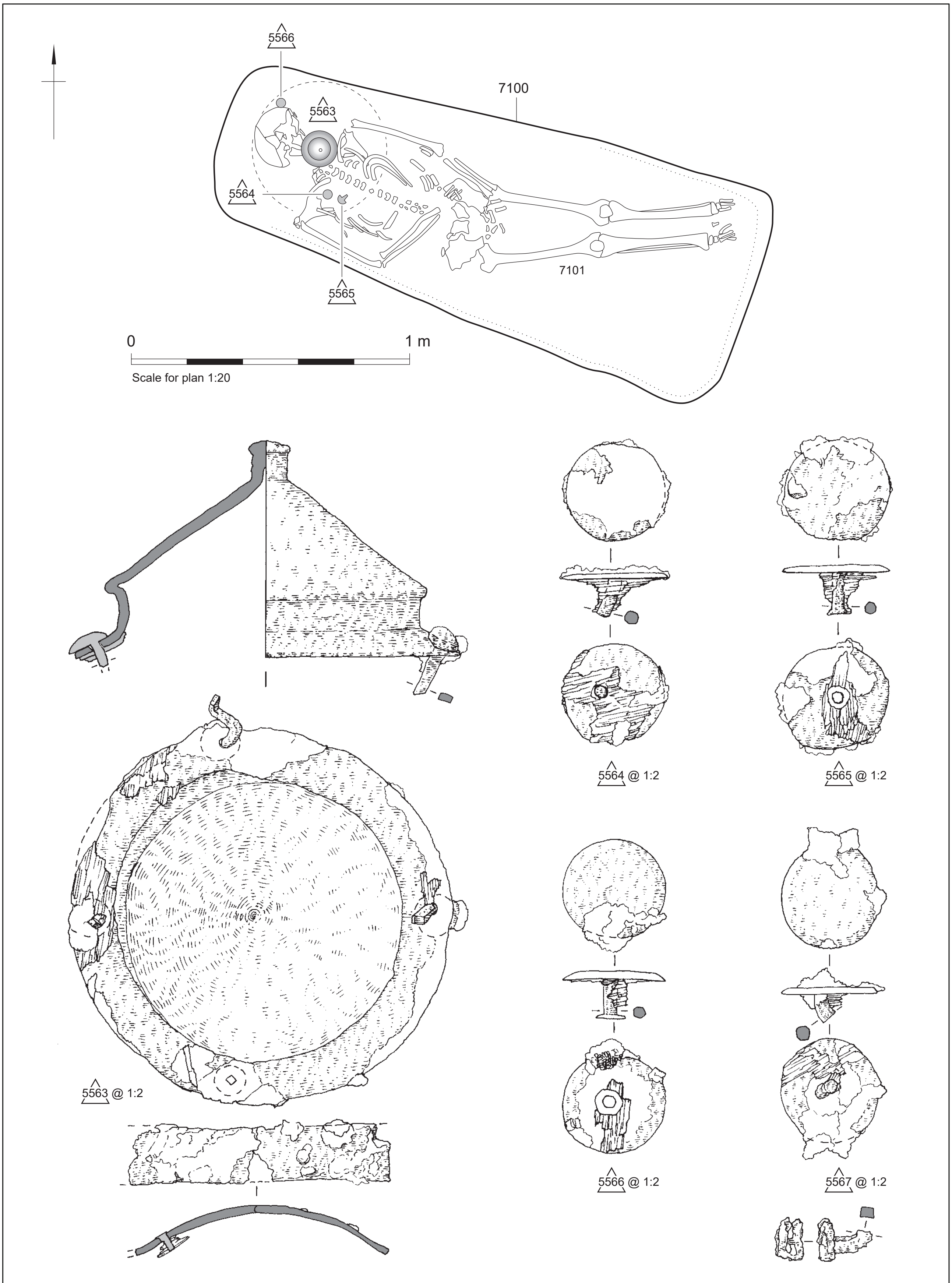


Figure 10.44 Grave 7100 and iron shield boss

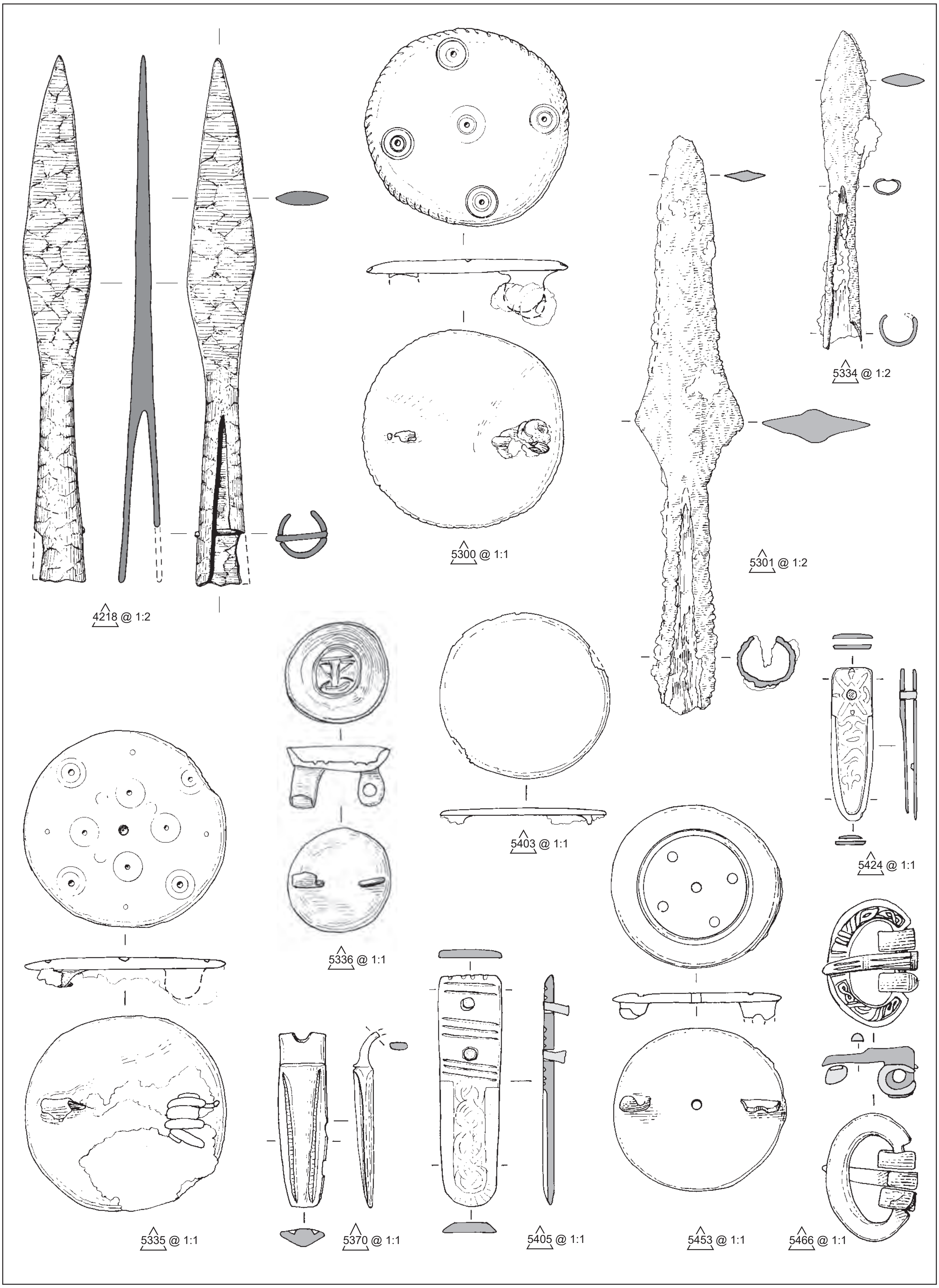


Figure 10.45 Unstratified grave finds

there is minor edge wear. It appears that the front was originally silvered. It is decorated by four double ring-and-dot motifs and one central motif of the same design and is notched around the edge. The artefact has a diameter of 38 mm. The pin arrangement no longer survives intact: the pin catch has broken off; the hinge-lug is present and contains a corroded fragment of the iron pin. The hinge-lug is copper alloy being cast in one with the brooch. Textile fibres (possible twill) on back.

ON 5301: iron spearhead (cleft socket containing remains of spear shaft). It has a length of 220 mm and a maximum width of 42 mm (at the blade angle). It is an angular blade with marked concavity of Swanton Type H1, date range 5th century to mid-6th, with a wide distribution. No decoration visible on the x-ray. Mineral preserved wood (probable ash) in the socket.

ON 5334: small iron spearhead (cleft socket). It has a length of 120 mm and a maximum width of 20 mm (at the blade angle). It is a leaf-shaped spearhead of Swanton Type C1, date range 5th century to mid-6th, possibly into 7th century, with a wide distribution. No decoration visible on the x-ray.

ON 5335: disc brooch, cast in one piece out of copper alloy; it is in fair condition with minor edge wear. It is decorated by possibly four double ring-and-dot motifs and a number of single ring-and-dot motifs. In the centre is a single dot. The artefact has a diameter of 39 mm. The pin catch is fragmentary; the hinge-lug is present and contains a corroded fragment of the iron pin. The pin catch and lug are copper alloy being cast in one with the brooch. Textile fibres (indistinguishable weave) on front and back of catch-plate.

ON 5336: button brooch, cast in one piece out of copper alloy; it is in good overall condition. The artefact has a diameter of 20 mm and a maximum rim height *c.* 3 mm. A human mask is separated from the rim by a ring. The mask consists of a rounded helmet; almost straight eyebrows that also form the upper part of the angular eyes; straight eye rings; rounded-bounded cheeks; long straight nose and a thin closed mouth. Suzuki Class H. The pin lug and catch were cast in one with the brooch; the pin is missing.

ON 5370: fragmentary copper alloy buckle plate. Tongue-shaped strip with central moulding and a series of tiny dots along part of one edge. Originally bent around loop with slot for tongue. Length 32 mm; width 10 mm.

ON 5403: disc brooch, cast in one piece out of copper alloy; it is in poor condition with wear to the edge of the artefact. No decorative details can be observed either by eye or on the x-ray. The artefact has a diameter of 32 mm. The pin arrangement no longer survives: a fragment of the pin is present.

ON 5405: copper alloy strap end. Tongue-shaped strip originally joined to a back plate by two copper alloy rivets. The front is inscribed with three zones of transverse lines above a rectangular panel that is possibly decorated. Mid-Saxon. Length 44 mm; maximum width 12 mm.

ON 5424: copper alloy strap end. Tongue-shaped strip and back plate; the front (captive end) consists of a raised square decorated by an inscribed St Andrew's cross punctuated in the centre by the remains of a rivet. Mid-Saxon. Length 29 mm; maximum width 8 mm.

ON 5453: disc brooch, cast in one piece out of copper alloy and has a central perforation. It is in poor condition with wear to the edge of the artefact. The decoration consists of four ring-and-dot motifs contained within a double circle. The artefact has a diameter of 32 mm. Fragments of both the pin lug and catch are extant.

ON 5466: copper alloy buckle with fragmentary plate. Oval-shaped frame, oval in cross section with a groove for the pin to rest. Style II decoration on the upper surface. Pin wrapped around strap bar; rectangular in section becoming oval; blunt pointed; decorated with longitudinal lines. Two U-shaped strap fittings. Traces of gilding to the frame and pin? Marzinzik type II.19b, of probable continental origin; earlier part of 7th century, possibly late 6th (see Riddler, Chapter 12). Height 24 mm; width 15 mm.

Three pieced (and seven unpierced) Roman coins, none from graves and all but one unstratified, are reported on separately below. (see Henry, Chapter 14).

Chapter 11
Human Bone

by Kirsten Egging Dinwiddy with a contribution by Emma Watts-Plumpkin

Introduction

The remains of 68 inhumation burials and redeposited bone from 100 contexts relating to the predominantly 6th-century Anglo-Saxon cemetery were analysed. The cemetery was focused on a large Early Bronze Age barrow (see Fig. 9.1), but had been extensively disturbed, mainly by badger burrowing and tree roots, and much of the redeposited material derives from contexts affected in this manner. Whilst the extent of the cemetery has not been fully confirmed, it is considered that the excavations have resulted in the retrieval of the remains of a large proportion of the burials.

The remains of 55 burials – excavated 2012−14 by Wessex Archaeology in conjunction with Defence Infrastructure Organisation and Operation Nightingale – and the majority of the redeposited material were analysed by the writer. The remainder, recovered by English Heritage (now Historic England) in 2003−4, were examined by Simon Mays (2006).

Samples from 15 individuals were subject to isotope analysis, and three were radiocarbon dated (see Watts-Plumpkin, below and Marshall *et al.*, Chapter 3 respectively).

Methods

The methods are outlined by Jacqueline McKinley in Chapter 5. With the exception of the prehistoric unburnt material from the backfill of Hawley's excavation trench discussed above, all of the redeposited human bone is presumed to be Anglo-Saxon.

Results

A summary of the results is presented in Table 11.1. Data from the previous analysis by Simon Mays (2006) have been incorporated as far as possible. Differences in data collection precluded the calculation of certain rates – in these instances only the writer's data has been used (indicated by 'WA').

Disturbance and Condition

The graves were cut into the southern half of the Early Bronze Age barrow's berm and ditch, as well as in the area immediately beyond, and survived to depths of between approximately 0.1 m and 0.8 m (Wessex Archaeology 2012−14, hereafter WA). Intercutting between graves was uncommon, the buried remains rarely being disturbed (graves 2681/2715, 2699/2807, 2829/2922, 2847/2908, 2866/2899, 2873/2885, 2902/2915 and 7016/7085) (see Fig. 9.2). The site has a long history of disturbance (see Chapter 1), and 19th-century sources describe rabbit burrowing and note that local villagers were actively digging into the mound. Antiquarian investigations and later military activity also contributed to the damage – the latter affecting graves 2621 and 7032 (see Chapter 9). In recent decades, extensive damage by badgers has resulted in the unearthing of quantities of human bone and occasional grave goods.

Approximately two-thirds of the burial remains had been disturbed by the badger activity (see Fig. 9.2), ranging from slight disarrangement and removal of a few skeletal elements (eg, the skulls of 2623 and 2719) to substantial/complete disinterment (eg, burial 2764). It appears that badgers regularly moved the material outwards from the mound along the runs, though there were also zones of more disorganised mixing (presumably within the sett chambers). A relatively large quantity of displaced material was collected over the years by military and civilian staff and members of the Bulford Conservation Group. Most derives from the south-west quadrant of the barrow where the badgers were most active and graves particularly dense. Large tree roots were responsible for some degree of disturbance; thick mats of fine roots had formed within several of the graves.

Bone preservation varied across the site and within individual skeletons (grades 0–5; mostly 2–4, corresponding to Mays' 'moderate' (2006)), which reflects the variable burial environments caused by the above-mentioned conditions. Some of the redeposited bone is abraded and weathered, suggesting re-working and exposure to the elements. Surface etching and penetration by roots was frequently noted. There are many examples of staining including more typical brown and grey surface patches which may be caused by concentrations of minerals or organic matter within the soil – sometimes associated with fungal and/or root activity. Widespread purplish-pink discolouration of (notably friable) trabecular bone is likely to be related to manganese carbonate or permanganate (Pl. 11.1; Dupras and Schultz 2013), perhaps facilitated by fungal infiltration. Proximity to metallic grave goods

Table 11.1 Summary of results from human bone analysis

Context	Cut	Deposit type	Quantification	Age/sex	Pathology
2101*	–	R	a/b) 2 frag s.u. c) 1 bone u. d) 1 bone a.	a/b) adult male >18 yr. c) adult ??female >18 yr. d) adult	b) *myositis ossificans traumatica* d) op –1L
2118*	–	R	1 frag. l.	adult >18 yr.	
2303*	–	R	5 frags s.a.u.	adult >18 yr. ?female	
2336*	–	R	1 frag. s.	adult >18 yr.	
2600	u/s	R	2 frag. s.a.	adult >35 yr.	*hyperostosis frontalis interna*; endocranial new bone
2602	2657 ditch	R	<2% s.u.	min. 1 adult >30 yr. min. 1 ?female	amtl; apical void
2603	u/s	R	2 frag. s.	adult >18 yr.	
2606	2605	*in situ*	*c.* 55%	adult >50 yr. female	endocranial vessel impressions; sinusitis; osteoporosis; op – left hip, right carpal, right knee, left femur/patella, right ankle; pitting – temporo-mandibulars, left acetabulum, right MtC-P & proximal IP; enth – left proximal ulna, femora; plastic change – left distal femur (?bursitis); ?solitary bone cyst – right 1st MtC
2611	2657	R	3 frag. s.a.	adult >25 yr.	
2612	2660	R	1 frag. s.	subadult/adult >15 yr. female	
2613a–c	a–c) sett	a–c) R	a) 2 frag. s.l. b) 2 frag. l. c) 1 frag. l.	a) adult >25 yr. ??male b) adult >18 yr. ?male c) adult >18yr. ??female	
2614	2657	R	2 frag. u.l.	adult >18yr. ?female	
2615	2617	R	*c.* 2% s.u.l.	juvenile *c.* 10–11 yr.	calculus; enamel hypoplasia
2616	2617	*in situ*	*c.* 70%	adult *c.* 40–50 yr. female	calculus; dental caries; enamel hypoplasia; ddd – C7, 1T, S1; oa – L1–5, 1 left rib; op – C1 af, C5–6, T1–2 ap, T3 tp, 2 right, 1 left ribs, left hip, right proximal femur, femur/patellae; pitting – T5, T7–8, T12 ap, T7 c-v, 3 right ribs; enth – ischial tuberosities, finger phalanges, femora; cortical defect – right costo-clavicular; MV – sacralisation, accessory sacral facet
2618	2657	R	2 bones u.	adult *c.* 18–35 yr. ?female	
2619	2657	R	1 bone 1 frag. s.l.	adult >25 yr.	op left talus
2623	2624	*in situ*	*c.* 45%	adult >45 yr. ?female	calculus; caries; fracture – T ap; oa – 3T, L4–5, right femur/patella; op – 1T tp, L2–3 ap, right distal ulna, left carpal, 2 proximal, 1 distal IP (right finger and unsided), left femur/patella, right lateral knee; enth – finger phalanges; ossified cartilage – rib; plastic change – L4–5 sp
2626	2627	*in situ* a) mis-numbered	*c.* 20% s.a.l. a) *c.* 5% a.	adult *c.* 40–45 yr. female a) adult *c.* 17–25 yr. ??male	oa – L5–S1; op – C1 af, S1 bsm, left sacro-iliac, left acetabulum, right proximal femur, left femur/patella
2628	2629	R	1 frag. s.	adult >25 yr.	?trauma/destructive lesion – left parietal
2631 incl. 2630	2632	*in situ*	*c.* 35% a.u.l.	adult *c.* 18–20 yr. ?male	
2633	2657	R	4 frag. s.a.l.	adult >18 yr. female	*cribra orbitalia*
2634	2660	R	2 frag. s.l.	adult >18 yr. ?male	
2635	u/s	R	10 frag.	adult >25 yr. ?male	*cribra orbitalia*; op – right occipital condyle, C1 af, as, T12 ap; MV – metopic suture
2636a	2657	a–b) R	a) *c.* 20 frag. s.a.l. b) 1 tooth	a) adult >35 yr. ??female b) juvenile/subadult *c.* 12–15 yr.	a) pitting – 1T c-v b) dental caries, enamel hypoplasia
2638[$] (local)	2639	*in situ* a) R	*c.* 88% a) *c.* 5%	adult *c* 30–40 yr. male a) min 1 adult >25 yr. ?female	calculus; dental caries; enamel hypoplasia; pd; hypercementosis; *cribra orbitalia*; atrophy – right leg (?polio); ?fracture – 2nd proximal phalanx (right finger); oa – T10–11, right temporo-mandibular joint; op – C1 af, T1–2, T6 ap; pitting – T8 ap, right glenoid; enth – distal humeri shafts, finger phalanges; plastic change – thickened left fibula; MV – sutural ossicles, multiple infra-orbital foramina, plural mental foramen, dental variation (incisors), dental crowding a) calculus; dental caries
2640	2639	R	1 frag. u.	foetus/neonate	

2641	2642	*in situ* a) R	*c.* 90% a) 2 frag. u.	adult *c.* 40–45 yr. male a) adult >18 yr. female	amtl; apical void; calculus; dental caries; enamel hypoplasia, pd; ivory osteoma; *cribra orbitalia*; ddd – C3–7, T4, T6–8, T10, 1L, S1; Sch – T7, T9–10; rotator cuff degeneration; oa – C2–3, C7, T3–4, T9, S1, left rib, right distal ulna; op – C1–2 af, T6, T10, L3–5 ap, C2, T1–3 bsm, T1, T6, T10 c-v, T1–2, T5–6 tp; 7 right, 4 left ribs, hips, sterno-claviculars, shoulders, left proximal ulna, right distal radius; enth – sternum, scapulae, patellae; cortical defect – right glenoid; plastic change – sterno-claviculars, distal ulnae, proximal tibiae; ossified cartilage – thyroid, rib; MV – sutural ossicles, palatine torus, mylohyoid bridge, dental malocclusion
2647$ (local)	2648	*in situ*	*c.* 85%	juvenile *c.* 12 yr. ?female	apical void; calculus; dental caries; enamel hypoplasia; pd; *cribra orbitalia*; infection – maxilla (dental); pitting – T7–8 ap, T8 c-v; MV – congenital absence mandibular M3, dental variation (incisors, premolar), mylohyoid bridge, non-fusion C1
2649	2660 ditch	R	*c.* 8%	adult *c.* 25–45 yr. female	*cribra orbitalia*; enth – right calcaneum; MV – metopic suture
2650	2660 ditch	a–b) R	a) *c.* 2% b) 1 tooth	a) adult >18 yr. female b) adult >45 yr.	op – 5th proximal IP (finger); pitting – right distal ulna; MV – *os acromiale*
2652$ (local)	2653	*in situ*	*c.* 65%	adult *c.* 30–40 yr. female	amtl; calculus; dental caries; enamel hypoplasia; pd; ddd – L3–5; Sch – L1, L3; rotator cuff degeneration; oa – 2 left ribs; op – T1, l4, S1 ap, left proximal humerus, knees; pitting – right rib, left sacro-iliac, left ankle; enth – left proximal radius; plastic change – left clavicle; hydatid cysts; MV – diastema, dental variation (incisor)
2655$ (local)	2656	*in situ*	*c.* 75%	adult *c.* 20–25 yr. male	calculus; enamel hypoplasia; pd; *cribra orbitalia*; cortical defects – costo-claviculars; distal ulnae; MV – sutural ossicles, palatine torus, nasal guttering, accessory sesamoid (right toe)
2667$ (local)	2668	*in situ*	*c.* 90%	subadult *c.* 16–17 yr. male	calculus; dental caries; enamel hypoplasia; pd; *cribra orbitalia*; Sch – 1T, T8, L2–S1; cortical defect – left talus; plastic change – endocranial, nasal guttering, left ulna shaft, femora, tibiae; MV – asymmetric occipital condyles, sutural ossicles, fused occipito-mastoid sutures, multiple infra-orbital foramina, palatine torus, 4th molar, dental variation (incisors), accessory sacral facets
2670	2671	*in situ*	*c.* 2% s.	infant *c.* 6–9 months	
2672	2674	R	4 frag. s.	adult >35 yr.	pitting – left temporo-mandibular
2673$ (local)	2674	*in situ*	*c.* 70%	juvenile *c.* 6–7 yr.	calculus; enamel hypoplasia; ?infection – endocranial new bone; MV – sutural ossicles, dental variation (incisor)
2677	-	R	1 bone u.	adult >18 yr.	
2678	2681	*in situ* a) R	*c.* 45% a) 1 bone l.	infant *c.* 2 yr. a) adult >18 yr.	enamel hypoplasia; hyperporosity – right scapula; plastic change – right humerus & radius
2685	2686	*in situ*	*c.* 70%	subadult *c.* 15–16 yr. ??male	calculus; dental caries; enamel hypoplasia; pd; *cribra orbitalia*: endocranial vessel impressions; destructive lesion – right femur head; plastic change – distal ulnae, tibiae; MV – multiple infra-orbital foramina, palatine torus, overbite, dental variation (incisors)
2692$ (local)	2699	?coffin/ chamber	*c.* 85%	adult *c.* 18–21 yr. female	apical void; calculus; dental caries; enamel hypoplasia; impaction; op – C1–2 af, C1 as; plastic changes – radii, ulnae; MV – sutural ossicles (tripartite Inca), metopic suture, dental variation (incisors), dental crowding
2698	2701	*in situ*	*c.* 20% s.u.l.	juvenile *c.* 5 yr.	enamel hypoplasia
2712	2711	R	6 frag. s.u.	subadult *c.* 15–16 yr. male	
2713	2715	R	2 frag. a.l.	adult >18 yr. ??female	MV – coalition C2 tp
2714	2715	*in situ*	*c.* 88%	adult *c.* 50–60 yr. female	apical void; amtl; calculus; dental caries; enamel hypoplasia; pd; *hyperostosis frontalis interna*; secondary sinusitis; fracture – left rib, left ulna, ?5th middle phalanx (left finger); ddd – C5–7, L5–S1; Sch – 5Ts; oa – C3–4, T1 ap, 2 right ribs, right trapezium, right 1st carpo-MtC, left MtC-P, distal IP (finger); op – C1 af, sacro-iliacs, 3 right, 4 left ribs, right carpals, right fingers, 2 distal phalanges (left finger), medial knees; pitting – T12 ap, 3 right, 1 left rib, sterno-claviculars, acetabulae, glenoids, 2 left carpals; enth – left olecranon; solitary bone cyst – 2 right, 1 left carpal; MV – sutural ossicles, mandibular torus, dental crowding, diminutive 12th ribs, accessory sacral facets, *os acromiale*
2718	2720	R	3 frag. s.a.	adult >20 yr.	
2719	2720	*in situ*	*c.* 55% a.u.l.	adult *c.* 35–40 yr. male	spondylolysis – L4–5 (L5 hypoplasia); Sch – T8, L1–2; oa – L2, L4–5 ap; op – T12, L3, s1 ap, T3, T8 tp, 5 right, 4 left ribs, right knee; pitting – T3–5, T7–9 ap, T5–7, T10 c-v, 2 right ribs; enth – calcanea; cortical defects – proximal 1st MtTs, 1st proximal phalanx (right toe); MV – Vastus notch
2721	2720	R	1 bone l.	adult >18 yr. ??male	
2721	2720	a–b) R	a) 1 bone u. b) *c.* 20%	a) adult >18 yr. b) adult *c.* 25–35 yr. male	b) calculus; dental caries; enamel hypoplasia; endocranial vessel impressions – frontal; MV – overbite

Table 11.1 Continued

Context	Cut	Deposit type	Quantification	Age/sex	Pathology
2722[$] non-local (various UK)	2723	*in situ* a–b) R	*c* 90% a) 6 frags s.a.u. b) 1 frag. l.	adult *c.* 30–35 yr. female a) adult *c.* 25–40 yr. b) juvenile/subadult *c.* 10–17 yr.	amtl; calculus; dental caries; enamel hypoplasia; pd; ?infection – endocranial new bone, L5–S1 bsm; secondary sinusitis; Sch – T9, L1; oa – T10–12 ap; pitting – T3–9, T12 c-v, left glenoid; cortical defects – proximal humeri; MV – sutural ossicles, metopic suture, dental crowding, *os acromiale*, congenital fusion (5th left toe) a) calculus
2726	2727	*in situ* a) R	*c.* 75% a) 10 frags u.l.	juvenile *c.* 11 yr. ??female a) adult >18 yr.	calculus; dental caries; enamel hypoplasia; MV – dental crowding, sutural ossicles
2728	2727	*in situ*	*c.* 45%	juvenile *c.* 5–6 yr.	dental caries; enamel hypoplasia; ?pnb – left temporo-mandibular
2732	2733	R	*c.* 6 frags s.u.l.	adult >35 yr.	
2768	2769	a–b) R	a) 9 frags s.a.u. b) 2 frags s.	a) adult *c.* 25–40 yr. female b) adult >35 yr. female	a) Sch – T b) *cribra orbitalia*; pitting – right temporo-mandibular
2770	–	R	scraps u.l.	adult >18 yr.	
2773	2774	*in situ*	*c.* 45%	adult *c.* 25–30 yr. female	calculus; enamel hypoplasia; pd; ?fracture – right rib; spondylolysis – L5; Sch – 3Ts; op – C1 af, as, T9 ap; MV – congenital absence M3s
2780	2781	*in situ*	*c.* 80%	adult *c.* 35–40 yr. ?female	calculus; dental caries; enamel hypoplasia; pd; ?fracture – right radius; oa – T12 c-v, right scaphoid; op – T5, T8–9 ap, L2–S1 bsm, T11 c-v, T7 tp, 9 right, 7 left ribs, 2 carpals, distal right radius, right knee, 1 distal IP (right toe); pitting – T3–4, T6 ap, T10 c-v, acetabulae, proximal right radius; enth – ischia, finger phalanges, proximal femora, right patella, calcanea; cortical defects – right proximal 1st MtT; MV – S6, accessory sacral facets
2782	2755	R	3 frags s.u.	adult >25 yr.	calculus
2800	u/s	R	*c.* 15% a.u.l.	juvenile *c.* 8–12 yr.	
2801	u/s	a–b) R	a) *c.*10% s.u.l. b) 1 frag. l.	a) min. 1 adult >25 yr. min. 1 male b) subadult/adult >13 yr.	a) osteomyelitis – right femur; ?fracture – right femur; enth – finger phalanges; cortical defect – proximal right femur; MV – metopic suture
2802	u/s	R	2 frags u.	adult >25 yr. ??male	
2803[$] non-local (Cornwall, Cumbria)	2804	*in situ* a) R	*c.* 65% a) 1 bone l.	adult >45 yr. ?female a) adult >18 yr. ?male	calculus; dental caries; enamel hypoplasia; pd; radius; pnb – left radius; ?fracture – left radius; oa – C3 ap; op – C1 af, L5–S1 ap; pitting – right temporo-mandibular, left acetabulum; enth – proximal phalanges (left finger); plastic changes – sabre tibiae
2806	2807	*in situ* a) R	*c.* 60% a) 3 frags + scraps l.	adult *c.* 25–35 yr. female a) adult >18 yr.	calculus; dental caries; enamel hypoplasia; pd; *cribra orbitalia*; op – C1–2 af; pitting – C3 ap; MV – sutural ossicles, mandibular torus, dental crowding a) ?fracture – left femur
2811	u/s	R	1 bone u.	adult >25 yr.	op – left MtC-P
2812	u/s	R	1 bone u.	adult >25 yr.	op – finger distal IP
2815	2934 ditch	R	a) *c.* 18% a.u.l. b) a few frags s.l. c) 1 bone u.	a) infant *c.* 2–4 yr. b) min. 1 adult >25 yr. min. 1 ??male c) adult >18 yr. ?female	
2819	2818	R	a) teeth, 1 frag. s. b) 2 bones u.	a) adult >30 yr. male b) adult >18 yr. ?female	a) enamel hypoplasia
2820[**$] AD 540–660 non-local (various UK)	2818	*in situ*	*c.* 65%	adult *c.* 40–50 yr. ?female	apical void; *amtl*; calculus; dental caries; enamel hypoplasia; hypercementosis; pd; infection – L5–S1 bsm; ?destructive lesion – endocranial; oa – right hip, right proximal humerus; op – L5–S1 bsm, proximal phalanx (right finger), left MtC-P, left proximal femur, left knee; pitting – left acetabulum, right lunate, right carpo-MtC; enth – ischia; exo – left MtC; MV – mandibular torus, overbite
2821	2847	*in situ*	*c.* 30% a.u.l.	infant/juvenile *c.* 4–5yr.	
2831[**$] AD 645–720 local	2829	*in situ* a) R	*c.* 88% a) 1 bone u.	adult *c.* 40–45 yr. male a) adult >18 yr.	calculus; dental caries; enamel hypoplasia; pd; *cribra orbitalia*; trauma – left parietal, ddd – S1; oa – left rib; op – C1–2 af, as, L4–5 bsm, T5 tp; pitting – T1, T6, T8, T10 ap, right sphenoid, right sterno-clavicular; enth – proximal finger phalanges, patellae, calcanea; plastic changes – T9 sp; radii, ulnae, 1st & 5th MtCs, proximal femora; ossified cartilage – rib; MV – sutural ossicles (coronal), multiple infra-orbital foramina, dental crowding, accessory navicular

2833	2832	a–b) R	a) *c.* 18% b) 2 frag. l.	a) adult >35 yr. male b) adult >18 yr. ?female	amtl; apical void; calculus; dental caries; pd; op – 1L ap; MV – plural mental foramen, dental crowding
2834$ local	2832	*in situ*	*c.* 90%	adult *c.* 40–45 yr. male	apical void; calculus; dental caries; enamel hypoplasia; pd; *cribra orbitalia*; infection – frontal; oa – T9, T12 ap; ddd – T10, L5–S1; Sch – T6, T8, T10–11; op – C1–2 af, as, C2, T4–5, T7–8, T11 ap, C4 bsm, T6, T9–11 tp, 7 right, 3 left ribs, right proximal ulna, left proximal femur; pitting – T5–6, T10, L4–S1 ap, T6, T9–10 c-v, left temporo-mandibular, right sterno-clavicular, right acromio-clavicular, glenoids; enth – left patella; MV – sutural ossicles, metopic suture
2835	2825 ditch	R	1 bone s.	adult >18 yr. ??female	
2838$ local	2836	*in situ*	*c.* 30%	adult >45 yr. female	apical void; amtl; calculus; dental caries; enamel hypoplasia; hypercementosis; pd; *hyperostosis frontalis interna*; op – C2 af; pitting – right temporo-mandibular; MV – sutural ossicles, overbite
2841	2839	*in situ*	*c.* 30%	adult *c.* 40–50 yr. female	calculus; ddd/infection – L4–S1; op – right sacro-iliac, right hip, right sterno-clavicular, right calcaneum; enth – calcanea; plastic changes – right ulna
2844	2842	*in situ*	*c.* 88%	adult *c.* 35–45 yr. male	apical void; calculus; dental caries; pd; *cribra orbitalia*; sinusitis; fracture – nasals, left clavicle, right distal ulna; ddd – C5–6, 3Ts, T12, L2–S1; Sch – T12; oa – T12 c-v; op – C1 af, C4, T6, T11, L3–S1 ap, T1, T7 c-v, T1, T7, T9 tp, glenoids, elbows, wrists, 1st MtC-P, carpo-MtCs, proximal femora, medial knees; pitting – C2 as, C3–5 ap, left temporo-mandibular, 8 right, 8 left ribs, sterno-claviculars, left proximal humerus, right distal ulna; enth – innominates; cortical defect – right petrous temporal, left elbow; calcified cartilage – thyroid, cricoid; plastic changes – nasal guttering; MV – occipital bunning, sutural ossicles, dental crowding, coalition L1 tp, *os acromiale*
2858	buried turf	R	2 frags s.	adult >18 yr.	
2859$ local	2873	*in situ*	*c.* 45%	juvenile *c.* 10 yr.	calculus; enamel hypoplasia; *cribra orbitalia*; MV – dental variation (incisors)
2860	2861	*in situ*	*c.* 90%	adult *c.* 30–35 yr. male	calculus; dental caries; enamel hypoplasia; pd; *cribra orbitalia*; sinusitis; pnb – right fibula; ?infection/trauma – left 5th MtT shaft; op – C1 af, T5 ap; cortical defect – left proximal ulna; MV – occipital bunning, sutural ossicles (sagittal), dental crowding
2868	2866	*in situ*	*c.* 40%	subadult/adult *c.* 17–20 yr. female	dental caries; enamel hypoplasia; infection – L5–S1 bsm; enth – proximal finger phalanx; plastic change – right proximal radius, left humerus shaft; MV – long 1st rib neck
2884	2885	*in situ*	*c.* 70%	juvenile *c.* 10 yr.	calculus; enamel hypoplasia; pnb – right tibia; sharp blade trauma – occipital; MV – metopic suture, dental variation (incisors)
2901	2899	*in situ*	*c.* 35%	adult *c.* 40–50 yr. female	apical void; amtl; calculus; dental caries; enamel hypoplasia; hypercementosis; pd; *cribra orbitalia*; infection – L5 bsm; trauma – 5th distal phalanx (right finger); ddd – L1, L3–4; oa – C1–2 af, C2–3 , L5–S1 ap; op – right distal humerus, left scaphoid, right 1st MtC-P, proximal femora, left knee; pitting – acetabulae, left glenoid; enth – ischia, finger phalanges, proximal left femur; cortical defect – left glenoid; solitary bone cysts – carpals; MV – dental crowding, palatine torus
2903$ non-local (various UK)	2902	*in situ* a) R	*c.* 88% a) 5 frags a.l.	adult >45 yr. male a) infant *c.* 2–4 yr.	apical void; *amtl*; calculus; dental caries; hypercementosis; pd; sinusitis; fracture – left facial, 2 right ribs, right clavicle, left ulna; trauma – left radius, left proximal femur; ddd – T10–11; Sch – T11; oa – C1 af, as, C2–4 ap, T11 c-v, right 12th rib, right hip, right triquetral, left lunate & scaphoid; rotator cuff degeneration; op – left sacro-iliac, left hip, shoulders, left proximal ulna, left wrist, fingers; pitting – 1T ap, right acromio-clavicular; enth – left acetabulum, left humerus shaft; cortical defect – tibiae shafts; calcified cartilage – ribs; MV – occipital bunning
2907	2905	*in situ*	*c.* 40%	adult *c.* 35–45 yr. male	calculus; pd; oa – C3, T10 ap, left proximal humerus; op – C1 as, T11–12 ap, 1st left rib, left distal humerus, distal IP (finger); pitting – C1 as, left acetabulum, proximal left ulna; enth – finger phalanges; plastic change – left upper limb; MV – mandibular torus, double facet C1
2908	none given	*in situ*	*c.* 8% l.	adult >25 yr. ??female	op – left proximal IP (?finger)
2916	2915	*in situ*	*c.* 45%	adult >45 yr. male	calculus; dental caries; enamel hypoplasia; pitting – left temporo-mandibular; enth – left patella; MV – sutural ossicles (coronal)
2924	2922	*in situ*	*c.* 55%	adult *c.* 35–45 yr. ?male	*cribra orbitalia*; fracture – right acetabulum, right 5th MtC; ddd – L5; op – L5 ap, L5–S1 bsm, sacro-iliacs, left acetabulum, fingers, right distal ulna, knees; enth – right innominate, right patella; plastic changes – femora shafts; pnb– lower limbs; MV– sacralising L5, accessory sacral facets, additional facet (left distal thumb)
6000*	2159	*in situ*	20–40%	adult *c.* 25–35 yr. female	calculus; MV – mylohyoid bridge, congenital absence M3
6001*	2165	*in situ*	80%+	adult *c.* 25–35 yr. male	amtl; apical void; calculus; dental caries; fracture – left mandible; *spina bifida occulta* – L5, S2–5; op – 1C, 1T bsm; MV – congenital absence M3
6002*	2190	*in situ*	60–80%	adult *c.* 20–25 yr. male	dental caries; destructive lesions – right acetabulum; plastic change – ?crutch use; MV – small M3, remnant metopic suture, asymmetric L5 arch, Vastus notch

Table 11.1 Continued

Context	Cut	Deposit type	Quantification	Age/sex	Pathology
6003*	none given	*in situ*	60–80%	adult *c.* 30–40 yr. female	calculus; dental caries; sinusitis; infection/?trauma – frontal; *spina bifida occulta* – L5; oa – C1–2, 4T, 1L, S1; enth – patella; MV – Vastus notch
6004*	none given	*in situ*	<20%	infant *c.* 2 yr.	
6005*	2319/2182	*in situ*	60–80%	adult *c.* 35–45 yr. male	amtl; apical void; calculus; dental caries; oa – C1–2, 1T ap, 1 left rib; MV – sutural ossicles
6006*	2373	*in situ*	<20%	adult >18 yr.	oa – 2 left carpals
6007*	2366	*in situ*	20–40%	adult >50 yr. male	amtl; calculus; dental caries; oa – 2C, 1 L ap; op – 3T bsm
6008*	2397	*in situ*	60–80%	subadult *c.* 16 yr. ?female	
6011*	2435	*in situ*	60–80%	adult *c.* 35–45 yr. male	amtl; apical void; calculus; dental caries; oa – C1–2; MV – Vastus notch
6012*	2502	*in situ*	80%+	adult *c.* 35–50 yr. female	amtl; apical void; calculus; dental caries; oa – 2T ap, 3 left & 5 right ribs, left acromio-clavicular, left distal ulna, left carpal; op – 4Cs bsm; ?solitary bone cyst – right proximal 1st phalanx (toe); ossified cartilage – thyroid, rib; MV – sutural ossicles, dental crowding, fused 5th toe phalanges
6013*	2533	*in situ*	<20% a.l.	adult *c.* 30–40 yr. female	
6014*	2572	*in situ*	40–60%	neonate *c.* 34–36 wks	
7001	u/s	R	3 frags s.a.	min. 1 adult >35 yr.	
7003	u/s	a–c) R	a) 2 frags u.l. b) 1 frag. l. c) 3 frags u.	a) subadult/adult >13 yr. ??female b) adult >18 yr. c) infant *c.* 2–4 yr.	
7007	u/s	R	1 frag. l.	adult >18 yr.	
7015	u/s	R	5 frags s.a.	adult >35 yr.	*hyperostosis frontalis interna*; oa – 1T ap; enth – left ilium
7028	7026	*in situ*	*c.* 60%	adult *c.* 35–45 yr. male	calculus; dental caries; enamel hypoplasia; hypercementosis; endocranial capillary impressions; pnb – tibiae, fibulae; Sch – 1T; MV – sutural ossicles (Inca), plural mental foramen
7033	7032	R	*c.* 10%	adult >40 yr. female	amtl; apical void; pd; op – C12 af, 2 left ribs, left MtC-P; pitting – right sterno-clavicular; enth – ilium
7035	7032	*in situ*	*c.* 45% a.u.l.	adult *c.* 40–45 yr. female	osteomyelitis – right medial clavicle; op – L3–4 ap; pitting – T6 c-v;
7038** AD 655–720	7036	*in situ*	*c.* 99%	subadult *c.* 15–16 yr. ?male	calculus; enamel hypoplasia; pd; *cribra orbitalia*; pnb – left distal humerus, distal femora, tibiae, fibulae, calcanea, left 5th MtT; ?cortical defect – C2, 4, 5 ap, pelvis; plastic change – right ribs; MV – sutural ossicles, retained mendosal suture, dental variation (molars), dental crowding, caudal shift, L6 (sacralising), accessory sacral facets, Vastus notch
7040	7016	*in situ*	*c.* 45%	adult >65 yr. female	amtl; apical void; calculus; dental caries; pd; *hyperostosis frontalis interna*; diploe expansion; osteomalacia; osteoporosis; sinusitis; ?fracture – right radius; ddd – L5–S1; oa – C1 af, left temporo-mandibular, right acetabulum; op – right sacroiliac, right glenoid, right proximal radius, right proximal femur, right talus; pitting – right temporo-mandibular; rotator cuff degeneration; enth – right femur shaft; plastic changes – vertebrae, upper limbs; MV – dental crowding, incipient sacralisation
7045	7044	*in situ* a) R	*c.* 15% a) 1 bone l.	adult >18 yr. a) infant *c.* 1–4 yr.	
7059	7058	R	1 frag. u.	adult >18 yr. ?female	
7060	7058	*in situ*	*c.* 75%	adult *c.* 50–60 yr. male	amtl; apical void; calculus; dental caries; enamel hypoplasia; pd; button osteoma – right temporal; DISH – 3T, T12–L5; ddd – C5–6, S1; oa – T2–3 ap; right hip, left 12th rib; op – C1 af, C7 ap, T1, 4–5, 9–10, 12 ap, T8 tp, left hip, 3 right, 2 left ribs, right sterno-clavicular, glenoids, elbows, wrists, right 1–3rd MtC-Ps; pitting – T5 ap, left acromio-clavicular; enth – humeri, radii, olecranons, proximal finger phalanges, left proximal femur; plastic change – ulnae, incisive canal; solitary bone cyst – left scaphoid; MV – sutural ossicle
7064	7062	*in situ* a) R	*c.* 65% a) teeth, 2 frags s.	adult *c.* 40–50 yr. female a) subadult/adult *c.* 15–25 yr.	amtl; calculus; dental caries; enamel hypoplasia; pd; *hyperostosis frontalis interna*; endocranial capillary impressions; fracture – right femoral neck; oa – C4 ap, temporo-mandibulars; op – C2 af, C3, 6–7 ap, right 2nd rib, left acetabulum, finger distal IP; pitting – right acetabulum, left sterno-clavicular; enth – proximal femora; ossified cartilage – thyroid; MV – sutural ossicles, metopic suture, palatine torus a) calculus; dental caries
7081	7079	*in situ* a–b) R	*c.* 80% a) tooth b) rib	subadult/adult *c.* 15–18 yr. ?male a) adult *c.* 20–40 yr. b) infant *c.* 1–3 yr.	calculus; dental caries; enamel hypoplasia; *cribra orbitalia*; fracture – left clavicle; ?plastic change – endocranial frontal; MV – dental crowding a) enamel hypoplasia
7084	7082	*in situ*	*c.* 70%	adult *c.* 30–40 yr. male	calculus; dental caries; enamel hypoplasia; pd; ?dental treatment; op – C2 af, L5 ap; MV – sutural ossicles; premature fusion occipito-mastoid & temporal suture, dental variation (incisors, molar), dental crowding

7087	7085	*in situ*	*c.* 99%	adult *c.* 40–45 yr. female	amtl; apical void; calculus; dental caries; enamel hypoplasia; pd; ddd – C4–6, T6, 12, L1, 4–5; oa – T11 c-v, T9 tp, temporo-mandibulars; op – L4 ap, T4–5, 7–10, 12, L2–3, 5 bsm, 3 right, 6 left ribs, sacroiliacs, acetabulae, glenoids, right radius, left proximal ulna, left finger proximal IP, right knee; pitting – T4–6, 8, 10, 12 c-v, 2 right, 2 left ribs; sacroiliacs, acromio-claviculars, sterno-claviculars, glenoids, left distal ulna; rotator cuff degeneration; enth – proximal finger phalanges; plastic change – ulnae, femora, tibiae; solitary bone cyst – right 1st carpo-MtC; MV – dental variation (incisor), accessory sacral facets
7090	7088	*in situ*	*c.* 28% l.	juvenile *c.* 5–7 yr.	
7101	7100	*in situ* a) R	*c.* 98% a) 8 bones/frags a.u.l.	adult *c.* 35–40 yr. male a) min. 1 adult >25 yr. min. 1 male	calculus; dental caries; enamel hypoplasia; pd; *cribra orbitalia*; op – 2 right ribs, right distal radius, knees; pitting – L3–5 ap; cortical defects – proximal 1st MtT-Ps; plastic change – ulnae, patellae (patellar instability); coalition – sesamoid (right toe); MV – mylohyoid bridge, dental variation (incisor), overbite, dental crowding a) op – right proximal ulna; enth – right 3rd rib
8013*		R	2 frags s.u/l	adult >18 yr.	
8014*		R	1 long bone frag	adult >18 yr.	
8028*		R ?=6011	2 frags, 1 tooth s.	adult >18 yr.	
8032*		R	4 frags a.l.	adult >18 yr.	
8043*		R ?=6008	1 tooth	adult >18 yr.	
BC2003 SF4044*	u/s	R	1 bone u.	adult >18 yr.	
BC2003 SF4047*	u/s	R	1 frag. u.	adult >18 yr.	
BC2003 SF4120*	u/s	R	1 bone a.	adult >18 yr.	
BC2003 SF4133*	u/s	R	1 frag. long bone	adult >18 yr.	
BC2003 SF4227*	u/s	R	2 frags u/l.	adult >18 yr.	
BC2003 SF4228*	u/s	R	1 frag. s.	adult >18 yr.	MV – metopic suture
BC2003 SF4229*	u/s	R	1 frag. s.	adult >18 yr.	
BC2003 SF4234*	u/s	R	2 frags s.	adult >18 yr.	
BC2003 SF4252*	u/s	R	1 frag. l.	adult >18 yr.	
BC2003 SF4253*	u/s	R	1 frag. s.	adult >18 yr.	
BC2003 SF4297*	u/s	R	5 frags s.a.	adult >18 yr.	
BC2003 SF4341*	u/s	R	1 frag. longbone	adult >18 yr.	
BC2003 SF4520*	u/s	R	a few frags s.	adult >18 yr.	
BC2004 SF4612*	u/s	R	1 frag. s.	adult >18 yr.	= BC2004 SF4613
BC2004 SF4613*	u/s	R	1 frag. s.	adult >18 yr.	= BC2004 SF4612
BC2004 SF4622*	u/s	R	1 frag. s.	adult >18 yr.	
BC2004 SF4654*	u/s	R	1 shaft u. = 6008	adult >18 yr. ?female	

Table 11.1 Continued

Context	Cut	Deposit type	Quantification	Age/sex	Pathology
BC2004 SF4655*	u/s	R	1 tooth	adult >18 yr.	dental caries
BC2004 SF4888*	u/s	R	1 frag. s.	adult >18 yr.	amtl
BC 15/2/2001	u/s	a–b) R	a) 2 bones l. b) 1 bone l.	adult >25 yr. male b) adult >18 yr. ?female	
BC 27/02/2002	u/s	R	3 frags s.u.	adult >18 yr.	
BC 04/02/2013	u/s	R	1 frag. s.	adult >25 yr.	
BC 03/06/2016	u/s	a–b) R	a) *c.* 8% s.a.u. b) *c.* 5%	a) min 1 adult >30 yr. min 1 male b) min 1 adult >18 yr. min 1 female	a) apical void; calculus; pd; op – right distal humerus, proximal left ulna; enth – right distal humerus; cortical defect – right 1st distal phalanx (toe)
BC 08/2016	u/s	R	a) *c.* 2% b) 1 bone l.	a) adult *c.* 30–45 yr. ?male b) infant *c.* 1–4 yr.	a) enth – rib, right humerus, left femur; MV – metopic suture
BC2015US	u/s	a–d) R	a) *c.* 10% b) *c.* 6% u.l. c) *c.* 5% s. d) 2 frags s.	a) adult >20 yr. min. 1 ??male b) infant *c.* 2–4 yr. c) adult *c.* 25–45 yr. male d) adult >18 yr.	c) sutural ossicles
BC2016US	u/s	R	1 bone l.	adult >18 yr. ??male	
U/S	u/s	a–b) R	a) 2 frags l. b) 1 frag. l.	a) adult >18 yr. b) juvenile *c.* 5–12 yr.	
unstrat	u/s	a–b) R	a) 2 frags l. b) 2 frags l.	a) adult >18 yr. b) juvenile *c.* 5–12 yr.	
unstrat 2013 A	u/s	a–c) R	a) *c.* 18% u.l b) 1 frag. l. c) 1 frag. l.	a) min. 1 adult >18 yr. min. 1 ??female b/c) min 2 subadult/adult >14 yr. ??female	a) ?fracture – right clavicle b) pnb/exo – left femur
unstrat 85373 A	u/s	a–e) R	a) *c.* 8% a.u.l. b) 2 frags a.l. c) *c.* 7% s.u. d) *c.* 20% u.l. e) 4 frags a.l.	a) adult >30 yr. b) adult >18 yr. ?male c) adult >18 yr. ?female d) infant *c.* 2–4 yr. e) juvenile *c.* 5–7 yr.	a) op – left acetabulum
unstrat 7057–79	u/s	R	1 bone u.	subadult/adult >15 yr.	
unstrat 2015: Brrw Cl	u/s	R	1 bone l.	adult >18 yr. ?female	
unstrat 18/12/12	u/s	R	*c.* 12% u.	adult >18 yr. ?female	

KEY: R – redeposited; s. a. u. l. – skull, axial, upper limb, lower limb (where not all skeletal regions are represented); amtl –*ante mortem* tooth loss ; pd – periodontal disease; C– cervical, T – thoracic, L – lumbar, S – sacral (vertebrae); af – articular facet; as – articular surface; ap – articular process joint; bsm – body surface margins; c-v – costo-vertebral joint; sp – spinous process; tp – transverse process joint; IP – interphalangeal joint; MtC – metacarpal; MtT – metatarsal; pnb – periosteal new bone; ddd – degenerative disc disease; Sch – Schmorl's node; oa – osteoarthritis; op – osteophytes; enth – enthesophytes; exo – exostoses; MV – morphological variation

* – analysed by S Mays
** – radiocarbon dated
$ – isotope analysis undertaken by E Watts-Plumpkin

Plate 11.1 Example of pink staining related to fungal infiltration (tarsals; burial 2641)

sometimes resulted in mineralisation and staining of the bone; examples include blue/green (copper alloy) and red/brown (iron). Badgers were responsible for most of the 26 examples of gnawing and a few scratch-marks, and a small number of bones had been gnawed by rodents; nearly all cases involved redeposited bone.

With over 50% of the skeleton recovered from just over half of the *in situ* burials, skeletal recovery was fairly good; a quarter were over 80% complete. Bone loss was predominantly due to disturbance – badgers being the major factor. Burial conditions were particularly detrimental to the trabecular bone, and bone ends suffered preferentially.

Demography

The assemblage includes the remains of a minimum of 81 individuals (MNI; Fig. 11.1, Table 11.2), 68 found *in situ* and 13 amongst the disarticulated bone. Ages range from foetus/neonate to elderly adult, and sex was estimated for 62 adults and some of the older immature individuals. The redeposited material includes at least one foetus/neonate, two infants, one juvenile, three subadults (a female and two males) and five adults >18 yr.

The proportion of immature individuals (30.8%) is identical to that recorded for the 5th- to 7th-century assemblage from Worthy Park, Hampshire (Wells *et al.* 2003, 159) and fairly typical of Anglo-Saxon cemetery assemblages generally. It is, however, lower than that seen at some other Wiltshire cemeteries, for example Collingbourne Ducis (late 5th–7th century) (40%; Egging Dinwiddy 2016b) and Blacknall Field, Pewsey (late 5th to mid-6th century) (47.5%; Stuckert 2010), which are considered more representative of a living population. The very young are somewhat under-represented at Barrow Clump, with only 8% of immature individuals aged under 6 months old (ie, approximately 2.5% of the excavated cemetery population); at Collingbourne Ducis the rate was closer to 14%, though at Blacknall Field it was only 2.1%. While differences in preservation and low fertility rates may be at least partly responsible, it is thought that differential mortuary treatment was the main causal factor.

Table 11.2 Minimum number of individuals

		Total incl. unsexed (#sexed)
Immature		
Foetus/neonate		1
Neonate *c.* 34–36 wk.		1
Infant *c.* 6–9 mnth.		1
Infant *c.* 2–4 yr.		4
Infant/juvenile *c.* 4–5 yr.		1
Juvenile *c.* 5–7 yr.		5
Juvenile *c.* 10–12 yr.		4 (1?F, 1??F)
Subadult *c.* 15–17* yr.		8 (1F, 1?F, 2M, 3?M, 1??M)
	Subtotal	*25 (4F, 6M)*
Subadult/adult >14 yr.		2 (2??F)
	Subtotal	*2 (2F)*
Adult		
c. 18–21 yr.		2 (1F, 1?M)
c. 20–25 yr.		2 (2M)
c. 25–35 yr.		6 (4F, 2M)
c. 30–40 yr.		8 (3F, 1?F, 4M)
c. 35–45 yr.		13 (4F, 8M, 1?M)
c. 40–50 yr.		5 (4F, 1?F)
c. 50–60 yr.		2 (1F, 1M)
>18 yr.		7 (1?F, 1?M, 1??M)
>25 yr.		1 (??F)
>45 yr.		5 (1F, 2?F, 2M)
>50 yr.		2 (1F, 1M)
>65 yr.		1 (F)
	Subtotal	*54 (26F, 24M)*
Total		81 (32F, 30M)

KEY: F – female; M – male; ? – probable; ?? – possible; *includes 2 possibly up to 20 yr.

The proportions of males and females are more or less equal, with 48.1% of the adults assigned as female and 44.4% male (39.5% vs 37.0% respectively when the immature individuals are included). Similar ratios were recorded for the late 5th- to early 8th-century assemblage from Twyford School, Hampshire (Egging Dinwiddy 2011, 95–100). Preponderances of either sex have been noted elsewhere in the region (females – Collingbourne Ducis and Blacknall Field (Egging Dinwiddy 2016b; Stuckert 2010); males – Alton, Hampshire (Evison 1988, 59–62; 5th to early 7th century)).

Female age-at-death rates were fairly consistent, rising steadily from sub-adult to middle-age; however, instead of tailing off (as may be expected), deaths peaked beyond the age of 45 years (23.1% adult females) and several would have been substantially older. The rates for males show peaks in late adolescence (20% all males vs 6.3% all females), and within the 35–45 year age range (45.8% male adults compared to 19.2% of female adults).

Similar proportions of juveniles and subadults are represented (Table 11.2; 11.1% and 9.9% respectively), but as is often the case, it was not possible to determine the sex of most of the immature individuals using standard methods. Crawford (1991, 19) suggests the 'age of majority' in the Saxon period was around 12 years. Supporting the suggestions of Malim and Hines (1998, 159), and using indicators

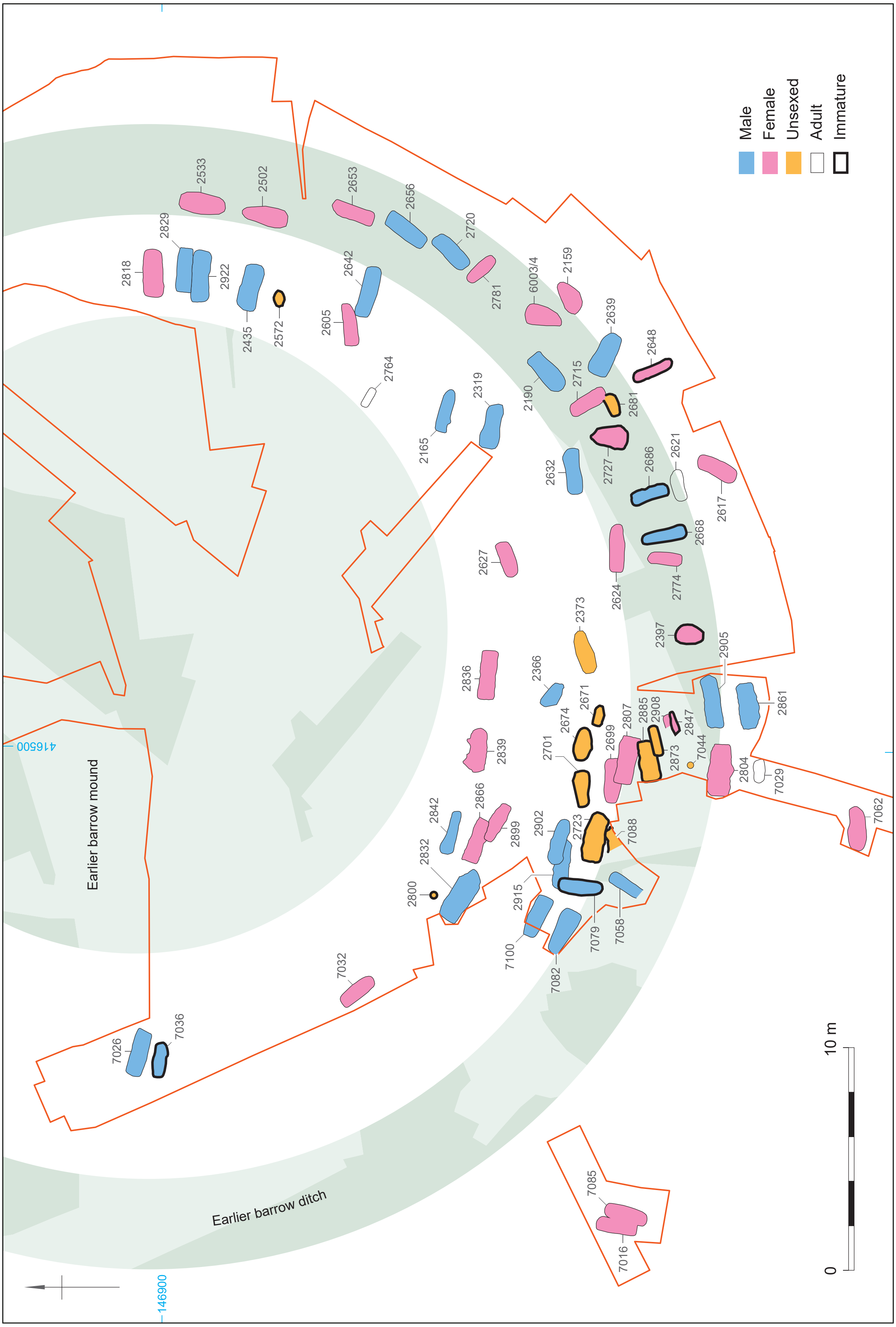


Figure 11.1 Human bone: demographic distribution

of physiological stresses suggestive of taking on adult roles leading to a relatively high rate of teenage deaths (13.9%), Stuckert (2010) remarks that boys were probably closer to 15 years of age before they reached this life-stage.

The age-at-death patterns for two nearby populations differ from that seen at Barrow Clump and each other. A greater proportion of the Collingbourne Ducis females died in early adulthood and fewer survived into old age, whilst the reverse was true of the males (Egging Dinwiddy 2016b). At Blacknall Field, male deaths peaked in the 20–29 and 40–49 year ranges, and female deaths rose steeply from late adolescence – peaking in at 30–39 years then falling sharply to continue at a low level well into old age (Stuckert 2010). Factors such as differential treatment in burial (perhaps influenced by temporal, social and economic determinants) and the proportion of the original cemetery population available for study can, however, skew the demographic data.

Skeletal Indices and Non-metric Variation

Skeletal indices reflect bone morphology, size and/or robusticity, allowing comparisons to be made between individuals within a population and between different populations. Recording the presence or absence of a particular suite of non-metric morphological variations is similarly useful in this respect. Though not always clearly understood, skeletal variation may be related to genetics, nutrition and disease, trauma and biomechanics (Berry and Berry 1967; Tyrrell 2000; Stirland 2005, 121); comparisons may, therefore, enable inferences to be made regarding group homogeneity, health and nutrition, as well as individual lifeways. A summary of the main skeletal indices is presented in Table 11.3 and regularly recorded non-metric traits in Table 11.4. A selection of non-metric traits and other morphological observations are listed in Table 11.1 and some are plotted in Figures 11.2−11.4; details are in the archive.

Skeletal indices

Stature was estimated for 26 adults (48%), the average for both sexes matching those calculated for Collingbourne Ducis (Egging Dinwiddy 2016b). Roberts and Cox (2003, 220) record a corresponding average for their sample of Early Medieval (encompassing Saxon) females; the Blacknall Field females were marginally taller (average 1.62 m; Stuckert 2010), though at 1.86 m one woman from that sample would have been exceptionally tall. The male average was slightly greater than those calculated for the Blacknall Field, Twyford School and Worthy Park males (1.73 m; *ibid*; Egging Dinwiddy 2011; Wells *et al.* 2003, 159), and the period average (1.72 m; Roberts and Cox 2003, 220).

The cranial index was calculated for 22 individuals, the average for both sexes falling within the dolichocranic (long-headed) category, following a broad trend for the period (Brodie 1994). While the male and female crania include particularly long examples, some male crania are brachycranic (broad/ round-headed), and no female skulls broader than mesocranic (average/medium). The crania from Collingbourne Ducis and Blacknall Field are also generally dolichocranic.

The platymeric index – reflecting the degree to which the most proximal part of the femoral shaft is flattened antero-posteriorly – was calculated for 50 individuals. The indices range widely from hyperplaytmeric (very flattened) to eurymeric (moderate). The average for both sexes fall within the platymeric (flattened) range. Where both femora are measurable, those from males tend to be more disparate, though no overall side preference was detected. In the females, the right femur is repeatedly flatter than the left, a pattern similarly observed at Collingbourne Ducis (Egging Dinwiddy 2016b). Comparable average scores were calculated for assemblages from Aldbourne, Hampshire (7th–early 8th century), Blacknall Field and Twyford School (Boylston 2012; Stuckert 2010; Egging Dinwiddy 2011).

It was possible to calculate the platycnemic index (reflecting the degree to which the most proximal part of the tibial shaft is flattened antero-posteriorly) for 49 individuals. The male range is slightly greater than that of the females (platycnemic–eurycnemic vs mesocnemic–eurycnemic), though the tibiae from both fall within the 'broad/wide' eurycnemic range. Where both tibiae were measured, differences between the sides are more common and extreme in the males, though this may be a relic of the smaller number of paired female tibiae. There is no strong preference as to which side is most/least flattened. The male and female tibiae from Collingbourne Ducis and Twyford School, and those of the females from Blacknall Field, are also eurycnemic (on average). The male tibiae from the latter site are slightly broader (mesocnemic), a trend also hinted at in the Twyford assemblage. As with Collingbourne Ducis, the purported link between platycnemia and the presence of squatting facets (Brothwell 1972, 91) is not upheld – none of the tibiae featuring squatting facets are platycnemic.

The robusticity index reflects the relative size of the femoral shaft; the higher the index, the more robust the bone. The averages demonstrate that the male femora were generally more robust than the female femora, though there is a substantial overlap. Where paired, female femora are most disparate, but with no side preference. The ranges for both sexes are particularly wide compared to Collingbourne Ducis, with notably gracile and robust examples; the average index is also slightly greater for both males and females.

Table 11.3 Summary of the major skeletal indices

	Female			Male		
	No. individuals	Range (m)	Mean (m)	No. individuals	Range (m)	Mean (m)
Stature	10	1.51–1.73	1.61 (SD 0.07)	16	1.64–1.84	1.74 (SD 0.06)
Cranial index	6	68.06–76.09	73.55 (SD 2.96)	16	66.84–81.38	74.19 (SD 3.83)
Platymeric index	25	66.85–93.65	80.02 (SD 5.45)	25	69.86–99.71	83.02 (SD 7.13)
Platycnemic index	23	63.35–83.13	73.65 (SD 4.75)	26	58.24–83.39	70.19 (SD 5.85)
Robusticity index	7	104.92–138.27	122.90 (SD 9.97)	14	110.42–142.44	128.36 (SD 8.81)

KEY: SD – standard deviation

Table 11.4 Summary of non-metric traits (totals including unsexed)

	Presence		Absence	
Trait	**Left**	**Right**	**Left**	**Right**
Cranial				
Supra-orbital notch	25 (9F, 15M)	26 (6F, 19M)	5 (2F, 3M)	7 (5F, 2M)
Supra-orbital foramen	5 (2F, 3M)	6 (3F, 3M)	33 (11F, 20M)	31 (8F, 22M)
Infra-orbital sutures	1 (M)	2 (1F, 1M)	11 (3F, 8M)	10 (2F, 8M)
Multiple infra-orbital foramina	3 (3M)	1 (M)	3 (2F, 1M)	7 (2F, 5M)
Zygomatic foramina	24 (11F, 13M)	29 (11F, 15M)	4 (4M)	2 (1F, 1M)
Metopic suture	9 (4F, 3M)		39 (14F, 18M)	
Palatine torus	6 (2F, 4M)		14 (7F, 7M)	
Plural mental foramen	3 (3M)	2 (2M)	27 (12F, 13M)	33 (14F, 17M)
Mandibular torus	4 (3F, 1M)	–	34 (16F, 17M)	38 (20F, 17M)
Mylohyoid bridge	2 (2F)	3 (1F, 2M)	22 (10F, 11M)	28 (14F, 13M)
Parietal foramen	–	11 (6F, 5M)	21 (9F, 10M)	24 (9F, 13M)
Auditory exostosis (torus)	–	–	33 (12F, 18M)	36 (16F, 15M)
Ossicles – bregma	–		38 (12F, 21M)	
Ossicles – lambda	7 (3F, 4M)		30 (10F, 15M)	
Ossicles – lambdoid	18 (7F, 10M)	20 (7F, 12M)	15 (5F, 9M)	13 (6F, 6M)
Ossicles – coronal	2 (2M)	2 (2M)	35 (10F, 21M)	33 (10F, 20M)
Ossicles – epipteric	1 (F)	5 (3F, 2M)	11 (2F, 9M)	9 (1F, 8M)
Ossicles – parietal notch	2 (2F)	5 (2F, 3M)	25 (9F, 16M)	24 (10F, 14M)
Ossicles – asterion	6 (6M)	9 (2F, 7M)	22 (11F, 11M)	21 (9F, 12M)
Posterior condylar canal	7 (2F, 5M)	6 (3F, 3M)	2 (1F, 1M)	7 (3F, 4M)
Hypoglossal canal divided	4 (1F, 3M)	4 (2F, 2M)	15 (7F, 7M)	20 (9F, 10M)
Double condyle facets	–	–	8 (3F, 5M)	13 (4F, 9M)
Pre-condylar tubercle	1 (M)		17 (4F, 13M)	
Axial Skeleton				
Atlas bridging – posterior	–	–	13 (8F, 5M)	19 (10F, 9M)
Atlas bridging – lateral	–	–	12 (8F, 4M)	18 (9F, 8M)
Accessory transverse foramen	3 (1F, 2M)	3 (1F, 2M)	8 (4F, 4M)	8 (4F, 4M)
Acetabular crease	5 (2F, 3M)	5 (2F, 3M)	24 (14F, 10M)	19 (12F, 7M)
Accessory sacral facets	5 (4F, 1M)	9 (5F, 3M)	6 (3F, 2M)	4 (3F, 1M)
Upper Limb				
Acromion articular facet	–	–	5 (3F, 2M)	6 (4F, 2M)
Suprascapular foramen	1 (M)	–	20 (11F, 9M)	16 (8F, 8M)
Circumflex sulcus	6 (1F, 5M)	4 (1F, 3M)	18 (10F, 8M)	20 (10F, 10M)
Supra-condyloid process	1 (F)	1 (F)	42 (16F, 21M)	48 (20F, 23M)
Septal aperture	3 (1F, 2M)	6 (3F, 2M)	20 (4F, 14M)	19 (4F, 14M)
Lower Limb				
Allen's fossa	3 (1F, 2M)	3 (2F, 1M)	13 (6F, 7M)	8 (6F, 2M)
Poirier's facet	3 (1F, 2M)	1 (M)	13 (6F, 7M)	13 (8F, 5M)
Plaque	7 (3F, 4M)	5 (4F, 1M)	10 (5F, 5M)	8 (4F, 4M)
Hypotrochanteric fossa	27 (10F, 13M)	26 (8F, 15M)	25 (13F, 8M)	23 (14F, 6M)
Exostoses in trochanteric fossa	8 (4F, 4M)	9 (7F, 2M)	7 (3F, 4M)	11 (3F, 8M)
Third trochanter	3 (3M)	1 (M)	34 (16F, 15M)	34 (16F, 16M)
Squatting facets – medial	–	10 (6F, 4M)	12 (6F, 6M)	14 (10F, 4M)
Squatting facets – lateral	7 (2F, 5M)	–	4 (2F, 2M)	3 (3F)
Vastus notch	3 (3M)	3 (3M)	11 (5F, 6M)	10 (5F, 5M)
Os trigonum	1 (M)	1 (M)	12 (6F, 5M)	9 (7F, 2M)
Medial talar facet	6 (2F, 3M)	5 (4F, 1M)	12 (5F, 6M)	8 (4F, 4M)
Lateral talar extension	–	–	18 (7F, 9M)	14 (8F, 6M)
Inferior talar articular surface	13 (4F, 7M)	11 (6F, 5M)	5 (4F, 1M)	4 (3F, 1M)
Anterior calcaneal facet double	8 (3F, 5M)	9 (3F, 6M)	8 (6F, 2M)	13 (10F, 3M)
Anterior calcaneal facet absent	1 (F)	1 (F)	15 (8F, 7M)	19 (12F, 7M)
Peroneal tubercle	3 (2F, 1M)	3 (2F, 1M)	–	3 (2F, 1M)

KEY: F – female; M – male

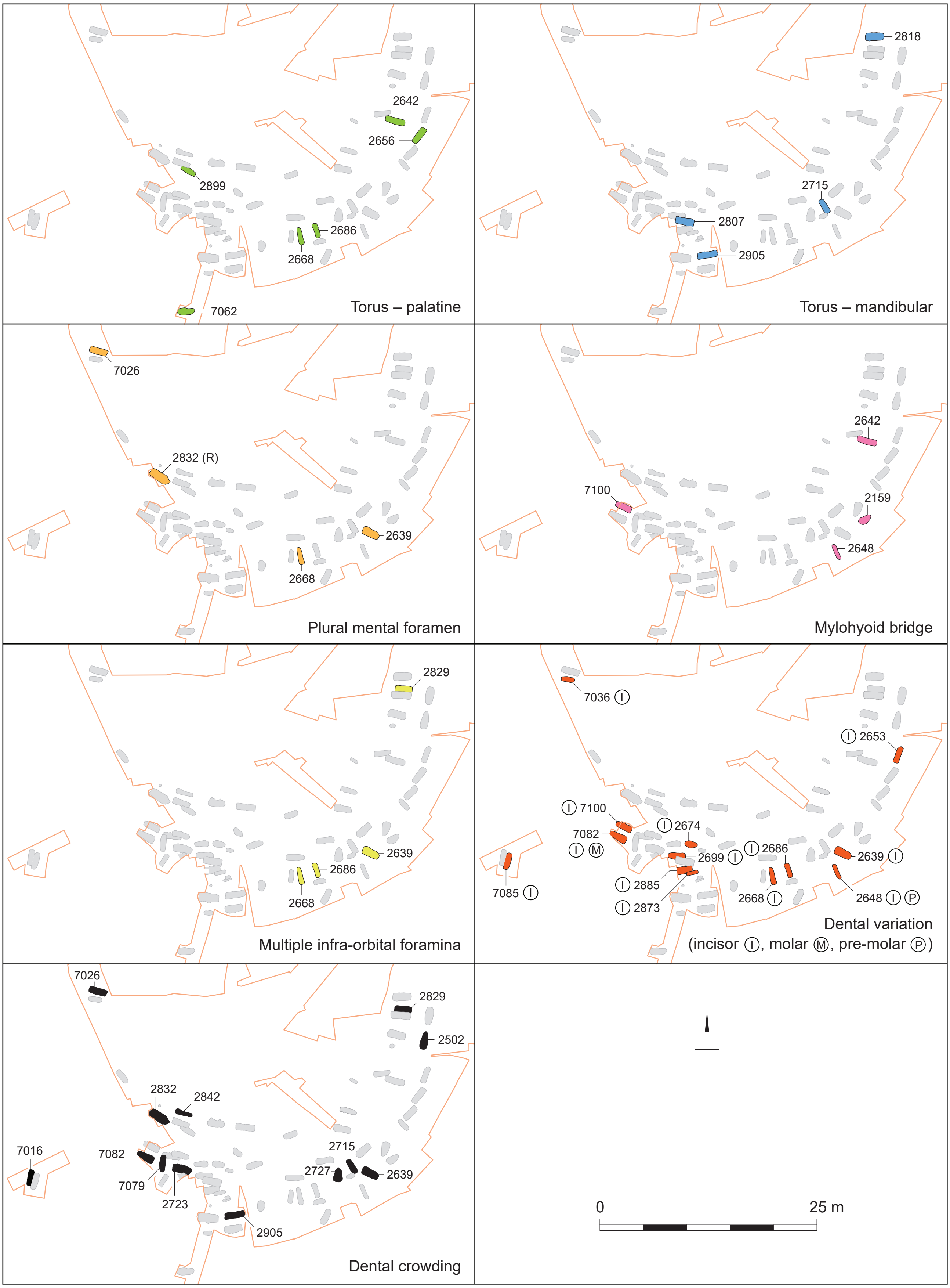


Figure 11.2 Distribution of cranial non-metric traits I

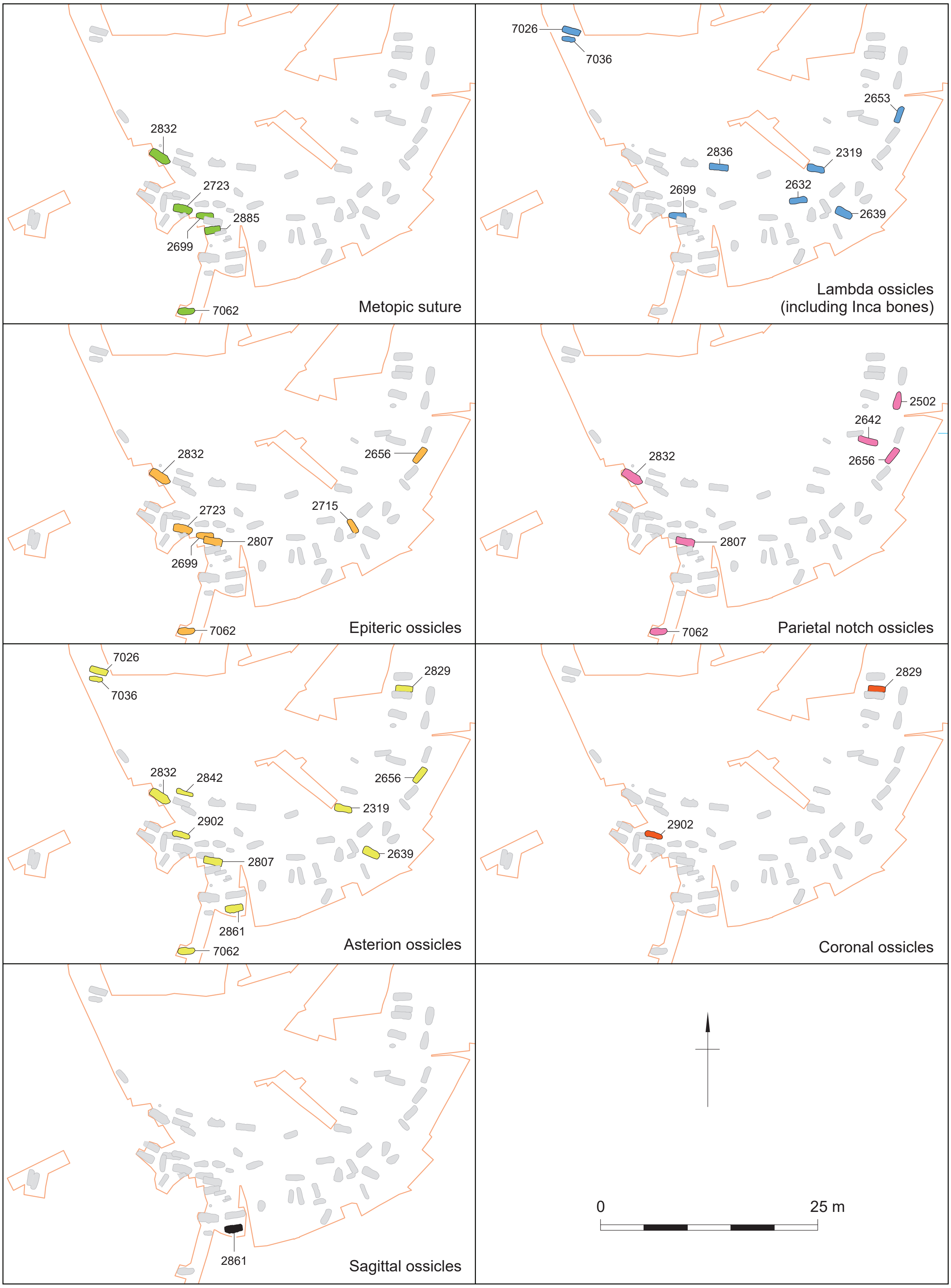


Figure 11.3 Distribution of cranial non-metric traits II

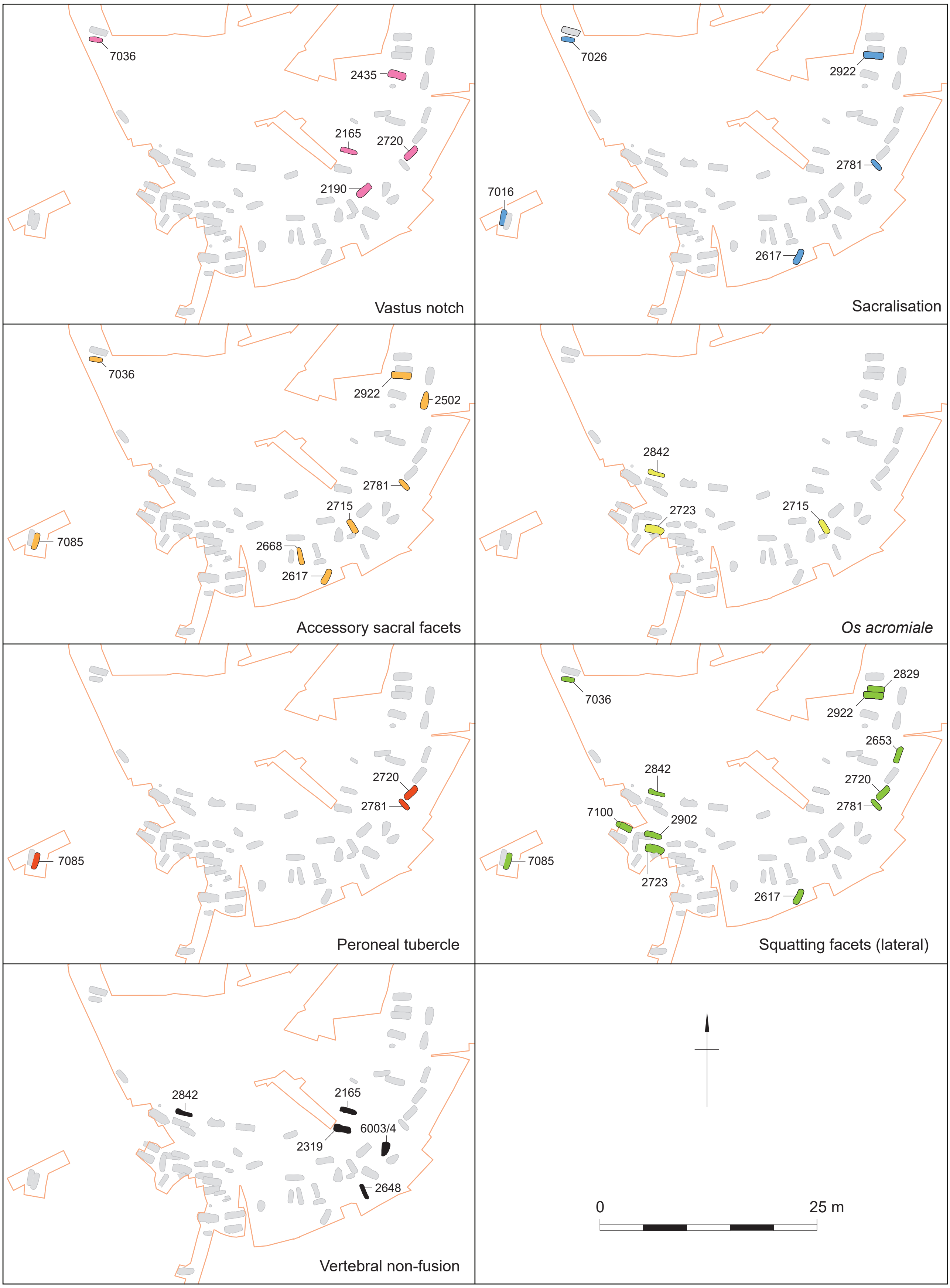


Figure 11.4 Distribution of post-cranial non-metric traits

Plate 11.2 Subadult male (burial 2667): fourth molar in the right mandible. Viewed from the lingual aspect

Non-metric variation

Dental variations are amongst the most heritable morphological variations, though some, like the congenital absence of third molars, are quite common (eight individuals here). There are a few examples of variant incisors whilst non-repeated traits include retained deciduous canines, a variant premolar, a molar pearl and various accessory cusps. Of the 13 examples of dental variation (Fig. 11.2) only two lay outside the southern segment of the cemetery and there is a notable absence to the east. Most variations affected incisors – usually in the form of shovelling or accessory tubercles. Only four examples of shovelling were seen in the much larger Collingbourne Ducis assemblage (Egging Dinwiddy 2016b, table 3.1). A pronounced diastema (gap) between the first incisors was recorded in the maxilla of an adult female (burial 2652) – perhaps associated with the presence of diminutive pegged second incisors. A particularly remarkable example of an unerupted, fully formed fourth molar (or distomolar) was present in the mandible of subadult male 2667 (Pl. 11.2). Clinically most fourth molars fail to erupt and are usually discovered radiographically. The prevalence of supernumerary teeth in general ranges between 1.2 to 3% in modern populations and occur more frequently in males. The mandibular location of this example makes it particularly uncommon (Karikal and Karikal 2014). Dental crowding is fairly common (17 dentitions), with between one and seven (average three) teeth affected per dentition. Though crowding was seen in material from across the site, there is a distinct concentration to the south.

Bony oral outgrowths (tori) are present in 25% of observable palates and 5.5% of mandibles, the former manifest in two pairs of adjacent graves (Fig. 11.2). Though rates vary greatly between populations, palatine tori are typically less frequent than those of the mandible. A link between repeated pressure, whether localised or associated with bruxism for example, has been reported clinically (Neville 2002, 21), and a study by Auškalnis *et al.* (2015) has established a genetic link to a predisposition for palatine tori.

Small bones (ossicles) can form in the various sutures of the cranial vault as a result of various conditions and/or a genetic predisposition. Some locations are more prone to their formation and prevalence varies between populations. Such features were observed in some less frequently recorded locations, for example the asterion and coronal sutures (27.3% and 6.3%), and in the sagittal suture of adult male 2860 (grave 2861; also at Blacknall Field (Stuckert 2010)); clusters or sole examples of these traits have been identified in the remains of several individuals buried in the south-western quadrant of the barrow. Eight individuals from across the site had ossicles at the lambda (29.6%), of which two (graves 2699 and 7026) can be classed as Inca bones, a rare trait in Europeans (1.2%), rarer still when tripartite in expression (grave 2699; Pl. 11.3) (Gardner 2016a).

Just under 21% of observable crania feature a retained metopic suture, more than twice the 9% rate typical for European Caucasians (Gardner 2016b; Bergman 1988, 282–88), and much higher than the 0–7% incidence reported by Berry and Berry (1967). All but one of the Barrow Clump examples derive from the south-west area of the cemetery (Fig. 11.3).

Six individuals share similar distinctive facial characteristics, namely particularly large orbits and broad, generously-sized nasal apertures. Four were buried in graves within the south-west quadrant of the barrow (graves 2842, 7062, 7082, and 7085) and two were located in the north-west (grave 7036), and southern parts (grave 2668).

Vertebral anomalies (Fig. 11.4) include a caudal shift with sacralisation of a sixth lumbar vertebra, and sacralisation of the fifth lumbar vertebra in a further three individuals; one sacrum (grave 2781) comprises six segments rather than the usual five. These five individuals were dispersed around the periphery of the cemetery. Vertebral fusion-failure was observed in five individuals, two involving the transverse processes and three the posterior neural arch. The latter is sometimes referred to as *spina bifida occulta* (Aufderheide and Rodríguez-Martín 1998, 61). Such anomalies are thought to have a strong genetic link, though there is some confusion within the published literature over terminology and other conditions that produce similar results (Mays 2006, referring to Barnes 1994, 49, 119). At Barrow Clump, four of the five with these non-fusion anomalies were buried in the south-eastern segment of the barrow.

Accessory sacral facets can be present at birth though they have also been linked to activity and spinal degeneration (Ehara *et al.* 1988). Such traits are fairly common in the assemblage, affecting eight individuals and equating to 52.2% of all sacra where

Plate 11.3 Young adult female (burial 2692): tripartite Inca bone on the posterior skull

the absence or presence of the trait was observable (Fig. 11.4). Most were seen in individuals buried in the east and south-east part of the cemetery, whereas there is a general lack in the south-western segment. Half of the cases were associated with sacralisation of the last lumbar vertebra.

Os acromiale – non-fusion of the epiphysis at the tip of the scapula's acromion process – has been confidently linked to activity involving regular pulling of the epiphysis, preventing the normal completion of fusion around the age of 20 years (Stirland 2005, 121; Scheuer and Black 2000, 268; Roberts and Cox 2003, 152), though there may still be a degree of predisposition to the condition (Hunt and Bullen 2007). Four individuals have the trait in the right scapula (in three cases the left side was not observable). Three were female, of which one example was found amongst the disarticulated assemblage from the eastern side of the site. Two individuals were buried in the southern group, and another was found in the south-eastern part of the cemetery (Fig. 11.4); all three also share other traits.

Four individuals buried in the eastern half of the cemetery, plus one other, had a Vastus notch, an anomaly of the patella.

The available skeletal indices and non-metric variation reveal an overarching homogeneity, as may be expected with a largely local and/or broadly related group. Isotopic analysis has, however, revealed that at least some of the cemetery population derived from outside of the locality, three in the south-west (graves 2723, 2804 and 2902) and one in the north-eastern area of the cemetery (grave 2818); the latter two were amongst the earliest in the cemetery sequence (Table 11.11; see Watts-Plumpkin below). The distribution patterns of some morphological traits indicate two probable family groups, their graves clustered in the south-western and eastern parts of the cemetery respectively. The sharing of multiple variations convincingly demonstrates a close familial relationship between the two subadults from adjacent graves 2668 and 2686, and the young female found in grave 2699 with those buried nearby in graves 2807 and 7062. The adult male from grave 2639 shared traits with, and was therefore probably related to, the two subadults and the group including the female from grave 2699. Other examples of various combinations of shared traits across the cemetery are suggestive of a certain degree of genetic mixing (eg, intermarriage) over time.

Table 11.5 Summary of permanent dentitions

	Teeth			Tooth positions		
	Maxillary	**Mandibular**	**All**	**Maxillary**	**Mandibular**	**All**
Female	204	252	456	170	287	457
Male	270	296	566	275	360	635
All incl. unsexed	499	569	1068	448	665	1113

Table 11.6 Summary of lesions in permanent dentition

	Calculus (WA)	Caries	Enamel hypoplasia (WA)	Ante mortem tooth loss	Apical voids	Periodontal disease (WA)
Female	T 298	T 92	T 123	T 58	T 23	T 111
	(124 max. 174 mand.)	(44 max. 48 mand.)	(54 max. 69 mand.)	(30 max. 28 mand.)	(9 max. 14 mand.)	(41 max. 70 mand.)
	65.4%	20.2%	27.0%	12.7%	5.0%	24.3%
Male	T 367	T 86	T 187	T 43	T 31	T 119
	(162 max. 205 mand.)	(48 max. 38 mand.)	(96 max. 91 mand.)	(21 max. 22 mand.)	(18 max. 13 mand.)	(51 max. 68 mand.)
	64.8%	15.2%	33.0%	6.8%	4.9%	18.7%
Total	T 678	T 180	T 340	T 101	T 54	T 229
incl.	(293 max. 385 mand.)	(93 max. 87 mand.)	(166 max. 174 mand.)	(51 max. 50 mand.)	(27 max. 27 mand.)	(92 max. 138 mand.)
unsexed	63.5%	16.9%	31.8%	9.1%	4.9%	20.6%

KEY: WA – Wessex Archaeology data only; T – total; max. – maxillary; mand. – mandibular

Pathology

Lesions associated with pathological conditions or injuries were noted in the remains of the majority of individuals, as summarised in Table 11.1.

Dental disease

Sixty-eight partial or complete permanent dentitions from 31 females, 27 males and 10 unsexed individuals, were recorded, along with a further three exclusively deciduous dentitions. A summary of tooth and socket counts is presented in Table 11.5, and the rates of dental lesions can be found in Table 11.6.

Calculus deposits (calcified plaque/tartar; Pl. 11.4) were observed in 51 (75%) of the dentitions (22 female, 23 male); both permanent and deciduous teeth are affected in two mixed dentitions. The majority of deposits formed slight to moderate 'tidemarks' around the gum-line; more severe examples were seen in the remains of subadult male 7038 and two adult females (burials 2722 and 2901). The number of affected teeth within a single dentition ranges from one to all 32 (WA), averaging just over 13 teeth per individual. The maxillary right M3 is most frequently affected (80%), though mandibular teeth are much more likely to have adhering deposits. Calculus is present on 12 deciduous teeth (mixed dentitions). There is little difference in the rate, severity and pattern of dental calculus between the sexes, and age appears to have little consistent bearing. The True Prevalence Rate (TPR; percentage of all observable) is somewhat greater than the period average of 39.2% (Roberts and Cox, 2003, 193–4), though it is closer to that calculated for the Twyford School and Collingbourne Ducis assemblages (70.1% and 72.7% respectively; Egging Dinwiddy 2011; 2016b). The nature of dental calculus, however, predisposes it to damage and loss, and there is a degree of variation in the way the condition has been recorded in the past. Rates are therefore considered a minimum expression of the condition, and comparisons between assemblages can be potentially misleading.

Periodontal disease (gingivitis) is caused by trapped plaque and bacteria leading to inflammation and bleeding of the gums; bone resorption and tooth loss can ensue in severe cases. Changes consistent with the condition (Ogden 2008) were seen in 33 dentitions (WA) – 16 female and 17 male. Expression ranges from slight to severe in up to 24 sockets (average seven). The female rate is slightly higher, reflecting a greater number of sockets affected per individual. Advancing age and dental calculus are major factors in the extent and severity. The condition is present in most adult dentitions from Collingbourne Ducis, and just over half of those from Aldbourne and Twyford (Egging Dinwiddy 2011; 2016b; Boylston 2012).

Dental caries (destruction of the tooth by acids, produced by oral bacteria present in dental plaque) were recorded in up to 11 teeth in 47 dentitions (20 female, 22 male). Lesions are present in similar proportions of mandibular and maxillary teeth, with prevalence highest in molars (26–50%) and lowest in mandibular incisors (around 3%). Caries were also seen in two deciduous molars. Many lesions commenced at the cemento-enamel junction, most frequently on the interdental surfaces (27 dentitions) though there are also many cases of 'pinhole' cavities in the occlusal fissures of molars (24 dentitions). As is often the case (Hillson 1986, 287), rates are higher in female dentitions compared with the males, probably related to the changes in oral chemistry during pregnancy which are considered to be detrimental to oral health. The overall rates are particularly high compared to the 3.3% and 4% recorded at Worthy Park and Blacknall

Field respectively (Wells *et al.* 2003; Stuckert 2010), and the period average calculated by Roberts and Cox is similarly low (4.2%; 2003, 190–1). Even the 10.2% rate demonstrated in the Collingbourne Ducis assemblage falls short (Egging Dinwiddy 2016b).

Most apical voids are related to chronic inflammation and death of the tooth pulp where it has been exposed to micro-organisms, for example as a result of trauma, caries or heavy wear. Small sacs of granulation material form at the apex of the root – a granuloma – resulting in a permanent smooth-walled void. Granuloma sometimes become cystic, creating larger voids, though other cysts can produce similar lesions (Soames and Southam 2005, 65–84). Infection may ensue, resulting in a dental abscess from which draining pus can cause surrounding tissues to become inflamed/infected, such as sinusitis (Katzenberg and Saunders 2008, 322–3; Ogden 2008; Dias and Tayles 1997). All forms of apical void are combined to calculate the rates presented in Table 11.6, in order to allow inter-site comparisons. Lesions were seen in between one and six sockets of 21 individuals (11 female, 10 male). The maxillary left premolar position is most frequently affected, followed by those to either side. Incisors are least affected. A total of 29 lesions had been caused by a dental abscess (Pl. 11.4), affecting up to five sockets in a single dentition. Abscesses were recorded in seven males and eight females, the former having no less than two each. Secondary infection was noted in two females and one male (sinusitis), and on the buccal surface of the maxilla of a further female. The rest of the voids are likely to have been the result of granulomata, of which at least eight examples would have been cystic (two males, three females). The prevalence of apical voids at Barrow Clump is a little greater than Roberts and Cox's period average (2.8%; 2003, table 4.15), which is equalled in the Collingbourne Ducis material. The rate for Worthy Park is lower still at 1.7%, while that calculated for the Blacknall Field collection is more comparable (4%).

Ante mortem tooth loss was recorded in 21 dentitions (12 female, nine male), affecting between one and 16 tooth positions – an average of around five per individual (Pl. 11.4). Molars, particularly mandibular, are most commonly affected; very few incisor and canine sockets are involved. The higher rate of loss in females is likely to be related to the greater prevalence of caries, as discussed above. In most cases sockets had fully healed and had remodelled to a thin crest, or, less frequently, a flattened platform, and a substantial loss of alveolar height is common. There is a strong link between advancing age and the number of teeth lost per individual. The overall rate is slightly greater than the average calculated for the period by Roberts and Cox (8%; 2003, 191), both figures are high compared to Collingbourne Ducis (4.2%), Blacknall Field (4%) and Worthy Park (6.3%) (Egging Dinwiddy 2016b; Stuckert 2010; Wells *et al.* 2003).

Plate 11.4 Older male (burial 7060): antero-left aspect of the maxilla and mandible demonstrating calculus build-up, a dental abscess, ante mortem *tooth loss and extreme attrition*

Dental attrition is fairly characteristic of the period. Extreme wear (some cupped) was noted in nine dentitions (Pl. 11.4). Chipping of the tooth edges is common, with mainly minor examples evident in 24 dentitions. General buffing and rounding of the tooth cusps was seen in 11 dentitions, and more faceted polishing was seen in 12 – six of which are associated with an overbite, and/or malocclusion. Other dental damage/modifications include four individuals with notched incisors/canines, and two with vertically split incisors. One tooth is so worn compared to the rest of the dentition that non-masticatory use of the jaws is likely; another example was probably the result of trauma. Interdental grooves seen in three dentitions are probably the result of repeated thread-drawing or probing with a pointed tool.

The right second maxillary incisor of an older male (burial 7084) has a large carious lesion in the root, which coincides with the *ante mortem* loss of a sizeable sliver of the lingual aspect (the sequence is not clear). Wide U-shaped grooves are evident on the interdental aspects of the cemento-enamel junction which, in this case, may be related to the injury/carious lesion. Together with a regular, smooth-walled cylindrical channel that extends vertically from the centre of the occlusal surface, these modifications may denote deliberate dental treatment, though habitual probing or 'worrying' at a painful, injured tooth could produce a similar outcome (Pl. 11.5). Dental treatment would usually have been non-invasive in the Anglo-Saxon period, for example charms and herbal remedies, though Anderson (2004) found evidence for a possible molar extraction in a similarly dated assemblage from Deal, Kent. He also notes that two Anglo-Saxon possible 'dentists' or 'tooth-drawers'

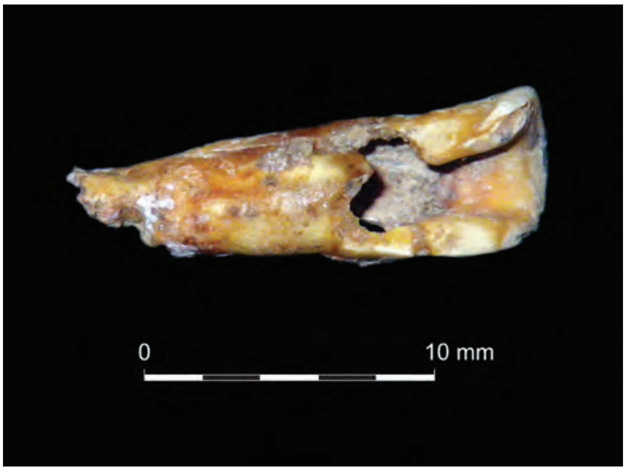


Plate 11.5 Adult male (burial 7084): distal aspect of the maxillary right second incisor showing possible dental treatment or 'worrying'

Plate 11.6 Juvenile (burial 2884): multiple linear enamel hypoplasia defects on the mandibular dentition. Antero-left view

were found buried with pouches of human teeth in Dunstable, Bedfordshire.

The Saxons are not renowned for paying much attention to oral hygiene (Roberts and Cox 2003, 193), and the Barrow Clump population appear to be no exception. Relatively high rates in both sexes of calculus, dental caries and *ante mortem* tooth loss suggest that their diet was more heavily reliant on sticky, carbohydrate-rich foodstuffs, including fruit sugars or honey, than their contemporaries, even those within the local area. There were obvious exceptions, however, exemplified by the non-local woman buried in grave 2818, who was found to have consumed a diet particularly high in meat (comparable to that of the Bronze Age individuals; see Marshall *et al.*, Chapter 3).

Stress indicators and metabolic disease

Particular skeletal changes are considered indicative of physiological stress. Factors can include nutritional deficiency, access to resources, infection and disease, excessive physical stress, heavy bleeding, pregnancy and maternal health, and parasite load. Stress indicators (dental enamel hypoplasia) and signs of metabolic deficiency (*cribra orbitalia*, rickets, osteomalacia and osteoporosis) were noted in the assemblage.

Dental enamel hypoplasia

Dental enamel hypoplasia is evident as defects in the tooth surface, reflecting the underdevelopment of enamel due to health or nutritional stresses in childhood. Differing types of defects may be related to the nature of the stressful episode; for example, some linear defects have been seen to correlate with clinical deficiencies in vitamin A, while a lack of vitamin D often produced more diffuse defects and pitting (Sheetal *et al.* 2013). The location on the tooth can allow a broad estimate of the age at which the disruption occurred, though there are limitations (Hillson 1986, 37; Lewis and Roberts 1997). Paradoxically, the presence of enamel defects demonstrates an individual's survival of the childhood challenges rather than their having succumbed to them. Up to 29 teeth in 43 dentitions (16 female, 14 male, 13 immature) have defects, averaging 8.8 teeth per dentition (WA). Canine teeth are more frequently involved; 46% permanent teeth and two deciduous (15.4%). Most of the defects are present as a fine linear depression, though there are examples of wider bands, 'pinching' and pitting which are associated with protracted episodes of stress. Pronounced defects indicate a few severe episodes were experienced, however, most lesions represent short-lived and relatively mild periods of distress. The majority of individuals affected had endured repeated episodes, as demonstrated by the many examples of multiple defects per tooth (Pl. 11.6). It appears that in most cases (90.6%) defects formed between around four to seven years of age, and in 58.1% formation occurred in infancy (up to four years), which may be reflective of the mother's health and diet. In 12 cases defects formed between the ages of 10 to 13 years (30.8%), that is within the typical range for the onset of puberty. Of those affected in this life-stage, 66.7% were male and 25% female, implying that for boys this was a particularly difficult time. One 15–16 year old male (burial 7038) had clearly suffered repeated physiologically stressful events throughout his life.

The overall WA rate is significantly higher than the period average calculated by Roberts and Cox (7.4%; 2003, table 4.12), though this may, in part, reflect a lack of directly comparative data and a degree of observer variation. The Barrow Clump rate is closer to that seen in the relatively small assemblages from Twyford School (30.4%; Egging Dinwiddy 2011), and Amesbury Old Dairy, Wiltshire (30.9%; Egging Dinwiddy 2017). The rate from Collingbourne Ducis (18.9%; Egging Dinwiddy 2016b) is rather lower, though here fewer individuals survived into adulthood.

Cribra orbitalia

Cribra orbitalia (pitting of the orbital roof) has traditionally been linked to iron deficiency anaemia, though megaloblastic anaemia due to a deficiency in vitamin B12 and gastrointestinal infections are now considered influential (Walker *et al.* 2009). The causes of iron deficiency are usually more complex than a simple dietary lack; blood loss, chronic disease and parasitic infestation can also be contributory factors (Molleson 1993; Roberts and Manchester 1997, 163–9; Lewis 2010). The most common cause of vitamin B12 deficiency is pernicious anaemia – a sometimes hereditary autoimmune disease that inhibits absorption of the vitamin. Other causes include gastrointestinal conditions such as Crohn's and coeliac disease, whilst excessive exertion has also been implicated (Herrmann *et al.* 2005; Joubert 2008). However, as the body is able to store vitamin B12 it can take many years for symptoms to appear, unless the onset occurs very early in life.

Slight to moderate lesions were observed in 22 individuals – two older juveniles (one female), three subadult males and 17 adults (seven female, 10 male). In most examples the fine porosity is at least partially healed. Larger pores were observed in one male orbit, whilst cribrotic lesions were seen in two individuals. Fifty percent of all orbits are affected, though the male rate is more than twice that of the females (64.7% *vs* 31.8%). Twenty-five percent of the unsexed (mostly immature) orbits are affected. At least five individuals also had some form of systemic infection. Of those with observable dentitions (15), all but one have hypoplastic enamel defects (93.3%).

Just over half of individuals with orbits from Blacknall Field had *cribra orbitalia* (Stuckert 2010), whilst at Collingbourne Ducis 40.2% of all orbits were affected, with very high levels in immature individuals (80%) (Egging Dinwiddy 2016b). A much lower overall rate was recorded in the Twyford School assemblage (25% of all orbits; Egging Dinwiddy 2011).

Vitamin D deficiency

Vitamin D is primarily synthesised through exposure of the skin to sunlight. It aids absorption of minerals essential for bone production, as well as various other biological and mental functions. Deficiency can lead to insufficient mineralisation of immature bones, impeding growth, and causing the limbs to bow and deform upon bearing weight (rickets). In adults the condition is known as osteomalacia, which results in bone softening and deformation, and muscle weakness. A lack of vitamin D has also been linked to an increased risk of viral infections (Beard *et al.* 2011) and obstetric problems (RCOG 2014).

The lower limb bones of two males are notably bowed – possibly rachitic (subadult 7038 (Pl. 11.7) and adult 2924). Both had signs of an underlying

Plate 11.7 Subadult male (burial 7038): tibiae and left fibula exemplifying plastic changes associated with rickets. Anterior view

condition, though changes were particularly obvious in the subadult, who had clearly been sickly throughout his life (see below). The adult had suffered an, albeit seemingly insignificant, fracture to the hip, which may have led to an altered gait and associated plastic changes. Various congenital conditions and anatomical variations affecting the angulation of the lower limb joints (eg, *genu varum* or bow-leggedness) can also cause exaggerations of the normal curvature of the femoral shafts, as can biomechanical stresses associated with habitual adoption of certain positions such as sitting upon inturned feet (Salter 1999, 125–6), or riding horses with the knees flexed (as jockeys do).

Bilateral, thinned and sunken patches on the superior aspect of the parietal bones of an elderly woman's skull are a classic characteristic of osteomalacia (Pl. 11.8), whilst the reduction of trabecular bone mass and changes to its structure indicate osteoporosis, a condition (also seen in another older female here) strongly associated with advancing age, though factors such as disease, diet, lifestyle and genetics can also play a role (Roberts and Manchester 1997, 177–80).

In general, the population appears to have suffered comparable levels of physiological stresses to the majority of their contemporaries, though as discussed

Plate 11.8 Elderly female (burial 7040): bilateral thinning of the parietal bones due to osteomalacia (lower: superior; upper: anterior)

above, there is evidence to suggest that males were placed under greater strain from adolescence. Perhaps, as noted above, this may be related to their preparation for adult roles as they approached and attained the age of majority.

Infection/inflammation

Infections (viral and bacterial) were almost certainly the biggest cause of mortality in the past, though a rapid death precludes a bony reaction and, as such, they are practically undetectable through standard osteological analysis. More long-standing infections, inflammation and irritation are more likely to produce observable changes, whether they be proliferative, destructive, or a combination thereof. Localised infections/irritations usually create a correspondingly circumscribed reaction, whilst systemic infections cause more widely distributed changes. Particular diseases and conditions may be determined based on the nature and pattern of the lesions, but more often it is impossible to make a specific diagnosis.

Viral

A disparity in robusticity and morphology of the bones of the lower limbs (but not so much their length) was observed in the remains of an adult male (burial 2638; (Pl. 11.9). The right limb is noticeably atrophied, the bones are more slender with less marked attachments, and the tibia is abnormally straight. The fibula lacks any crests, is elliptical in profile, and thickened along the mid-portion. The left limb is more 'normal' morphologically, though the fibula is very much thickened and robust, and abnormally rectangular in profile. As the limbs are of relatively comparable length, whatever caused this apparent atrophy of the right leg occurred not long before skeletal maturity. Neurological injury is usually a factor in limb atrophy, the resultant weakening or paralysis of the limb causing muscle-wasting, whilst the unaffected limb is likely to be favoured, increasing muscle strength and prompting bony modification. Consequently, the morphology of the limb bones reflects these muscular changes. There is no evidence to suggest traumatic injury that would have compromised the nerves supplying the right leg, so it is possible that this man was infected with the poliomyelitis virus, which though it means 'infantile paralysis', can affect adults. The virus usually infects the bloodstream via the gastrointestinal tract, and attacks particular cells of the spinal cord and brain stem. The infection does not always result in paralysis, though when it does it may be transient or permanent (Salter 1999, 317–21). Changes here also include excessive flaring of the lateral supracondyloid ridges of the humeri (with enthesophytes), the left displaying a 5 mm portion separated from the shaft. The ulnae have pronounced interosseous crests, extending onto the site of the *pronator quadratus* sites. The right second proximal finger phalanx has linear exostoses along the medial edge, and the proximal phalanges are rather rounded and slender towards the distal ends. Perhaps these changes relate to the use of a mobility aid such as a crutch, and/or possibly participation in tasks more suitable to his circumstances.

Atrophy of a right femur shaft in association with an abnormal acetabulum was recorded by Mays (burial 6002). The surface of the joint is described as 'bumpy', with underlying (poorly preserved) voids. Ruling out supra-acetabular cysts, osteoarthritis and tuberculosis, Mays (2006) suggests that joint injury and/or bony necrosis are more feasible interpretations. It is possible that this man was also affected by poliomyelitis as an adult, the acetabular changes potentially relating to dislocation of the hip – a complication of lower limb paralysis (Lau *et al.* 1986). Mays also noted asymmetric upper limb robusticity; the right humerus and ulna being 2–3 mm wider than their left counterparts, again possibly reflecting the use of a crutch.

Bacterial

Staphylococcus aureus – a common bacterium found in the nose, respiratory tract and on the skin – is a frequent cause of abscesses, respiratory infections, sinusitis and food poisoning, usually infecting the body via mucus membranes or breaks in the skin. Once in the bloodstream it can infect various organs (bacteraemia), resulting in osteomyelitis (clinically causal in around 90% of cases; see below), as well as endocarditis, toxic shock syndrome and sepsis (Tong *et al.* 2015). It is one of the leading causes of infection of the bloodstream in the developed world, and its antibiotic-resistant form is the infamous MRSA (Methicillin-resistant *Staphylococcus aureus*). Untreated bacteraemia has a clinical fatality rate of around 80%.

Osteomyelitis is one of the most serious inflammatory disorders of the skeleton, involving a rapidly developing blood-borne bacterial infection within a bone's medullary cavity, typically one of the larger lower limb bones (Roberts and Manchester 1997, 126–29). Changes consistent with the condition – comprising extensive lamellar new bone deposits, gross deformation, cloacae (pus exit sinuses) and bone necrosis – were seen in four individuals, affecting a femur (burial 2801; Pl. 11.10), fibula (burial 7028; Pl. 11.11) and a radius and fifth metatarsal (burials 7040, 2860). Observable probable causes include trauma and underlying conditions. A further possible example of osteomyelitis is represented by gross destructive and sclerotic changes, and a cloaca in the medial end of an adult right clavicle (7035; Pl. 11.12). It is possible that the lesion may instead represent septic arthritis, though, clinically, it is rarely seen in this joint; underlying disorders such as diabetes mellitus and rheumatoid arthritis are considered predisposing factors (Nusselt *et al.* 2011; Roberts and Manchester 1997, 114–16).

Sclerotic changes characteristic of infection of the intervertebral disc and adjacent vertebral endplates (vertebral osteomyelitis or discitis) were identified in the fifth lumbar and first sacral vertebrae body surfaces of five adult spines (Pl. 11.13; Table 11.1); in one case the fourth lumbar vertebra is also involved. Discitis is usually secondary to infection elsewhere, particularly the genitourinary tract. It is most commonly caused by *Staphylococcus aureus* (see above) and *Escherichia coli*, though Gram negatives, *Streptococci* and Tuberculosis

Plate 11.9 Adult male (burial 2638): tibiae showing clear atrophy of the right, potentially the effect of poliomyelitis. Medial aspect

Plate 11.10 Adult (redeposited 2801a): gross changes to a right femur shaft resulting from osteomyelitis. Medio-posterior view, proximal end to the left

Plate 11.11 Adult male (burial 7028): considerable enlargement of the right fibula resulting from osteomyelitis (probably anterior aspect). Periosteal new bone deposits on the left fibula

Plate 11.12 Adult female (burial 7035): probable osteomyelitis affecting the medial articular surface of the right clavicle

are also known contributory factors (Salter 1999, 221). Affected individuals (most often older males) typically suffer back pain; recurrence is common and around a third of cases result in some disability. Potentially fatal complications include sepsis and blockages caused by the migration of septic emboli (Viroslav 2012).

Roberts and Cox list 22 cases of osteomyelitis from across the country (2003, 173), typically one or two examples per cemetery. A juvenile from Blacknall Field is recorded as having the condition (humerus; Stuckert 2010), and chronic infection resulted from a penetrating injury to the hand of a woman buried at Collingbourne Ducis (Egging Dinwiddy 2016b). The number of cases at Barrow Clump may, therefore, be considered higher than average.

Non-specific infection/inflammation
Abundant vessel impressions and new bone deposits on the endocranial surface of the skull vault (four individuals; Table 11.1) may be indicative of infection, or reaction to haematomas due to trauma or metabolic deficiency (eg, scurvy – vitamin C deficiency). New bone within the temporo-mandibular joint of burial 2728 may have a similar aetiology. Other signs of infection include small patches of disorganised bone on the exocranial surfaces of the skull vaults of four individuals, which probably represent localised infection due to minor injuries or scalp lesions. Dental infections were contributory to at least five of the eight cases of sinusitis and infection of other surrounding tissues (Pl. 11.4). Other causes of sinusitis include underlying infections and airborne irritants such as dust and smoke (Roberts and Manchester 1997, 131).

Widespread changes to the bones from two adjacent burials (adult male 7028 and 7038, a subadult male) indicate some form of systemic infection or condition. The tibiae and left fibula of the adult male are considerably thickened, featuring irregular layers of lamellar new bone (medial tibiae and all of the fibula). The right fibula is so much expanded and deformed that it was mistaken for a redeposited tibia during excavation. Undoubtedly osteomyelitis (see Pl. 11.11), the shaft is grossly thickened along its length, the proximal two-thirds being encased in smooth striated new cortical bone; the distal portion is more irregularly affected, with more porotic, globular dense new bone and fewer surface striations. The medullary cavity and trabecular bone appears greatly expanded; very faint remnants of the original outer surface are evident in the proximal and mid-shaft areas, whilst there is more sclerosis and thickening at the distal end. Generalised thickening across various parts of the skeleton of the younger male was noted in association with smooth new bone deposits and sclerotic porosity at the ends of limb bones, across much of the tibiae, the calcanea and the left fifth metatarsal; newer bone deposits were observed on the fibulae shafts and there is some sclerosis within the trabecular bone of the calcanea. Severe bowing of the tibiae and thickened fibulae, along with slighter deformation of the femoral shafts, are testament to this subadult having suffered from rickets (see above). Whilst these changes could well indicate a prolonged infection, their 'swollen' appearance is reminiscent of the expansive characteristics of chronic childhood scurvy (Lewis 2007, 131–4), and there is evidence for periodontal inflammation, another sign of the metabolic condition; perhaps this young male's bones indicate severe nutritional deficiencies rather than (or as well as) an infection.

Fine, lamellar periosteal new bone deposits across the medial tibial mid-shafts of a juvenile (burial 2884) may be a sign of infection, though given the lack of any other indications it is possible that the deposits reflect inflammation, perhaps related to activity, for example shin splints, or localised trauma.

A small patch of new bone within an abnormal depression, located above the left knee of an older adult female (burial 2606), may represent chronic inflammation of the supra-patellar bursa. A bursa is a pad of fluid-filled tissue that is positioned so as to reduce friction between moving structures such as tendon and bone, or tendon and skin. The supra-patellar bursa may become inflamed or accumulate fluid as a result of a fall onto the knees, infection, or overuse of the joints, such as may occur with running, or crawling on the knees (Chatra 2012). The condition often causes localised swelling and severe pain, and is sometimes associated with general fever-like symptoms and general weakness.

Parasitic infection

Consumption of water or food contaminated by the faeces of dogs or foxes, or handling of the animals, can lead to ingestion of tapeworm eggs (*Echinococcus*) (Manchester 1983, 49). Larvae invade the intestinal wall and are carried to many of the organs within the body, where they settle and form a hard-shelled hydatid cyst. Often these remain asymptomatic, though their site and size are major factors with regard to symptoms (Aufderheide and Rodríguez-Martín 1998, 240–4); rupture of a cyst can cause serious complications including anaphylaxis (Lowth 2014). Fragments of hydatid cysts were recovered from the pelvic cavity of the remains of an adult female (burial 2652).

The evidence points to high levels of bacterial infection (*S. aureus* particularly) within the population, which will have spread easily from person to person via contaminated hands, handled items and clothing. The case(s) of poliomyelitis are of interest, though not unique – cases have been recorded at Worthy Park (Wells *et al.* 2003) and at Raunds Furnells (Boddington 1996, 41–2). The remains of a possibly Saxon adult male from Tinney's Lane, Sherborne, Dorset, showed signs potentially related to the condition (McKinley 1999a). Other infections such as tuberculosis and leprosy – both evident in nearby Collingbourne Ducis (Egging Dinwiddy 2016b) and the latter recorded in the remains of one individual from Aldbourne

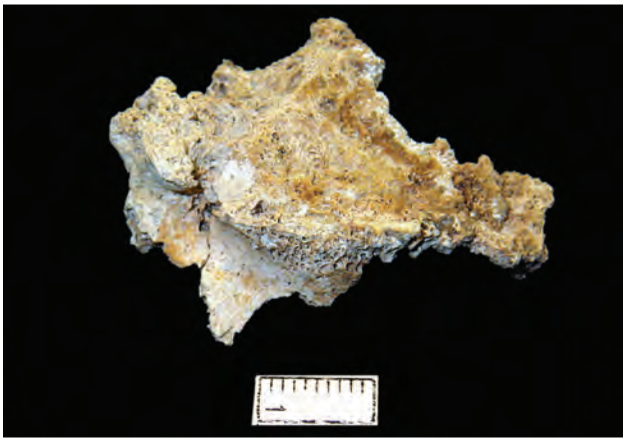


Plate 11.13 Adult female (burial 2722): gross changes to the body surface of the first sacral vertebra, probably resulting from discitis. Supero-ventral aspect

(Boylston 2012) – are not confirmed here, though it is possible that some of the recorded lesions may be associated with these conditions.

Parasitic infestations of the gut are thought to have been commonplace in the Anglo-Saxon period, especially in urban contexts such as York, where rubbish/latrine pits have been found to contain enormous quantities of parasite remains (Roberts and Cox 2003, 176–7, 195). Hydatid cysts were present in the soil samples taken from the pelvic cavities of three individuals from Collingbourne Ducis (Egging Dinwiddy 2016b), and early medieval texts such as *Bald's Leechbook* refer frequently to maladies of the liver that are likely to have been caused by sheep fluke and tapeworms (Rawcliffe 2011); that we have found evidence for that should not be surprising.

At least two individuals would have had some form of major disability as a result of infection, though clearly mechanisms had been put in to place to allow them to continue to be mobile, and remain active members of the community.

Trauma

It was possible to determine that 20 individuals had sustained some form of traumatic injury including fractures, soft tissue damage and weapon trauma (Tables 11.1 and 11.7). Nine adult males had between one and seven injuries, and between one and three injury sites were observed on the skeletons of eight female adults. A juvenile and two subadults (male) had also suffered physical trauma. Most appear to be relatively benign and accidental, possibly occupational in nature, but there is evidence to suggest a degree of interpersonal violence.

Trauma to the upper limbs, including the hands, was the most common seen within the assemblage. There were four examples of fractured clavicles (three males, one female), all of which were broken at the mid-shaft and well-healed. Such injuries usually occur as a result of a fall onto an outstretched hand or

Table 11.7 Summary of trauma sites

Site	Number of injuries
Skull – frontal	1 (F)
Skull – parietal	2 (1M)
Skull – facial	3 (2M)
Mandible	1 (M)
Vertebrae	2 (1F, 1M)
Rib	4 (2F, 1M)
Pelvis *(acetabulum)*	1 (M)
Clavicle	4 (1F, 3M incl. subadult)
Humerus	1 (M)
Radius	3 (2F, 1M)
Ulna	2 (1F, 2M)
5th metacarpals	2 (2M)
Fingers	2 (1F, 1M)
Femur	4 (1F, 2M)
Total	32

KEY: F – female; M - male

directly on to the shoulder (Adams 1987, 119). Two of the males display other traumatic lesions.

A well-healed but serious trauma to the left side of the face of an adult male (burial 2903; (Pl. 11.14) represents perhaps the most devastating of his seven injury sites (see below). A 31 mm linear fracture extends from the lateral side of the left supra-orbital notch, towards the narrowest part on the supero-lateral edge of the orbital margin. Though substantially remodelled, there remains a porous, 3 mm wide linear depression along the fracture site and there is evidence for disruption of the lateral orbital roof. Catastrophic trauma to the left malar is evidenced by the tapering and remodelled lateral parts of the orbital margin and maxilla (7 mm lateral of an enlarged infra-orbital foramen), the drooping latero-inferior orbital margin and corresponding loss of part of the orbital floor, and the flattened infero-lateral margin of the maxilla. Lateral splaying and thickening of the zygomatic arch reflects further fracturing. The main portion of the malar is entirely absent, and the peripheral remaining bone features healed, rounded ends. The left side of this man's face must have suffered a tremendous blow or blows, which resulted in the disintegration of the malar and part of the zygomatic arch, and ultimately the resorption of the dislodged fragments. It is likely that the injury affected the left eye, which, if it was not blinded or removed, would have been somewhat unstable, at least a third of its protective socket having been damaged/resorbed. The maxillary left molars were also lost, undoubtedly as a consequence of the same event. Whilst it is possible that the injury occurred accidentally, the evidence implies a deliberate, very heavy blow to the face.

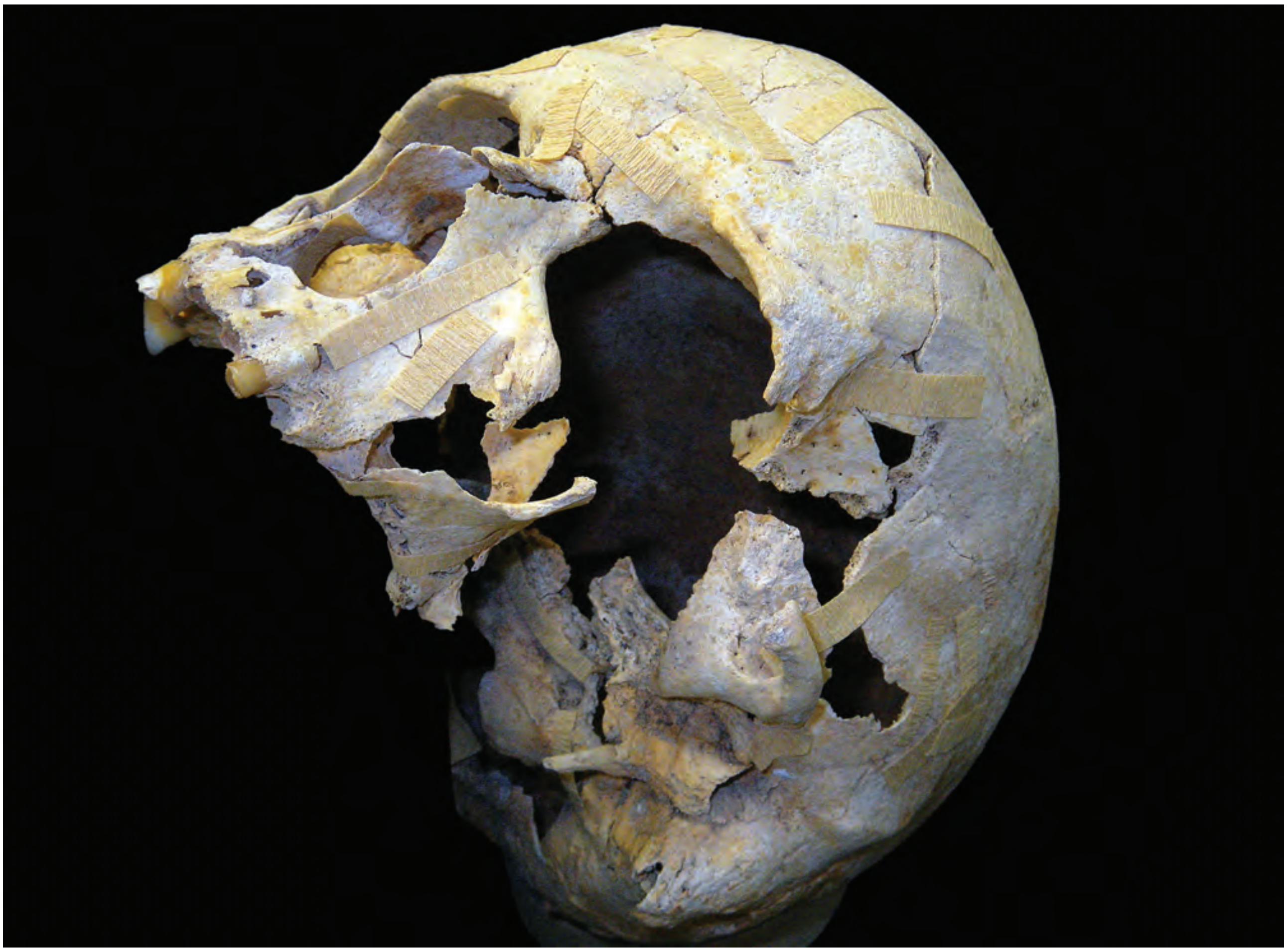


Plate 11.14 Older adult male (burial 2903). Serious trauma to the left side of the face, comprising a healed fracture of the orbit, and traumatic loss of the left molars and zygomatic bone. Infero-left aspect

Another man (burial 6001) had a well-healed fracture to the left side of his mandible, just posterior of the mental foramen. Mays (2006), who recorded this observation, explains that lateral mandibular fractures are characteristically due to violent assault, usually resulting from a blow from a fist or blunt weapon (Ogundare *et al.* 2003; King *et al.* 2004). Stuckert describes a similar fracture in the mandible of a subadult female (2010, 123). The healed fracture of the nasal bones of another individual from Barrow Clump (burial 2844) left a pronounced depression on the left side of the nasal bridge, an injury consistent with interpersonal violence, though accidental trauma cannot be discounted.

A fairly frequently observed fracture of the neural arch of the fifth lumbar vertebrae is known as spondylolysis. It often occurs in young adulthood, and is typically associated with heavy lifting, hyperflexion and also repeated hyperextension of the spine, though there is some suggestion of a morphological predisposition (Salter 1999, 372; Ward *et al.* 2010). Spondylolysis was observed in a male and a female (burials 2719 and 2773), each bilaterally expressed, with fusion only evident in one side of the male example. The female vertebra is otherwise normal, whilst the body of the other is substantially wedged (77.9%; posterior height: 6.2 mm *vs* anterior height: 28 mm; (Pl. 11.15), the articular process joints are slightly deformed and there is thickening of the neural arch of the vertebra above. The changes are consistent with hypoplasia of the vertebral body which is, clinically, frequently associated with spondylolysis and often mimics anterior slippage of the L5 body (pseudo-spondylolisthesis). Studies suggest that the fracture precedes and therefore causes the hypoplasia rather than the reverse, changing the biomechanical pressures in a maturing lumbar spine, increasing loading onto the posterior portion of the vertebral body causing flattening and wedging (Frank and Miller 1979; Wilms *et al.* 2009; Ikata *et al.* 1996).

The fracture evident in the tip of a superior articular process joint of a first thoracic vertebra (older female 2623) is probably associated with joint degeneration (see below).

Two females each had a single rib fracture, whilst the two broken ribs of male 2903 were the least of his injuries (see above and below). Rib fractures are usually the result of a direct blow or a fall, and most heal without intervention (Adams 1987, 107).

Hairline fractures (concentric and radiating) within the right acetabulum of a probable male (burial 2924) may have been the result of a direct lateral blow to the proximal femur or to a flexed knee when the hip was abducted, as may occur in a fall on to the side, or knees (Adams 1987, 204).

A small destructive lesion was observed on the head of the right femur of a subadult male (burial 2685). There are no signs of infection elsewhere in his

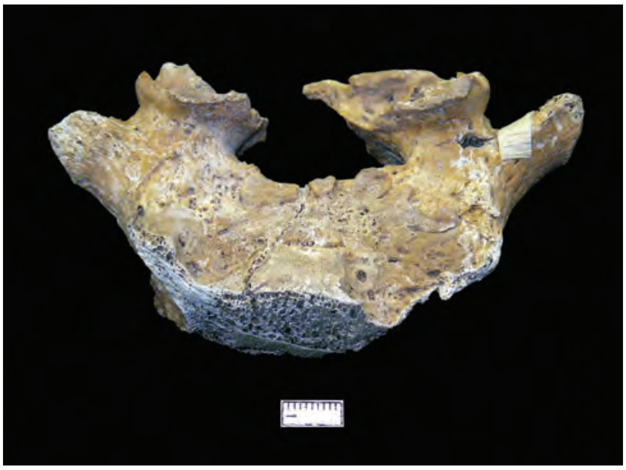


Plate 11.15 Adult male (burial 2719): spondylolysis and hypoplasia of the fifth lumbar vertebra. Ventral aspect

skeleton, whilst there is much evidence for strenuous physical exertion. This lesion probably represents a traumatic injury, such as *osteochondritis dissecans* – a condition common to males, thought to be traumatic in origin, which results in obstructed blood flow and localised necrosis (Rogers and Waldron 1995, 28–30; Aufderheide and Rodríguez-Martín 1998, 81–83).

A partially healed mid-shaft parry fracture was observed in the left ulna of much-injured male 2903 (see above and below). There is still bony callous material present along the posterior aspect, whilst on the latero-anterior aspect the damage is more angular with some splitting. The fracture is oblique, and x-radiographs show it to be substantially unfused and partially resorbed, with little healing. It is possible that there had been complications – forearm bones, especially the ulnae, are particularly prone to delayed fusion or non-union if not stabilised. The left radius has signs of trauma in the corresponding location, though it had not been fractured. Given this man's other injuries (all of which are well healed), it is possible that the injury occurred whilst he was protecting himself from a direct assault. The most common cause of such an injury is a fall onto the hand (Adams 1987, 158) – a more likely explanation in the cases of two fracture sites on the left ulna of a female (burial 2714) and a remodelled injury to the right ulna of anther male (burial 2844), both of whom have other signs of upper limb trauma (Table 11.1).

Hand and finger injuries were seen in three individuals, and while most injuries to the hands occur accidentally, fractures in fifth metacarpals (two cases) are usually the result of throwing a punch. The tip of the right fifth finger of adult female 2901 was severely damaged or lost long before death (Pl. 11.16).

A fracture in the right proximal femur of a 40–50 year old female (7064) is evident as shortening and thickening of the neck and intertrochanteric region, with slight contracture and malalignment. X-radiographs show a distinct area of opacity, roughly

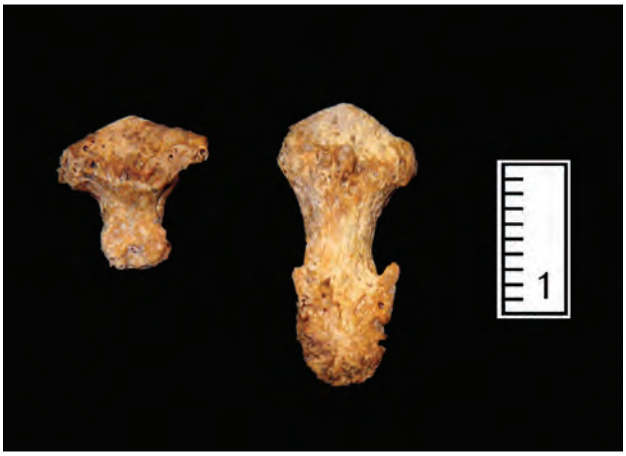


Plate 11.16 Older adult female (burial 2901): trauma to the tip of the right fifth finger. Disto-palmar view

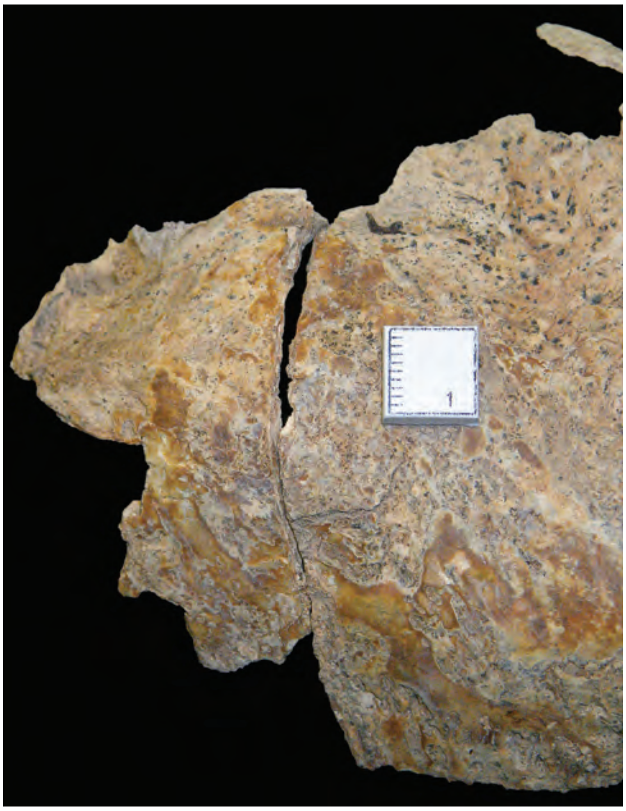


Plate 11.17 Juvenile (burial 2884): peri-mortem *sharp blade cut to the posterior skull*

Plate 11.18 Older adult male (burial 2903): gross plastic changes to the shaft of the left femur, possibly associated with a blade injury. Medial aspect

following the intertrochanteric line. Such an injury – known as a trochanteric fracture – is far less serious than a break in the femoral neck, as it unites readily and complications rarely occur – at worst there may be a small degree of malalignment. Clinically, the cause is nearly always a fall or being knocked down, and elderly (over 75 years) women are far more prone to these types of fracture (Adams 1987, 218). Fractures may have been involved in at least one of the cases of femoral osteomyelitis described above.

Mays (2006) noted the presence of bony proliferations on a male left humerus (2101), potentially indicative of *myositis ossificans* – the post-traumatic ossification of the soft tissues, usually muscle (Aufderheide and Rodríguez-Martín 1998, 26–7; Salter 1999, 483–4). Injury to the skeleton can result in bony proliferation, or exostoses; two minor examples not associated with obvious injuries are present within the assemblage, affecting a metacarpal and a femur (Table 11.1).

Pathological changes to the bone at the insertion sites of tendons, ligaments and joint capsules include bony growths (enthesophytes) and defects in the cortical bone. The main causative factors include repeated or traumatic stress, often related to activity (see below), as well as various diseases and advancing age; some individuals may have a natural predisposition to excessive bone formation. It is not always possible to determine the aetiology of particular lesions (Rogers and Waldron 1995, 24–5; Havelková and Villotte 2007; Benjamin *et al.* 2008). Enthesophytes were present in the remains of 14 females and 15 males, each having similar prevalence in axial elements (mostly the pelvis), lower limbs and fingers. However, the occurrence in upper limbs (excluding the fingers) is slightly more prevalent in male remains, and some differences between the sexes become apparent when considering particular skeletal elements/joints, for example lesions at the elbow were more common in females (Table 11.1). Defects at entheses were most frequently recorded in the costo-clavicular joints, though a few were noted on limb bone shaft attachments.

Weapon injuries

A sharp blade injury was evident, unusually, in the remains of older juvenile 2884, of undetermined sex. The child's skull had been cleanly sliced from the posterior-right edge of the foramen magnum, where the spine joins the skull, towards the mid-point of the right lambdoid suture. The injury includes a thin scored line with a deeper, relatively straight and clean-edged cut near full-thickness. The endocranial surface has some irregular, angular bevelling along the cut line, and there is some ancient damage and adhering precipitate (Pl. 11.17).

Gross changes to the left femur of male 2903 (see also above; (Pl. 11.18), comprise a large and

Table 11.8 Summary of spinal lesions

	No. vertebrae	Schmorl's node	Degenerative disc disease	Osteoarthritis	Lone osteophytes*	Lone pitting
Female	352 (all)	–	–	39 *(11.1%)*	68 *(19.3%)*	–
	291 (WA)	11 *(3.8%)*	27 *(9.3%)*	–	–	28 *(9.6%)*
Male	411 (all)	–	–	35 *(8.5%)*	74 *(18.0%)*	–
	335 (WA)	23 *(6.5%)*	35 *(10.4%)*	–	–	34 *(10.1%)*
Total	767 (all)	–	–	74 *(9.6%)*	142 *(18.5%)*	–
incl. unsexed	630 (WA)	34 *(5.4%)*	62 *(9.8%)*	–	–	63 *(10.0%)*

KEY: * – Mays data comprises body surface margin osteophytes only

Table 11.9 Rates of osteoarthritis in the extra-spinal joints

Joint	Total joints incl. unsexed	Female		Male	
		Total joints	Osteoarthritis	Total joints	Osteoarthritis
Temporo-mandibular	59	27	5 *(18.5%)*	29	1 *(3.4%)*
costo-vertebral (ribs)	148	121	15 *(12.4%)*	123	5 *(4.1%)*
Shoulder – humerus	25	11	1 *(9.1%)*	14	1 *(7.1%)*
Wrist – ulna	24	7	–	17	1 *(5.9%)*
Hand – carpals	162	81	2 *(2.5%)*	81	3 *(3.7%)*
Hand – carpo-meta	116	58	1 *(1.7%)*	56	–
Hand – meta-phalangeal	140	66	1 *(1.5%)*	72	–
Hand – distal IP	101	46	1 *(2.2%)*	55	–
Hip – pelvis	62	32	2 *(6.3%)*	29	2 *(6.9%)*
Hip – femur	55	29	1 *(3.4%)*	26	2 *(7.7%)*
Knee – femur/patella	51	25	1 *(4.0%)*	26	–

deep depression on the medio-anterior aspect, from mid-shaft to the level of the lesser trochanter. Within the elongated, somewhat angular, lesion there are areas of 'puckering', though most of the undulating surface has remodelled to become much like the surrounding cortical bone. The natural curve of the bone is somewhat disrupted along the posterior aspect where the proximal part of the linear aspera is broad and disorganised; the mid-portion features an extensive ridge of medially projecting exostoses (see above). X-radiographs illustrate a loss of density along the medial edge of the lesion, whilst the surrounding cortical bone is very dense; there is no indication of a fracture. The changes are consistent with a significant sharp weapon trauma which penetrated deep enough to sever the muscles of the thigh (eg, *vastus medialis*, *intermedius* and *lateralis*) and remove a small portion of the femur shaft. The injury was clearly sustained a considerable time prior to death, as evidenced by the degree of remodelling including substantial plastic changes associated with an abnormal positioning and function of the damaged muscles serving the knee.

The patterns of trauma are generally consistent with accidents and a handful of interpersonal incidents. The levels and patterns of injuries are largely typical of the period (Roberts and Cox 2003, 203–9) and region (Egging Dinwiddy 2016b; Stuckert 2010), with one or two noteworthy cases, such as the much-injured non-local man (burial 2903), the extent and nature of his injuries suggesting that he had been involved in heavy fighting several years before his death, though it is not possible to be certain if his wounds were sustained during a single incident, or over the course of a violent career. Blade injuries to the young are not often found so when they are it prompts questions as to the circumstances. There is evidence to suggest that children may have been undergoing preparation for adulthood around the onset of puberty (see above) which is pertinent to the case detailed above, the child (burial 2884) being approximately 10 years old. Could there have been a terrible training-related accident, or was the child the victim of a vicious assault?

Joint disease

Lesions consistent with joint disease are amongst the most commonly recorded in osteoarchaeological material. They are frequently associated with age- and/or activity-related wear-and-tear, though trauma, malformation and biomechanical problems can instigate/accelerate degeneration; lesions may also be present as a result of other conditions and disease processes.

The entire assemblage includes all or parts of 56 adult spines (26 female, 27 male, 3 are unsexed), with 767 individual vertebrae available for observation (Table 11.8). A total of 2098 adult extra-spinal joints were recorded by the writer (1010 female and 1046 male joints; Tables 11.9 and 11.10).

Schmorl's nodes

Pressure defects on the surface of the vertebral bodies, known as Schmorl's nodes, are caused by the prolapse of the intervertebral disc – often as a result of heavy loading and twisting of the spine. Such lesions usually form in early adulthood, though can persist into later life (Rogers and Waldron 1995, 27; Roberts and Manchester 1997, 107). Defects of varying shape and severity were seen in between one and seven vertebrae in 13 spines (five female, eight male). The

Table 11.10 Extra-spinal joint counts, showing rates of degenerative joint lesions

Joint		Female left	Female right	Male left	Male right	Total inc. unsexed left	Total inc. unsexed right
Temporo-mandibular	Total	13	14	15	14	29	30
	Oa	3 (23.1%)	2 (14.3%)	–	1 (7.1%)	3 (10.3%)	3 (10.0%)
	Pitting	1 (7.7%)	5 (35.7%)	3 (20.0%)	–	5 (17.2%)	5 (16.7%)
Costo-vertebral (ribs)	Total	55	66	63	60	121	127
	Oa	6 (10.9%)	7 (10.6%)	4 (6.3%)	1 (1.7%)	10 (8.3%)	8 (6.3%)
	Op	20 (36.4%)	17 (25.8%)	15 (23.8%)	25 (41.7%)	36 (29.8%)	32 (25.2%)
	Pitting	1 (1.8%)	8 (12.1%)	8 (12.7%)	10 (16.7%)	9 (7.4%)	18 (14.2%)
Acromio-clavicular	Total	3	3	2	3	5	7
	Pitting	1 (33.3%)	1 (33.3%)	1 (50.0%)	2 (66.0%)	2 (40.0%)	4 (57.4%)
Sterno-clavicular	Total	5	10	4	6	10	16
	Op	–	1 (10.0%)	1 (25.0%)	2 (33.3%)	3 (30.0%)	3 (18.8%)
	Pitting	4 (80.0%)	4 (40.0%)	1 (25.0%)	3 (50.0%)	5 (50.0%)	7 (43.8%)
Shoulder – glenoid	Total	7	8	11	8	18	16
	Op	1 (14.3%)	3 (37.5%)	4 (36.4%)	3 (37.5%)	5 (27.8%)	6 (37.5%)
	Pitting	4 (57.1%)	2 (25.0%)	1 (9.1%)	2 (25.0%)	5 (27.8%)	4 (25.0%)
Shoulder – humerus	Total	3	8	7	7	10	15
	Oa	–	1 (12.5%)	1 (14.3%)	–	1 (10.0%)	1 (6.7%)
	Op	1 (33.3%)	–	2 (28.6%)	2 (28.6%)	3 (30.0%)	2 (13.3%)
	Pitting	–	–	1 (14.3%)	–	1 (10.0%)	–
Elbow – humerus	Total	5	10	8	11	14	21
	Op	–	1 (10.0%)	2 (25.0%)	2 (18.2%)	2 (14.3%)	3 (14.3%)
	Pitting	–	1 (10.0%)	–	–	–	1 (4.8%)
Elbow – radius	Total	4	6	8	7	12	13
	Op		2 (33.3%)	2 (25.0%)	2 (28.6%)	2 (16.7%)	4 (30.8%)
	Pitting	–	1 (16.7%)	–	–	–	1 (7.7%)
Elbow – ulna	Total	6	6	12	11	18	22
	Op	2 (33.3%)	1(16.7%)	7 (58.3%)	4 (36.4%)	9 (50.0%)	5 (22.7%)
	Pitting	–	–	1 (8.3%)	–	1 (5.6%)	–
Wrist – radius	Total	5	6	7	7	12	13
	Op		2 (33.3%)	4 (57.1%)	4 (57.1%)	4 (33.3%)	6 (46.2%)
Wrist – ulna	Total	4	3	5	8	9	11
	Oa	–	–	–	1 (12.5%)	–	1 (9.1%)
	Op	–	–	3 (60.0%)	2 (25.0%)	3 (33.3%)	2 (18.2%)
	Pitting	1 (25.0%)	1 (33.3%)		1 (12.5%)	1 (11.1%)	2 (18.2%)
Hand – carpals	Total	32	49	40	41	72	90
	Oa		2 (4.1%)	2 (5.0%)	1 (2.4%)	2 (2.8%)	3 (3.3%)
	Op	1 (3.1%)	3 (6.1%)	6 (15.0%)	6 (14.6%)	7 (9.7%)	9 (10.0%)
	Pitting	2 (6.2%)	1 (2.0%)	–	–	2 (2.8%)	1 (1.1%)
Hand – carpo-meta	Total	24	34	23	33	48	68
	Oa	–	1 (2.9%)	–	–	–	1 (1.5%)
	Op	–	1 (2.9%)	2 (8.7%)	4 (12.1%)	6 (12.5%)	5 (7.4%)
	Pitting	–	1 (2.9%)	–	–	–	2 (2.9%)
Hand – meta-phalangeal	Total	31	35	35	37	67	73
	Oa	1 (3.2%)	–	–	–	1 (1.5%)	–
	Op	1 (3.2%)	1 (28.6%)	2 (5.7%)	5 (13.5%)	4 (6.0%)	6 (8.2%)
	Pitting	–	1 (28.6%)	–	–	–	1 (1.4%)
Hand – proximal IP	Total	36	40	36	31	72	71
	Op	4 (11.1%)	3 (7.5%)	3 (8.3%)	–	6 (8.3%)	3 (4.2%)
	Pitting	–	1 (2.5%)	–	–	–	1 (1.4%)
Hand – distal IP	Total	20	26	31	24	51	50
	Oa	1 (5.0%)	–	–	–	1 (2.0%)	–
	Op	2 (10.0%)	4 (15.4%)	1 (3.2%)	–	3 (5.9%)	4 (8.0%)
Sacro-iliac	Total	10	13	12	10	22	23
	Op	3 (30.0%)	4 (30.8%)	2 (16.7%)	1 (10.0%)	5 (22.7%)	5 (21.7%)
	Pitting	1 (10.0%)	1 (7.7%)	–	–	1 (4.5%)	1 (4.3%)
Hip - pelvis	Total	16	16	15	14	32	30
	Oa	–	2 (12.5%)	–	2 (14.3%)	–	4 (13.3%)
	Op	5 (31.3%)	2 (12.5%)	4 (26.7%)	2 (14.3%)	10 (31.3%)	4 (13.3%)
	Pitting	6 (37.5%)	5 (31.3%)	1 (6.7%)	–	7 (21.9%)	5 (16.7%)
Hip - femur	Total	14	15	13	13	27	28
	Oa	–	1 (6.7%)	–	2 (15.4%)	–	3 (10.7%)
	Op	4 (28.6%)	6 (40.0%)	7 (53.8%)	2 (15.4%)	11 (40.7%)	8 (28.6%)
Knee – femur/patella	Total	12	13	12	14	24	27
	Oa	–	1 (7.7%)	–	–	–	1 (3.7%)
	Op	5 (14.7%)	4 (30.8%)	2 (16.7%)	3 (21.4%)	7 (29.2%)	7 (25.9%)
Knee – lateral	Total	11	9	11	12	22	21
	Op	2 (18.2%)	3 (33.3%)	1 (9.1%)	–	3 (13.6%)	3 (14.3%)
Knee – medial	Total	11	11	12	11	2	22
	Op	3 (27.3%)	3 (27.3%)	1 (8.3%)	1 (9.1%)	4 (17.4%)	4 (18.2%)
Ankle	Total	9	11	10	8	20	20
	Op	–	1 (9.1%)	–	–	–	1 (5.0%)
	Pitting	1 (11.1%)	–	–	–	1 (5.0%)	–
Foot – tarsals	Total	39	51	43	37	86	88
	Op	–	1 (2.0%)	–	–	1 (1.2%)	1 (1.1%)
Foot – tarso-metatarsal	Total	19	20	18	15	38	35
Foot – meta-phalangeal	Total	19	17	22	17	42	35
Foot – proximal IP	Total	9	16	18	17	28	34
Foot – distal IP	Total	7	6	12	7	19	13

KEY: oa – osteoarthritis; op – lone osteophytes; IP – interphalangeal; *NB pitting – lone lesions only* eighth thoracic vertebra is most frequently involved; none were seen in vertebrae above the sixth thoracic position. The individual with the most injured vertebrae was also the youngest, a large 16–17 year old male (2667). There is a slightly elevated prevalence in male vertebrae, though rates are rather low compared to the period average of 16.6% (Roberts and Cox 2003, 197–8) and those recorded for Collingbourne Ducis and Twyford School (14.2 and 14.5% respectively; Egging Dinwiddy 2016b; 2011). The Worthy Park rate, however, was much lower (2.2%; Wells *et al.* 2003). Differential preservation of the vertebral bodies (particularly poor at Barrow Clump) may be contributing to the disparate rates.

Degenerative disc disease

Degenerative disc disease is the breakdown of the intervertebral disc, which causes heavy pitting and disfigurement of the vertebral body surfaces, often accompanied by marginal osteophytes (Rogers and Waldron 1995, 270). The condition is evident in between one and 12 vertebrae from 14 individuals (seven of each sex). It is usually the result of age-related degeneration, though may be exacerbated by spinal abnormalities, overuse and obesity. Clinical studies have found that biochemical factors and a genetic predisposition can also be contributory factors (Buckwalter 1995; Sobajima *et al.* 2004; Chan *et al.* 2006). There is little difference between the sexes, though the frequency per individual spine is slightly greater in males. Changes are predominantly slight to moderate, and the most frequently affected vertebrae are the fifth cervical and first sacral. The overall rates calculated for the Collingbourne Ducis and Twyford School assemblages are greater (15.6% and 14.5%; Egging Dinwiddy 2016b; 2011), due to a much higher rate of the condition in male spines (21.1% and 26.5% respectively); female rates are more comparable with Barrow Clump (10.8% and 10.1%). The males from the more distant sites in Thanet, Kent were even more preferentially affected (32.3%; East Kent Access Road (EKAR); Egging Dinwiddy 2015), though as at Collingbourne Ducis, the EKAR assemblage includes examples of early-onset degeneration, that is potentially genetically/biochemically linked.

Osteoarthritis

Lesions consistent with osteoarthritis (Rodgers and Waldron 1995, 43–4) were observed in between one and nine vertebrae in 25 adult spines (13 female, 12 male), predominantly in the articular process joints, though these joint survived preferentially. Overall, the third and fourth cervical vertebrae were most commonly affected. Whilst rates are not too dissimilar between the sexes, the distribution of the lesions is. Male spines have a predominance of lesions in the second to fourth cervical vertebral position, and rarely the lumbo-sacral region, whereas the lower thoracic and fifth lumbar vertebrae were most commonly affected in females (cervical distribution was broadly comparable). The rate is slightly lower than that recorded for Collingbourne Ducis (11.1%; Egging Dinwiddy 2016b), though, as with other comparable cemeteries, poor preservation is problematic, precluding meaningful discussion.

Osteoarthritis was observed in 43 (just over 2%) of extra-spinal joints (WA; 28 female, 15 male). The most frequently affected joint was the right hip (13.3% right acetabulae), followed by both temporo-mandibular joints (10.3% left, 10% right) and the proximal left humerus (10%) (Tables 11.9 and 11.10). In females the temporo-mandibular joints were particularly prone to the condition, followed by the right shoulder and hip, whilst in males the right hip and left shoulder were preferentially affected. Mays (2006) recorded lesions in 16 extra spinal joints from four individuals (two males, one female). Both males had rib lesions (three), whilst the female had changes in eight ribs, the left acromio-clavicular joint and left wrist. The unsexed adult had lesions in two left carpals. There is a clear correlation between the condition and advancing age, with those most extensively and severely affected being over 40 years old.

Low levels of osteoarthritis were recorded at Twyford School, largely in the upper limbs (both sexes) (Egging Dinwiddy 2011). At Collingbourne Ducis, males were more adversely affected than the females in the temporo-mandibular joints (the reverse of the Barrow Clump observation), whilst other joints were fairly equally involved. Like Barrow Clump, however, the female pattern shows a less widely distributed lesions, principally the mandible, shoulders, elbows and hands (Egging Dinwiddy 2016b).

Lone osteophytes

Lone osteophytes were observed in between one and 13 vertebrae in 34 spines (20 female, 14 male). Whilst articular process joints were more commonly affected (20 spines), this may be a relic of poorer preservation of other parts of the vertebrae. The atlas is the most commonly affected vertebra, followed by the fifth thoracic and axis, a pattern which is reflected in the male spines. In female spines the atlas is still most commonly affected, though the ninth thoracic is also frequently involved. The overall rate is lower than that recorded for Collingbourne Ducis (33.7%), where lesions affected proportionally more male than female vertebrae (39.8% vs 28.5%). Again, poor trabecular bone preservation is likely to be a factor in the low occurrence at Barrow Clump.

Lone osteophytes were recorded on 257 (12.2%) extra-spinal joints (WA), most frequently affecting parts of the shoulder, elbow and wrist (Table 11.10). Whilst lesions were evident across the skeleton, the wrist was far more frequently involved in males than females, and to a lesser degree the sterno-clavicular and elbow joints. In males, the right hip was more than twice as likely to have osteophytes, whilst in females the distribution was more equal. More female knee joints (proportionally) have osteophytes, and whilst the pattern is not strong, lesions are more common in female fingers (especially the distal interphalangeal joints).

Lone pitting

Pitting of the spinal joint surfaces (predominantly of the articular processes), was seen in between one and eight vertebrae in 17 spines (nine male, seven female), predominantly in the articular process and cost-vertebral joints. The overall rate is only slightly greater than that calculated for the Collingbourne Ducis assemblage (9.2%; Egging Dinwiddy 2016b), though the Barrow Clump proportions are markedly different, affecting male and female vertebrae equally; at Collingbourne Ducis only 4.6% of female vertebrae were affected compared to over three times as many from amongst male remains (14.4%). A lower overall rate was in evidence in the Twyford School assemblage (5.3%; Egging Dinwiddy 2011), though like Collingbourne Ducis, males appear to have been more prone to the development of these lesions (7.4% *vs* 4.7%).

Lone pitting was observed in 87 extra spinal joints (4.1%) across all skeletal regions, though with fewer in the lower limbs and none in the feet. Generally the shoulders, elbows and wrists were affected to a greater degree in males, whilst female skeletons more frequently exhibited pitting in the joints of the hands and pelvis. The relatively low rates may reflect the relatively poor condition of the bone surface, osteophytes and gross changes associated with osteoarthritis being more likely to be preserved than more subtle pitting, though lower overall rates were seen at Collingbourne Ducis (where bone preservation was better) and Twyford School (3.4% and 1.5% respectively).

Rotator cuff degeneration

Changes reflective of rotator cuff degeneration are evident on the proximal humeri of three females and two males, all but one of whom would have been over 40 years of age at death (the exception being approximately 30–40 years). Degenerative tears in the rotator cuff are common and painful. Prevalence increases with age, and most cases have no clear link to trauma (Clement *et al.* 2012).

The evidence indicates some sex-determined variation in everyday tasks, and/or the way in which tasks were undertaken. Most notably, men were seemingly more exposed to the risk of traumatic spinal injury as a result of heavy loading and twisting of the spine, and to general wear-and-tear of a greater range of joints, possibly reflecting differing gender roles and expectations. At Collingbourne Ducis, males similarly exhibit greater rates and range of joint disease, though spinal injury was more prevalent in the females, suggesting differences between the activities of the two communities, how they were executed and by whom (Egging Dinwiddy 2016b). Stuckert also notes indications of gender-specific activities (2010).

Activity-related changes

As well as the two possible crutch users (burials 2638 and 6002; see above), some individuals have noteworthy changes that may relate to activity, though the evidence can only indicate strength of muscle sets and/or repetition of movements rather than particular occupations or tasks. One large subadult male (burial 2667) has particularly exaggerated hypotrochanteric fossae and robust femoral attachments, and very flattened, slightly anteriorly bowed tibiae which feature exceptionally deep grooves along the soleal line – indicating strong pulling of the *gluteus maximus* (lateral hip rotation) and *soleus* (plantar flexion of the foot), as may occur with horse-riding with flexed legs, or habitually maintaining a similar pose. Very similar changes were seen in the legs of the (probably related) subadult male in the adjacent grave (burial 2685). The sizeable bones of a mature adult male (burial 2641) include considerable plastic changes and marked enthesophytes. The sterno-manubrial joints are massive and the costo-clavicular entheses are strongly marked. The scapular and humeral attachment sites are pronounced and there is evidence to suggest degeneration of the rotator cuff; the distal ulnae are medio-superiorly inclined. The femora are distinctly flared at the proximal end (lateral), the proximal tibiae are noticeably laterally inclined, and the soleal lines pronounced. Together these imply that this man was an especially robust and strongly muscled individual, who participated repeatedly in activities that required considerable strength across his entire body, though seemingly did not give rise to risk of significant injury (eg, iron smithing as opposed to fighting).

Other plastic changes identified in the assemblage include those resulting from metabolic disease, trauma and benign soft tissue masses (see above and below).

Miscellaneous

Most of the lesions described as cysts (Table 11.1) represent pseudo-erosions or solitary bone cysts, which are often the result of vascular disturbance and/or fibroplastic proliferation; they are usually asymptomatic (Rogers and Waldron 1995, 61–3; Eiken and Jonsson 1980).

Developmental cortical defects on articular surfaces (as opposed to connective tissue attachment sites – see above) are very common, and often they are normal variations or insignificant congenital anomalies, though some may have a traumatic origin.

Plate 11.19 Adult male (burial 7101): anterior aspect of the patellae showing medio-inferior elongation, probably associated with patellar instability

Several examples are listed in Table 11.1, all of which are consistent with a non-traumatic aetiology.

A possible case of bilateral patellar instability (Adams 1987, 240; McCarthy and Bollier 2015) was observed in the remains of burial 7101, an adult male. Repeated subluxation of the patella puts excessive strain onto the medial restraints of the knee, and consequently causes injury to the patella. Both patellae feature infero-medial extensions of the medial articular surfaces, the surrounding structures appearing sclerotic, creased and somewhat buttressed (Pl. 11.19). Slight osteophytes are present here, and there is faint pitting of both medial articular surfaces, suggesting the onset of degenerative joint disease.

Concluding Remarks

The assemblage is consistent with the cemetery having been used by a largely local community, though a proportion of its very youngest members (infants and neonates 0–4 years) were seemingly afforded a different mortuary treatment, and/or disposed of elsewhere. Some of the first Anglo-Saxons to be buried at Barrow Clump were not from the local area (see Watts-Plumpkin below), yet they appear to have settled into a community living close-by, inter-married with the existing populations and raised families. Evidence provided by the metric data and distribution of various morphological variations suggest that choice of location for burials was strongly influenced by family links, the burials initially deriving from at least two family groupings, which appear to have become inter-related over time.

The community was subject to fairly typical levels of health and nutritional stresses for the period, but generally appear to have fared better than those buried not far away at Collingbourne Ducis (Egging Dinwiddy and Stoodley 2016b). The rates of enamel hypoplasia are high, but this may, paradoxically, reflect greater survival of childhood onslaughts. Like their contemporaries, their diet was likely to have been highly dependent on carbohydrate-based, tough and gritty foodstuffs, but adequate protein consumption allowed them to achieve average stature. The evidence also points to slightly greater consumption of sugar-rich food, for example honey and/or fruit. As elsewhere, oral hygiene was evidently not a major concern, yet an attempt was made to alleviate the pain and irritation of one man's damaged, carious tooth. The use of the teeth and jaws in everyday tasks was apparent to some degree – as witnessed in other similarly dated assemblages (Stuckert 2010; Egging Dinwiddy 2011; 2016b; Anderson and Andrews 1997). Stressful episodes were likely associated with weaning, childhood diseases and periodic malnutrition, though cultural customs such as infant swaddling and confinement of the sick may also have been contributory factors. As children (particularly boys) approached their 'coming-of-age' they appear to have been subject to increasing

Table 11.11 Strontium isotope analysis results

Grave	Burial	Tooth Sampled	Mass (mg)	Final corr. 87Sr/86Sr	2σ	RSD
2639	2638	Mandible R.P2	9	0.708262	0.000111	0.007851
2648	2647	Mandible R.P2	10.1	0.708055	0.000093	0.006602
2653	2652	Maxilla L.P2	10.6	0.708689	0.000095	0.006684
2656	2655	Mandible L.P2	5.5	0.708576	0.000137	0.009670
2668	2667	Maxilla R.P2	5.9	0.708234	0.000248	0.017473
2674	2673	Mandible R.P2	4.2	0.707979	0.000124	0.008729
2699	2692	Mandible R.P2	9.5	0.708483	0.000085	0.006019
2723	2722	Mandible R.P2	10.7	0.709902	0.000095	0.006720
2804	2803	Maxilla L.P2	7.7	0.710185	0.000060	0.004218
2818	2820	Mandible R.P2	4.8	0.709291	0.000104	0.007320
2829	2831	Mandible L.P2	5.3	0.708789	0.000093	0.006534
2832	2834	Mandible R.P2	7.1	0.708358	0.000079	0.005600
2836	2838	Maxilla R.P2	4.1	0.708278	0.000163	0.011488
2873	2859	Mandible L.P2	5.5	0.708379	0.000119	0.008367
2902	2903	Maxilla R.P2	6.8	0.709435	0.000119	0.008400
–	2920 (l)	Larger sheep tooth	6.1	0.708101	0.000124	0.008747
–	2920 (s)	Smaller sheep tooth	4	0.708056	0.000087	0.006170

levels of stress, for example extreme physical exertion, thought to be linked to the adoption of adult roles at a relatively young age. The fatal sharp blade injury to a juvenile around the age of the onset of puberty is a rare finding that provides a further insight into of the lives and treatment of young members of the Saxon communities.

In general, there was marked sexual dimorphism with regard to body-size, and there is some evidence to suggest differences in occupations and lifestyles. The men and older boys were more likely to have led very physically demanding, sometimes violent lives that required or resulted in bodily strength and occasionally severe injuries. Women appear to have been largely involved in more circumscribed activities, particularly ones that favoured the use of the upper limbs. The skeletons of one or two individuals are particularly informative as to possible occupation, for example the probable warrior and the strong, muscular possible blacksmith.

High levels of bacterial infection, particularly of the common *staphylococcus aureus*, which has the potential to cause serious illness or death, further demonstrates inadequate personal hygiene. The presence of one, possibly two, cases of poliomyelitis is of particular interest as contemporaneous evidence is not common.

A number of individuals would have had some form of physical disability, requiring various levels of care and assistance, though mechanisms seem to have been in place to allow them to continue to be active members of the community.

Isotopic Analysis of Residential Mobility

by Emma Watts-Plumpkin

Introduction

Strontium isotope analysis was conducted on human teeth sampled from the remains of 15 Anglo-Saxon burials (Fig. 11.5, Table 11.11) with the aim of establishing the extent of migration within the cemetery population and adding to the knowledge of migration during this period across the British Isles.

While samples in this study were taken with the aim of conducting both strontium and oxygen isotope analyses, the oxygen results returned from the laboratory were significantly higher than expected. Taken at face value, the results were so high that they would have placed the entire sample not only outside the British Isles but outside the whole of Northwest Europe – including the two faunal samples from the site, which were analysed for the purpose of indicating a local isotope signature. These unusual results were more plausibly explained as being due to contamination or analytical error. Unfortunately, there was no opportunity to re-run the oxygen analysis within the available timescale; consequently, as the results were so out of the ordinary, the decision was made not to include them within the subsequent analysis. The conclusions presented here have, therefore, been based on the strontium isotope data alone.

Principles

The area in which a person lives can leave characteristic traces within that individual's body. Subsequent analysis of these traces can indicate where a person grew up and whether they have moved into or out of an area during their lifetime. One such form of analysis comprises examination of the ratio of strontium isotopes within the human body. The proportion of strontium isotopes present within rock varies geologically and, through weathering and other natural processes, they are transferred to the soil and groundwater, and subsequently into the plants, and then animals and humans via the food chain (Evans *et al.* 2009, 617; Montgomery 2002, 24; Vanhaecke and Degryse 2012, 378). During this process the specific $^{87}Sr/^{86}Sr$ ratio is retained and, therefore, the $^{87}Sr/^{86}Sr$ ratios found within the bones and teeth of humans can be characteristic of the rocks the isotopes originated

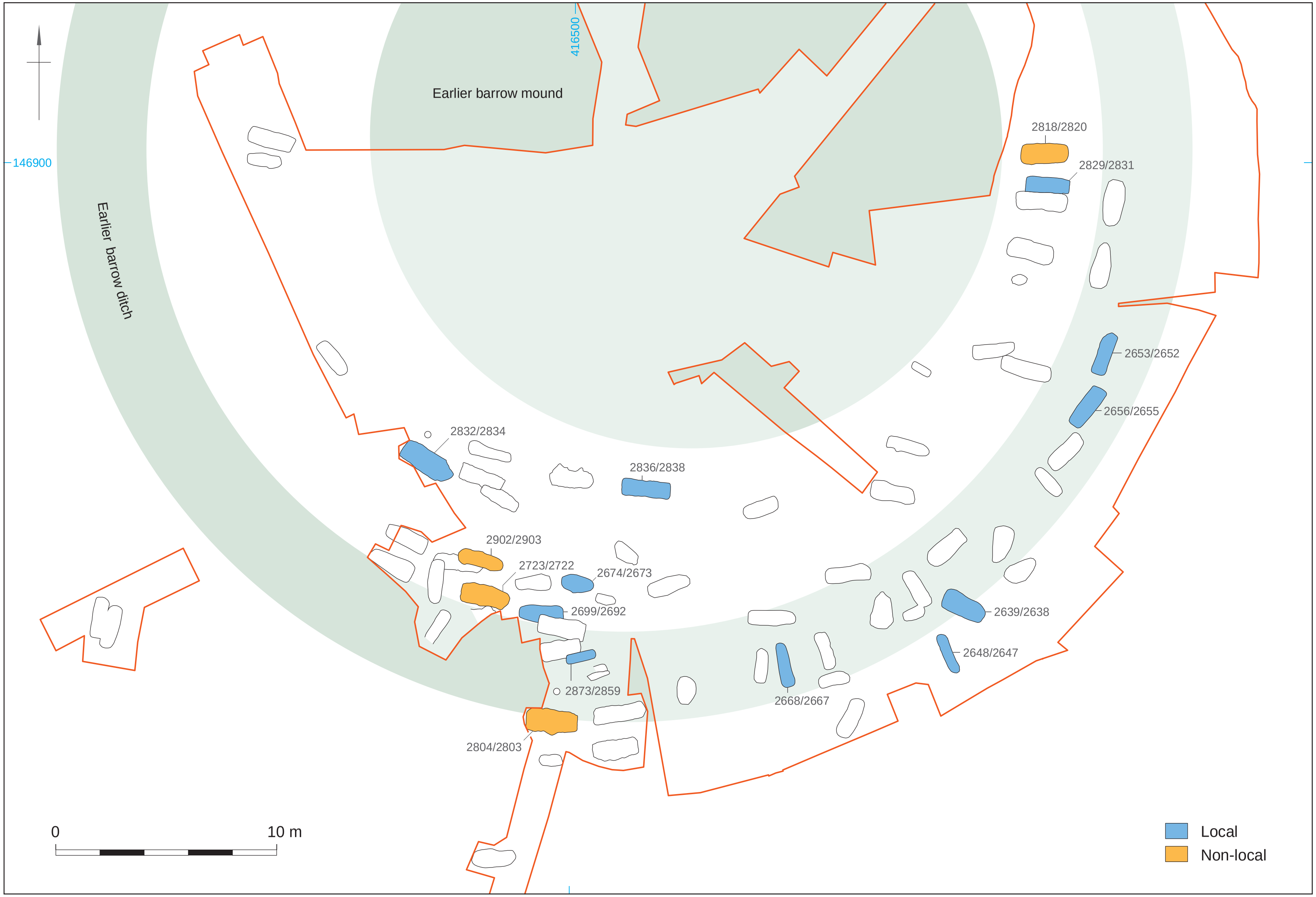


Figure 11.5 Sampling distribution and results of isotope analysis

from. Unlike bone, once tooth enamel has formed it does not regenerate, and so the isotopic compositions present in the geographic area an individual grew up in will effectively be 'locked in' regardless of any subsequent movement in location.

Comparison of the strontium ratios recorded in human teeth with the strontium measurements from known geographic locations and known geology can be used to indicate areas where that person may have lived during the time those teeth were formed.

Materials

Sampling took place in April 2014 and included remains from graves excavated during the 2012 and 2013 excavation seasons. Samples were taken from those individuals with sufficient teeth suitable for analysis, and included individuals of both sexes across the age range, buried with a variety of grave good types and within graves in different areas of the cemetery (Fig. 11.5 and Table 11.11; denoted '$' in Table 11.1 and indicated in the Grave Catalogue (Chapter 10)).

The 2nd premolar tooth (P2) was taken from all 15 individuals, the results from which reflect the location of the individuals between the ages of 3 and 6 years. Two sheep/goat teeth of likely Roman or later date from the upper ditch fill of the barrow were also sampled and analysed to give a comparative 'local' result against which to gauge those from the human teeth.

Methods

Sample preparation

Sample preparation took place at the University of Oxford Research Laboratory for Archaeology and the History of Art (RLAHA). All 15 human teeth and both faunal teeth were cleaned prior to drilling using a Swam Blaster air abrasion system and 5 micron aluminium oxide powder. A dental drill with diamond-coated burrs was used to separate the enamel from the tooth.

Strontium isotope analysis

Strontium isotope analysis was undertaken at the University of Leuven. The methodology is described in full in Degryse *et al.* (2012) and may be summarised as follows:

Dissolution of enamel for investigation was accomplished by means of a hotplate digestion using a HNO_3–HCl mixture. After sample digestion, the Sr fraction of the sample digests was isolated from the concomitant tooth matrix via an extraction chromatographic separation using a Sr-selective resin. Sr isotope ratio measurements were carried out using a Neptune multi-collector ICP-MS instrument. All samples were run in a sample-standard bracketing sequence with a 200 mg L-1 Sr solution of the isotopic reference material NIST SRM 987 $SrCO_3$ that was previously conducted through the extraction chromatographic isolation procedure as a standard. Blank Sr signals were always negligible compared to the Sr intensities encountered for standards and samples (<0.1%). The intensities obtained for $^{83}Kr^+$ and $^{85}Rb^+$ were used to correct for the Kr interferences on m/z ratios 84 and 86, and the Rb interference on *m/z* 87, respectively. Russell's law was used for mass discrimination correction on the basis of a $^{86}Sr/^{88}Sr$ ratio of 0.1194 (De Muynck *et al.* 2009; Thirlwall 1991).

Oxygen isotope analysis

Samples were analysed for $\delta^{18}O$ using a VG Isogas Prism II mass spectrometer with an on-line VG Isocarb common acid bath preparation system where they were reacted with purified phosphoric acid (H_3PO_4) at 90°C. The evolved CO_2 was pre-concentrated using a cold finger apparatus prior to admission to the dual inlet system on the mass spectrometer. Calibration to Vienna Pee Dee Belemnite standard (VPDB) was via NBS-19 and was made daily using the Oxford in-house Carrara marble standard (NOCZ).

As outlined above, the decision was taken not to include the oxygen results in the subsequent analysis since the readings returned from the laboratory were unfeasibly high. Usually, oxygen and strontium isotope analyses would be used in conjunction with each other in order to pinpoint areas where an individual spent their childhood. The absence of the oxygen data means it was not possible to cross-reference the strontium data against it, therefore, much broader potential areas of origin have had to be attributed to the individuals in this study than might otherwise have been possible.

Results and Discussion

Defining strontium isotope ratios of the local area

Barrow Clump is situated within an area of Cretaceous chalk, which geologically is known to have a $^{87}Sr/^{86}Sr$ ratio of ~0.7075 (McArthur *et al.* 2001, 156) and produces spring water with a $^{87}Sr/^{86}Sr$ ratio of 0.7077 (Montgomery *et al.* 2006a, 1628). The remains of individuals excavated from areas of Cretaceous chalk have been found to have strontium ratios usually in the region of ~0.708 to 0.709 (Evans *et al.* 2006; 2010a; Montgomery *et al.* 2000; Montgomery 2002; Montgomery *et al.* 2005; 2006b), and previous analyses conducted on dentine and plant samples from the wider vicinity of Barrow Clump, such as at Durrington (approximately 7 km to the south), provided results within this range (Evans *et al.* 2010b).

Based on the factors above, it is expected that individuals who grew up in the area around Barrow Clump would have a $^{87}Sr/^{86}Sr$ ratio in the range of 0.708–0.709. This is supported by the strontium isotope results of the sheep/goat samples taken during this study; at 0.708056 and 0.708101, these are at the lower end of the predicted 0.708–0.709 range.

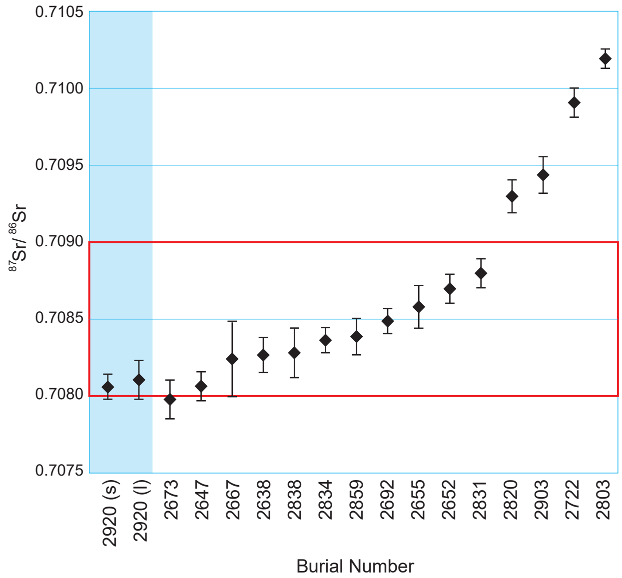


Figure 11.6 Chart showing the Barrow Clump individuals and their corresponding strontium ratio, with two standard deviations (2σ) plotted for each. The first two columns (contained within the blue box on the left) are the two faunal samples. The red rectangle indicates the expected strontium ratios for the area local to Barrow Clump

Human samples

Ten of the samples from Barrow Clump have a $^{87}Sr/^{86}Sr$ ratio that falls within the expected local range of 0.708–0.709. One other individual, burial 2673 (a juvenile), falls just outside the lower end of the scale at 0.707979, but as the error bar reaches within the expected range (Fig. 11.6) and the result is very close to that of the faunal sample, it should be considered alongside the other 10 samples.

These 11 individuals are, therefore, likely to have spent their childhood in the Barrow Clump area or in another geologically similar location that produces strontium isotope ratios within this same range. They include individuals across the age range, both males and females, who were buried along a variety of orientations in different parts of the cemetery (inside and outside the area of the ditch, and within the ditch fill (Fig. 11.5)).

The remaining four individuals – burials 2820, 2903, 2722 and 2803 (one male and three female adults) – all have increasingly higher strontium ratios than the expected 'local' range, suggesting that they spent their early childhood years outside the vicinity of Barrow Clump. For three of these four (2722, 2820, 2903) there are large areas of the British Isles that produce comparable ratios including much of the Midlands, the south coast, the west of England, the Home Counties and the east coast of East Anglia, as well as areas in Scotland and the north of England. For burial 2803 (adult female), the outlier with the highest strontium ratio, the possible areas of origin within the British Isles are more limited. Geologically, these are mainly restricted to southern Cornwall and areas within Cumbria, although other isotope studies outside these locations have produced strontium ratios within this 0.710–0.711 range. These include Wasperton, a site situated on Triassic rocks in Warwickshire, where it was estimated that the locally available strontium in the biosphere ranged from ~0.7100 to 0.7107 (Montgomery *et al.* 2006b, 6), and Cliffs End Farm in Kent, where strontium ratios for the local environment fell between 0.7082 and 0.7101 (Millard with Nowell 2015).

Areas of continental Europe have also produced comparable strontium ratios to those from the four non-local individuals at Barrow Clump including northern Germany, parts of central and southern Germany, Italy and Hungary (Voerkelius *et al.* 2010). It is not possible, however, to pinpoint specific areas of origin based on strontium isotope analysis alone without oxygen isotope data to narrow this down further, nor is it possible to rule out other localised areas of Europe, or indeed areas of the world, that produce similar strontium isotope ratios.

All four of the individuals with non-local isotope ratios were buried on the same west–east orientation, three of them in a fairly tight cluster in the south-western area of the site (Fig. 11.5). Most were recovered from graves cut inside the area described by the barrow ditch with one on the outer margins; none were cut though the ditch fill.

Notable individuals

Those with isotope ratios local to Barrow Clump included an adult male buried with a bronze-bound wooden vessel and spear (from grave 2668), an adult female buried with both an Anglo-Saxon and a Roman brooch (grave 2653), and an adult male (grave 2832) buried with a shield and spear. All those buried with weapons of some form appear to have been local individuals, although many other locals had no grave goods at all.

Conclusions

The strontium isotopes indicate that at least four adults buried within the Barrow Clump cemetery – three females and one male – are likely to have spent their early childhood years outside the local area. One of these individuals, burial 2803, an older female with the highest strontium ratio of the whole sample, may have originated from a different area to the other three.

While there are several areas across the British Isles that produce strontium isotope ratios in the range seen in these four outliers, their ratios are also compatible with some areas of continental Europe. It is, therefore, possible that they may have grown up not just outside the Barrow Clump area, but possibly even outside the British Isles altogether.

The strontium isotope results are not diagnostic by themselves however, and without oxygen isotope results to compare and cross-reference these with, the exact locations these individuals originated from cannot be pinpointed further.

Chapter 12
Metalwork

by Nick Stoodley with contributions by Matt Bunker, John Hines and Ian Riddler

Introduction

This section draws, where appropriate, upon established typological surveys to ascertain the chronology of the artefacts and their cultural background. It does not refer to the major dating project by Hines and Bayliss (2013) because the majority of the Barrow Clump metalwork had been analysed by the time it was published.

In total 166 metal objects were recovered (not including coins, and each group of fragments counts as one object): 59 of copper alloy, 105 of iron and two silver artefacts (Table 12.1). The majority of the finds came from graves, while 18 were unstratified, most of the latter from animal-disturbed topsoil or subsoil and likely to derive from graves. A probably substantial but unknown percentage of the cemetery has been excavated, but there are certainly a number of unexcavated graves. The artefacts have been placed into one of four main assemblages (weapons, jewellery, personal equipment and vessels). Each assemblage is split into object type and then, using the main classificatory schemes, further divided by subtype thus allowing the date and cultural association of each piece to be considered.

Reference will be made to the mainly 6th-century cemeteries of Collingbourne Ducis (Gingell 1978; Egging Dinwiddy and Stoodley 2016), Charlton Plantation (Davies 1985), Harnham Hill (Akerman 1855 a and b), Market Lavington (Williams and Newman 2006), Petersfinger (Leeds and Shortt 1953), Blacknall Field, Pewsey (Annable and Eagles 2010, hereafter Pewsey) and Winterbourne Gunner (10 graves were excavated in 1960 (Musty and Stratton 1964), while a further 76 were investigated between 1992–7 but are unpublished) and the 7th-century burials associated with Bronze Age barrows at Swallowcliffe Down (Speake 1989) and Ford (Musty 1969). Subsequent references to these cemeteries will not provide bibliographic details.

Weapons

Weapons were recovered from 11 graves (Fig. 12.1), and there are a further three unstratified spearheads.

Table 12.1 Breakdown of metal objects by material and type (where appropriate)

Metal	No. in total	Types / description						
Copper Alloy								
Brooches	26	Romano-British: 4	Applied disc: 2	Disc: 6	Button: 3	square-headed: 2	Penannular: 1	Saucer: 8
Toilet items	4	Cosmetic brush: 3	Tweezers: 1					
Finger rings	5	Spiral band: 2	Band: 3					
Rings	2							
Vessel/bucket	1							
Vessel fittings	3	2 fittings	Repair patch					
Strap ends	2							
Buckles	2							
Coins	8	Perforated: 3						
Misc./uniden.	10	Incl. ? knife guard, washer, plate x 2, fitting, ?nail, stud						
Fragments	Groups in 4 graves							
Silver								
Finger ring	1							
Spoon	1							
Iron								
Spearheads	12	C1: 1	E2: 3	H1: 4	H1 or transitional H1/H2: 1		H2: 3	
Ferrules	2							
Shield bosses	9	Group 1.1: 5	Group 2: 1	Group 3: 1	Group 4: 1	Group 6: 1		
Shield fittings	8							
Sword	1							
Knives	15	Evison type 1: 4	Evison type 2: 4	Evison type 3: 4	Evison type 4: 1	Unidentified: 2		
Buckles	11	Type I.11a-i.x: 3	Type I.12a-i: 1	Type II 19.a: 4	Type II 21a: 1	Unidentified: 2		
Brooches	2	Pennanular	Bow (type Estagel)					
Horse bit	1							
Pins	3	loop-headed: 2						
Rings	5							
Misc./uniden.	26	Incl. rivet x 6, shaft x 3, clip, fitting, plate, rod, strip x 2, possible buckle, uniden. objects x 10						
Fragments	Groups in 10 burials							

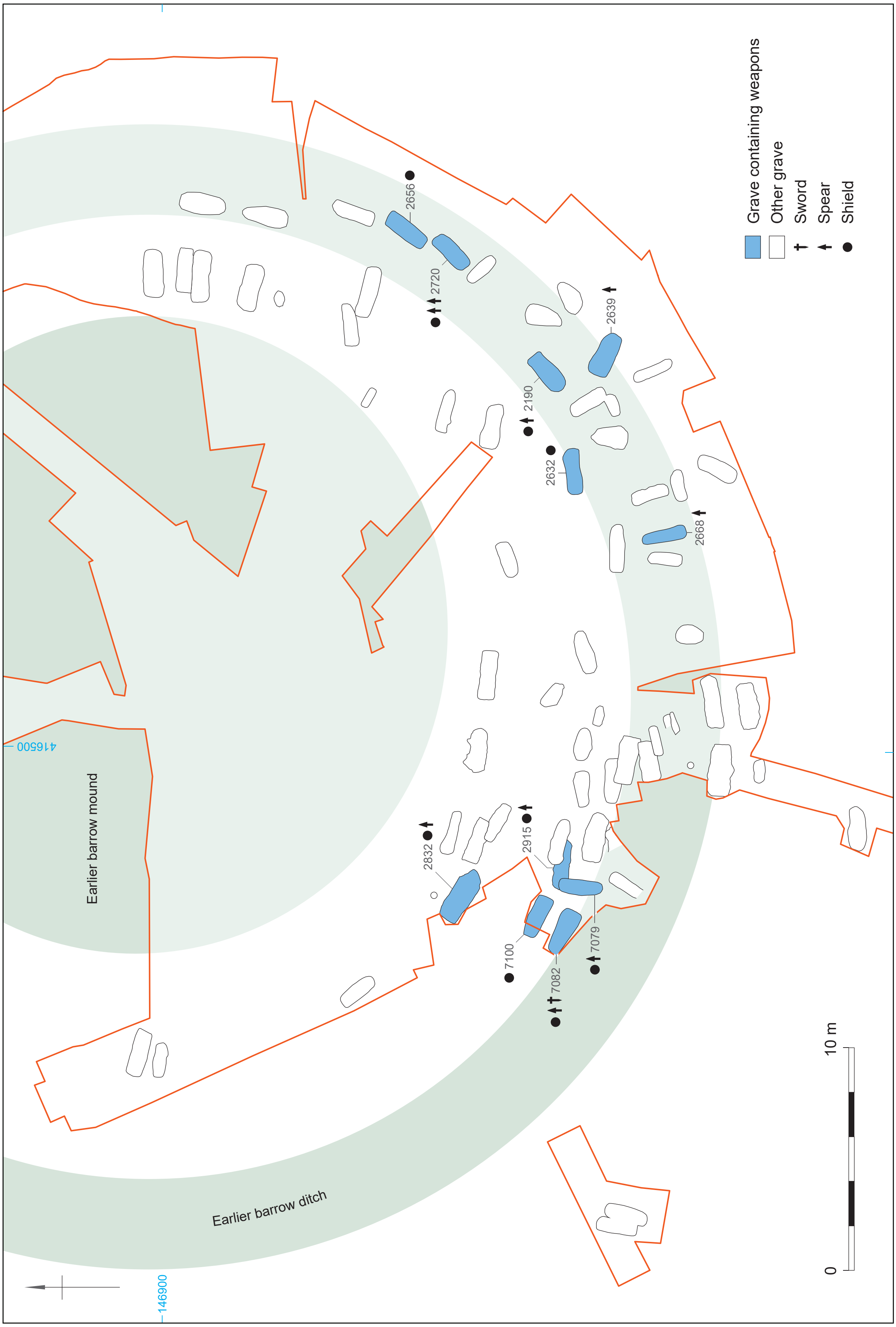


Figure 12.1 Cemetery plan: distribution of weapons

There is one sword, 12 spearheads and nine shield bosses (Table 12.1). Overall the proportion of burials with just a spear (18%) is low (Table 12.2). The national average is 79% and in Wiltshire the figures for Collingbourne Ducis (53%), Market Lavington (50%) and Petersfinger (43%) are also significantly higher than at Barrow Clump. It is, however, the same as Pewsey and at both sites it can be explained by the high number of spears associated with other weapon types. The combination of a pair of spearheads and a shield in grave 2720 is notable because only 6% of burials nationally had this configuration and the only Wiltshire example is the high-status 7th-century barrow burial at Ford. At Barrow Clump a relatively high number of weapon burials only contained a shield (27%:3): compare this to the national figure of 13% (226) and 10% (58) from Wessex. A sword, complete with a scabbard and fittings, was found in grave 7082. Such offensive weapons are rare finds: just 3% of graves nationally contained these items, but in Wiltshire, Petersfinger and Pewsey produced three and four examples respectively with most, as was the case at Barrow Clump, accompanied with a shield and spear, representing a full weapon kit.

All the weapons, except for two, had been placed with adult males, a figure easily paralleled in other Wiltshire burial grounds (Egging Dinwiddy and Stoodley 2016, 104). The exceptions were in grave 7079, a possible male of 15–18 years with a spear and shield, and a spear with grave 2668, a possible subadult. Weapon burials account for 16% of the total group of burials, which is lower than that recorded in contemporary Wiltshire cemeteries, for example Pewsey (19%), Petersfinger (20%) and Market Lavington (24%), but is similar to Collingbourne Ducis (13%). Just under half of the males were interred with weapons (47%), which concurs exactly with Härke's (1989, 49) national study. In the context of Wiltshire, the figure is higher than Collingbourne Ducis (42%), but lower than that at Pewsey (53%), Petersfinger (55%) and especially Market Lavington (71%), although the incomplete nature of the investigation at the latter may be partly responsible for this unusually high figure.

The weapon burials were distributed fairly evenly throughout the cemetery, but in several places they were found close together, such as graves 2656 and 2720, which also shared a similar alignment. On the western edge of the cemetery, graves 7082 and 7100 were adjacent and had the same orientation, while at their foot end a grave (7079) contained the weapon burial of a male adolescent (7081) on a different alignment. Two burials with the same type of shields were in close proximity in the south-eastern part of the cemetery and shared the same orientation (graves 2656 and 2720). A similar situation involving shield burials was noted at Market Lavington. Where weapon burials were placed close together it could indicate a similar time of burial or that a relationship of some sort had existed between the individuals.

Table 12.2 Weapon combinations

Weapon combination	Number
Spear	2
Spear and shield	4
Spear x 2 and shield	1
Shield	3
Sword, shield and spear	1

Spearheads

Swanton's (1973) classification has been used; most examples were ascribed to a group, but one exhibits intermediary features (Table 12.3; Pl.12.1).

Three angular straight-sided spearheads (Group E2, 6th–7th century, ONs 5360 (grave 2639), 5411 (grave 2832) and 5429 (grave 2915)) were discovered; they are well represented in the Upper Thames, East Anglia and the Midlands, but the Barrow Clump examples are the first from Wiltshire. Smaller examples (E1) come from Collingbourne Ducis (grave 83) and Pewsey (grave 45), and occur in contexts of the 6th and 7th century. There are eight angular concave-

Plate 12.1 Spearheads (left to right, ONs 5334, 5360 and 5301)

Table 12.3 All spearheads (following Swanton 1973)

Spearhead (Swanton Group)	Grave
C1	U/S (ON 5334)
E2	2639, 2832, 2915
H1	U/S x2 (ON 5301; SF 4218), 2720/1, 7082
H2	2688, 2720/2, 7079
H1/H2 transitional	2190

sided spearheads. Four belong to the H1 Group (the smallest examples; ONs 5366/1 (grave 2720), 5532 (grave 7082) and unstratified 5301 and SF 4218), while another has a length that places it between the H1 and H2 Groups (ON 4470 (grave 2190)). H1 is an early form dating to the late 5th to mid-6th century *(ibid.*, 103–7). In addition, there are three larger examples that can be classified as Group H2 (ONs 5323 (grave 2668), 5366/2 (grave 2720) and ON 5535 (grave 7079)); these spearheads are found in contexts from the 5th through to the 7th century (*ibid.*, 107–11). All Group H spearheads have a similar distribution, with concentrations along the Thames Valley and in the Midlands, and have been retrieved from most Wiltshire cemeteries; H1 spearheads are especially well represented at both Pewsey and Petersfinger. Finally, ON 5334 (unstratified) is a small leaf-shaped spearhead of Swanton Type C1 with a date range extending from the 5th century to mid-6th, possibly into the 7th century and with a wide distribution.

Most spearheads were found on the right-hand side of the burial above the skull, which agrees with the Wessex data and indicates a majority of right-handed spearmen. Exceptions to this rule were in graves 7082 and 7079, where the weapon was to the left of the body; in the former it would have been placed next to the sword. At Collingbourne Ducis there was no preference: an equal number of burials had spears on either the left- or right-hand side. Two small areas of textile were discovered on the blade of ON 4470 (grave 2190) and might be the remains of a wrapping, but alternatively could have come from an item of clothing (Peacock 2007, 12–13).

Plate 12.2 Shield boss over legs in grave 7082

Shields

Evidence of nine shields was recovered, consisting of iron fittings (bosses, grips and board fittings). There are five Group 1.1 bosses (later 5th to earlier 6th century, ONs 5435 (grave 2915), 5348 (grave 2656), 5367 (grave 2720), 5563 (grave 7100) and 5495 (grave 7082)), a form that is concentrated in the Upper Thames Valley and Wessex (Dickinson and Härke 1992, 12–13). It is by far the most common boss in Wiltshire, occurring in 74% (n=20/27) of interments, for example Collingbourne Ducis grave 82 and several from Petersfinger and Pewsey.

The other types of boss are more frequently encountered outside Wessex. This is particularly so for Group 3 bosses (mainly 6th century) (grave 2190, ON 4469), a form popular in East Kent and Essex (*ibid.*, 15–16), although a pair was recovered from Petersfinger (graves 7 and 60) and Collingbourne Ducis (graves 52 (possible) and 77). Grave 2632 produced a low narrow boss with a straight cone (ON 5361), identified as a Dickinson and Härke Group 4, a 5th to earlier 6th century form with a distribution centred on the Upper Thames Valley and neighbouring areas of Wessex and the West Midlands (Dickinson and Härke 1992, 17–19). Wiltshire examples can be cited from Harnham Hill (grave 1) and Pewsey (graves 14 and 34). An example of a Dickinson and Härke Group 2 boss was recovered from grave 7079; a carinated boss that is of a transitional type between Group 1 and 3. It is a small group with examples deposited in graves from the beginning of the 6th to the early 7th century and was common in East Anglia and the West Midlands (Dickinson and Härke 1992, 13–14). The group is rarely found in Wessex, though in Wiltshire examples come from Bassett Down and Charlton Plantation (grave 59). A low curved boss (Group 6, ON 5412) was retrieved from grave 2832. This type is mainly found in eastern areas of the country (Geake 1997, map 35) and in contexts dating from the late 6th to mid-7th century; it is seldom encountered in Wiltshire, although an example has been recovered from Collingbourne Ducis (grave 101). All the bosses were associated with grips and most are Type Ia 1 (short grip with expanded terminals), although the boss (ON 5563) in grave 7100 was found with a Type Ia 2 grip (straight sided), while in grave 7082 (ON 5495) it is of medium length but exhibits characteristics of a long flat grip (IIIa). The grip that was associated with the shield in grave 2190 had a wooden handle and may also have had a leather covering, while the board also had a leather cover (Peacock 2007, 9–10).

The size of this weapon restricted where it could be placed, and the majority of shields have been found horizontally along the centre axis of the grave (Dickinson and Härke 1992, 65). At Barrow Clump six examples were found over the upper body and head area, while in the other graves the boss was associated with the legs (Pl. 12.2). Circular iron board studs were found with a number of the bosses; they are the most frequent type of fitting (Dickinson and Härke 1992, 27), and provided a simple form of decoration. Two pairs of circular iron board studs were associated with the boss in grave 2656, while in grave 7100 there were four studs; originally a pair to either side of the boss. A single board stud topped with tinned copper alloy plate was found in grave 7082 and is in keeping with the wealthy nature of this weapon burial. A pair of board studs were recovered from grave 2190 and from the position that they were found in it can be estimated that the board had a minimum diameter of approximately 0.74 m, while the height of the studs indicated that the board had a thickness of approximately 10 mm (Peacock 2007, 12). The studs from graves 2656 and 7100 give a minimum diameter for the shields accompanying these burials of 0.65 and 0.70 m respectively. Overall, the diameter of the boards from Barrow Clump compare well to Dickinson and Härke's (1992, 45) range of 0.42–0.92 m. The timber used for the board varies: graves 2190 and 2632 (willow or poplar, 2832 and 7082 (alder) and grave 2915 (lime) (see Cameron, Chapter 13). Alder and willow (or poplar) were also the most common species in Dickinson and Härke's (1992, 48) national sample.

Sword

by Matt Bunker

The sword (ON 5496) found in grave 7082 is, overall, a typical example of an Anglo-Saxon sword of the 6th/7th century, in that it consists of a broad, pattern welded blade (a three-bar uninterrupted continuous herringbone pattern; Paul Mortimer, pers. obs.) with roughly parallel cutting edges and with a lower guard, grip and upper guard made of horn (Pls 12.3 and 12.4). The tang of the blade was peened over a roughly circular iron washer which sat on top of the upper guard, securing the hilt assembly. It is not possible to determine whether any adhesives or wedges were utilised in the assembly but, where visible, the horn elements appear to be tightly fitted to the tang. The blade protrudes 3 mm from the mouth of the scabbard, indicating that the shoulders of the blade sat in a recess cut into the base of the lower guard, which would increase the stability of the hilt assembly. There is no evidence that a pommel was ever fixed to the upper guard to conceal the peened end of the tang, and again this is typical. In a recent study of 168 examples (Mortimer and Bunker 2019), fewer than 40% of early Anglo-Saxon swords had a pommel when excavated. It is possible that the pommel was removed from the sword prior to deposition; as of the end of 2016, the Portable Antiquities Scheme contained 53

Plate 12.3 Sword from grave 7082

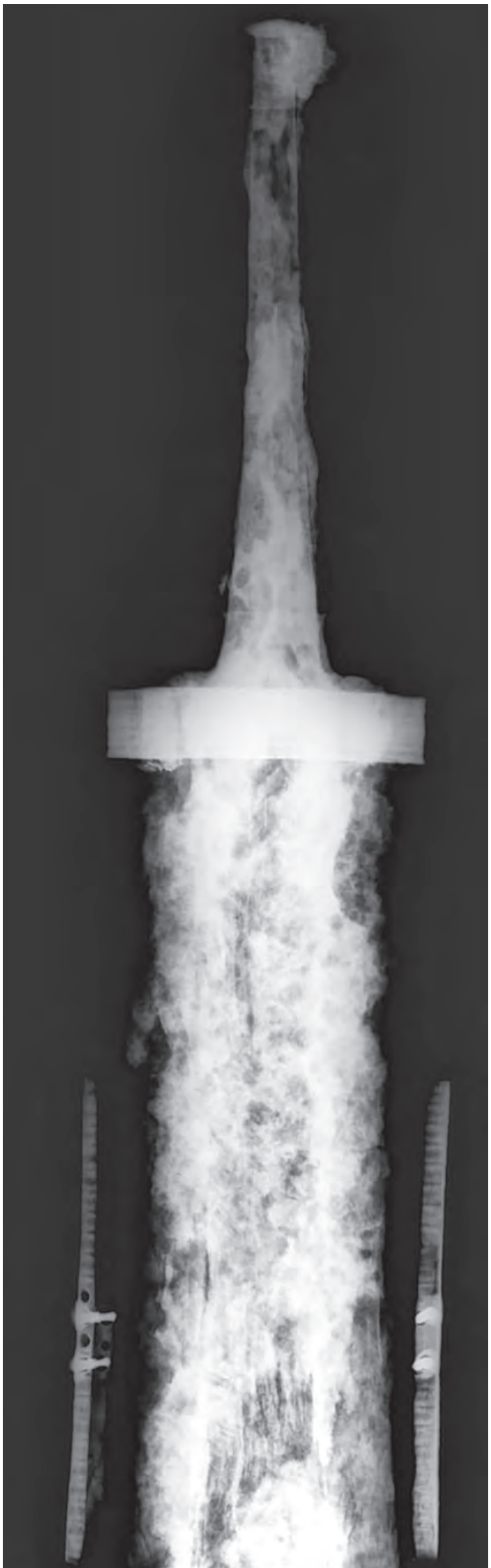


Plate 12.4 X-radiograph of upper part of sword from grave 7082

pommels of this period recorded as stray finds (not including the approximately 80 discovered in the Staffordshire Hoard), some of which showed no sign of having been part of an inhumation burial. However, two of the best-preserved examples that we have of hilt fittings of the period (from the Snape boat burial and the Cumberland hilt assembly held by the British Museum) demonstrate that pommels were not always fitted, even to swords with complex hilt decorations.

An interesting feature of the sword from grave 7082 is the presence of two flat, copper alloy spacers which sit at either end of the grip, separating it from the guards. A similar fitting can be seen between the grip and the upper guard on the sword from Watchfield (Scull 1992) which seems to have served a practical purpose in securing the hilt assembly to the tang. It is unclear whether this is the case with the examples from Barrow Clump or whether they are primarily decorative. Regardless, they are a rare if not unique surviving feature on a sword of this period.

The other notable feature of the sword is the amount of grip material which has survived. The large piece of mineralised horn which splays out as it meets the lower guard is one of the most substantial from an Anglo-Saxon sword of this period, exceeded only by those from Snape and Cumberland, and it gives us an indication that, like those two examples, the grip may have been ribbed with grooves for the fingers. Bovine horn delaminates over time and what seems to have been preserved is presumably just the core of the grip, giving us an idea as to its original width but not its depth.

As with the sword, the scabbard is typical of the period in terms of its construction (see Cameron, Chapter 13) but its metal fittings and associated finds are worthy of further discussion.

The copper alloy mouthband falls broadly into Menghin's Type 3b (Menghin 1983), having seven ridges running across the front face which extend to cover the sides of the band. This face still bears traces of gilding. However, the back of the band is unusual in that the flat surface is also decorated, with two rows of ring and dot decoration running close to its top and bottom (Pl 12.5). The band has cracked from top to bottom on this face, with the break passing through what appears to be a deliberately formed circular hole near the top. There is no obvious matching hole in the wooden scabbard remains underneath this feature, so it does not appear to have been for a rivet to fix the band to the scabbard. Evison theorised that the holes present on some scabbard mouths from England and Scandinavia were to allow for the suspension of sword beads (Evison 1967) and, given the presence of the small bead (ON 5497) close to the scabbard, this is a possible explanation (Tim Edwards, pers. obs.). However, it should be noted that, like other mouthbands considered by Evison, there is no obvious gap between the mouthband and the body of the scabbard, so it is unclear how a thong or cord could be passed through the hole to suspend a bead.

Two gilded, copper alloy, U-shaped edge strips of Menghin's Type 1a were fitted to the outside edges of the scabbard, each secured to it by two disc headed rivets which passed all the way through the wood of the scabbard and which were then peened over the back of the edge strips. The decoration on these edge strips consists of a repeated pointed tongue-shaped pattern along most of the front face, except for the central area where the holes for the rivets are. Although superficially similar to the examples from another Wiltshire burial, Blacknall Field, Pewsey grave 22 (Annable and Eagles 2010), the form of the tongues is different (pointed rather than rounded) and the pair from Barrow Clump lack the silver inlay found on those from Blacknall Field. In addition, a study of the smooth inner face of the edge pieces from Barrow Clump show us that these were cast, whereas the decoration on the Blacknall Field pair is described as being 'embossed'.

There is a gap between the rivet heads and the edge strips and it is assumed that these passed through small slits in the suspension strap (Blacknall Field grave 22 still had some mineralised organic material, tentatively identified as leather, around the rivet heads). It seems unlikely that the rivets were intended to bear the weight of the whole sword and scabbard, and evidence from other scabbards of this period which also employ these rivetted mounts (most notably Great Chesterford, Essex grave 122 and Brighthampton, Oxfordshire grave 31) indicates that the suspension strap formed a tight-fitting loop around the scabbard by means of a short secondary strap fixed to the main one. The disc headed rivets would prevent the scabbard from moving in this loop and the edge strips themselves would reinforce the scabbard at this point of compression. One or more of the small, rectangular copper alloy plates, each with two holes in, that were found with the scabbard may have been part of this suspension mechanism. The width of these pieces (14 mm) and the placement of the holes (spaced 8 mm apart, the same as the gap between the pairs of disc headed rivets) would be consistent with a strap wide enough to accommodate the rivets on the edge strips. It is possible that two of them (the one found beneath the scabbard and the one which was unlocated) are plates from the backs of the edge strips, used to peen the pairs of disc headed rivets over (the scabbard from Blacknall Field grave 22 has individual washers over the end of each rivet which served the same purpose), but the third was found to one side of the scabbard and may have been part of the method used to join the main and secondary straps together. They are also the same width as the other associated copper alloy object, seemingly the folded plate from a small buckle which may have served to adjust and fasten the suspension strap, although the buckle loop itself is entirely absent.

Plate 12.5 Sword from grave 7082: decorated back of scabbard mouthband

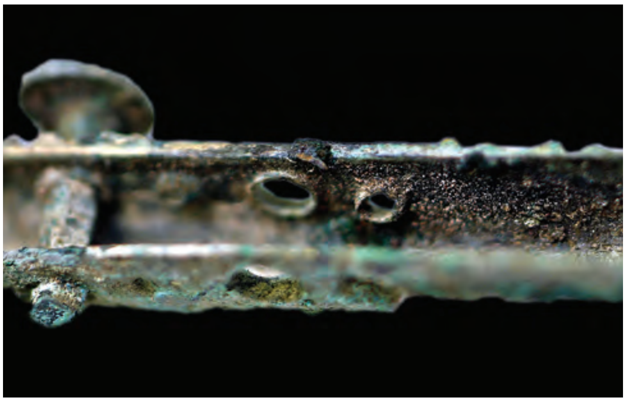


Plate 12.6 Sword from grave 7082: finished and unfinished rivet holes in scabbard edge strip

It is not possible to determine whether the scabbard suspension took the form of a waist-belt or a baldric.

Perhaps the most interesting feature of this pair of edge strips is that one of them contains a flaw which gives us a small insight into the manufacture of these items. In addition to the two holes in which the rivets sit, there is a second pair of holes, slightly above the others. These holes are unfinished, each consisting of a depression in the front face of the edge strip with a small hole in the bottom and, in one case, a corresponding hole in the rear face. When looking at the inner face of this edge strip and comparing the finished and unfinished holes, it seems clear that they were made first by means of a punch and then finished by being reamed to size (Pl 12.6). Although the flaw is obvious now, it would have been concealed by the suspension strap when being worn, so perhaps the maker failed to disclose this mistake to their patron.

Personal Equipment

Knives

Knives are the most common early Anglo-Saxon grave good: in a national sample, 55% of undisturbed adult burials had this object (Stoodley 1999, 30–2). Their popularity almost certainly stems from the variety of

Figure 12.2 Cemetery plan: distribution of knives

uses that they had in everyday life. Although at Barrow Clump they are not the most common artefact, they are the most frequently occurring item of personal equipment, being found in 14 graves (Fig. 12.2), and are more common with adult males. In Wiltshire knives were also mainly found with males (61%/39%). One juvenile had a knife (grave 2873) and individuals in this age group were also found with knives at Collingbourne Ducis (graves 88 and 103).

Where position was recorded, knives were associated with the waist area and had probably been secured by a belt. Less than half were in a grave that also produced a buckle however, so a rope or leather cord may have been knotted at the waist. Most knives were to the left of the waist and indicate a majority of right-handed individuals.

Böhner's (A–D, 1958) and Evison's (1–6, 1987) classifications have been used, although in the case of fragmentary knives it was often impossible to identify type. Both schemes are based on the shape of the blade and its point in relation to its centre. All the major blade types are present, plus two knives for which the blade shape could not be identified. Types A, B and C are present in equal numbers and although the first two types are found from the 5th to the 7th century, Type C is predominantly a 7th-century form. Type A blades were also the most common form at Collingbourne Ducis, Market Lavington and Pewsey, while at Petersfinger and Charlton Plantation Type B's have a numerical advantage (Table 12.4). As is normal, all of the burials were accompanied by a single knife (Stoodley 1999, 30–3), although in grave 7085 a possible blade fragment was in an assemblage that also contained a Type C knife.

Table 12.4 Knife types (number in brackets = %. Others = Evison types not comparable to Böhner. Type ? = unclassified)

Cemetery	Type A	Type B	Type C	Type D	Others	Type ?
Collingbourne Ducis (all years)	25 (38)	12 (18)	8 (12)	1 (2)	6 (9)	13 (20)
Charlton Plantation	1 (6)	7 (44)	4 (25)	1 (6)	0	3 (19)
Market Lavington	11 (52)	6 (29)	0	0	0	4 (19)
Petersfinger	7 (27)	11 (42)	1 (4)	0	0	7 (27)
Pewsey	15 (35)	9 (21)	3 (7)	0	0	16 (37)

Toilet Items

Objects associated with personal care were recovered from four or possibly five graves. A pair of copper alloy tweezers was discovered on the chest of the adult female in grave 2807 (ON 5404), which is of interest because in Wiltshire tweezers have a strong association with males (n=13: M9/69%) and are usually found in graves that also contained weapons. What may be a pair of iron tweezers came from the juvenile possible female in grave 2648 (ON 5321). Tweezers may have been involved in the preparation of the corpse and were then deposited in the grave. Three females produced a single tubular copper alloy handle from a cosmetic brush (ONs 4485 (grave 6003), 4981 (grave 2502) and 5378 (grave 2699)) (Pl. 12.7). These are relatively scarce artefacts and nationally demonstrate strong female associations. As at Barrow Clump it is often only the handle that survives, all or virtually all trace of the bundle of hairs having disappeared. Each

Plate 12.7 Cosmetic brush handle, small square-headed brooch and finger rings from grave 2699

Plate 12.8 Spoon from grave 2159

Plate 12.9 Bridle bit from grave 2159

Plate 12.10 Bucket from grave 2668

brush was joined to a copper-alloy ring from which it would have been suspended: the two examples from graves 2502 and 6003 were discovered over the upper chest; in the latter it was probably suspended from the necklace. Toilet items are found throughout early Anglo-Saxon England, although there are concentrations in Wessex, the Upper Thames Valley and the Midlands (MacGregor and Bolick 1993, 227), with dates ranging from the 5th to later 7th century. In Wiltshire examples come from Collingbourne Ducis (graves 31 and 38), Pewsey grave 50 and Charlton Plantation grave 24.

Spoon

An exceptional find is the fragmentary spoon (ON 4404, grave 2159), which XRF analysis (see Appendix 1) suggests is made of debased silver (Pl. 12.8). The bowl has two perforations close to where it joins the handle and it seems that an attempt was also made to perforate the lower part of the handle. The perforations may have been made to facilitate its use as a skimmer; however, actual skimmers usually have five holes in the centre of the bowl, for example the tinned bronze spoon from Winterbourne Gunner grave 7. In addition, the perforations in the Barrow Clump example do not appear to have been carefully made and could be evidence of an attempt to reattach the bowl and handle. Spoons and skimmers are commonly found on the Continent; the English examples date to the later 5th and 6th centuries and record a distribution that is centred on Kent (Parfitt and Brugmann 1997, 67–8).

Horse Equipment

A composite iron bridle-bit came from grave 2159 (ON 4405). It can be described as a cheek-ring snaffle (Fern 2005, 47–50) and consists of a pair of rings connected by a mouthpiece made up of two jointed bars (Pl. 12.9). This appears to be the first example of such an artefact from the county, the closest being an unstratified piece from Droxford in Hampshire (Fern 2005, 47). The rarity of the artefact conforms to the high wealth of this grave and may also indicate an equestrian association. Its position by the waist, in association with several other artefacts, suggests that it may have been contained in a receptacle.

Vessels

This group consists of a range of artefacts that include simple wooden examples, through to composite metal bound wooden buckets, bronze and iron receptacles and glass vessels of various forms. It is unknown how popular wooden vessels were because most of the evidence will have disappeared. They can, however, be recognised from small metal fittings that appear to have functioned as repair patches, for example in grave 6003. The numerous copper alloy bands and strips in that grave suggest the unusual presence of a group of vessels, its significance augmented by its apparent association with a young child of 2 to 2.5 years of age. A close parallel for these fittings comes from Collingbourne Ducis grave 1, a disturbed interment of an adult male that produced a decorated bronze drinking cup mount (Gingell 1978, 67, fig. 13). Grave 2159 produced groups of fragments that are identified as bindings and fittings, perhaps the remains of a wooden box. A small, pale green body fragment of a probable Roman glass vessel (ON 5468) was discovered at the foot (north) end of grave 7016.

The most impressive find came from grave 2668 (ON 5324): a largely intact copper alloy bound wooden bucket, the metal bindings decorated by rows of repoussé dots (Pl. 12.10). Such buckets date to the 5th–6th century, particularly the 6th century (Cook 2004, 43). A bucket bound by copper alloy strips and decorated with triangular appliqués was discovered with a female in Collingbourne Ducis grave 69. Despite this example, buckets are more likely to occur with adult males (Stoodley 1999, 33) and are also linked with greater quantities of burial wealth. In Wiltshire all the males with buckets were also accompanied by weapons; especially noteworthy are Pewsey graves 22 and 47, both of which contained a sword, shield and spear. It may be that these vessels symbolised an aspect of the deceased's lifestyle, for example that they had more leisure time at their disposal, perhaps spending it on activities such as feasting. It is therefore surprising that grave 2668 contained a male subadult, although the grave also produced a spearhead.

Table 12.5 Jewellery by type

Dress accessory	Number/%
Brooches	28/56
Beads	13/26
Finger rings	6/12
Pins	3/6

Miscellaneous Objects

There are two copper alloy rings, from grave 6003 (ON 4488) and grave 2502 (ON 5009); the latter is fragmentary but is probably part of a wire necklace ring, while the former was associated with the group of objects accompanying the infant in this grave. There are four iron rings: two (grave 2159, ONs 4408 and 4414) retained a fragment of a pin across their centre suggesting that they are small buckle loops. A small iron ring (grave 2502, ON 4977) was found with beads and was probably a fitting threaded on to the necklace found in this grave.

Jewellery and Dress Accessories

General Patterns

Costume jewellery was a major part of the early Anglo-Saxon burial rite and includes artefacts that were functional as well as decorative (brooches and pins), those that appear to have been primarily decorative (bead necklaces, bracelets and finger rings), in addition to keys and chatelaines, which may have had a functional and/or symbolic purpose. Overall, 17 (25%) burials were found with such objects (Fig. 12.3). Jewellery was mainly buried with adult females, although grave 2648, a possible female juvenile of about 12 years, had beads, and in grave 7088 a juvenile of 7–8 years was also discovered with beads. The proportion of adult females with jewellery (56%:14), falls just short of the national average (60%) (Stoodley 1999, 75), but is considerably lower than Pewsey (82%).

There are 50 items of jewellery (a bead group is counted as one necklace/group/bracelet) (Table 12.5):

Table 12.6 Comparison of jewellery type by cemetery (number in brackets = %)

Cemetery	Brooch	Bracelet	Finger ring	Girdle item	Necklace	Pin
Collingbourne	44 (47)	0	6 (6)	4 (4)	24 (26)	15 (16)
Market Lavington	9 (41)	0	0	1 (5)	4 (18)	8 (36)
Petersfinger	13 (33)	2 (5)	2 (5)	6 (15)	14 (35)	3 (8)
Pewsey	52 (49)	5 (5)	1 (1)	4 (4)	31 (29)	13 (14)

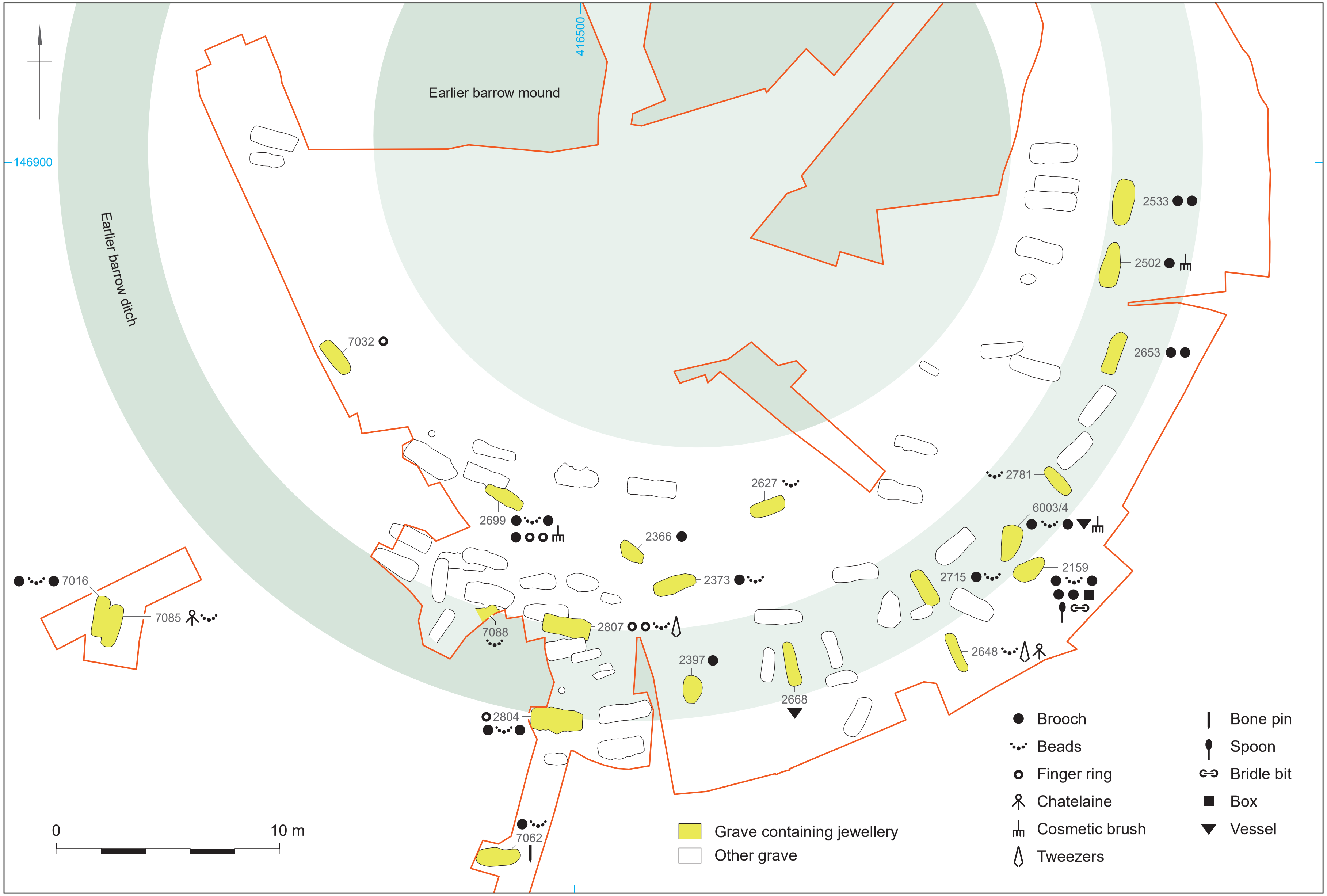


Figure 12.3 Cemetery plan: distribution of jewellery

brooches are the most common artefact, followed by collections of beads; other types are scarcer.

A broadly comparable situation is found elsewhere in Wiltshire (Table 12.6). At Collingbourne Ducis brooches and bead necklaces are the most common items. Brooches are the main type of costume accessory at Market Lavington and Pewsey, though at Petersfinger beads have a slight numerical advantage. Overall, the statistics reveal that the key elements of a costume are the brooches that fastened the dress and the beads that embellished it. Although poorly represented at Barrow Clump, pins were also an important costume element, being more popular than beads at Market Lavington.

Brooches

Barrow Clump compares well to the rest of the county (Table 12.7): the same preference for circular brooches is observed, especially saucer and disc varieties – typical Saxon forms (Fig. 12.4). There are several other minority types in evidence, such as a very rare Visigothic bow brooch and a penannular brooch of a form that is native – not Germanic. On the whole, the evidence demonstrates that a strong Saxon identity was being expressed. Small-long brooches, which are the most popular brooch type in Wiltshire, mainly because of their predominance at Pewsey, are entirely missing from Barrow Clump. No such brooches were found in the sample of burials from Market Lavington either and only three of the 22 brooches so far recovered from the large inhumation cemetery at Winterbourne Gunner are of this variety.

Brooches provide enough variation in terms of style and decoration to attempt a typological analysis on the basis of which a chronological sequence can be established and cultural associations sought. For the circular brooches typology is determined by the decoration on their faces and most of the examples can be placed in groups, except for the two applied brooches with very fragmentary faces. This is regrettable because typologically early examples of these brooches were deposited from about the middle of the 5th century and as a type they have potential to provide important evidence about the earliest Saxon migrations, see for example Welch (1975).

Saucer brooches

Grave 2159 produced a pair of unidentical gilt saucer brooches (ONs 4402 and 4403) decorated with an inner whirligig motif surrounded by a radial design (Dickinson Group 2.3, dated to the 6th century) (Pl. 12.11). The distribution of Groups 2.2–2.4 is centred on the Upper Thames Valley with outliers in Sussex and West Kent. A pair of gilt saucer brooches (ONs 4506 and 4518) was recovered from grave 6003 and display a single field of Style I decoration enclosed by a beaded circle and an outer notched circle (closest to Dickinson Group 7). They also date to the 6th century, but have a distribution centred on the south Midlands. Another pair of saucer brooches was excavated from grave 2804 (ONs 5406 and 5407) and display a geometric pattern of a floriate cross motif and hearts, which is unique but is closest to Dickinson Group 3.1, dated to the late 5th century. Finally, grave 7016 produced a pair of gilt brooches (ONs 5460 and 5463) decorated with a floriate cross and masks that can be classified as Dickinson Group 3.2.1. Examples of this subtype have been discovered in the Upper Thames Valley, Surrey and Sussex and date to the first half of the 6th century, although the transfer to England of the floriate cross design from the applied brooch to the cast saucer brooch, and also the fusion of the mask and floriate cross, probably date to the late 5th and early 6th century (Welch 1983, 48).

Table 12.7 Types of brooches at Barrow Clump compared to those excavated from Wiltshire Anglo-Saxon cemeteries (Wilts total = 158)

Brooch types	Barrow Clump	Wilts No.	Wilts %
Annular	0	1	1
Applied	2	20	19
Button disc	3	10	9
Disc	6	15	14
Penannular	2	7	6
Romano-British	4	2	2
Saucer	8	22	20
Small-long	0	23	21
Square-headed (inc. small and great)	2	4	4
Others	1	4	4

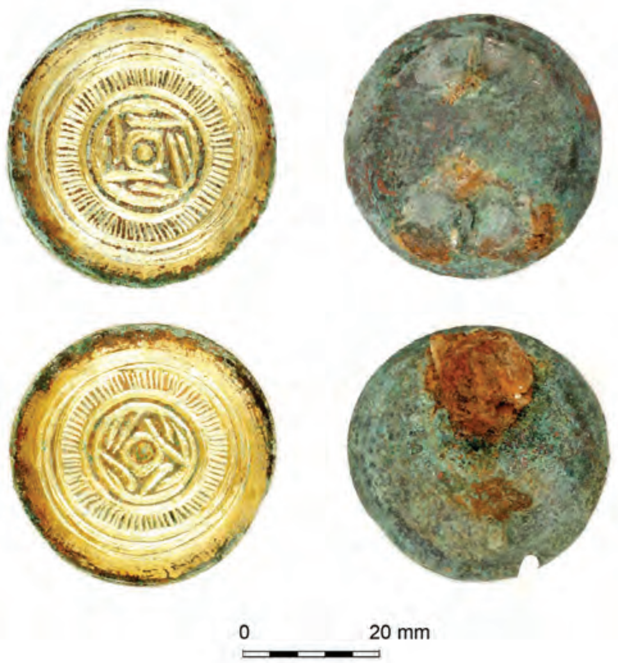


Plate 12.11 Gilded saucer brooches (front and back) from grave 2159

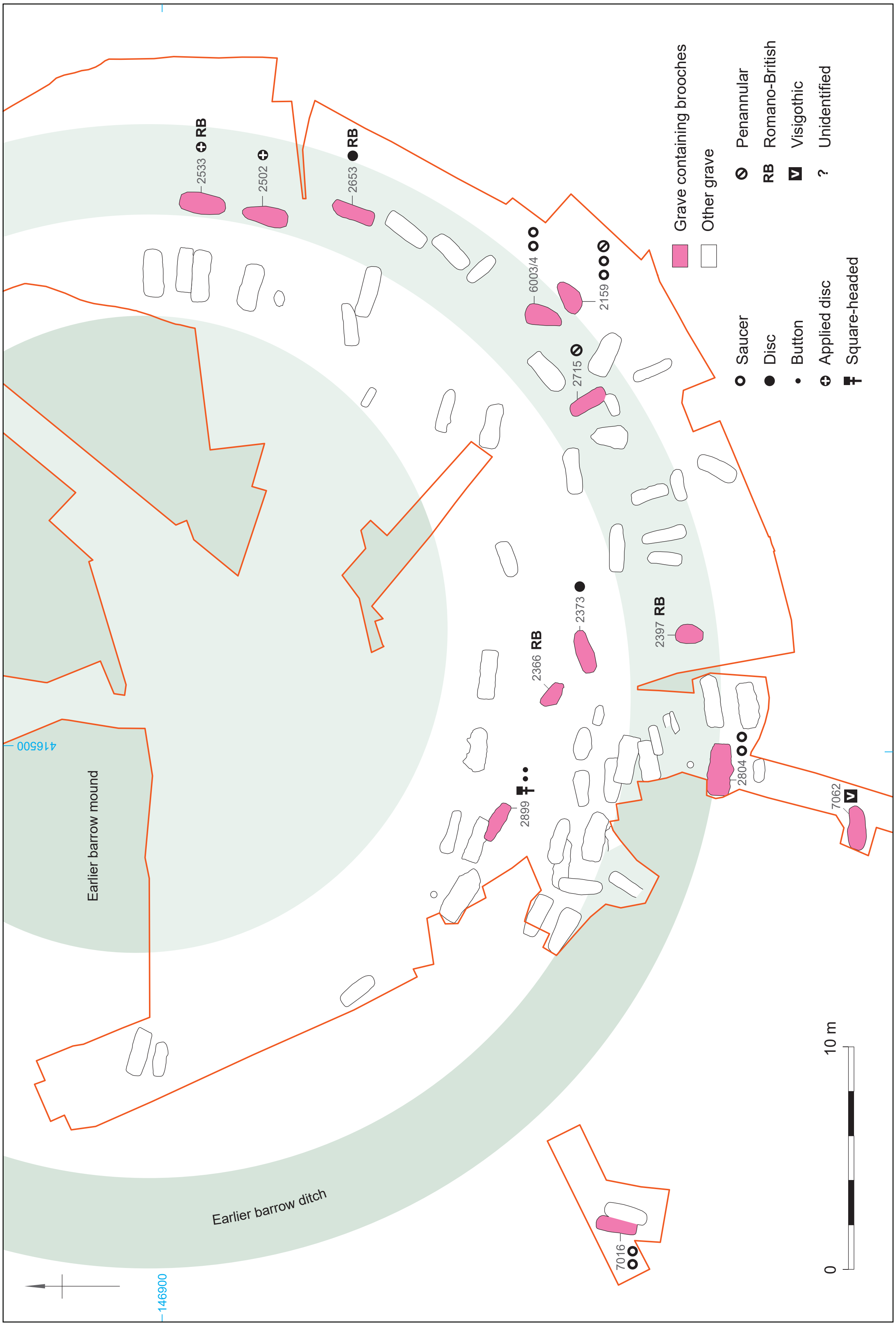


Figure 12.4 Cemetery plan: distribution of brooches

Disc brooches

Four of the Barrow Clump disc brooches were unstratified finds (ONs 5403, 5300, 5335 and 5453), while one (ON 4641) was the only brooch in grave 2373 and ON 5328 was paired with a Roman brooch (grave 2653). The lack of any clear typological development in the form of these fasteners has led to little overall classification and chronological understanding, but Dickinson (1979) advises a date range of the mid-5th to mid-6th century. The distribution of disc brooches is essentially south of England, although they are found in smaller numbers in Eastern 'Anglian' England. Disc brooches figure prominently throughout the south. They are the most common brooch type in the Upper Thames Valley (Dickinson 1979, 39) and are well represented in both Wiltshire and Hampshire.

The decoration on ON 4641 (grave 2373) is difficult to discern but appears to be a quincunx, while circling the outer edge is a ring of stamped semi-circles. The use of ring-and-dot was an effective and widely used motif found on a variety of different metalwork pieces. It occurs in various designs on disc brooches from Wiltshire, such as the unmatched pair from Charlton Plantation (grave 14) though the closest example, but lacking the semi-circles around the edge, was found in Petersfinger grave 10. The face of ON 5328 (grave 2653) was originally silvered and is decorated by a central ring-and-dot motif surrounded by eight irregularly placed examples. A similar pair came from Fairford, Gloucestershire (MacGregor and Bolick 1993, 66). Much of the decoration on ONs 5300 and 5335 (unstratified) is hidden beneath layers of corrosion, but it seems that the front of both was originally silvered and decorated by four double ring-and-dot motifs and a central one of the same design, which is fairly common, with examples from Oxfordshire (MacGregor and Bolick 1993, 63–4). Unstratified brooch ON 5453 has decoration consisting of four ring-and-dot motifs contained within a double circle. No decorative details can be observed on ON 5403 (unstratified), although it is again possible that details are concealed beneath a layer of corrosion.

Button brooches

Three button brooches were recovered, two from grave 2699 and an unstratified example. The pair from the grave (ONs 5373 and 5388) are dissimilar (Pl. 12.12). ON 5373 can be placed in Suzuki's (2008) Class B1 as it displays many of its characteristics: a rounded helmet with hair limited to the central part, straight eyebrows, round eyes, short nose, rounded cheeks, no moustache and an open mouth. Examples are dated to the first half of the 6th century and the Barrow Clump brooch came from a grave that is firmly dated to the 6th. The distribution of this type is centred on Wessex with outliers in Essex, Kent, Oxfordshire and Somerset. ON 5388 is identified as a Suzuki Class B3 on the basis of a rounded helmet, straight eyebrows, round eyes, curved eye rings, flaring nose, moustache and an open mouth. These also belong to the first half of the 6th century; the distribution is centred on Kent and France but outliers are found in Bedforshire, Cambridgeshire and Wessex. The unstratified brooch (ON 5336) exhibits crude decoration, but it is probably an example of Suzuki's Class H (first half of the 6th century) as it exhibits a small rounded helmet, almost straight eyebrows that also form the upper part of the angular eyes, straight eye rings, rounded-bounded cheeks, long straight nose, no moustache and a thin closed mouth. This is a small group centred on Kent and the Isle of Wight, with an outlier from Hampshire.

Plate 12.12 Button brooches from grave 2699

Applied brooches

Two applied disc brooches (ONs 4986 and 5101) were recovered from separate graves (graves 2502 and 2533 respectively), but both are in very poor condition and it is impossible to identify the decoration that was originally applied to their faces. The manufacture of these brooches started in the 5th century, for example Collingbourne Ducis grave 23 produced brooches of Spong Hill Type that are datable to the 5th century. Production continued into the 6th century, as the two from Winterbourne Gunner (graves 8 and 9) decorated with Style I decoration demonstrates.

Great Square-headed Brooch

by John Hines

The great square-headed brooch from grave 2159 (ON 4401; Pl. 12.13) is readily recognizable as a specimen of Group I in the national scheme of classification of this typically elaborate form of bow brooch (Hines 1997, 17–32, pls 1–9). That is no great surprise in itself, for this group of brooches can be identified as *the* distinctively 'Saxon group' in its distribution. The earliest known members of the group are from Surrey and East Kent, in what could be an early territory south of the Thames relatively close to the Roman

Plate 12.13 Great square-headed brooch from grave 2159

Plate 12.14 The great square-headed brooch fragment from Woodstock, Oxfordshire. PAS: BERK-EDB064 (West Berkshire County Council)

crossing point to the city of *Londinium* (Hines 2004), while the brooches representing the second stage of development as identified in the *Corpus* volume of 1997 have been found over a wider area, extending from the coastal region of East Sussex through south-west Surrey to the Upper Thames basin in Oxfordshire, the Avon valley in Warwickshire, and probably to Bedfordshire too. A third stage of development in the brooch design sees the range of the group extending to the Isle of Wight, further west into Gloucestershire, and north-eastwards to the districts of Rutland and Huntingdon in the eastern Midlands (Fig. 12.5). As a whole, however, this group can also be described as markedly heterogeneous in design, and its newly found member from Barrow Clump in Wiltshire adds much important new information for its study and interpretation.

The Barrow Clump brooch has its closest parallels in brooches from Chessell Down, Isle of Wight, grave 60 and Fairford, Gloucestershire, grave 20. Those brooches are already identified as being particularly similar to one another in having the same designs in the headplate frame, of four outward-facing masks along the top and two such masks on either side, and in the moulded, inward-facing, pointed oval masks in the headplate upper corners. These features are also found on the Barrow Clump brooch, although the single row of punchmarks around the outer edges of the headplate is a technique of additional embellishment appearing on this brooch alone within Group I. The headplate upper corner elements in question occur also on a brooch assigned to stage 2 of the group from Brighthampton, Oxfordshire, grave 51, and on the fragments of a brooch from a cremation burial at Hampnett, Gloucestershire. The field of Style I zoomorphic ornament in the headplate inner panel of the Barrow Clump brooch can be identified as a more coherently executed version of the design reproduced more crudely on the Chessell Down brooch, while the skeuomorphic reproduction of a beaded wire frame around the footplate is another equivalent element shared by these two brooches. The prototype of the latter, in the form of a true beaded wire edging to the footplate, is found with the two brooches from Alfriston, East Sussex, graves 28 and 43. The Style I-filled panels on the bow of the Barrow Clump brooch, meanwhile, can likewise be identified as a better version of what appears in more degenerate form here on the Fairford brooch, just as the gaping, downward-facing, profile animal heads in the footplate upper borders on the Barrow Clump brooch also appear in a coarser version on the latter. Altogether, then, we may now conclude that the Barrow Clump brooch belongs to a newly identifiable transitional stage between at least the earlier of the two Alfriston brooches (Alfriston 28) in stage 2 of the group and Chessell Down 60 and Fairford 20 in the group's previously identified third and last phase.

The Barrow Clump brooch had broken across the footplate and been repaired with a carefully shaped and fitted patch, applied to the back (Fig. 10.1). This slightly overlaps with an attached catch-plate, which we can take to have been original as it is an arrangement for the pin-catch that is paralleled on a small number of other, relatively early, great square-headed brooches (Hines 1997, 54, fig. 26i–k). The base of the catch-plate on the Barrow Clump brooch has a flared lower terminal which may be compared directly with the attached catch-plate on Alveston Manor 5 of Group I (Leeds 1949, pl. 116), a component that is more clearly shaped in the form of a fish. As that otherwise extremely elaborate and individualistic, large brooch is itself uncertainly located between stages 1 and 2 of this group (Hines 1997, 27), the inference that the Barrow Clump brooch should be assigned to a now discernible later horizon of stage 2 is corroborated.

Another recently found representative of Group I, meanwhile, is a fragment reportedly found in the area of Woodstock in West Oxfordshire, which is recorded on the PAS database (BERK-EDB064: Pl. 12.14). This fragment includes part of the footplate upper borders and inner panels, of forms that are strikingly close in design to the Barrow Clump brooch. The face of the Woodstock fragment is quite severely abraded, so that it is not possible to tell, from the available images, if the footplate bar should be counted a third equivalent element between these two brooches. The Woodstock fragment appears to have been shaped into a fairly regular trapezoidal – nearly rectangular – object, on which the preserved perforations in the footplate upper borders mean that it could have been worn suspended as a pendant. A filled drilled hole lower down in the footplate inner panel area suggests that it is from a brooch that had been repaired in antiquity just as the Barrow Clump brooch was. These two brooches must be regarded as closely contemporary products.

Like the brooches of Group I from Berinsfield, Oxfordshire, grave 102 and Brighthampton grave 51, the Woodstock brooch-fragment represents the adoption of this group in the Saxon Upper Thames area during the course of stage 2 of its development. Notwithstanding the number of shared equivalent and closely related elements between the Barrow Clump and Chessell Down grave 60 brooches, the latter now appears increasingly peripheral, geographically, to

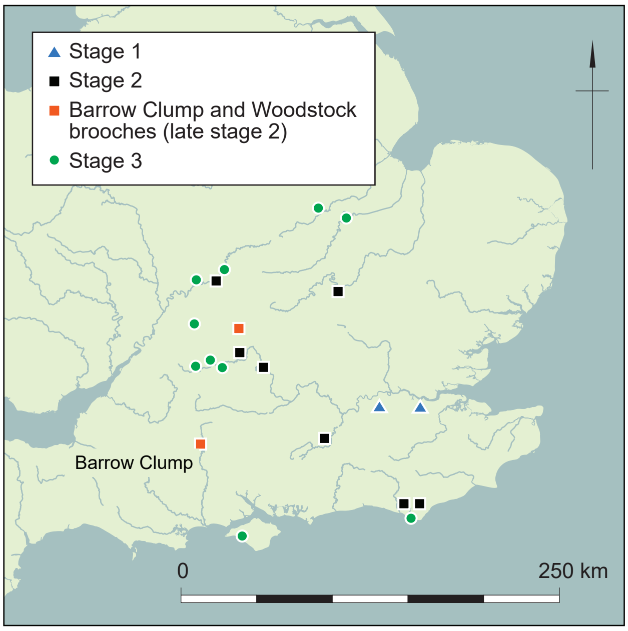


Figure 12.5 The distribution of Anglo-Saxon great square-headed brooches of Group I. Blue triangles: stage 1 – the earliest known members of this group; black squares: stage 2 – brooches of the next stage of development of the group; green circles: stage 3 – brooches of the third and final stage of development of the group. Red squares: the very similar brooches from Barrow Clump and Woodstock (Oxon) which can be assigned to a later horizon of stage 2

the overall distribution of the group. The increasing evidence for an important network of shared material culture covering Barrow Clump in the heart of Wiltshire and a core area in the Upper Thames region, while also similarly extending also north-westwards to the Warwickshire Avon valley, merits emphasis. From the chronology of the great square-headed brooches proposed in 1997 (Hines 1997, 223–34), we may assign the production and burial of the Barrow Clump brooch to the first half of the 6th century, most likely in or around the second quarter of that century. The association of the brooch in grave 2159 with beads of Birte Brugmann's Constricted Segmented type (ConSeg), characteristic of her Phase A2, is fully congruent with this dating (Brugmann 2004, 42–70).

The woman who was buried in grave 2159 was laid to rest with a range of other artefacts, which are truly unusual in the case of the penannular brooch, bridle-bit and perforated silver spoon found around her hips. The combination as practical dress-accessories of the great square-headed brooch with a pair of cast saucer brooches, by contrast, is quite a standard costume suite, albeit one implying relatively high status (Hines 1997, 294–304). That is not least the case with brooches of Group I, a further five of which were found in such combinations. There is, however,

Plate 12.15 Visigothic brooch, Type Estagel from grave 7062 (Wiltshire Council, CMAS)

no known example of cast saucer brooches with the same four-legged whirligig design as in grave 2159 with a great square-headed brooch. It is interesting to note that the only other two great square-headed brooches found with penannular brooches are both of Group I: in Alveston Manor grave 5 and Alfriston grave 43. The silver penannular brooch in Alfriston grave 43 is markedly different in form, and carries incised zoomorphic and plant motifs which can be associated with the primarily 5th-century Quoit-brooch Style (Welch 1983, 64–5). The published report of the excavations at Alfriston indicates that this brooch had been worn as a functional dress-accessory, being found 'on the chest', but there is no grave plan (Griffith and Salzman 1914, 39–41). This woman's costume also included a pair of small square-headed brooches of a Kentish type (Hines 1997, pl. 120a–b). The Alveston Manor penannular brooch is more similar in form to that from Barrow Clump but not of the same type, and there is no record of where it was found in the grave; this grave-assemblage also included a pair of cast saucer brooches (Hines 1997, 239–41, 248, fig. 107b).

Altogether, the Barrow Clump brooch provides us with a new and much finer view of the transmission and modification of complex brooch designs within Group I of the Anglo-Saxon great square-headed brooches. Geographical consistency within the patterns of source and derivation suggest that the Upper Thames region became a key area for development and influence as stage 2 (as identified in 1997) progressed towards stage 3. The production, distribution, wearing, repair and burial of these brooches form a series of regular, if not all equally inevitable, transactions and activities that recur within a zone of consistent material cultural practice. The occurrence of the brooch in Barrow Clump grave 2159, repaired after it became broken, quite purposefully represented the presence here of individuals who were not merely connected to but were active members of a higher social stratum found across an extensive area of southern England in the first half of the 6th century. Given the historical enigma of the relationship between the southern coastal regions of Hampshire (and Wight) and the Upper Thames basin in the growth of the power of the kings of the *Gewissae* and eventual emergence and consolidation of a kingdom of the West Saxons (Yorke 1989; 1990, 130–42; 1995; Eagles 2018, 117–27), the evidence for the range of the network represented by the great square-headed brooches, and its apparent focal zone around the Upper Thames, is of real value as an archaeological counterpart to problematic historical records.

Small square-headed brooch

This gilt, small square-headed brooch (ON 5376, grave 2699) of Aberg Type 131 is dated to 500–530/40 AD. It has chip-carved decoration consisting of a raised rectangular moulding in the headplate and a footplate containing a cruciform-shaped moulding that exhibits a rudimentary Style I mask (see Pl. 12.7). Although small square-headed brooches are found throughout southern England, the Wiltshire cemeteries have only produced a small number, with two coming from Pewsey (graves 19 and 31). Unsurprisingly there are no direct parallels from the county for the Barrow Clump specimen, but several brooches from further afield (Brighthampton, Oxfordshire; Barrington, Cambridgeshire; and Chatham Lines, Kent) display similar designs.

Penannular brooch

A small sub-circular copper alloy penannular brooch (ON 4418, grave 2159), consisting of a thin narrow band with simply decorated terminals, is identified as a Fowler (1960) Type D1. The Wiltshire cemeteries have only generated a handful of penannular brooches, with two from Collingbourne Ducis grave 61 (Fowler Type E and Type D4). A pair that included a Type D (subtype unknown) was also found at Pewsey (grave 102) in a grave dated to the late 5th century. These types were current during the Romano-British period and would have probably been heirlooms by the time they were interred at Barrow Clump. Native British culture is also represented by the four early Roman brooches (see below). An iron penannular brooch of unidentified type was discovered in grave 2715.

Bow brooch

A rare iron bow brooch (ON 5483) inlaid with transverse wires of unknown material, but probably brass, was found in grave 7062. It also has probable brass knobs at the end of the foot and each end of the pin axis bar (Pl. 12.15). It is an example of a Visigothic brooch, Type Estagel, dated to the end of the 5th and beginning of the 6th century (Schulze-Dörrlamm 1986), with a distribution focused on southern France and central Spain, but with examples in northern France including Normandy (Koch 1998, 83, Abb 17). This is an important find, being the first time such a brooch has been found in an Anglo-Saxon grave. The only other known example of this type came from a pit in the Ebbsfleet valley (West Kent) between Springhead and Northfleet, the site of an early Saxon settlement (Schuster 2011, 32).

Roman brooches

Barrow Clump has produced more Roman brooches than any other Wiltshire cemetery: an early Roman Mainstream Trumpet brooch (ON 4711, grave 2397), an undated Roman Colchester Derivative Hinged pin brooch (ON 4998, grave 2533), and two Roman Colchester Derivative Harlow brooches (ONs 4690, grave 2366 and 5329, grave 2653) (Pl. 12.16) with dates that centre on the 1st and 2nd centuries AD. While the deposition of Roman brooches in early Anglo-Saxon burials is not particularly unusual, the presence of four is significant and indicates contact with old Romano-British sites in the area. The fact that the Barrow Clump inhabitants acquired such fine brooches, which are also of generally similar design, indicates that they may have deliberately sought out such examples, perhaps to imitate early Anglo-Saxon bow brooches that they could not obtain (White 1990). The Roman brooch with the female adult in grave 2533 was paired with an Anglo-Saxon applied brooch and as suggested seems to have served as a substitute. Two adult males (graves 2366 and 2397) had a Roman brooch over the left shoulder where they had probably fastened a cloak.

Pins

Three iron pins (ONs 4982, 4999 and 5484) were recovered from graves (2502, 2533 and 7062 respectively). The style of the head is used to classify the pin. ON 4999 is a crook-headed pin (Ross 1991, Type XIX) dated to the 6th century, with similar examples from Pewsey (graves 30 and 93). The other two pins have a hooked end (Ross 1991, Type XVII); they are also dated to the 6th century and comparable examples come from Market Lavington. In addition to the iron pin, grave 7062 also had a bone pin/needle (see Mepham, Chapter 14). A number of graves produced fragmentary iron shafts that may have belonged to pins (not included in the totals).

Plate 12.16 Early Roman brooches (left to right: Hinged, ON 4998, grave 2533; 2-piece Colchester, ON 4690, grave 2366; Trumpet, ON 4711, grave 2397)

Finger Rings

Finger rings are rare and Barrow Clump is notable for producing a relatively large number: one silver and five copper alloy examples. ON 5377 (grave 2699) is a common type, being a spiral band fashioned from a strip of copper alloy, and was found on a finger bone of the left hand. Also from this individual's left hand came a small cast silver ring (ON 5381) (see Pl. 12.7). ON 5409 (grave 2807) includes two rings, both from the left hand: one is another spiral ring with the terminal of each end folded back, while the other is a simple band. Discovered on the left hand of the burial in grave 2804 (ON 5410) was a copper alloy, possibly cast, band. There certainly seems to have been a fashion for wearing rings on the fingers of the left hand! Grave 7032 (ON 5459) produced an open copper alloy band, flat in section and expanding to terminals (location unknown). All the rings are simple undecorated examples and are paralleled in Wiltshire, for example the ring from Collingbourne Ducis grave 92 was formed from a plain strip of metal. Decorated examples are also known, such as Collingbourne Ducis grave 31 that exhibits punched dots, and a similar example was also found in Charlton Plantation grave 24.

Buckles and Strap Ends

Buckles are the second most popular type of grave good nationally (Stoodley 1999, 34) but are under-represented at Barrow Clump (15%). In Wiltshire 20% of burials produced buckles (eg, 25% of burials at Pewsey and 23% at Petersfinger), either iron or copper alloy, but Barrow Clump seems to have been a community in which belts were not particularly popular, or were not secured by buckles. The majority of Barrow Clump buckles are iron and there are only two copper alloy examples, both unstratified. The latter comprise a fragmentary buckle plate, consisting of a tongue-shaped strip decorated with a central moulding and a series of tiny dots along part of one edge (ON 5370), and an oval buckle (ON 5466) described in detail by Ian Riddler below.

There are 11 definite iron examples, while iron fragments appear to represent another three buckles (ONs 4972 (grave 2502), 4415 (grave 2159) and 5313 (grave 2617)). All the buckles are of a simple design, consisting of oval/round loops, but four cases also had a rectangular attachment plate. Where classification was possible, four belong to Marzinzik Type II 19a (2003), and consist of a simple loop and plate, with a wide date range and distribution. ON 4713 (grave 2397) is a small example in which the plate is folded around the loop and the tongue is also wrapped around the loop; ON 4983 (grave 2502) is a fragmentary buckle and rectangular plate. ONs 5331 and 5330 (grave 2656) are a pair of fragmentary buckles with plates. There is a single example of a 6th-century buckle with a square plate and a single large rivet (Marzinzik Type II.21a), with the sword and associated fittings in grave 7082. Buckles without plates comprise grave 2533 (ON 5100) (Marzinzik Type I.12a-i), a round buckle, and several examples of oval buckles (Marzinzik Type I 11a-i): grave 2866 (ON 5418), grave 2915 (ON 5430) and grave 7085 (ON 5561). Both types have a wide date range and distribution.

Two copper alloy strap ends were unstratified finds from subsoil, both of them of Mid-Saxon date. ON 5424 is the rear part of a tongue-shaped strap end, consisting of a square decorated by an inscribed cross, which has been punctuated in the centre by a rivet. ON 5405 is the front plate of a tongue-shaped strip. It is inscribed with three zones of transverse lines and a rectangular panel containing a motif.

A Possible Continental Buckle
by Ian Riddler

A fragmentary copper alloy buckle and plate (ON 5466; Fig. 10.45) is a stray find that can be attributed to the later phase of the cemetery. The buckle frame is complete, whilst only the loops survive from the accompanying plate. This makes it difficult to assign to a specific type, although there are a few clues from the surviving components. The buckle frame is oval in form with an indented tongue bar and it is cast with two decorative panels. The tongue is stepped about its midpoint and is decorated with pairs of incised lines to either side of the step. The tongue does not have an additional back plate, as can be seen with buckles of Marzinzik's type II.15 and the related series described by Windler (1989), and it is larger than the sequence of her type II.24; it can be placed instead in Marzinzik's type II.19b (Marzinzik 2003, 43–4 and 46–7). With a frame width of 24 mm it lies at the upper end of the scale for buckles of this type, whose sheet metal rectangular plates are usually secured by one or two rivets.

An unusual characteristic of the buckle frame, however, is the presence of two inset panels on the upper surface. They fall to either side of the tongue but they are clearly related. When put together, they show a lacertine beast in profile, with an interlaced tongue emerging from its mouth and a coiled body, the front and back legs delineated by figure-of-eight interlace. The animal is complete and the presence of simple interlace on the legs and tongue indicates that it belongs to Style II, and not to Style I. This is unusual, given that Style II is widely distributed across Kent and Suffolk and also occurs in Hampshire, but is practically unknown in Wiltshire (Høilund Nielsen 1999, 186).

The practice of placing inset panels into cast buckle frames is not commonly seen in early Anglo-Saxon England or on the Continent. The majority of buckle frames are plain and decoration usually occurs on the accompanying plate or on additional mounts. This is the case with the buckles of Marzinzik type II.14, for example, where buckle plates and mounts include Style I decoration (Marzinzik 2003, pls 84–5). Some of the buckles of her type I.2 shield-on-tongue are decorated, occasionally with inset panels, but these do not contain animal ornament. Type I.2 is essentially Frankish in origin and the majority of examples found in England are likely to have been imported from the Continent (*ibid.*, 19–21). The related type I.4 also includes a few buckles with inset decorative plates, whilst an oval buckle with a fragmentary sheet metal plate from Morning Thorpe grave 358 has two Style I beasts on it and forms a good parallel for this buckle type (Green *et al.* 1987, fig. 419F; Marzinzik 2003, pl. 10).

These buckles, which span the period *c.* 525–560/570 in England, provide a background to the Barrow Clump example. The buckle is related to the series of type I.2 and I.4 buckles but it is lighter, with a squarer section and a flat upper surface that does not have bevelled or curved edges. It is closer in form to the Morning Thorpe buckle, as well as a small number of continental buckles that include panels of animal ornament. A Frankish oval buckle from Ehranger grave 16 includes panels of animal ornament set within frames to either side of the tongue and forms a good parallel. Böhner placed it in the late 6th- to early 7th century (Böhner 1958, 193–4 and taf 44.3a). It is related to buckles of Marti's type 7B, which are distinguished by the decoration applied to the buckle

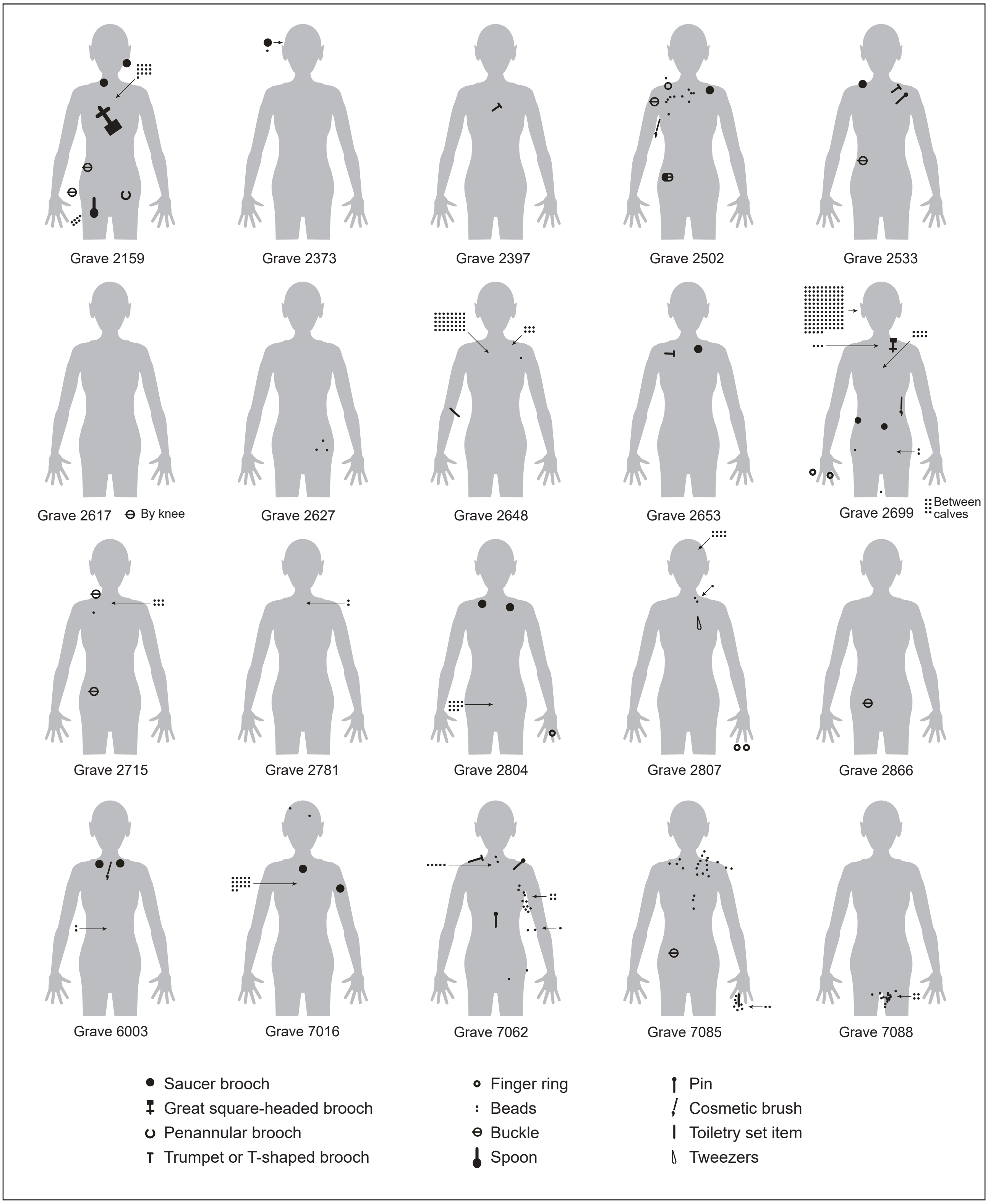


Figure 12.6 Position of jewellery/fasteners on body

frame and the accompanying plate and mounts (Marti 2000, 99–100). These are later buckles, spanning the middle third of the 7th century, extensively decorated with animal designs. The decoration extends to the buckle tongues as well, and provides an explanation for the incised lines along the Barrow Clump buckle tongue. On more elaborate tongues the front part is an animal head and the stepped part at the back represents the body (Marti 2000, abb 57.2). Here the tongue decoration is reduced to pairs of incised lines.

These comparisons suggest that the buckle was probably made on the Continent in the earlier part of

Plate 12.17 Pair of saucer brooches in grave 2804

the 7th century, or possibly a little earlier, and it would originally have formed part of a belt set, with animal ornament present across the plate and accompanying mounts. Elaborate belt sets of this nature would have been worn largely by males. At some point it came to Wiltshire and was buried (or lost) in a cemetery, quite possibly having been separated from the accompanying parts of the belt set along the way.

Dress Styles

A reconstruction of the types of costumes worn by the females at Barrow Clump can be undertaken by examining the location of brooches and other pieces of jewellery (Fig. 12.6). A scheme to classify the costumes is based on the styles defined by Walton Rogers (2012) for her analysis of Dover Buckland. Her Dress Styles (I–III) cover most of the identifiable costumes at Barrow Clump and allow for a comparison to be made with other Wiltshire cemeteries. Walton Rogers based her dress styles on the position and types of brooches, but this study only considers the position of the fasteners because in Wessex there is no obvious link between brooch type and dress. Dress Style I is the peplos, identified by Walton Rogers by brooches at the shoulder, either a pair or a singleton. A single brooch positioned at the shoulder may, however, have secured a different garment to the peplos, for example a cloak. Dress Style II is identified by a single brooch found anywhere from the neck to lower chest and may have clasped a loose and lightweight garment – the actual form of the costume is, however, unknown. Dress Style III is evidence for a Frankish fashion, which utilized two brooches at the neck/centre chest and represents a garment with a front-opening slit.

Twelve burials produced evidence for female dress styles. Eight have evidence for Dress Style I, of which six had a pair of brooches on, or around, the shoulder areas. Grave 2159 had the most elaborate assemblage, consisting of four brooches and a necklace and it is worth describing in detail. It had suffered damage by badgers and root action resulting in the movement of several artefacts, yet an idea of how the jewellery was worn is still possible to reconstruct. The two saucer brooches were found in the area of the upper body, and although one looks to be out of place, to the left of the skull, the other is over the upper chest/shoulder, and it seems reasonable to assume that this pair was fastening a peplos. The great square-headed brooch was discovered over the chest in a roughly central position and probably secured an outer garment produced from fine wool or cashmere (see Walton Rogers, Chapter 13), probably a cloak. The collection of beads found in the area around the great square-headed brooch would have belonged to a necklace. Another group of beads was discovered by the upper right leg along with two iron rings. The rings could have been part of a necklace, and it seems probable that the object had been enclosed either in a bag, suspended from a belt, or placed in this position for the funeral. The spoon was found at the other side of the waist and may also have been suspended from a belt. However, a copper alloy penannular brooch, bridle bit and some fragmentary iron objects, two of which are loop-ended objects, were in the same area, and the group may have formed a chatelaine to which the spoon also belonged. This grave belonged to a woman of some standing and is further discussed below.

Grave 6003 produced a pair of saucer brooches and a small collection of amber beads (two over the torso and a pair by the upper right leg). Evidence of a linen cord was found around the brooch pins, which Walton Rogers (see Chapter 13) suggests may have supported the cosmetic brush, but from which the amber beads could also have been strung. It is possible that the disturbance to this grave caused the beads to become separated, but unless others have been lost the necklace would have been very unpretentious, no more than a mere necklet. One of the saucer brooches was discovered over the right shoulder. The other was more central and may have shifted from its original position on the left shoulder, though it might represent a variation in costume style. Lying above the fabric of the peplos was a fine linen textile that can be interpreted as a head-veil or lightweight shawl (see Walton Rogers, Chapter 13). The female in grave 2533 had an applied brooch on the right shoulder and a Roman brooch on the left shoulder, while the fragmentary remains of an iron pin produced evidence of a fine linen similar to that from grave 6003. In addition, the female adult in grave 2653 had a disc brooch paired with a Roman brooch, and the women in graves 2804 and 7016 both had pairs of saucer brooches that probably fastened a peplos dress (Pl. 12.17).

The burial in grave 2502 was found with an applied brooch over the left shoulder, possibly associated with a peplos fastened at one shoulder or 'a clasped and belted mantle' (Walton Rogers 2007, 162–4), and a pin found on the lower right-hand side of the torso that probably secured a veil or shawl of medium-fine linen (see Walton Rogers, Chapter 13). A relatively large collection of amber beads was distributed over the upper chest in association with several small copper alloy objects that were also probably part of the necklace. The handle of a cosmetic brooch was also found in this area and it was probably suspended from the necklace. In a similar way the adult female in grave 7062 had a Visigothic bow brooch on her right shoulder, a bone pin on the left and an iron pin on the lower chest. It is possible that the bone pin had secured a head veil or shawl and the dress was a peplos that only required one metal fastener, while the iron pin secured an additional garment.

Three burials had possible evidence for Dress Style II. The adult in grave 2373 had a single disc brooch in the area of the skull, plus a necklace of amber and glass beads and some probable fittings, all from around the torso/head area. The evidence indicates a costume secured by the single metal brooch, possibly at the neck. The burial in grave 2397 has been identified as a possible female of about 16 years of age, associated with an early Roman brooch at the neck or left shoulder and a buckle at the waist. Finally, an iron brooch was recovered from near the skull of the adult female in grave 2715.

The costume evidence found in grave 2699 differs from the other burials in that a small square-headed brooch and pair of button brooches served to fasten the garment. The square-headed brooch was found on the right shoulder, while one button brooch was over the chest and the other was found at the left-hand side of the pelvis. It is possible that the button brooches had been securing an example of Dress Style III, but the lower one had become dislodged. In this case the square-headed brooch may have fastened a separate garment, perhaps a cloak. Alternatively, and in a similar way to grave 2502, a peplos may have been fastened on one shoulder and the button brooch secured a veil or shawl, the other button brooch fastening an item of clothing around the waist.

An adult male (grave 2366) was found with a single early Roman brooch, which may have fastened a garment over the left shoulder. Brooches are rarely found in the burials of early Saxon males, but there was a minority fashion for wearing cloaks, perhaps in the Roman style (Philpott 1991, 141). From the author's national sample there are eight such cases and the closest examples to Barrow Clump come from Collingbourne Ducis. Grave 1 dates to the 6th century and had a single bronze gilt brooch (actual details are unknown), while in grave 11 a Roman gilt disc brooch was found on the right shoulder (Gingell 1978, 78, 97). In addition, the body in grave 11 had been placed in an almost prone position. Prone burial was practised in the late Romano-British period and the fact that the brooch appears to have been fastening a cloak indicates the survival of native traditions within this community. Only one of the eight burials in the national sample was following the Germanic rite of weapon burial (Lyminge, Kent, grave 31), which also supports the idea that the wearing of a cloak derived from native traditions. At Barrow Clump, grave 2366 was also found with a fragment of a probable pin in the area of the right chest, and it is possible that a brooch and pin were fastening a peplos. Although rare, some early Anglo-Saxon males were interred in female costume. Such behaviour may have signalled a special gender category in which males had feminine symbols conferred on them, at least in death, and reflected the fluidity of gender roles in society (Stoodley 1999, 76–7).

Roman brooches were also found in graves 2397 and 2533, both around the left shoulder area. It is not unusual to find these brooches in the graves of early Anglo-Saxon women and children (White 1990, 127–35), and examples from Wiltshire include Harnham Hill grave 21, the only brooch accompanying an infant, and grave 40 (adult), an assemblage that contained *inter alia* a pair of Anglo-Saxon button brooches; Winterbourne Gunner grave 38 produced a simple fibula but its location in the grave is unknown; while in grave 48 at Petersfinger a Roman brooch was found beneath the hips of an adult, which had no other fasteners. The presence of Roman brooches has been interpreted in different ways: as part of a collection of scrap to be melted down and made into the latest style of Saxon brooch, especially when found as part of a bag collection, or alternatively as substitutes when Anglo-Saxon brooches were not available (White 1990). The latter appears to be a more appropriate explanation for the practice at Barrow Clump.

Chapter 13
Mineral Preserved Organics

Costume and Textiles at Barrow Clump Anglo-Saxon Cemetery (2003–4)

by Penelope Walton Rogers [PR:984; 22 May 2008]

Introduction

The clothing in which the Anglo-Saxon dead were placed in the grave can be reconstructed from the arrangement of garment fasteners (brooches, buckles, pins) on the body and from areas of mineral-preserved cloth adhering to the metalwork. At Barrow Clump, the evidence comes from the furnished burials, 2159, 2190, 6003/4, 2397, 2502, 2533, and to a lesser extent, 2373 and 2366, but it is not possible to draw any conclusions about the clothing or shrouding of the bodies in the unaccompanied burials, 2165, 2319/2182, 2435 and 2572. The costumes prove to be typical of the Anglo-Saxon south-west, and they include some tentatively identified evidence for a native British influence.

When disturbed and undisturbed burials are compared, it is surprising to find that the artefacts moved by badgers or rabbits have yielded just as much textile evidence as those not moved. The changed position of objects in the grave caused preliminary difficulties in the costume analysis, but careful examination of the textiles on the backs of brooches, and comparison with material from other sites, allowed the original position of at least some of the artefacts to be reconstructed. Any limitations on the evidence recovered from this site were due not to interference by animals, but to the relatively hostile calcareous soil.

Preservation of Textiles and the Disturbance of the Burials

The complex mechanisms by which textiles are preserved in association with buried metalwork have been studied by a number of authors (Jakes and Sibley 1983; Sibley and Jakes 1984; Janaway 1985, 1989; Cooke 1990). Significant factors include the soil pH, the amount of air and moisture in the soil, the composition of the associated metalwork, and the raw material of the textile (proteinaceous wool or cellulosic linen). The textile may be subjected to (a) physical degradation, especially alkaline hydrolysis of wool and acid-catalysed hydrolysis of linen; and (b) attack from fungi (especially on linen) and aerobic bacteria (on wool). It will also be affected by (c) metal salts from the corroding metalwork which can (i) inhibit the microbiological attack, and (ii) replace the organic material with minerals. The decaying human body must also have an effect, by producing a mildly acidic environment in the critical early phase of burial. Despite all the local variables, a national survey of the textiles preserved in 162 early Anglo-Saxon burial grounds showed that, in strict numerical terms, the different soil types did not in themselves introduce a bias in the preservation of textiles, and to compare sites by counting textile types is therefore a valid exercise (Walton Rogers 2007, 57–60).

It is only qualitatively that a difference emerges. On heathland podzol and brown sands, at sites such as Snape and Sutton Hoo, Suffolk, textiles can be preserved in such good condition that analysis of dyestuff and wool quality is possible. On calcareous soils, on the other hand, the textiles tend to be very small patches and are often fully or partially mineralised (for the different forms of mineral-preservation, see Janaway 1983), which means that they require extra work to identify the fibre, and dye analysis is impossible. For the textiles from the chalky soils of Barrow Clump, only a few partially mineralised fibres could be identified by ordinary optical microscopy and it was necessary to use a Scanning Electron Microscope for the remainder (for the uses of the two techniques, see Walton Rogers 2007, 60–1). The SEM micrographs were prepared by Vanessa Fell, English Heritage Centre for Archaeology.

The mineralisation of the fibres probably explains why the badgers and other burrowing animals have had little impact on the preservation of the textiles. Eight textiles and four yarns/cords were recovered from the six disturbed graves and five textiles and one cord from the six undisturbed ones. Experimental work has shown that most decay occurs in the first decade after burial (Janaway 1989, 23). If the textiles had reached a mineralised state by this time, then later disturbance would have allowed the rigid textile remains to be moved with the artefact. It seems likely that at sites on more textile-friendly soils, where larger, better-preserved remains might be expected, the damage could have been more extensive.

Table 13.1 Textiles and cords (from seven graves; 2003–4)

Textile type	Wool	Linen	No fibre ident.	Total
ZZ tabby	0	0	0	0
ZZ 2/2 twill	4	1	4	9
ZS 2/2 twill	0	0	0	0
Tablet weaves	0	0	0	0
Yarns/cords	0	5	0	5
Total	4	6	4	14

The Main Textile Types

Fourteen examples of textile were recorded on artefacts from seven graves, 2159, 2190, 6003/4, 2373, 2397, 2502 and 2533. These represent the burials of four adult women (with a child, 6004, alongside the adult, 6003), one probably female 16-year-old, and two adult men. Full details of weave, spin and thread-count could be recorded in nine of the 14 textiles (Tables 13.1 and 13.2). All nine are the most common fabric type of the early Anglo-Saxon period, ZZ 2/2 twill (Walton Rogers 2007, 70–2), of which three are wool, one wool or goat-fibre, one linen and four not identified to fibre (Table 13.1). The fine undercoat of goat, often termed 'cashmere', was sometimes used for the cloaks clasped by prestige brooches (Walton Rogers in prep) and the textile clasped by the great square-headed brooch in 2159, SF 4401, certainly includes a number of fine fibres, although too little detail has been preserved (Pl. 13.1) to allow a confident distinction between fine wool and cashmere.

ZZ 2/2 twill in wool was prevalent in the 5th and early 6th century, but it lingered in westerly parts later than elsewhere, and the less common linen examples continued into the 7th century (Walton Rogers 2007, 72, 104–9). It was therefore to be expected in the graves at Barrow Clump. The absence of ZS 2/2 twill and tablet weaves is also typical of westerly Anglo-Saxon sites, as these structures had their greatest concentration in the east and south-east (Walton Rogers 2007, 108–10). It is more surprising to find that ZZ tabby is not present, as this weave is particularly well represented, in both wool and linen, in 5th- and 6th-century graves in Wiltshire (see database at http://ads.ahds.ac.uk/catalogue/resources.html?clothing_eh_2007 and for additional material from Pewsey: Crowfoot 2005, 10–11). It may be the small size of the Barrow Clump 2003–4 collection which has led to this apparent inconsistency.

Incomplete details could be recorded for the remaining five textiles. Three had ZZ spin and were probably further examples of twill. On the backs of both saucer brooches from grave 6003/4 there was also an unusually thick textile, where the weave could not be identified. Decorative edgings and cloth borders are often found in this position, and at Market Lavington a patterned fabric, probably rosette weave (grave 26), and a thick tabby repp tape (grave 7) were recorded in the same position on saucer brooches (Walton Rogers 1992/2006, 113–5). The thick nature of the fabric suggests wool.

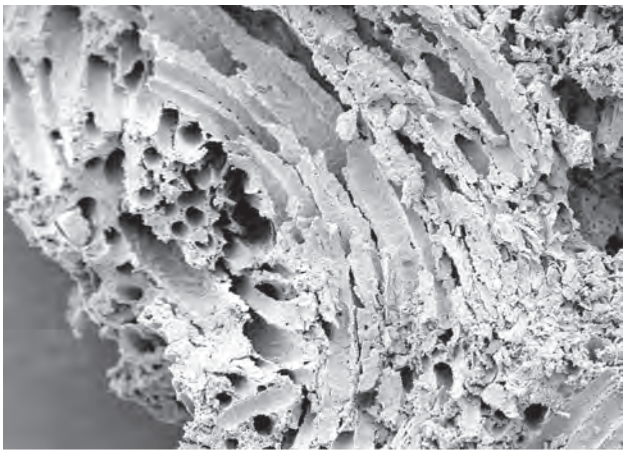


Plate 13.1 Mineralised fine wool or goat fibre from the textile on the pin of great square-headed brooch SF 4401

Threads and Cords

Threads and cords were recorded in two graves, 2159 and 6003/6004. In 2159, the linen two-ply cord on the back of the saucer brooch SF 4402 is likely to have supported the string of 22 beads found in the grave, but the purpose of the multi-strand cord with the great square-headed brooch SF 4401 and the bundle of fine Z-spun linen yarns tied around the pin hinge of the same brooch is not known. In 6003/6004 a bundle of two-ply linen cords appeared on the pin supports of both the brooches worn at the shoulders, which suggests that they were used to support the cosmetic brush on the woman's chest. In this grave, the five amber beads were not on the chest but at the hip.

Costume

Table 13.2 provides a summary of the evidence for clothing at Barrow Clump.

Women

Three women were almost certainly buried in the peplos, which was typical woman's wear of the period from the 5th century to the third quarter of the 6th. It was a full-length tubular over-garment fastened on the shoulders with a pair of brooches. In grave 6003/6004 there was a pair of matching saucer brooches at the shoulders; in grave 2159 the brooches had been displaced but were again saucer brooches; and in grave 2533 a disc brooch at the right shoulder had been combined with an early Roman brooch at the left. The fabric of the peplos was not preserved in

Table 13.2 Evidence for how the bodies were clothed at Barrow Clump Anglo-Saxon cemetery (2003–4)

BODY Gr.	Sex (Gen)	Age	ACCESSORIES	TEXTILES and CORDS Fibre	Stucture	Count/spin	Position	INTERPRETATION
2159 **sk 6000** Supine, disturbed	F(F)	25–35	*With textile* 4401 great square-headed brooch 4402 saucer brooch 4405 horse bit 4418 penannular brooch (cu/a) *Without textile* 4403 2nd saucer brooch at throat beads: 15 amber, 6 glass, 1 coral	wool or goat-fibre [SEM]	?	Z x Z, medium	Pierced by pin of great square-headed brooch, lower right chest	The brooches are not in their usual costume position, probably as a result of disturbance by badgers. If the brooches are re-instated in their standard positions, then this woman wore a peplos made of medium-fine ?wool textile, which was fastened on the shoulders by the pair of saucer brooches. Over this was a cloak made from a thicker fabric of fine wool or cashmere, fastened by the square-headed brooch. The textile on the horse bit may represent a flap of this cloak over or under the girdle group. The penannular brooch appears to be part of the girdle group at the hip. The linen cord on the saucer brooch is probably a bead cord, but the bundle of yarns on the square-headed brooch is puzzling
				flax/hemp	bundle yarns	Z, 0.3 mm diam.	Wrapped around pin pivot on back of great square-headed brooch	
				probably flax/hemp	cord	Z?5Z2S	Multi-strand cord, detached from, but in association with, great square-headed brooch	
				?wool	?	Z x Z, medium-fine	Pierced by pin of saucer brooch 4402, above left shoulder	
				flax/hemp, probably flax	cord	Z2S, 1.5 mm diam.	On back of saucer brooch 4402, running from pin support to edge of brooch, on same line as pin	
				not ident.	?	10/? x 10/?	On one arm of horse bit at left hip. Similar to wool/goat-hair textile on chest.	
				?flax/hemp	yarn	Z, 0.8 mm	Running across band of penannular brooch at left hip	

BODY Gr.	Sex (Gen)	Age	ACCESSORIES	TEXTILES and CORDS Fibre	Stucture	Count/spin	Position	INTERPRETATION
2190 **sk 6002** Supine, feet and right hand disturbed by animals	M(M)	20–25	*With textile* 4469 shield boss and grip 4482 detached textile *Without textile* spearhead, knife, shield studs	not ident.	2/2 twill	10/Z x 10/Z	On shield grip, facing away from shield, on chest, and detached.	The two fabrics, one medium, the other medium-coarse, probably represent a cloak or blanket over a tunic.
				wool [SEM]	?2/2 twill	8/Z x 7/Z	On iron ?strap on back of boss, on grip and detached	
6003 **sk 6003** On right side, flexed	F(F)	30–40	*With textile* 4488 ring (cu/a) 4506 saucer brooch 4518 saucer brooch 4523 detached textile *Without textile* 4485 cosmetic brush 4486 buckle (fe) beads: 5 amber at adult's hip, between bodies miscellaneous iron fittings	not ident.	?	thick textile	Pierced by pins of both saucer brooches, at the shoulders of 6003	The adult wore a peplos which had an unusually thick fabric at the upper border, its quality likely to indicate wool. Outside this a fine ?linen garment, possibly a veil or a shawl, caught on to the back of a saucer brooch. A third textile, a medium-weight twill, 4523, may belong with either body.
				not ident.	2/2 twill	12/Z x 9/Z	Detached fragment 4523 by legs	
6003 **sk 6004** Child at front waist of adult 6003	Child	2–2.5		flax/hemp	bundle of cords	Z2Z, 0.8 mm diam.	Loose bundle of cords on pin-support of both saucer brooches at shoulders	
				possibly flax/hemp	?twill	Z x Z, fine (yarn 0.6 mm)	On back of saucer brooch 4518, at left shoulder, between thick textile and back of brooch. Possibly also on ring 4488 at front upper thigh.	
				not ident.	2/2 twill	10/Z x 9/Z	On outer face of iron plate 4510 between two bodies	

Table 13.2 Continued

BODY Gr.	Sex (Gen)	Age	ACCESSORIES	TEXTILES and CORDS Fibre	Stucture	Count/spin	Position	INTERPRETATION
2373 **sk 6006** Disturbed	M	?	*With textile* 4641 disc brooch *Without textile* beads: 18 glass	wool	2/2 twill	14/Z x 14/Z	On back of disc brooch by head	Accessories indicate female gender. Wool twill not necessarily pinned by brooch.
2397 **sk 6008** Supine, disturbed	?F(?)	*c.* 16	*With textile* 4713 buckle (fe) *Without textile* 4711 Roman brooch at throat/shoulder 4712 fe 'clip'	wool	2/2 twill	10/Z x 9/Z	On back of iron plate of buckle at waist	Medium-coarse wool tunic or dress fastened by belt.
2502 **sk 6012** Supine	F(F)	35–40	*With textile* 4982/5045 pin (fe) 4983 buckle (fe) *Without textile* 4986 disc brooch at left shoulder beads: 11 amber miscellaneous objects probably suspended on chest	flax/hemp wool	2/2 twill 2/2 twill	14/Z x 14/Z 16/Z x 12/Z	Fastened by pin at lower left chest In loose folds on back of plate of buckle at left waist	Belted dress of wool twill. Pinned linen twill `garment, probably a head veil or shawl, reaching to the elbow or below. A single brooch at the left shoulder may represent a single-brooch peplos or a mantle-dress.
2533 **sk 6013** Supine	F	30–40	*With textile* 4999 pin (fe) *Without textile* 4998 Roman brooch left shoulder 5101 disc brooch right shoulder 5017 glass bead 5100 buckle (fe) right waist	not ident.	2/2 twill	16/Z x 14/Z	On one face of pin in region of upper chest	The brooches on the shoulders suggest that a peplos was worn. It was not certain that the fine twill on the chest was fastened by the pin it touched, but if it did it would represent a lightweight veil or shawl.

Grave 2165, sk 6001, male, 25–35. No textiles, no garment accessories

Grave 2319/2182 , sk 6005, male, 35–45. No textiles, no garment accessories

Grave 2366, sk 6007, male, 50+. No textiles; accessories include a Roman brooch at left shoulder

Grave 2435, sk 6011, male, 35–45. No textiles; one amber bead by head

Grave 2572, sk 6014, perinatal infant. No textiles, no garment accessories

2533, but in grave 2159 it was a medium-fine ?wool twill, and in 6003/6004 it was bordered by the thick textile described above. A tailored dress was usually worn under the peplos, although no textile remains were detected inside the peplos in these three graves. Outside the peplos in grave 2159 there was a thick fabric made from fine wool or cashmere, clasped by the great square-headed brooch and interpreted as a cloak. On the front of the peplos fabric in 6003/6004 there was a fine linen textile, either a head-veil or a lightweight shawl. The lightweight twill on an iron pin on the upper chest in grave 2533 probably had a similar function.

The women in these three graves were in their 20s and 30s and their costume suites are conventional ones for women aged between 17 and 50 (Walton Rogers 2007, 178–80, 241–2). The peplos was mostly adopted at ages 11 to 16, but the extra cloak, head-veil or shawl was not usually added until 17 or later. The greater wealth of the woman buried in a quality cloak clasped by a great square-headed brooch, 2159, is obvious and she is accompanied by the most numerous beads, 15 amber, six glass, and one coral, on her chest. The woman with the pair of saucer brooches in 6003/6004 probably had a cosmetic brush on a cord strung between the shoulder brooches, but her five amber beads were at the waist or hip, which is a common position for the mid-6th century (Walton Rogers 2007, 195). The woman in 2533 had probably less access to valuable objects, as she had non-matching shoulder brooches, one of which was too old to be an heirloom and was probably scavenged from a Roman site (Stoodley, Chapter 12), and only one glass bead. On the other hand, she had a pin, a buckled belt and her veil or shawl was of good quality.

Less conventionally, the woman in 2502 had only one brooch, a disc brooch, at her left shoulder. This is most likely to represent a peplos fastened on one shoulder, or possibly a clasped and belted mantle (Walton Rogers 2007, 162–4). A single shoulder brooch was sometimes an indicator of youth or low status (Owen-Crocker 2004, 47–8; Walton Rogers 2007, 152), but in this case the woman was aged 35–40 and she was well supplied with accessories, including a pin on the chest, a buckled belt fastening a garment of medium-fine wool twill, and 11 amber beads on the chest. She can be compared with three adult women and one sub-adult at Watchfield, Oxfordshire, who had a single disc brooch on the shoulder, in what may have been a local family custom (Scull 1992, graves 77, 105, 131 and 309; Walton Rogers 2007, 152). In grave 2502 the medium-fine linen twill pierced by the pin on the lower chest probably represents another veil or shawl.

The clothing in 2397 is more difficult to interpret. The skeleton has been only tentatively identified as female (aged about 16), and the early Roman brooch at the neck/shoulder combined with a buckle at the waist could indicate either gender. The medium-coarse wool twill on the back of the buckle at the waist might therefore represent a woman's belted dress, worn without a peplos, as was probably the case in graves 24 and 36 at Market Lavington (Walton Rogers 1992/2006, 114–6). These and related examples at Wasperton, Warwickshire, were regarded as hybrid costumes, possibly influenced by the British to the west (Walton Rogers 2007, 198). Alternatively, grave 2397 might be compared with male burial 2366, described below.

Children

Neither of the two children, in 2572 and 6003/6004, had been buried with costume accessories. There were two textiles between the two-year-old child 6004 and the adult woman 6003 in grave 6003/6004, but they could have come from either body and there were no surviving textiles with the perinatal infant in 2572. Very young children were sometimes buried with trinkets, but functioning garment fasteners are rare.

Men

The adult men in 2165, 2190, 2319/2182 and 2435 had no costume accessories, although it is likely that they were buried in conventional male clothing of a knee-length long-sleeved tunic over close-fitting trousers (Owen-Crocker 2004, 111–9; Walton Rogers 2007, 199–206). Textiles were rare in the male graves, but in 2190 two fabrics caught between the body and the shield are, from their quality, likely to represent a wool cloak or blanket laid over a twill tunic.

The man over 50 years old in grave 2366 had an early Roman brooch at the left shoulder. Roman officers wore a military cloak clasped on the shoulder with a crossbow brooch, a practice that spread to civilian officials in the 3rd and 4th century (Croom 2000, 51–2). In the late Roman burials at Lankhills, Hampshire, and Scorton, North Yorkshire, the crossbow brooch was mostly worn on the right shoulder, although in two graves at Lankhills it was on the left (Clarke 1979, 165–6, 170–1, fig. 61; Walton Rogers forthcoming). At Barrow Clump, however, the brooch is not the crossbow type and since grave 2366 lay in the same area as 2397, where there was an early Roman brooch combined with an Anglo-Saxon buckle, it seems more likely that 2366 represents another Anglo-Saxon with a brooch collected from a Roman site. Brooches are rare in Anglo-Saxon male burials, and when they occur at the shoulder they are often the forms of penannular brooch that suggest an Irish or native British influence (Walton Rogers 2007, 206–7). For a man to wear a brooch in this manner supports the theory of a British element in dress styles of the Anglo-Saxon South-West (Walton Rogers 2007, 198, 206-7; Stoodley 1999, 34).

Table 13.3 Catalogue of textile remains (2012–14)

Textile No.	*Grave*	*SF*	*Obj. type*	*Position of textile on the object*	*Gender*	*System*	*Spin direction*	*Spin tightness*	*Thread count per 10 mm*	*Fibre type*	*Weave*
T1	2915	5435	shield grip	Outside, overlies T2	M	1	Z	medium	8	–	2/2 diamond twill
						2	Z/S	medium	7	–	
T2	2915	5435	shield grip	Outside, transverse strip	M	1	Z	medium/ tight	8	–	Tablet-woven selvedge
						2	Z	medium/ loose	8	–	
T3	2915	5430	iron buckle	On front	M	1	0	loose	–	–	indistinguishable
						2	–	–	–		
T4	7062	5483	iron brooch	On front and back	F	1	0/Z	loose	20*	plant	Plain tabby
						2	Z	loose	20*		
T5	2715	5342	iron buckle	On front and back	F	1	Z	medium	–	–	Possible twill
						2	–	–	–		
T6	2715	5343	iron buckle	On front and back	F	1	Z	medium	8	–	2/2 twill
						2	Z	medium	8*		
T7	2656	5330	iron buckle	On back	M	1	Z	medium	12*	–	Plain tabby
						2	Z	medium	12		
T8	2656	5331	iron buckle	On back	M	1	Z	medium	12*	–	2/2 twill
						2	Z	medium	12*		
T9	7016	5460	brooch	Caught in the brooch hinge	F	1	Z	loose	16*	–	Possible twill
						2	Z	loose	16*		
T10	2804	5406	saucer brooch with iron pin	On outside rim and in hinge	F	1	Z	medium/loose	10*	plant	Plain tabby
						2	Z	medium/loose	12*		
T11	2804	5407	saucer brooch with iron pin	On the rim and pin	F	1	Z	medium/loose	–	plant	Plain tabby
						2	Z	medium/loose	–		
T12	2847	5415	iron strip frag.	At one end, both faces	*Infant/*	1	–	–	–	–	indistinguishable
					juvenile	2	–	–	–		
T13	2617	5313	iron buckle	On back	F	1	Z	medium	16*	–	Possible twill
						2	Z	medium	14*		
T14	–	5300	disc brooch	On back	?F	1	Z	medium/loose	–	–	Possible twill
						2	Z	medium/loose	–		
T15	–	5335	disc brooch	Trace on front and back (on catch–plate)	?F	1	–	–	–	–	indistinguishable
						2	–	–	–		
T16	7085	5527	iron frags.	On one face	F	1	Z	medium/loose	18	–	Plain tabby repp
			(1 of 4)			2	Z	medium	12		
T17	7085	5527	iron frags.	A small ball of textile	F	1	Z	medium	16	–	Possible twill
			(2 of 4)			2	Z	medium	20		
T18	2781	5395	spear–ferrule	On one side	?F	1	Z	medium	11	–	2/2 twill
						2	Z	medium	12		
T19	7082	5532	spearhead	On one side	M	1	–	–	–	–	indistinguishable
						2	–	–	–		
T20	2656	5348	shield grip	Detached end fragment	M	1	–	–	–	–	indistinguishable
						2	–	–	–		
T21	2699	5388	button brooch	On back: iron pin and hinge	F	1	–	–	–	–	indistinguishable
						2	–	–	–		
T22	2699	5373	button brooch	On back: iron pin and hinge	F	1	0/Z	loose	–	–	2/2 twill
						2	0/Z	loose	–		
T23	2699	5376	miniature square–headed brooch	On back: pin and hinge	F	1	Z	medium loose	20*	–	Plain tabby
						2	Z	medium loose	20*		

KEY: * estimated from 5 mm

Mineral Preserved Organics (2012–14)

by Esther Cameron

Textiles

Fragments of 22 textiles were recorded on 21 items (Table 13.3). This assemblage has five examples of plain weave, five 2/2 twills, five 'possible twills' of indeterminate type and one tablet woven braid or selvedge. Six fragments were indistinguishable. One example of patterning was found but no evidence of colour. The condition of the textile fragments is in most cases average to poor, especially those which were mineralised through contact with ironwork, including some too small and eroded for proper description. The few in good condition are organic, preserved by the effects of copper. The relatively small size of textile fragments from this site (4–20 mm across) is a limiting factor in describing the weaves and distinguishing warp from weft; therefore, the two sets of threads are referred to as System 1 and System 2.

At least some of the plain woven fabrics in this assemblage are potentially linens, or to be more exact bast fibres such as flax or nettle (Haugan and Holst 2014). Fibres from plain weaves T4 and T10/T11, which are fine and medium grade fabrics respectively, were examined under SEM by the author and confirmed as plant, either *Linum usitatissimum* or *Urtica dioica*. It is probable that several of the other fabrics are wool textiles, especially the medium to coarse weaves suitable for outer garments and blankets.

The threads of the fabrics are Z-spun and quite loose, some virtually unspun, with thread diameters in the range 0.2–0.8 mm. Exceptions are the diamond twill (T1) which is mixed spin, and the braid (T2) which has a slightly tighter spin and thicker thread than the rest of the assemblage. See below for a more detailed description of both by P Walton Rogers.

Of the 12 fabrics with measurable thread counts the range lies between 7/8 and 20/20 threads per cm. There are two fabrics at the coarse end of this range (T1 and T6), both 2/2 twills from male and female graves respectively. There are four fabrics in the middle range: a plain tabby and 2/2 twill (T7 and T8) from a male grave, a plain tabby (T10 and T11) from a female grave and a 2/2 twill (T18) also from a female grave, although in this case the gender is slightly uncertain. At the finer end, with the highest thread counts, there are six fabrics: three plain tabbies (T4, T16 and T23) and three possible twills (T9, T13 and T17), all from female graves. The finest of the tabby weaves – T4 from grave 7062 and T23 from grave 2699 – each associated with a single brooch apparently worn close to the neck on the shoulder, possibly represent linen head-dresses or veils.

P Walton Rogers' report on the textile evidence from 2003–4 shows a limited range of fabrics from which Z-spun tabbies, S/Z twills and tablet woven braids are notably absent (see above). It is now apparent that this was only half the picture as the missing elements are present in the 2012–14 data. It can be concluded that the assemblage as a whole is compatible with other Anglo-Saxon textiles from 6th-century contexts in Wiltshire and Hampshire, comprising ZZ-spun plain and twill weaves of various grades and tablet woven braids (Annable and Eagles 2010; Crowfoot 1978; 1985a; 1985b; 1988; 2003; Crowfoot *et al.* 2005; Egging Dinwiddy and Stoodley 2016; McCormick and Watson 2010; Walton Rogers 1992/2006).

A Note on Mineral-preserved Textile (T1) on Shield Grip (ON 5435, grave 2915)

by Penelope Walton Rogers

On one face of the shield grip in two patches, mineral-preserved textile, area (i) 50 x 18 mm (extending to 50 x 30 mm along the tablet-woven border) and area (ii) 35 x 20 mm (Pl. 13.2).

Area (i) is in two layers. The lower level is a 2/2 diamond twill with a tablet-woven border. The upper layer is a small patch of the same, and this upper level continues on the opposite side of the border. The warp (parallel to the tablet weave) is Z-spun, 8–9 threads per cm; the weft has mixed spin, two threads Z followed by one thread S (repeating) and 7–8 threads per cm (Pl. 13.3). The tablet-woven border is 7–8 mm wide and worked from the same Z-spun yarn as in the main body of the textile, with tablets threaded two left and two right. The Z and S yarns of the weft can be seen entering singly into the side of the tablet weave.

Area (ii) has a broken surface which makes it difficult to interpret, but it has the general appearance of the same textile as in (i). Over the surface there are two sewing stitches, diagonal to the weave, both 4–5 mm long and made of fine, tightly plied thread, Z-plied.

Sword Hilt and Scabbard from Grave 7082 (ON 5496)

The hilt

Mineralised remains of a horn hilt are preserved on the tang (Fig. 13.1). The original shape of the hilt is lost but there is evidence of three sections representing the upper guard, grip and lower guard. The thickness of the upper guard is 11 mm, the length of the grip 94 mm and the thickness of the lower guard 13 mm. The horn is best preserved at the lower end of the grip where it appears to splay at an angle before it joins the guard (Pl. 13.4). The tang is rectangular in cross-section, approximately 10 x 5 mm, ending in a low plano-convex knob above the upper guard. There is no trace of adhesive or wedges between the hilt and tang.

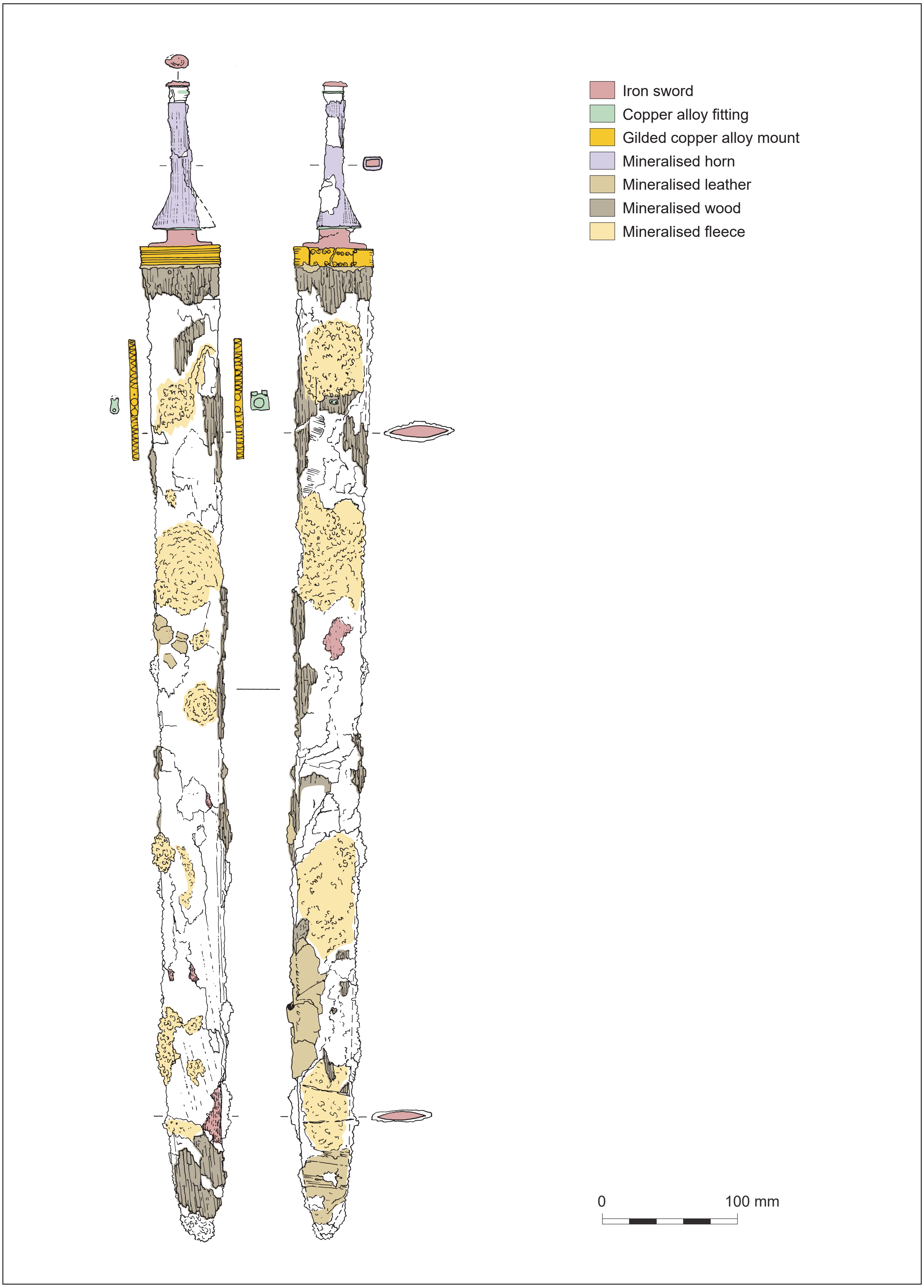


Figure 13.1 Sword from grave 7081, showing mineral preserved organics

Plate 13.2 Mineral-preserved textile (T1) on shield grip ON 5435 (© The Anglo-Saxon Laboratory)

The evidence suggests a traditional three-part hilt with straight guards, of standard dimensions, made entirely of horn, most probably from the solid tips of cattle horn. Although no complete hilts of this date survive, the indications are that the majority of 6th-century sword hilts were made in this way. The splayed grip is an interesting detail; two examples of well-preserved hilts with indentations for the fingers, on the Cumberland sword in the British Museum (1876, 0717.1) and a sword from Snape, Suffolk, are of 7th-century date (Cameron and Filmer-Sankey 1993).

The scabbard

The scabbard is made of willow laths (*Salix/Populus* sp.), width 60 mm, thickness 2 mm. On the front upper-section there is a central gap where wood is missing which suggests the scabbard is slightly undulated at this end (Pls 13.4 and 13.5). At the sides, where the two laths join, there is evidence of a chamfered edge. The wood is plain.

There is substantial evidence of a fur skin lining; mineralised hairs on the blade swirl in all directions, the fibres broken and incomplete, identified as sheep (*Ovis*). The flesh-side of the skin is pimpled with hair roots, indicating that it was pared down to the minimum thickness required to retain the hairs.

There is also evidence that the scabbard was covered with hide or leather, the broken edge of which protrudes from beneath the metal band at the mouth, front and back, thickness 1 mm. There are further traces at the scabbard edges where it has been preserved by copper from the fittings.

Transverse impressions on the back of the scabbard, near the tip, are difficult to explain as it is not obvious what caused them or whether they occurred before or during burial (Pl. 13.6). It is possible they are compression marks from a suspension strap, or indents made by the left fore-arm and pelvis of the skeleton.

The scabbard is likely to have been connected to a belt or baldric by two straps, one from the lower end and the other from the metal edge-fittings. Rivet-heads on the edge-fittings do not lie flush with the metal but above it by approximately 1.5–2 mm, presumably representing the thickness of the strap. A metal strap-connector with an internal thickness of 4 mm, found with the sword and associated with a minute fragment of hide or leather, is likely to be part of this system.

Swords with comparable organic remains from 6th-century contexts in Wiltshire are those from graves 22 and 47 Blacknall Field, Pewsey (Annable and Eagles 2010, 8–11, 147–8). These also have a possible undulation of the front upper-section, an uncommon feature also occurring among scabbards in Kent, Essex, Buckinghamshire and Suffolk (Cameron 2000, 35). In terms of materials used, the scabbard and hilt from Barrow Clump are most similar to the swords from grave 47 Blacknall Field and grave 59 Collingbourne Ducis which also have willow/poplar scabbards and

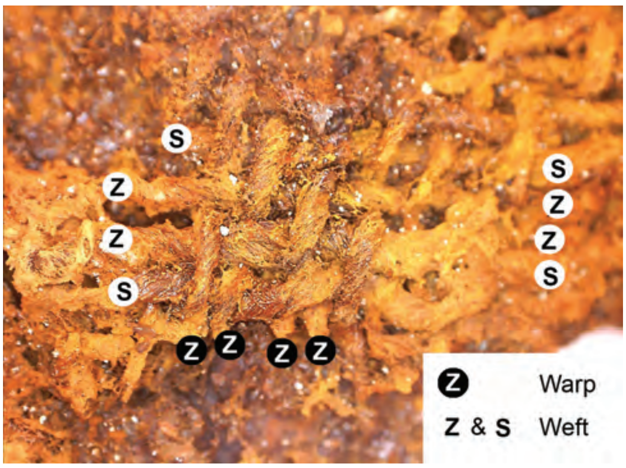


Plate 13.3 Detail of 2-2 weave structure, Z and S spin (textile T1) (© The Anglo-Saxon Laboratory)

Plate 13.4 Sword, showing the front upper-section of the scabbard and part of the horn hilt (grave 7082, ON 5496)

Plate 13.5 Sword, showing back upper-section of the scabbard (grave 7082, ON 5496)

Plate 13.6 Sword, showing the back lower-section of the scabbard (grave 7082, ON 5496)

hilts of horn (Egging Dinwiddy and Stoodley 2016, 104). At this date willow/poplar is the most frequently occurring species among Anglo-Saxon scabbards, the sheepskin linings and hide/leather covers being part of the same long-lived tradition.

Woods Associated with Spearheads and Shield Boards

Spearheads

Four spear sockets contained enough wood for sampling (Table 13.4). Two of these identifications are more confident due to different levels of preservation but the results suggest that two spear hafts were of ash and two of hazel wood. At Collingbourne Ducis, Alton and Kingsworthy ash occurs most frequently for spears, followed by hazel and willow (Egging Dinwiddy and Stoodley 2016, 125; Evison 1988, 7; Hawkes and Grainger 2003, 196). Nationally, ash and hazel predominate with small regional differences; wood species of 80 spears from Eriswell, Suffolk show a slight preference for hazel (53%) followed by ash (43%) and willow (4%) (Caruth and Hines forthcoming).

Wood craft

No cross-section was visible in the hazels but the ashes were mature woods rather than round. The wood of one of the spears (grave 7082, ON 5532) shows a slight gradation where it protrudes beyond the socket, suggesting the diameter of the shaft was the same as the external diameter of the socket. This has been noted previously by Härke of three spears at Blacknall Field, Wiltshire and two from Westgarth Gardens, Suffolk. (Annable and Eagles 2010, 48; West 1988, 13).

Shield board construction

Five of the eight shield bosses had enough mineralised wood to suggest the boards were made from longitudinal-tangential planks. Species identification indicates three of alder, one of willow/poplar, one of lime (Table 13.5). The diameters of the shield boards are estimated from (a) grave 7082 (ON 5495) which according to measurement of the extended grip had a minimum diameter of 400 mm, and (b) grave plans which suggest the diameters of the other seven boards were in the range 350–450 mm. Board

Table 13.4 Woods associated with spearheads (2012–14)

Grave	*SF*	*Internal socket diameter mm*	*Possible ID*	*Probable ID*	*Definite ID*
2915	5429	15	–	–	Ash *Fraxinus* sp.
2720	5366	16	Hazel *Corylus* sp.	–	–
7082	5532	14	–	–	Hazel *Corylus* sp.
non-grave	5301	15	–	Ash *Fraxinus sp.*	–

Table 13.5 Evidence of organic remains on the shields; Th 1 = flange rivets, Th 2 = shield-mount rivets, Th 3 = grip rivets (2012–14)

Grave	**ON**	**Wood**	**Th. 1 mm**	**Th. 2 mm**	**Hide**	**Grip type**	**Grip joinery**	**Th. 3 mm**	**Grip binding**
2632	5361	Possibly Willow/Poplar *Salix/Populus* sp.	8	10	front & back	Ia 1	one piece	8	–
2656	5332, 5346–8	–	7	11	front & back	Ia 1	lapped	7	–
2720	5357, 5364, 5367	Probably Alder *Alnus* sp.	7	–	front	Ia 1	lapped	7	Possible strap, hide/skin
2832	5412	Alder *Alnus* sp.	–	–	–	Ia 1	lapped	8	–
2915	5435	Lime *Tilia* sp.	8	–	front	Ia 2	one piece	–	–
7079	5536, 5562	–	7	–	front	Ia 1	lapped	9	–
7082	5495	Alder *Alnus* sp.	10		front & back	IIIb	one piece	–	–
7100	5563	–	8	–	–	Ia 1	one piece	–	textile

thickness, measured from shield-boss flange rivets (Th1), were 7–8 mm on six shields, 10 mm on the one with the extended grip, and immeasurable on one other. Measurement (Th2) of rivets from shield mounts indicates an increase in thickness in two cases (the other six had no shield mounts). In six cases there is evidence that the boards were covered with a layer of hide, some on the back as well as the front. The majority of the grips are iron strips with slightly widened ends Type Ia 1; of the other two, one is a straight strip Type Ia 2 (grave 2915) and the other is an extended type IIIb (grave 7082), part of which cannot be examined properly because it is corroded to the boss (Dickinson and Härke 1992, fig. 17). In this assemblage there is evidence that lap joints were used in attaching four of the grips to boards. There is very little evidence of organic materials other than the usual traces of hide and wood on the inside of the grips. The grip from grave 7100 has traces of twisted yarn on both faces. Where textile occurs only on the outside of a grip, as in grave 2632 and grave 2915, it is assumed to be from contact with another object. There is a trace of hide and mineralised plant stalks on the outside of the grip from grave 2720.

Evidence of shield boards from other Anglo-Saxon cemeteries in the region of Barrow Clump is relatively patchy but in some respects the picture is consistent. The three types of wood occurring at Barrow Clump, alder, willow/poplar and lime were standards for Anglo-Saxon shields due to their resilience and lightness in weight. The same types of wood have also been found on shields from cemeteries at Blacknall Field, Collingbourne Ducis and Kingsworthy, and in cemeteries of similar date nationwide (Annable and Eagles 2010, 13–15; Carver *et al.* 2009; Dickinson and Härke 1992, 48; Egging Dinwiddy and Stoodley 2016, 107, 124; Hawkes and Grainger 2003, 196, 199; Watson 1994, 37). Evidence from the cemeteries of Market Lavington and Collingbourne Ducis, Wiltshire and Portway, Hampshire suggests that a board diameter of approximately 400 mm was average for this region, which is slightly smaller than the national range of 450–660 mm (Cook and Dacre 1985, 90; Dickinson and Härke, 1992, 45; Egging Dinwiddy and Stoodley 2016, 107; Williams and Newman 2006, 77). This is also reflected in board thickness, those at Blacknall Field, Market Lavington and Portway are in the range 6–8 mm while the national average is 7.5 mm (Dickinson and Härke 1992, 47–8). An increase in board thickness at the shield mounts (Th2) relative to its thickness at the centre (Th1) is recorded for shields at Blacknall Field, Market Lavington and Portway, and although the technicalities are not fully understood, it is a common and widespread feature of 6th-century Anglo-Saxon shields (Dickinson and Härke 1992, 48, 52; Watson 1994, 38). Woodcraft on shield grips from Collingbourne Ducis, Market Lavington and Kingsworthy suggests they were either attached to the shield with lap-joints or made as 'one piece', the latter involving the removal of two lunate openings at the centre of the shield board, avoiding the need for joinery. The same division is apparent in East Anglia, as for example at Eriswell, Suffolk where organic remains on 29 shield grips represent 17 possible lap-joints and 12 'one piece' (Caruth and Hines forthcoming).

Wood from the Anglo-Saxon Bucket

by Catherine Barnett

Examination of the wooden staves of the wood and metal Saxon bucket (ON 5324, Pl. 12.10) showed these to be exceptionally well preserved. Oddly, despite the presence of copper alloy bands around the object, the wood was not mineralised or desiccated nor, given the dry chalk sedimentary context, was it waterlogged. This level of preservation and the presence of small, peeling, dark flakes on one portion of the external surface led the writer to speculate on whether some kind of preservative or wax had been used in antiquity.

Four small fragments were provided for species identification. These were already separate from the main piece but the excavator was confident of their source, and given the quality of the artefact it was decided not to cut the bucket itself if at all possible. Their condition was not as visibly good as the main piece, their detachment clearly caused by a degree of rot. Nevertheless, anatomically the pieces were pristine and confident identification was possible by wetting and using standard methodology for waterlogged wood:

A fine slice was taken from each wood fragment along three planes (transverse section (TS), radial longitudinal section (RL) and tangential longitudinal section (TL)) using a razor blade. The pieces were mounted in water on a glass microscope slide, and examined under bi-focal transmitted light microscopy at magnifications of x50, x100 and x400 using a Kyowa ME-LUX2 microscope. Identification was undertaken according to the anatomical characteristics described by Gale and Cutler (2000), Schweingruber (1990) and Butterfield and Meylan (1980). Identification was to the highest taxonomic level possible, usually that of genus and nomenclature is according to Stace (1997).

The pieces all proved to be of yew (*Taxus baccata*) wood. This identification was expected as the majority of known parallels with this artefact have also been of yew (70% of the 350 or so found, according to Riley 2012). Its longevity, hardness and beauty, as well as the myths and beliefs associated with this taxon, may all have contributed to its choice.

The Replication of the Anglo-Saxon Bucket from Grave 2668

by W J Letting and Julie Newby

During the 19th century the reproduction of archaeological material was a significant and serious enterprise for antiquarians and museums, who began to create and circulate reproductions, primarily for research and display purposes.

Some of these reproductions were interpretative reconstructions or scaled copies, souvenirs or even replicas made to replace missing or damaged originals. There was never any pretence that they were the originals; these were not fakes or forgeries, instead the intention was that they would be exact copies.

This practice, whilst not pursued to the same level by museums and other heritage organisations today, continues with individuals producing 'copies' of original artefacts for sale to collectors and living history enthusiasts. Furthermore, there are historians and archaeologists seeking to produce 'replicas' using, as close as possible, original materials and techniques for the purposes of 'experimental archaeology'.

Although we can make no claim for our reproduction of the 'copper-alloy bound stave-built vessel' from grave 2668 (ON 5324, see Fig. 10.16; Pl. 12.10) being 'experimental archaeology' in its purest sense, we set out to produce a 'replica' based as closely as possible on the original artefact in terms of form and dimensions, as well as the materials used in its construction. The artefact had not yet been conserved by the time we began, however we took a series of detailed photographs of the original along with the extensive measurements necessary to ensure that the replica was as accurate as we could make it.

Whilst we were fortunate to have an artefact that was 'largely intact' and in such a superb state of preservation, certain elements were missing or damaged. These included the handle and associated lugs or terminals, a number of rivets and rivet heads and a fragmentary central hoop. Whilst the wood of the original, Common or European Yew (*Taxus baccata*), had shrunk and was, in certain areas, missing, we were able to deduce the original number of staves used to create the body of the vessel and their dimensions. By using the internal measurements of the U-shaped rim we could also derive a nominal thickness for the staves.

Armed with these photographs and dimensions, along with the drawings of the original, we were now in a position to begin work on producing a prototype and, more importantly, to learn about the art of coopering or, in simple terms, how to make a wooden bucket.

To produce a watertight vessel the individual staves must have their longitudinal edges 'bevelled' or angled to ensure that each stave butts securely to the staves either side of it. That angle is dependent upon the number of staves used in the construction. In the case of the Barrow Clump 'bucket', it was constructed of eight staves all of approximately 36.5 mm width resulting in a vessel of 103 mm diameter. This would require the edges of each stave to be bevelled to an angle of 22.5°. The original artefact had vertical, parallel sides. Had they been tapered, wider at the bottom than at the top, then setting the angles and ensuring that the staves fitted together would have been a much more complex problem.

With a basic understanding of the process we then proceeded to produce the required number of staves for the prototype from European or Common Ash

(*Fraxinus excelsior*), selected purely on its availability, structural stability and ease of working. Using an electric band saw with a tilting table each of the staves was cut to size and the long sides of each stave cut to the approximate angle required. These angles were then further 'refined' using an electric bench sander with a tilting table to ensure that each of the staves was the correct shape necessary for an accurate fit. A channel was then cut into the inside of each stave close to the bottom using a suitable knife and parting chisel to accommodate the base. The base was then shaped and 'finessed' to fit the body of the bucket and the whole thing assembled to check the accuracy of the joints between the individual staves and between the staves and the base. Once we were happy with the 'dry fit' the vessel was then reassembled using modern wood adhesive. When dry the outside of the vessel was shaped and the whole thing tested to ensure that it was watertight.

Having successfully completed the prototype we felt we had the understanding and confidence necessary to proceed with the replica proper.

Eight staves were split out from blocks of seasoned yew wood and each was then trimmed to size in order to form the body of the vessel. After some 'fine-tuning' to ensure an accurate, secure join between the staves they were shaped to produce a curve on both the inner and outer faces. As before, we now cut a channel the appropriate distance from the bottom into the inside of each stave, thereby producing the groove necessary to take the base. The base was then shaped by hand, narrowing at the edges to ensure a secure fit.

With the main body of the bucket complete we now turned our attention to the copper alloy fittings. No analysis of the composition of the copper alloy banding had been undertaken so we opted to use a standard bronze sheet, of appropriate thickness. We based our choice of material on the analysis of artefacts from other local cemeteries, which show predominantly bronze and gunmetal in use in the 6th century, with very little evidence for brass.

The bands were cut to size and the decoration punched on to the reverse using a simple handmade steel punch filed by hand to produce a 'dimple' which, when the band was turned over, provided the raised dots displayed on the original. The bands were then marked with the position of the rivet holes necessary to assemble the final vessel and drilled, including those that appeared to have no corresponding hole or rivet in the staves of the vessel itself.

The most difficult aspect of the metalwork was forming the U-shaped rim of the bucket. A strip of bronze was heated and then hammered over a former to produce a U-shaped, open-ended ring. This process required the bronze to be heated, quenched and then pickled at regular intervals to ensure that it did not become brittle as a result of the repeated hammering and shaping. We had several failed attempts at forming a 'satisfactory' rim and found it to be, by far, the most challenging aspect of the project. Whilst we are still not entirely happy with the finished component, looking at it now reminds us just how skilled the original makers were.

Plate 13.7 Replica of the Anglo-Saxon bucket from grave 2668

Prior to fitting the bands we needed to produce the dome-headed split 'pins' or legged rivets. Using the same bronze sheet, each rivet head was punched and domed by hand in order produce a piece that matched the dimensions of the originals. The 'legs' were then cut to the correct width and length before being folded to form a 'split pin' with a flattened base. Whilst there was evidence of the use of solder to affix the rivet head to the legs, again there has been no analysis of its composition. We settled on a modern industrial solder for the reconstruction. The smaller, solid rivets necessary to hold the rim clips in place were formed from bronze rod of the appropriate gauge.

The original vessel shows no evidence of glue. The structural integrity is provided by the tight fit of the individual staves, the base and copper alloy banding, all held in place by the rivets.

We then took the individual elements of the reconstruction and 'dry assembled' them to ensure they would all fit together as planned prior to positioning the lateral bands. Using the pre-drilled holes in the bands as a guide we then drilled through the staves of the vessel to provide the necessary holes for the split legged rivets to pass through. These holes were intentionally made slightly smaller than the thickness of the rivet legs in an effort to create a secure, watertight seal. The maker of the original vessel would not have had access to a drill bit as we understand them today. They would have had to punch the holes into the copper alloy bands and then use an awl or auger to make the corresponding holes in the staves of the vessel. The rivets then had to be hammered in to place and 'set' by splaying the legs and hammering them down on the inside of the bucket to ensure the whole vessel remained stable. This was an incredibly nerve-wracking part of the operation but eventually did prove just how robust the wooden structure actually was (thankfully!).

The upper terminals of the two opposing copper alloy uprights are broken on the original artefact, but indicate where the handle lugs would have been located. We extended the uprights so that they were of sufficient length to be folded back over on themselves and secured to the inside of the bucket by the topmost rivet, thus forming a loop that was laterally pierced to allow for the handle to be fitted.

As there was no evidence for any handle with the original, we chose to produce one based on a similar vessel found in grave XXVII at the Mount Pleasant Anglo-Saxon cemetery, Alton, Hampshire. This was made from iron, but there are also period examples elsewhere of strap handles made from bronze – and, where no evidence remains at all, it has been suggested that the handles could have been made from leather, or even cordage or textile.

One of the most 'interesting' accidents of the entire process occurred whilst fitting the handle. The handle proved to be quite a tight fit and, in fitting the iron-work onto the vessel, the head from one of the rivets was levered away from its legs as a result of the upright twisting. Although more than a little annoyed at our clumsiness, we noted that the remaining section of the rivet looked exactly like the fixings on the original that had suffered similar damage. We found this incredibly reassuring and replaced the rivet quite happily with one of the spares that we had prepared for just such an eventuality.

The finished vessel was then treated with a mixture of beeswax, linseed and natural turpentine to seal the yew wood (Pl. 13.7). The Roman naturalist and philosopher Pliny the Elder had, in his *Natural History* (AD 77–79), noted that *'even wine flasks for travellers made of its wood in Gaul are known to have caused death'*. In modern scientific literature however, evidence for yew wood causing health problems is limited to a few cases of irritation or dermatitis but, given that the finished product would be available for handling, we did not want to take any unnecessary risks.

So, why try to reconstruct this particular vessel? We had always wanted to attempt a replica bucket, and when we were invited by Richard Osgood to take part in the Barrow Clump Open Day in 2014 it seemed an ideal match. The Operation Nightingale project had inspired us from the beginning. Having seen the *Time Team* episode aired in 2013 we then visited the excavations with the Hampshire Field Club and the connection was made. The bucket was special. It represented – or even symbolized – so many links between those excavating the site and the warriors that they were uncovering. It inspired everyone involved in the project and was an obvious source of pride. This replica seemed the only logical tribute, however small, we could make to their work. The original is now on display at the Wiltshire Heritage Museum in Devizes, and the replica forms part of *Weorod's* displays at events across the area. Both vessels continue to enchant visitors and bring the Barrow Clump story to life.

Like the antiquarians and museums of the 19th century, the ability to represent an artefact as it was prior to its deposition is important to us as historical interpreters, and allows us to show a member of the public, or indeed an archaeologist, the 'before' and 'after'. Even the heritage specialists we work alongside are used to seeing copper alloy artefacts as 'dull and green', and enjoy seeing them as they would have been when they were 'shiny and new', enhanced here by the rich reddish-brown colour of the 'fresh' yew wood. For ourselves, we benefit from the learning acquired during the production process, and are then able to pass that knowledge on to members of the public and others to help them to understand the past and the people who lived in it a little better. Not so much 'experimental archaeology' as 'experiential archaeology'.

As ever, we come to the ultimate rhetorical question. How did the original makers of these vessels produce such finely crafted items without the aid of modern tools? No protractor to measure the angles and no band-saws and sanders with tilting tables to cut and refine the staves? No metal shears and drill bits to produce and fit the bindings? They would have worked with axes, knives, punches, cold chisels and augurs. Every item we reproduce, every replica we make, be it a 'feasting bucket', a copper alloy brooch or a pair of shoes, only serves to increase our admiration for the knowledge, artistry and skill of the original makers. The Barrow Clump bucket was, for us, one of the best of these moments.

Chapter 14
Other Finds

The Coins

by Richard Henry

Ten Roman coins were recovered from the excavations and these date from the 3rd and 4th centuries AD. The assemblage, consisting of four radiates and six nummi, includes six copies. In the 3rd and 4th centuries copies of official coinage were produced during periods of limited supply and to provide sufficient small change. Such issues are common as site finds in Wiltshire and were in widespread circulation. There is a prolific increase in the quantity of coins recorded as site finds in the 3rd and 4th centuries and the assemblage from Barrow Clump is, therefore, not uncommon, although the size of the assemblage does not allow for statistical analysis.

Roman coins from Anglo-Saxon burials are well attested and the vast majority are pierced for personal ornament, usually for mounting as pendants or stitched onto clothing (Kent 1961; King 1988; Rigold 1988; Moorhead 2010). Roman bronze coins are found in graves dating from the 5th through to the 7th centuries (King 1988).

The three pierced examples discussed below were all unstratified, but it is possible they are from disturbed burials. Pierced Roman coins from the mid-3rd to 4th centuries could remain in circulation in the Roman period after modification and, therefore, the argument that these issues could be disturbed from burials is not conclusive, although given the nature of the site this seems probable. Such deposits in Anglo-Saxon burials are considered secondary contexts (Moorhead 2010).

ON 5401 (2802) is an issue of Allectus which has been pierced at 7 o'clock on the obverse on the inscription.

ON 5452 (7001) is an issue of Constantius II and has been pierced in two locations. Such modifications have been associated with the coins being sewn onto fabric, and Moorhead (2010, 41) suggests that these double-pierced coins could also be used for necklaces. A broadly central perforation is irregular in form and located at the chin of the bust. A further perforation, which is circular and 1.55 mm in diameter, is located at 8 o'clock on the obverse on the inscription.

ON 5534 (7001) is an issue of Constantine I and has been pierced at 9 o'clock on the obverse, with the perforation located on the inscription. The perforation is 2.6 mm in diameter and has been drilled through the reverse.

Catalogue

(by object number and context; Normanby = Burnett and Bland 1988; RIC = Webb 1933)

Radiates

Ruler	Reverse	Exergue	Date	Reference	Wt (g)
ON 5489 (7001) Tetricus I	SALVS AVGG Salus feeding snake and holding rudder	–	271–274	Normanby 1494 ff	1.60
ON 5455 (7002) Victorinus	PAX AVG (Irregular) Pax standing left holding vertical sceptre	–	275–285	–	1.25
ON 5400 (2801) Carausius	ADVENTVS (Irregular) Emperor riding left with right hand raised	ML	268–288	Cf RIC Vb 10	4.60
ON 5401 (2802) Allectus	PROVIDENTIA AVG Providentia standing left holding globe	S/P//C	293–296	RIC Vb 108	3.20

Nummi

Ruler	Reverse	Exergue	Date	Reference	Wt (g)
ON 5534 (7001) Constantine I	SOLI INVICTO COMITI Sol standing left with right hand raised	[…]//PLN	313–317	–	3.04
ON 5451 (7001) House of Constantine	VRBS ROMA (Irregular) Wolf with twins	[…]	330–340	–	0.65
ON 5490 (7001) House of Constantine	VRBS ROMA (Irregular) Wolf with twins	[…]	330–340	–	1.27
ON 5337 (2635) House of Constantine	GLORIA EXERCITVS Two soldiers one standard	[…]	335–341	–	0.72
ON 5452 (7001) Constantius II	FEL TEMP REPARATIO (Irregular) Soldier spearing fallen horseman	[…]	353–361	–	1.22
ON 5339 (2729) House of Constantine	FEL TEMP REPARATIO (Irregular) Soldier spearing fallen horseman	[…]	353–361	–	0.31

Beads

by Lorraine Mepham

Introduction

A total of 440 beads (284 glass, 152 amber, 4 other), plus fragments, was recovered, deriving from 18 graves (in addition one bead was found unstratified). Table 14.1 gives the breakdown of bead types by grave. Numbers per grave ranged from one to 165, although the latter total was exceptional – the next highest total was 60, and the other 15 graves contained 34 beads or fewer.

The beads have been classified by shape, colour and size following the scheme recommended by Hirst (2000), with correlations where appropriate to Brugmann's classification (2004). Reference has also been made to the Dover Buckland assemblage (Evison 1987).

Glass Beads

Monochrome

The majority of the glass beads (254) are monochrome types; these are summarised in Table 14.2. They occurred in 10 graves. Disc, annular, globular, drawn globular, cylindrical and ribbed types are all present. By far the most common are globular beads, represented by a group of 131 miniature beads (diameters 1–2 mm) from grave 2699. These comprise 94 in a pale semi-translucent green-blue (ONs 5372 etc), and 37 in an opaque dark colour (ONs 5392 etc). Four further miniature dark globular beads were found in grave 7016 (ONs 5624 and 5636).

Drawn globular segmented beads were also common: there were 30 from grave 2648 (ONs 5322 etc), five from grave 2159 (ONs 4426 etc), one from grave 2715 (ON 5344) and 18 from grave 7016 (ONs 5475, 5624 and 5633 etc). The number of segments in each ranged from one to four, although a few show signs of breakage at one or both ends (particularly those comprising single segments), suggesting that some at least were originally longer. There is no sign that these beads are of 'gold-in-glass' type; they appear simply colourless.

Ribbed 'melon' beads of Anglo-Saxon rather than Roman type (Brugmann's Melon Blue) occurred in three graves (2807 (ON 5621), 7062 (ON 5650) and 7085 (ON 5523)), and in all three cases were found with wound annular blue beads (Brugmann's Blue) (ONs 5402, 5480 and 5531 respectively). The latter also occurred in graves 2804 (alongside colourless beads of the same form (ON 5416)), 2373 (ONs 5000 etc) and 7016 (ONs 5624 etc), and one colourless annular bead was also found in grave 2699 (ON 5641). Grave 7062 yielded the only examples of semi-translucent blue-green annular (ON 5656) and transparent pale blue-green disc beads (ON 5657), as well as opaque red (ON 5485) and yellow (ON 5486) disc beads. One of the two opaque white disc beads also came from this grave (ON 5627); the other was in grave 2699 (ON 5389). A large annular bead in translucent yellow-brown glass (ON 5497) was found associated with the sword in grave 7082, the only bead from this grave.

Polychrome

Polychrome beads (30) make up 11% of the glass beads. They were found in four graves; two produced a single bead each (graves 2699 (ON 5386) and 7088 (ON 5510)), with the remainder from graves 7062 (12 beads; ONs 5625 etc) and 7085 (16 beads; ONs 5539 etc). Their types are summarised in Table 14.3. Beads with various combinations of crossing waves and dots (Koch34 and Dot34 types), in several colour variants,

Table 14.1 Bead types by grave

Grave	Gender/Age	Glass Mono	Glass Poly	Amber	Rock crystal	Bone	Coral	Total
2159	Female *c.* 25–35y	6	–	15	–	–	1	22
(Sk 6003/4)	Female *c.* 30–40y; juvenile	–	–	5	–	–	–	5
2373	Adult indet.	18	–	1	–	–	–	19
2435	Male *c.* 35–45y	–	–	1	–	–	–	1
2502	Male *c.* 35–50y	–	–	11	–	–	–	11
2627	Female adult *c.* 40–50y	–	–	3	–	–	–	3
2648	?Female juvenile *c.* 12y	32	–	28	–	–	–	60
2668	Male subadult *c.* 16-17y	1	–	–	–	–	–	1
2699	Female adult *c.* 18–21y	135	1	27	1	1	–	165
2715	Female adult *c.* 50–60y	1	–	7	–	–	–	8
2781	?Female adult *c.* 35–40y	–	–	2	–	–	–	2
2804	?Female >45y	9	–	3	–	–	–	12
2807	Female *c.* 25–35y	8	–	3	–	–	–	11
7016	Female >65y	19	–	9	–	–	–	28
7062	Female *c.* 40–50y	18	12	1	–	–	–	31
7082	Male *c.* 30–40y	1	–	–	–	–	–	1
7085	Female *c.* 40–45y	6	16	13	–	–	–	35
7088	Juvenile *c.* 5–7y	–	1	23	1	–	–	25
Total		254	30	152	2	1	1	440

Table 14.2 Monochrome bead types by grave

Context	Count	Colour	Shape	Comment	Dating
Grave 2159	1	Colourless	Drawn, globular, segmented (1 segment)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 2159	3	Colourless	Drawn, globular, segmented (2 segments)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 2159	1	Colourless	Drawn, globular, segmented (3 segments)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 2159	1	Opaque green	Globular		
Grave 2373	18	Blue	Annular	Brugmann Blue	mainly *c.* AD 450–530
Grave 2648	10	Colourless	Drawn, globular, segmented (1 segment)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 2648	9	Colourless	Drawn, globular, segmented (2 segments)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 2648	10	Colourless	Drawn, globular, segmented (3 segments)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 2648	1	Colourless	Drawn, globular, segmented (4 segments)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 2648	1	Green-blue	Thin-walled cylinder	BrugmannConCyl	*c.* AD 480–580
Grave 2648	1	Yellow-brown	Annular	–	
Grave 2668	1	Uncertain	Uncertain	Fragmentary, degraded	–
Grave 2699	1	Opaque white	?Disc	?Buckland B57	Buckland phases 3–5 (*c.* AD 575–675)
Grave 2699	1	Colourless	Annular	Buckland B64	Buckland phase 1 (*c.* AD 475–525)
Grave 2699	94	Semi-translucent green-blue	Miniature globular	–	–
Grave 2699	37	Opaque dark	Miniature globular	BrugmannMinDark	*c.* AD 450–580
Grave 2699	1	Opaque dark	Miniature wound	–	–
Grave 2699	1	Colourless	Thin-walled cylinder	–	–
Grave 2656	1	Colourless	Drawn, globular, segmented (4 segments)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 2804	1	Blue	Annular	Brugmann Blue	mainly *c.* AD 450–530
Grave 2804	8	Colourless	Annular	Brugmann Blue	mainly *c.* AD 450–530
Grave 2807	7	Blue	Annular	Brugmann Blue	mainly *c.* AD 450–530
Grave 2807	1	Blue	Ribbed	BrugmannMelonBl	*c.* AD 530–580
Grave 7016	1	Blue	Annular	Brugmann Blue	mainly *c.* AD 450–530
Grave 7016	2	Opaque dark	Miniature globular	BrugmannMinDark	*c.* AD 450–580
Grave 7016	12	Colourless	Drawn, globular, segmented (1 segment)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 7016	2	Colourless	Drawn, globular, segmented (2 segments)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 7016	2	Colourless	Drawn, globular, segmented (3 segments)	BrugmannConSeg	mainly *c.* AD 480–580
Grave 7062	1	?semi-translucent blue-green	Annular	–	–
Grave 7062	1	Opaque dark	Annular	–	–
Grave 7062	7	Blue	Annular	Brugmann Blue	mainly *c.* AD 450–530
Grave 7062	1	Transparent pale blue	Disc	–	–
Grave 7062	2	Opaque red	Disc	Buckland B01	Buckland phases 3–6 (*c.* AD 575–700)
Grave 7062	1	Opaque white	Disc	Buckland B57	Buckland phases 3–5 (*c.* AD 575–675)
Grave 7062	1	Opaque yellow	Disc	Buckland B12	Buckland phases 1–6 (concentration in phase 3: *c.* AD 575–625)
Grave 7062	1	Uncertain	Disc	Degraded	–
Grave 7062	1	Blue	Ribbed	BrugmannMelonBl	*c.* AD 530–580
Grave 7062	1	Blue	Ribbed	BrugmannMelonBl	*c.* AD 530–580
Grave 7062	1	Uncertain	Uncertain	Degraded	–
Grave 7085	1	Blue	Annular	Brugmann Blue	mainly *c.* AD 450–530
Grave 7085	4	Blue	Ribbed	BrugmannMelonBl	*c.* AD 530–580
Grave 7085	1	Blue	Uncertain	Fragments only	–

Table 14.3 Polychrome bead types by grave

Context	Count	Colours	Type and pattern	Comment	Date
Grave 2699	1	Opaque white body with translucent blue trail and opaque red dots	Disc; double crossing wave and dots	Dot34	AD 555–650
Grave 7062	1	Opaque white body with blue trail	Disc; spiral trail	Buckland D01; Brugmann BlueGreenSpiral	
Grave 7062	1	Opaque red body with opaque white trail	Thick-walled cylinder; spiral trail	Buckland D05; Koch42	AD 580–650
Grave 7062	1	Opaque red body with opaque white trails and opaque yellow dots	Globular; double crossing wave and dots	Dot34	AD 555–650
Grave 7062	1	Opaque red, opaque yellow and translucent dark green	Thick-walled cylinder; Streaked Traffic Light	Streaked TL	AD 450–530
Grave 7062	1	Opaque white body; opaque red trails and translucent blue dots	Globular; double crossing wave and dots	Dot34	AD 555–650
Grave 7062	2	Opaque white body; translucent blue trails and opaque red dots	Disc; double crossing wave and dots	Dot34	AD 555–650
Grave 7062	1	Uncertain	Globular; very degraded; possibly Traffic Light		
Grave 7062	1	Opaque red, opaque yellow and translucent dark green	Thick-walled cylinder; Streaked Traffic Light	Streaked TL	AD 450–530
Grave 7062	1	Opaque red body with blue trail	Disc; blue wavy trail		
Grave 7062	1	Blue with possible opaque white dots	Annular; degraded; possible white dots around circumference		
Grave 7062	1	Opaque red body with opaque white and opaque yellow trails	Thick-walled cylinder; spiral trails		
Grave 7085	3	Opaque yellow with dark green/black trail	Globular; double crossing wave	Koch34	AD 580–650
Grave 7085	1	Opaque yellow with opaque red and dark green/black trails	Thick-walled cylinder; degraded	Reticella	
Grave 7085	2	Opaque white body with translucent blue trail	Globular; double crossing wave	Buckland D25; Koch34 Blue	AD 580–650
Grave 7085	1	Opaque red body with opaque white trail	Globular; double crossing wave and dots	Buckland D42; Dot34	AD 555–650
Grave 7085	8	Opaque red body with opaque white trail	Globular; double crossing wave	Buckland D19; Koch34 White	AD 580–650
Grave 7085	1	Opaque yellow with dark green/black trail and red dots	Globular; double crossing wave and dots	Dot34	AD 555–650
Grave 7088	1	Opaque red, opaque yellow and translucent dark green	Thick-walled cylinder; Streaked Traffic Light	Streaked TL	AD 450–530

are the most common. There are also three (possibly four) examples of Brugmann's Streaked Traffic Light beads, with opaque yellow and translucent dark green trails on an opaque red ground (grave 7062, ONs 5629, 5647 and 5648; grave 7088, ON 5510).

There are examples of spiral trails, including Koch42 (ON 5625) and Brugmann's BlueGreenSpiral (ON 5626), as well as an opaque red disc bead with single translucent blue wave (ON 5649), and a possible example of Brugmann's Regular Dot (white spots on blue) (ON 5653), all from grave 7062, while grave 7085 produced one Reticella bead (ON 5541).

Amber Beads

The majority of the amber beads do not appear to have been carefully shaped, but rather to have been made from lumps of amber with little loss of raw material. The exceptions are a group of 16 spindle-shaped beads (ONs 5362, 5369 and 5390 etc), and one large annular bead (ON 5385), all found in grave 2699. The remainder comprise a range of rounded and flattish forms (Evison 1987, text fig. 11, types A01-A04), ranging from small (diameter <5mm) to large (diameter >10mm). In terms of their length:diameter ratios, the beads range from very short (a length:diameter ration of 1:4) to medium (1:1), with the spindle-shaped beads being long or very long (1.5:1 to 2:1) (Brugmann 2004, fig. 9).

Other Beads

The four other beads comprise two in rock crystal, one in coral and one in bone. The rock crystal beads are both large (diameters over 10 mm); one is bun-shaped (grave 2699; ON 5375), and the other biconical (grave 7088; ON 5500). Both are worn around the circumference, a phenomenon noted elsewhere and which cannot be explained by their use in necklaces; they may have had a previous or additional use (Brugmann 2010, 48). The bone bead (grave 2699; ON 5619) is cylindrical and thin-walled, although somewhat abraded. The coral bead came from grave 2159 (ON 4430). Coral beads are amongst the less commonly used non-glass types; no other examples are known from cemeteries in the region.

Gender and Age Associations

Gender and age of the individuals in the 18 graves are given in Table 14.1. The majority (11) are adult females; where the age has been estimated, it ranges from *c.* 18 to over 65 years. There are three adult males (30 to 50 years), one adult of indeterminate sex, two juveniles (one probably female), and one subadult (male). It is notable that the female juvenile has the second highest bead total (60), while the highest total (165 beads, largely miniature), belonged to the youngest of the female adults (*c.* 18–21 years), which accords with the correlation of bead numbers to age observed by Stoodley (1999, 110–11, fig. 98). The subadult male had only one bead (possibly redeposited), as did two of the adult males, but the third adult male had a collection of 11 amber beads.

Position of Beads in Graves

Position of the beads in the graves varied, and in at least one case (grave 2373) could not be determined due to later disturbance. In 10 of the graves (including one of the adult males), there was a definite grouping or concentration in the neck/upper chest area, suggesting that the beads were either worn on a string around the neck, or were attached to the front of the dress (graves 2159, 2502, 2648, 2699, 2715, 2781, 2807, 7016, 7062, 7085); in grave 2159, the beads were grouped around a square-headed brooch. The adult female in grave 7085 also had a group of beads at the left hip, perhaps contained in a small bag worn at the waist, and four other graves also contained bead groups in the pelvic area (graves 2627, 2804, 7088). As well as the upper body group, the adult female in grave 2159 also had five beads down by the right thigh. In the case of grave 2804, the beads appeared to have no relationship to the pair of disc brooches found at the shoulder. The two groups from grave 7085 were different in character: amber beads were included in both, but the glass beads were divided by type, monochrome beads only at the hip, and polychrome only at the neck.

Two of the beads from grave 7062 were found at the hip, although the majority were by the left shoulder, and these two may have been displaced from the latter group. In grave 2699, although the miniature beads were concentrated in the head area, the rest of the beads were scattered apparently randomly down the body as far as the lower calves. The single bead from grave 7082, accompanying an adult male, was found next to the hilt of a sword, and may have been attached to it, possibly fulfilling an amuletic function. The association of beads with swords has been noted elsewhere, and examples of amber, glass and crystal beads found beside swords have been recorded, including two found beneath swords at Petersfinger, Wiltshire (Leeds and Shortt 1953, 16, 17, 44; Evison 1967; Davidson 1998, 83).

The bead accompanying the ?male subadult in grave 2668 was by the feet, and could have been redeposited, while the position of the single amber bead found with the adult male in grave 2435 was unrecorded.

Chronology

Using Brugmann's chronological groupings, it seems that the 18 grave groups might not all fall within the same period, and there is a potential date range from late 5th to mid-7th century. Possibly the earliest group came from grave 2373, in the form of 18 blue annular beads, which belong mainly to Brugmann's Group A1 (*c.* AD 450–530). Single blue annular beads occurred in graves 2804 (with a colourless annular bead) and 2807, although the latter grave also contained a blue ribbed ('melon') bead. Brugmann links these ribbed beads to her Group A2b (*c.* AD 530–580).

Other early groups are characterised by the presence of amber and monochrome glass segmented beads (graves 2159, 2648, 2715 and 7016). The currency of the segmented beads extends from the Roman period through to Brugmann's Group B, although they mainly belong to her Group A2 (*c.* AD 480–580). Grave 2699 probably also belongs to this early phase, containing the bulk of the miniature monochrome glass beads, and the spindle-shaped amber beads, which are known from 5th- and early 6th-century contexts in England and on the Continent (Brugmann 2010, 44), and a rock crystal bead, a type most common in the first half of the 6th century.

Five graves contained only amber beads, generally in small quantities: 2435, 2502, 2627, 2781 and 6003/4. While amber bead strings are characteristic of the 6th century, single or small groups of amber beads were probably used as amulets throughout the early Anglo-Saxon period, and these small groups cannot be dated more closely on the basis of shape or proportion (Brugmann 2010, 50).

The presence of a Traffic Light bead and a rock crystal bead in grave 7088 may link this grave to the early phase; Traffic Light beads fall within Brugmann's Group A1 (*c.* AD 450–530). However, two (possibly three) Traffic Light beads in grave 7062 appear to be heirlooms (as may be a Visigothic brooch), occurring alongside Koch42 and Dot34 polychrome beads, and monochrome types that also appear later (Melon Blue, opaque red, white and yellow disc beads). Koch42 beads were found at Dover Buckland in late 6th- to mid-7th-century graves; Brugmann suggests that the type is related to the Koch20 White, imported in the second half of the 6th century, so it may be of similar date (Brugmann 2004, fig. 159). Brugmann links the polychrome Dot34 to her Group B (*c.* AD 555–650). Opaque red and yellow disc beads occurred at Dover Buckland in graves dating *c.* 575–700 (Evison 1987, table XI).

Grave 7085, the only other grave to contain a significant number of polychrome beads, also contained Dot34 types, alongside Koch34 and a Reticella. The latter is included by Brugmann in her Group A2B (*c.* AD 530–580), with the other types in Group B, the Koch34 types specifically in Group B2 (*c.* AD 580–650).

In conclusion, although the potential date range extends from the late 5th to mid-/late 7th century, all the grave groups could be accommodated within the 6th century. There are no beads here which belong exclusively to Brugmann's Group C (*c.* AD 650 onwards).

General parallels can be observed with other Wiltshire cemeteries, such as Collingbourne Ducis, Blacknall Field and Petersfinger, all of which produced a similar range of bead types dating to the later 5th to 6th centuries, including high proportions of amber beads (Brugmann 2004, table 10; Mepham 2016).

Bone Objects
by Lorraine Mepham

Two bone objects were recovered from Anglo-Saxon graves: a small strip fragment from grave 2720, and a pin or needle shank from grave 7062.

The strip fragment (ON 5398), measuring 25 x 17 x 2 mm, one end possibly cut and the other broken across, is of uncertain function. One possible interpretation is that it was part of the central connecting plate from a composite comb, although it retains no diagnostic features such as rivet holes. Moreover, composite combs were most frequently made from red deer antler, and this object is not antler but bone, possibly a cattle rib. Another possibility is that it could be part of a mount of some sort, perhaps for use on a box or casket.

The shank from grave 7062 (ON 5482) has broken across a perforation through the head, but its original length is unlikely to have exceeded 55 mm (Fig. 10.37). The form of the head is uncertain, but the object is significantly smaller than the range of perforated-head pins made from modified pig fibulae (eg, MacGregor 1985, fig. 64, 37), and it appears closer to the form of a needle, an object type not particularly common in Anglo-Saxon contexts. The bone species is unidentifiable. This object is of interest in its association with a Visigothic brooch of late 5th-/early 6th-century date (and possibly an heirloom, as indicated by the glass beads from the same grave which suggest a mid-6th-century or later date for the burial; see Mepham above, this chapter); the pin/needle was found by the left shoulder of the individual and the brooch by the right shoulder, suggesting that it acted as a clothing fastener.

Anglo-Saxon and Later Pottery

by Lorraine Mepham

Anglo-Saxon

Fifteen sherds in organic-tempered fabrics can be confidently dated as Anglo-Saxon (Table 14.4), and 18 sherds in a sandy fabric from grave 7016 could represent the remains of a funerary vessel, while 26 further sandy sherds are less confidently assigned to this period – the difficulties of distinguishing between Iron Age and Anglo-Saxon sandy wares has already been mentioned above.

One of the organic-tempered sherds carries tooled decoration, apparently in a linear band (unstratified/topsoil in Trench 7), and there is simple linear tooling on a sandy sherd from topsoil. Three sandy sherds from a convex bowl were found in the Early Bronze Age barrow ditch (fill 2614).

The 18 sherds from grave 7016 include a rim from a vessel of unknown form; these sherds cannot definitively be said to represent a single vessel, as they are small, heavily abraded and not obviously conjoining. However, given the other evidence from the same grave (redeposited cremated bone, melted metal object), the argument for this being the remains of a vessel from a disturbed cremation grave is fairly convincing. Indeed, subsequent excavations in 2017 and 2018 recorded the first Anglo-Saxon (urned) cremation burial at the site, approximately 20 m to the south-west of grave 7016, as well as the first pottery vessel to be found in an inhumation grave at Barrow Clump.

Organic-tempered wares are conventionally dated as 5th to 8th century, although their persistence as late as the 10th century has been noted, for example in Bath (Vince 1979). Here an early/middle Anglo-Saxon date seems most likely, with a similar date range for the sandy wares.

Table 14.4 Anglo-Saxon and later pottery

Period	Ware	No. sherds	Wt. (g)
Saxon	Organic-tempered ware	15	144
	Sandy ware	44	292
	sub-total Saxon	*59*	*436*
Medieval	Kennet Valley coarseware	2	10
	Laverstock-type	2	10
	West Wilts coarseware	1	3
	sub-total medieval	*5*	*23*
Post-medieval/ modern	Frechen stoneware	1	5
	Verwood-type	9	375
	English stoneware	1	60
	Refined whiteware	3	14
	sub-total post-med/modern	*14*	*454*

Medieval

Five medieval sherds were identified, all coarsewares (Table 14.4); all were intrusive sherds in earlier features These comprise one Laverstock-type coarseware from the Salisbury area (Anglo-Saxon graves 2699 and 2905), two probable ‘Kennet Valley’ chalk-/flint-tempered types (Anglo-Saxon grave 2639; upper fill 2813 of Early Bronze Age barrow ditch), and one probable West Wiltshire ware (flint layer 2636 in Early Bronze Age barrow ditch).

Post-medieval/Modern

Post-medieval/modern wares comprise Verwood-type earthenware from east Dorset, German (Frechen) and English stonewares, and refined whitewares (Table 14.4). Apart from three sherds clearly intrusive in the Early Bronze Age turf mound (2858), these sherds were recovered from unstratified/disturbed, topsoil and subsoil contexts, and from a modern pit (7007).

Chapter 15
The Anglo-Saxon Cemetery and its Context – Discusssion

by Nick Stoodley

The section here provides an examination of the various aspects of the burial rite: multiple burial, position of the corpse, grave orientation, and the structure and size of the grave, followed by a consideration of the layout and organisation of the cemetery. This is followed by a discussion of the social structure of the community that buried its dead at Barrow Clump and a study of the cemetery in the wider landscape. The significance of the evidence is brought out by placing it within the context of early Anglo-Saxon Wiltshire (Fig. 15.1); for its wider setting, see Eagles 2018 *passim*.

Chronology

The date of the accompanied burials and the chronological range of the cemetery can be established from the metal finds excavated from graves, the main ones being brooches and weapons. A number of the grave goods could have been produced in the 5th century (eg, ONs 5403, 5406, 5407, 5453, 5532 and 5563, ONs 5403 and 5453 being unstratified ring-and-dot decorated disc brooches, ON 5563 a Dickinson and Härke Group 1.1 shield boss), but it is questionable whether any burial was interred before the 6th. Grave 2653 with a disc brooch (ON 5328) and Roman brooch (ON 5329) could be the earliest. Disc brooches date to the mid-5th to mid-6th century (see above) and coupled with a Roman brooch it is tempting to suggest a 5th-century date. However, Roman brooches were also reused as dress fasteners in the 6th century, so although it is probably one of the earliest burials it may not necessarily pre-date 500 AD. Grave 2804 with, amongst other artefacts, a pair of saucer brooches (ONs 5406 and 5407) similar to Dickinson group 3.1, could also be late 5th century, although this is based on only one other example and neither is it a direct parallel. Finally, a pair of saucer brooches (ONs 5460 and 5463) of Dickinson's Group 3 (floriate cross subtype 3.2.1), from grave 7016, are probably of late 5th–early 6th-century date. The weapon burials concur: the Dickinson and Härke Group 1.1 and 4 shield bosses and Swanton Type C1, H1 and H2 spearheads were produced in the 5th century, but all these types continued to be deposited into the 6th and in some cases later. A Dickinson and Härke Group 1.1 shield boss (ON 5495) was found with a spearhead of Swanton type H1 (ON 5532) dated to AD 450–550, and the grave (7082) could potentially have contained the earliest weapon burial.

Grave 2190 had a spearhead (Swanton Type H1 or H1/H2 transitional) and shield boss (Dickinson and Härke Type 3) that place the interment in the earlier 6th century. The burial in grave 2699 with, amongst other objects, its small square-headed brooch (ON 5376), pair of button brooches and large quantity of glass and amber beads can be easily accommodated in the 6th century. A rare Dickinson and Härke Group 2 shield boss (ON 5536) dates from the start of the 6th century to the early 7th century, and was associated with a long-lasting type of spearhead (ON 7081; Swanton H2; 5th to early 7th century) in grave 7079. Probably the latest datable burial was found in grave 2832: a Type E2 spearhead and Dickinson and Härke Group 6 shield boss place it somewhere in the later 6th to earlier 7th century. Overall, the phase of accompanied burial falls within the 6th century, although there is the possibility that the cemetery was established at the end of the 5th century.

Radiocarbon dating was carried out to try to understand the chronological relationship between the unaccompanied and accompanied burials (see Marshall *et al.*, Chapter 3). Three burials were selected for the programme: 7038 (a crouched burial on the western edge of the cemetery) and 2829 and 2818 that were in close proximity on the eastern side of the burial ground. The burials dated from the late 6th to late 8th centuries cal AD and it is probable that they post-date the accompanied inhumations. Consequently, the chronological range of the cemetery is extended into the Mid-Saxon period. The three radiocarbon-dated burials were located in the berm of the Early Bronze Age ring-ditch and it is here, especially in the eastern part of the cemetery, that the majority of the unaccompanied burials or individuals with few grave goods were interred. A lack of burial wealth is a defining feature of the final-phase period and it may well be that these graves were some of the latest to be dug. In support of this idea is the fact that the area produced probably the latest weapon burial (grave 2832). In contrast, burials dated to the 6th century are mainly found in the outer ring-ditch itself and the area around it. A chronological pattern in which the earliest graves were located around the outer perimeter of the Bronze Age monument while the latest ones were placed closer to its centre may have been identified. The implications of this for an understanding of the development of the cemetery is further discussed below.

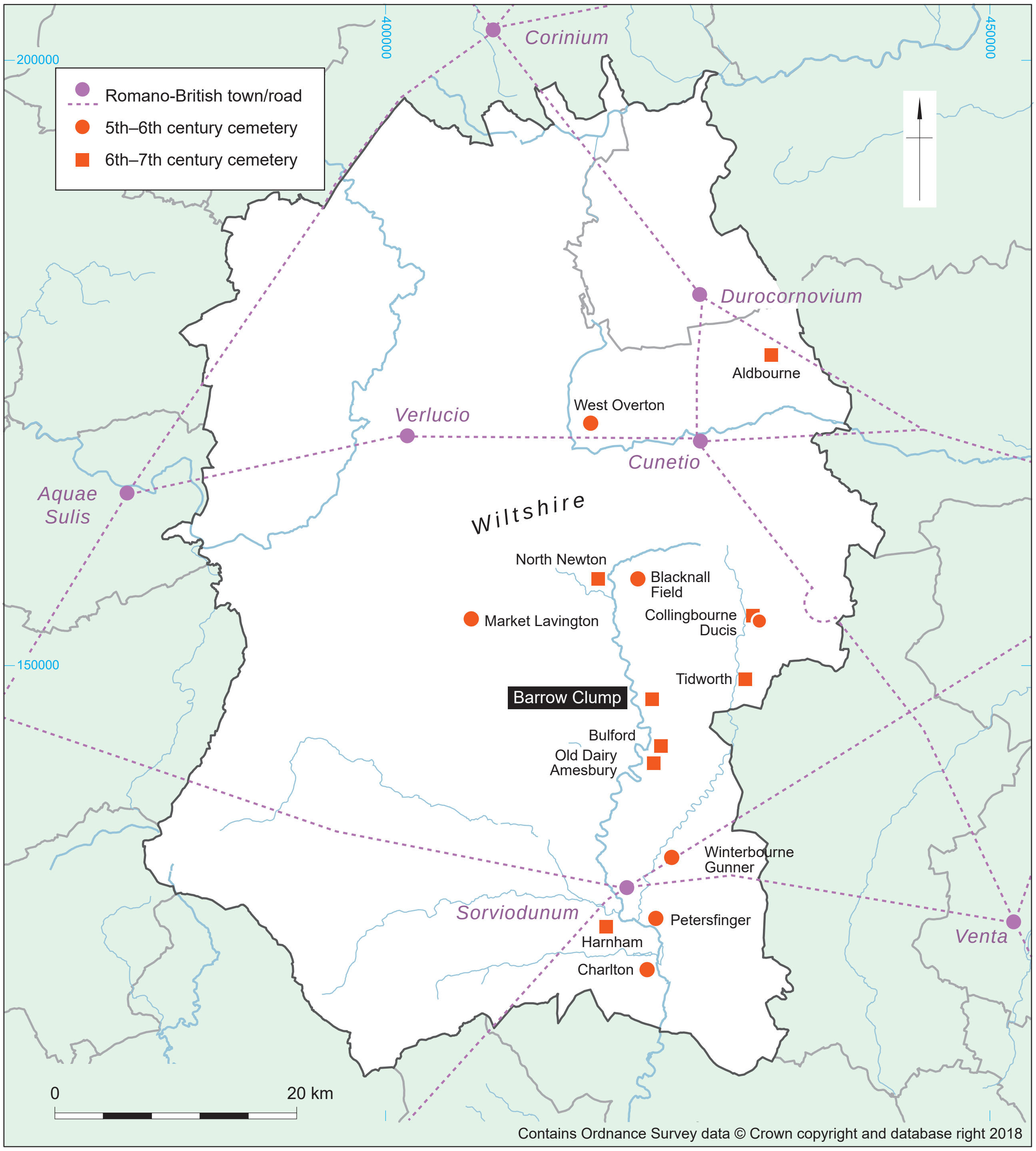


Figure 15.1 Locations of Wiltshire cemeteries discussed in text

Cultural Associations

In line with other Wiltshire cemeteries of the later 5th and 6th century Barrow Clump demonstrates a material culture that is undeniably Saxon. The brooches provide the best indication of cultural identity with strong connections to other Saxon sites both in Wiltshire and the surrounding areas; for example, the disc brooches have parallels in the Upper Thames Valley, to the east in Hampshire, and in Wiltshire. The button brooches include types found in surrounding Saxon areas, while the saucer brooches also register parallels to the north in the Upper Thames Valley, in addition to Surrey and Sussex. It should be noted that the closest example of the great square-headed brooch is from the nearby cemetery of Pewsey. There is a distinct lack of Anglian or Kentish brooches. An exception to the pattern is the imported Visigothic brooch, Type Estagel, which has a distribution focused on southern France and central Spain, but is also known in northern France, including Normandy (see above) (Koch 1998, 83, Abb 17; Schulze-Dörrlamm

Plate 15.1 Pair of juveniles in grave 2727 (Trench 2), from the west (scales = 0.2 m and 0.5 m)

1986). The nature of this burial's assemblage of grave goods, which also include a bone pin, is unusual and is suggestive that the woman was a non-local.

The assemblage of weapons reinforces the Saxon character of the community and contains spearheads that have parallels in surrounding areas, especially the Upper Thames Valley, and have also been recovered from other Wiltshire cemeteries, such as Group H2. The majority of the shield bosses are of a type (Group 1.1) that is well represented in Wiltshire, as well as the Upper Thames Valley and surrounding Saxon areas. The Dickinson and Härke Group 2 boss belongs to a small group that is poorly represented in Wessex, although examples are known from Bassett Down and Charlton Plantation (grave 59). This group is more commonly found in East Anglia and the West Midlands (Dickinson and Härke 1992, 13–14). Overall the general lack of material associated with Anglian and Kentish areas (with the possible exception of the debased silver spoon) demonstrates that this was a community with limited connections, or one that deliberately chose to express a Saxon identity through the burial rite.

Other Aspects of Mortuary Provision

Multiple Burial

Most graves contained a single interment (97%); only two produced more than one burial (graves 6003/6004 and 2727). Multiple burial is rare and usually consists of two corpses interred at the same time (Stoodley 2002, 106). For example, at Pewsey only two of the 105 graves contained multiple burials and both were interred contemporaneously; at Petersfinger, where a relatively high number of graves (n=6) were used for multiple bodies, they were all of this character. It was more unusual for a grave to be reopened to allow the insertion of another burial, but two examples are known from Collingbourne Ducis. Most of the individuals in a multiple are adult females and children, or two adults of different sex (Stoodley 2002, 112–14). At Barrow Clump grave 6003/6004 comprised an adult female and infant of between 2 and 2.5 years of age, but grave 2727 contained a pair of juveniles (11-year-old possible female and 5–6-year-old; Pl. 15.1) – a rare combination (6% of a national sample (Stoodley 2002, 112–13)). In both cases a kin-based relationship may have existed, although it is possible that an already prepared grave provided an opportunity to bury unrelated community members who had died at a similar time (Stoodley 2002, 120–1). Overall, the rarity of multiple burials suggests that graves were not used to group related individuals together, rather it appears that households had particular areas of a cemetery for their dead (see below).

The Position of the Burial

The majority of the Anglo-Saxon dead were placed extended on their back in a supine position, although the attitude of the arms and legs could vary. Other positions, such as crouched, burial on one side and prone are relatively rare (Stoodley 1999, 55–6) and at Barrow Clump all but three of the burials (where position could be recorded) were extended supine. Exceptions were found in the following graves: 6003, an adult female who was buried on her right side; 2836, a badly disturbed interment but with the legs of the adult female bent in such a way as to suggest that she was originally on her left side; and 7036, a tightly crouched possible male of 15–16 years found on the western edge of the cemetery. Burial on the side records a female bias: out of a sample of 142, 70 were adults and 43 (61%) were female (author's data). The statistics for Wiltshire are too small to be meaningful, with four cases only (one male, one female and two unsexed). It is unknown why the Barrow Clump females were treated in this way, although 6003, an adult female, was interred with an infant (6004) and the position might have been necessary to accommodate both individuals. Alternatively, the woman may have been cradling the young child. Burial in a crouched position is relatively rare but is associated with younger individuals. In Wiltshire where the age was known the group contained infants, juveniles and adolescents, for example at Collingbourne Ducis a 12–14-year-old (grave 90) and at Pewsey a juvenile of 6–7 years (grave 103) and an infant of about 2.5 years (grave 73). Both Barrow Clump (grave 7036) and Pewsey (grave 103) were found on the edge of their cemeteries and it could be that burial position and location were used to set these individuals apart from the rest of the cemetery.

Orientation of Graves

In the following discussion the direction refers to the position of the head. In most early Anglo-Saxon cemeteries a range of different alignments are noted, although the majority follow west–east or south–north. At Petersfinger the graves in the eastern sector generally followed a south–north alignment, while in the western sector they tended to be west–east (Stoodley 1999, 132–3). At Pewsey, the majority of graves generally followed a west–east direction, while at Market Lavington most were positioned south-west to north-east. The factor(s) determining grave alignment are usually unknown, although religion (Hawkes 1973), ethnicity (Faull 1977, 8) and the position of the sun at the time of burial (Hawkes 1973; Hirst 1985, 25) have all been suggested. Just as likely are local topographic factors and these probably account for the variation that is noted between the cemeteries. At Market Lavington, for example, grave alignment appears to have been dictated by the slope of the hillside and an enclosure ditch (Stoodley 2006, 177).

The graves at Barrow Clump would probably have had their alignment controlled by the curve of the outer ring-ditch and this is certainly the case for several dug within it, for example graves 2502, 2533, 2653, 2656 and 2720 that closely follow its arc. This is similar to Burghfield, Berkshire (Butterworth and Lobb 1992), where the majority of graves were influenced by the curve of the Bronze Age barrow around which the cemetery clustered. However, Barrow Clump displays more variety because some of the graves in the ditch had an alignment that was close to south–north, such as graves 6003 and 2727, while others were closer to south–east to north–west, for example grave 2715. In general, these graves can be said to follow a southerly orientation and it is possible that they were focused on a central feature in the barrow and by implication might be signalling a stronger association to the monument. The graves in the berm display less variation and tend towards a west–east alignment, probably following the arc of the ring-ditch in this area. In the south-western quadrant they were largely west–east or WNW–ESE, irrespective of whether they are in the ditch or berm, which suggests other factors had controlled the direction that graves had been dug in this part of the cemetery.

Grave Structure

Graves of the early Anglo-Saxon period might be embellished with a range of internal and external structures. The latter would have been utilised to draw attention to the location of a grave but was a practice that became more common from the later 6th century. In contrast, graves of the 5th and 6th centuries had relatively simple internal structural features, such as timber coffins, stone linings or a layer of some type of organic material on the floor. Unless conditions are especially favourable, the evidence for timbers and soft furnishings is very fragmentary, often preserved as nothing more than dark stains. Much of the evidence must have been lost entirely and the scale of the practice is likely to be seriously underrepresented. At Barrow Clump five (7%) of the graves produced evidence for some type of structure: grave 2533 contained charcoal stains, grave 6003 some undefined burnt material, grave 2642 a flint lining, grave 2699 probable evidence for a coffin, and grave 7016 fragments of a burnt plank at the head-end of the grave (western edge). The evidence from graves 2533 and 6003 possibly represents burnt planks that were used as structural features within the pit. Grave 2533 also had a large flint nodule about half way down the grave's right-hand-side. Such stones have regularly been found with planking and probably provided support for a timber structure; in this grave it may have been associated with the burnt timbers. Elsewhere in Wiltshire, a variety of structural features have been found. At Winterbourne Gunner it ranged from worked pieces of stone placed at the deceased's head (grave 41) through to evidence of coffins and turf linings (graves 12 and 59 respectively); at Petersfinger several of the inhumations had flint lining around one or more of the grave walls, while at Collingbourne Ducis flints were found around not only the grave edge, but also over the body.

The dimension of a grave is usually related to the physical size of the occupant, and this is especially true in burial grounds sited over firm bedrock where the digging of a grave required greater physical effort. It was of interest, therefore, to examine whether larger graves were dug into the softer fill of the outer ring-ditch compared to the berm area where the graves were dug through the underlying chalk; no graves were found in the surviving mound itself. As a comparison the length and width of graves in Wiltshire was calculated (data from the author's database): 57 adult graves provided measurements (graves of subadults were omitted): average length 1.80 m and width 0.73 m. The results for Barrow Clump (Table 15.1) are: graves in the ring-ditch (no = 12) average length 1.92 m, width 0.73 m; graves in the berm (no = 24) average length 2.05 m, width 0.74 m. So although the difference in width is tiny, the graves dug into the harder bedrock of the berm are longer than those in the ditch and also exceed the county average. Moreover, they were also dug to a greater depth: 0.34 m (ring-ditch), 0.46 m berm. If grave size was an indicator of status, in that greater effort was required to dig the grave (Tainter 1975), then the centre of the barrow would appear to have been the place to inter the more socially important people. Was proximity to the centre of the monument important? However, the average number of grave good types was higher for the burials within the ring-ditch (2.3) compared to their counterparts in the berm area/outside the ring-ditch (1.1), and it is clear that there is no simple correlation between grave structure and burial wealth. Chronology may help explain this pattern: some of the latest graves were dug into the berm (see above). It has been noted elsewhere that graves of the final-phase were larger than their migration-period counterparts (Egging Dinwiddy and Stoodley 2016, 144), and this might have been in response to the ending of the accompanied burial rite.

Cemetery Structure and Layout

When an earlier monument was reused as a burial place for the early Anglo-Saxon dead the graves tended to be placed around the south and east sides of it (Williams 1998, 99). For example, at Field Farm, Burghfield (Butterworth and Lobb 1992, fig. 6) they were in the southern area enclosed by the ring-ditch and immediately outside it. The secondary burials at Barrow Clump extended over a greater area, located within the berm area, outer ring-ditch and beyond in an arc from east to west. At Barrow

Table 15.1 Grave sizes at Barrow Clump

	Av. Length (m)	Av. Width (m)	Av. Depth (m)
All graves	1.84 (60)	0.69 (60)	0.41 (49)
All adults	2.03 (39)	0.73 (40)	0.43 (38)
All subadults	1.44 (13)	0.38 (13)	0.32 (9)
Males	2.15 (15)	0.73 (16)	0.45 (16)
Females	1.97 (22)	0.74 (22)	0.44 (21)
Males weapons	2.16 (9)	0.75 (10)	0.45 (10)
Males no weapons	2.13 (6)	0.70 (6)	0.39 (6)

Clump the monument was the only one of more than 20 such earthworks singled out (though many may have been levelled or ploughed flat by the end of the Romano-British period), while at Bradstow School, Broadstairs, Kent and Bargates, Christchurch, Dorset, two or more prehistoric monuments were reused. It is possible that at Barrow Clump additional early Saxon cemeteries were sited around the other monuments, although there is no record of any early Saxon finds coming from these areas and no positive indications from geophysical survey (see Chapter 1). Also, it is not unusual for graves to avoid the monument, for example at Dover Buckland (Williams 1998, 99) where some of the latest interments were sited around a barrow, but earlier graves were found at a distance of up to 60 m away. At Barrow Clump grave 7062 was discovered about 8 m south of the ring-ditch and it is certain that other graves lie in the area surrounding the monument.

A spatial analysis of the graves at Barrow Clump has been touched upon when examining grave alignment, but it will now be considered in greater detail. The burials of males, females and subadults appear to have been intermingled with no apparent patterning. However, a closer examination shows the presence of plots, in which orientation and the location of a grave in relation to the outer ring-ditch was important (Fig 15.2). Plot A was located in the eastern part of the monument and consisted of seven graves. Graves 2818 (female), 2829 (male), 2922 (female), 2435 (undetermined) and 2572 (juvenile) formed a short row orientated roughly north–south with their feet pointing to the ring-ditch. Grave 2435 (disturbed) produced a fragment of an amber bead, but the other graves did not contain artefacts. To the east of these graves and in the ring-ditch graves 2533 and 2502 had been aligned roughly south–north 'end-to-end'. In both graves the head was at the south end and both burials were accompanied by jewellery and other objects – wealth, orientation and location served to distinguish the interments of these individuals.

Similar patterning was noted in a small group of graves to the south (Plot B): 2764 (undetermined), 2605 (female), 2642 (male) all without accompanying grave goods, while in the ring-ditch were graves 2653 (female with jewellery), 2656 and 2720 (males with weapons) and 2781 (?female); the first three of these

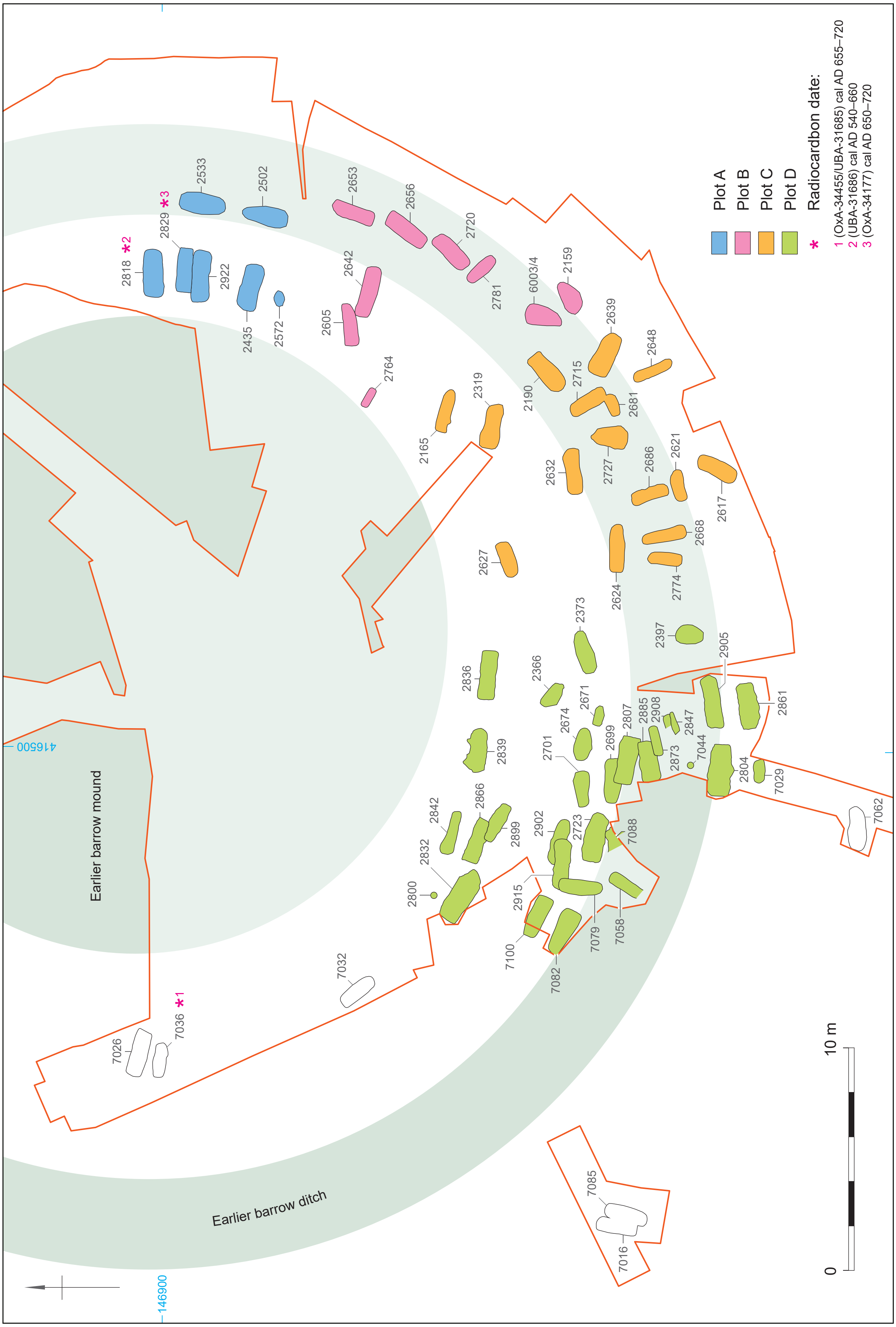


Figure 15.2 Cemetery plan: grave plots (A–D)

latter graves had a similar south-west–north-east alignment, but grave 2781 was south-east to north-west and the occupant was only accompanied by a small collection of grave goods. In contrast, the two adult females in graves 2159 and 6003/4 (this grave also containing an infant) in the south-west of the plot were relatively richly furnished, grave 2159 in particular with the great square-headed brooch, debased silver spoon and iron bridle-bit. The distance between Plots A and B was not great and the burials may have originally belonged to one large group that occupied the eastern part of the monument. Another group was found in the south-east part of the monument: Plot C, but the graves were not distinguished through orientation; for example, both south–north and west–east aligned graves were dug in the ring-ditch, and although the burials in the berm area were generally impoverished, compared to their counterparts in the ring-ditch, grave 2632 contained a male with a shield boss. Plot D was sited in the southern part of the monument and was separated from Plot C by a gap in the distribution of the graves at about the 180° mark. A small group in its northern part had a similar orientation and are generally impoverished (graves 2832, 2842, 2866, 2899, 2839 and 2836); these may have belonged to a subdivision within Plot D or were part of a separate group. To their south was a larger group that mostly consisted of west–east aligned graves sited both in the ring-ditch and outside it. Unlike in Plots A and B, most of the burials within the ring-ditch lacked grave goods, and it appears that the rigid structure observed in Plot A gradually broke down in the plots farther to the south.

That each plot contained individuals of different sexes and ages strongly suggests that they belonged to families. Yet the varying quantities of burial wealth deposited with the dead implies that the plots belonged to households composed of individuals of different status; not families in the biological sense (Härke 1997, 137–41). Chronology may also help to explain how the plots were organised. The earliest graves seem to have been located around the outer ring-ditch, while the latest ones were placed closer to its centre (see above). This is particularly apparent in Plot A, which contained two burials with radiocarbon dates centred on the 7th century (graves 2818 and 2829). It can be suggested that a household started burying its dead around the perimeter of the monument and over time moved inwards towards its centre.

A closer analysis of the cemetery layout reveals that the situation may be more complex. Subtle spatial patterning within individual plots is observed, which may contribute further evidence about how they had been organised. Age certainly appears to have determined the location of graves. In Plot A the infant (2572) was at the southern end of the row of adults, while in the adjacent plot grave 2764 was set apart on its north-west edge and although it did not produce skeletal material its small size indicates that it originally contained an infant. In Plot C most of the subadults/infants were buried in the ring-ditch, while in Plot D the subadults/infants clustered into two discrete groups: one in the ring-ditch and another to its north. Furthermore, in some plots burials with similar rites had been placed close together suggesting that the individuals had been related in some way. For example, in Plot A graves 2829 and 2922 contained a male and female adult respectively; the graves were touching, shared the same orientation and neither of the occupants had grave goods. Also in this plot, graves 2502 and 2533, which had been placed ‘end-to-end’, both had *inter alia* a single applied disc brooch. In Plot B, graves 2159 and 6003 were adjacent and both had pairs of gilt saucer brooches. Two of the adult males (graves 2165 and 2319) in Plot C are worthy of note: they were adjacent, neither had grave goods, but both were in relatively narrow graves and in positions consistent with the bodies having been constrained in some way, such as by the use of a shroud or coffin. The nature of the rite is strongly suggestive that their deaths were broadly contemporary, and it may also have served to differentiate them from other male interments in the plot. In this case difference was signalled through the structure of the grave and the manner of the deposition – not by grave goods.

The use of burial plots has been observed in Wiltshire’s other early Anglo-Saxon cemeteries. The analysis of Collingbourne Ducis, Petersfinger and Pewsey revealed discrete groups of graves that were used throughout the life of each cemetery. Not only did plots contain individuals of different ages and sexes, but the burials had varying quantities of grave goods and have been interpreted as internally ranked households (Härke 1997, 138–9; Stoodley 1999, 131–5). Thus kin, and not gender or social rank, was the principle around which a cemetery was laid out and Barrow Clump was no different. The other Wiltshire examples were all flat cemeteries; however, the use of burial plots in sites focused on a prehistoric monument is known from outside of the county, for example in Kent at Mill Hill, Deal, where two individual plots were sited on the edge of the monument (Parfitt and Brugmann 1997), while at Field Farm, Burghfield, similarities in orientation and grave furnishings have been used to tentatively identify burial groups (Butterworth and Lobb 1992, 71–2). Part of the significance of Barrow Clump lies in the fact that it is the first example in Wiltshire where a similar kin-based arrangement of graves has been identified in a cemetery that reused an earlier monument.

The discovery that Barrow Clump was in use during the 7th century is significant because Wiltshire now has an example of a cemetery in which burials of the migration-period and final-phase were in close proximity. It differs, therefore, to the 5th- and 6th-century sites of Pewsey and Petersfinger. Moreover, in Wiltshire it was usual to relocate burial in the 7th century, either to a separate site altogether, such as The Old Dairy, Amesbury (Harding and Stoodley 2017) and Aldbourne (Stoodley *et al.* 2012), or to a new location within a pre-existing burial ground, for example Collingbourne Ducis. The availability of both the berm and outer ring-ditch allowed the Barrow Clump community to continue burying around this monument. The latest burials, which were following a new type of burial rite, were separated from the earlier ones, thus negating the need to establish a new cemetery.

The Meaning of the Burial Rite

Gender and the Lifecycle

Gender is the cultural construction of biological sex (Oakley 1985) and it is this definition that most archaeologists have adopted when analysing the construction and operation of gender in the past (Whelan 1991). If a strong association exists between cultural practices and biological sex this is usually taken as evidence for the presence of a gender system. Mortuary remains are particularly valuable because they have the potential to provide detailed information about gender and how it was constructed in relation to biology. The analysis of early Anglo-Saxon burials has revealed that during the 5th and 6th century gender was an important structuring principle for all early Anglo-Saxon communities and there was a very close relationship between biological sex and cultural gender (Brush 1993; Stoodley 1999). The signalling of this social identity was afforded priority, being highly visible for many community members through the provisioning of grave goods that acted as active symbols of a person's gender: males having a general propensity for weaponry, while female interments are typified by an abundance of dress fasteners and items of jewellery. In common with the other Wiltshire cemeteries a gender dichotomy constructed around these two separate assemblages is evidenced at Barrow Clump. In a very small number of cases adults could

Table 15.2 Adults with gender-signalling artefacts by Wiltshire cemetery

Cemetery	Number adult females (possible/ probable)	Quantity with jewellery (number/ proportion)	Number adult males (possible/ probable)	Quantity with weapons (number/ proportion)
Charlton Plantation	11	4/36	11	3/27
Harnham Hill	9	4/44	9	1/11
Market Lavington	9	4/44	10	9/90
Petersfinger	5	3/60	20	11/55
Pewsey	28	23/82	27	15/55

be interred with objects usually associated with their opposite sex (Lucy 1997; Stoodley 1999, 76–7), demonstrating that the construction of gender was more complex than initially suspected. At Barrow Clump an older male (grave 2366) was discovered with a single Roman brooch and probable pin possibly indicating that he was interred in a dress, perhaps symbolising a feminine identity (but see above for an alternative interpretation).

Throughout most of Wiltshire and early Anglo-Saxon England generally, more women than men had their gender identity symbolised (Stoodley 1999, 75–6). Pewsey with its good skeletal preservation and recent osteological analysis provides an accurate indication of the practice (Table 15.2). The extent to which gender structured burial practices in other Wiltshire cemeteries is harder to gauge because of partial excavation and doubts over the accuracy of the sexing of the human remains. For example, Market Lavington is unusual because more males than females had their gender symbolised, but not all of the cemetery could be excavated and there were problems identifying the sex of some of the burials.

At Barrow Clump 10 (43%) adult males had weapons compared to 13 (57%) women with jewellery, and the proportion of both sexes with their gender symbolised is slightly lower than the national average (M45%/F60%). The ratio of men:women with gender-signalling grave goods is not too dissimilar to most early Anglo-Saxon cemeteries, although it is unknown why there was an imbalance in the proportions of men and women buried with such paraphernalia. It may have resulted from social differences between the genders, or it may have had an ethnic dimension (Stoodley 1999, 140–1). The male identity, symbolised as it was through weapons, may have signified Germanic ancestry – necessary if, as Härke (1990) believes, early Anglo-Saxon communities were ethnically mixed. In contrast the female sphere appears to have involved specific roles and responsibilities that were important in these communities, but involved individuals irrespective of their ethnic origin. The relatively high number of females at Barrow Clump that were not buried with feminine-related symbolism is intriguing, and would suggest that there was a restricted range of roles that merited the conferment of jewellery. It is also found that the graves of some of the women without jewellery occupied the peripheral areas of their burial plots, for example in Plots B, C and D, and this could be interpreted as reinforcing their marginal status within the community. Alternatively, it could be chronological and some of these women were buried during the final phase, when the accompanied rite was in decline (see above).

An individual's gender was closely bound up with his/her age and this determined the level of symbolism that was conferred (Stoodley 2000). Several age-related thresholds operated within each

Plate 15.2 Small square-headed brooch, button brooches and other jewellery in grave 2699

gender category and defined passage from one age grade to another. With each grade may have come different social roles and identities, and it is these that are symbolised through the grave goods. A first age group is identified as existing between the years of 0–2-3: a defining feature is a complete dearth of grave goods. The youngest burial at Barrow Clump was that of a perinatal infant (grave 2572) found without accompanying objects. The graves of the two infants (graves 2681 and 2671) were devoid of finds. The boundary of a second age group was set at 2–3 years of age and most of its members were also without accompanying grave goods, for example graves 2885 and 2873. Several had objects, although they tended to be simpler versions of those found with older individuals – perhaps appropriate for that age, or small fragmentary artefacts of unknown form. The young child (grave 6004), of 2–2.5 years of age, may have had several small drinking vessels placed near its head, while the juvenile of 3–5 years (grave 2847) was found with an unidentifiable object. This low level of symbolism may reflect the limited social status that these young individuals had, resulting perhaps from their inability to contribute to the household. For example, small pottery vessels seem to have been specific to young children (Stoodley 2000, 465): at Winterbourne Gunner grave 67 of a child produced a single small handmade pot.

Age-related changes to the types and quantities of jewellery marked out distinct female-specific age groups. In common with other Wessex cemeteries a first age group occurred around 7–8 years: the juvenile of 7–8 years in grave 7088 had a collection of beads. In most early Anglo-Saxon cemeteries, a major change to the female burial rite occurred at around biological maturity with the full complement of jewellery, comprising pairs of brooches, necklaces and other accoutrements, being found. It was a change that seems to have signalled 'coming of age.' At Barrow Clump, however, the full female ensemble is only found with women in their late teens/early twenties, for example in grave 2699 (18–21 years) (Pl. 15.2). It is possible that a different system of age organisation was followed by Barrow Clump or the age groups were determined according to cultural, not biological, age (Stoodley 2000, 468–9). The importance of the late teens is underlined by the fact that an additional cloak, head-veil or shawl was generally not acquired until the age of 17 and upwards and this is clearly the case at Barrow Clump (graves 2159, 2502, 2533 and 6003) (see Walton Rogers, Chapter 13). On reaching the late teens an important change appears to have occurred to the status of some females. The prime years for women were between 20 and 40 years, as demonstrated by the fact that the majority of women with a full complement of jewellery were in this group. Older women tended to have no jewellery or simpler assemblages that generally consisted of a single brooch, for example grave 2715 with, amongst other items, a single iron penannular brooch, amber beads and a glass bead. A decrease in the quantity and quality of the jewellery may reflect a reduction of female-linked

Plate 15.3 Spearhead overlying bucket in grave 2668

status as age increased. Overall, women demonstrate a complex age organisation with several lifecycle stages (Stoodley 2000, 462–3).

Weapons could be interred with children, but examples are rare and they are almost always single spears. The late teens marked a major threshold from which males could now bear weapons (Härke 1997, 128; Stoodley 2000, 461). Barrow Clump conforms to this pattern: the weapon burial rite commenced in adolescence with a 16–17-year-old (grave 2668) and a 15–18-year-old (grave 7079) with a spear (and bucket; Pl. 15.3) and a spear and shield respectively. Weapons symbolised a major change to the status of these young men in the community. Perhaps the practice signified that they were now considered eligible to carry arms and the status that came with it, but it may also have been bound up with entry into an age grade where their Germanic ancestry had greater meaning (see above).

Social Hierarchy and Cultural Identity

Along with gender and age, position within a social hierarchy also placed a constraining effect on the level of material wealth deposited with a burial. Approaches to social ranking have been dominated by quantitative analyses that mainly employed artefact counts (Arnold 1980; Shephard 1979). For example, both the reports on Edix Hill (Malim and Hines 1998) and Norton (Sherlock and Welch 1992) used a scoring system to rank the burials. Härke (1997, 145) advocated a more wide-ranging approach that combines the full analysis of the archaeological evidence with a consideration of the symbolism in various areas of the burial rite (for an application of this see Stoodley 2010, 95–100). Such 'multidimensional' approaches offer a more nuanced assessment of vertical ranking in early Anglo-Saxon society. Variations in both the quantity and quality of portable wealth can be compared to the amount of effort and materials spent on the construction of the grave and the treatment of the corpse; greater investment in both areas can be seen as indicative of a relative system of social ranking.

It has been stated that the weapon-burial rite was reserved for those who enjoyed a rank higher than men interred without weapons; the latter interpreted as belonging to the lowest ranks in society (Alcock 1981; Hawkes 1973, 186–7). More recently a study by Härke (1992, 150–53) also argued that males with weapons enjoyed a higher status than those without. It may not be correct to interpret variation in male burial wealth is such simple terms, however. It has been discussed how the deposition of Roman brooches may have derived from a different tradition – one that did not follow the Germanic rite of weapon burial and, as such, may be evidence of a different cultural identity.

Plate 15.4 Detail of sword and scabbard fittings in grave 7082

At Barrow Clump, grave 7082 contained the only sword burial (Pl. 15.4); the sword is contained in a decorated scabbard and the grave also produced a shield and spear. Nationally such a combination of weapons is rare: 13% (of weapon burials), with 10 other occurrences in Wiltshire. The cemetery at Breamore (in Hampshire, but on the Avon south of Salisbury) had a very high proportion of weapon burials and belonged to a group able to acquire a range of prestigious objects, such as vessels of various types, but interestingly no grave was furnished with a sword (Hinton and Worrell 2017). The male at Barrow Clump had, therefore, been of some local, if not regional, importance (Fig. 15.3). The proportion of burials with a spear and shield at Barrow Clump is relatively high: 45%, compared to 26% of all weapon assemblages nationally (Härke 1989, table 4.3). The average for Wessex is higher at 41% (52 burials), with over half (55%) of the weapon burials at Breamore having had this pairing of weapons. It is possible that males with a spear and shield ranked above those interred with only a spear (Alcock 1981), the most common weapon assemblage nationally. At Barrow Clump two of the weapon burials were only furnished with a single spear. If variations in the deposition of weapons did reflect different social ranks, then this appears to have been a community with a high number of males of above average status. Confirmation of this idea may be found in the fact that the burials with a spear and shield, plus grave 7082 that contained a sword, had on average a higher number of grave goods and types of grave goods (4.6/4) than those with a single spear or shield (1.6 for both counts). Moreover, the weapon burial rite was associated with generally uniform burial practices: all the individuals were extended supine in graves in which they were the only occupant; the graves were orientated between south-east to north-west and lacked structural features. Although the structure of the graves and the treatment of the corpses is not unusual, the similarity of the rites accorded to weapon burials served to mark this group out and may have symbolically reinforced their social rank. Härke (1989) has argued how the symbolic content of weapon burial changed over time from having had a largely ethnic meaning in the 5th and 6th centuries to a mainly social one by the 7th (Härke 1997, 145–6). It is still possible, however, that during the earlier period distinctions of vertical status operated within an ethnic category. Yet rather than viewing the differences in weapon burial as reflecting social classes in a direct way, the burial rite may have been deliberately structured to symbolise identities that the deceased, or their family, aspired to, and such reasons may well have determined both the quantity and combinations of weapons.

Social differentiation within the group of female burials is harder to investigate because of the complex nature of the jewellery assemblages: compared to

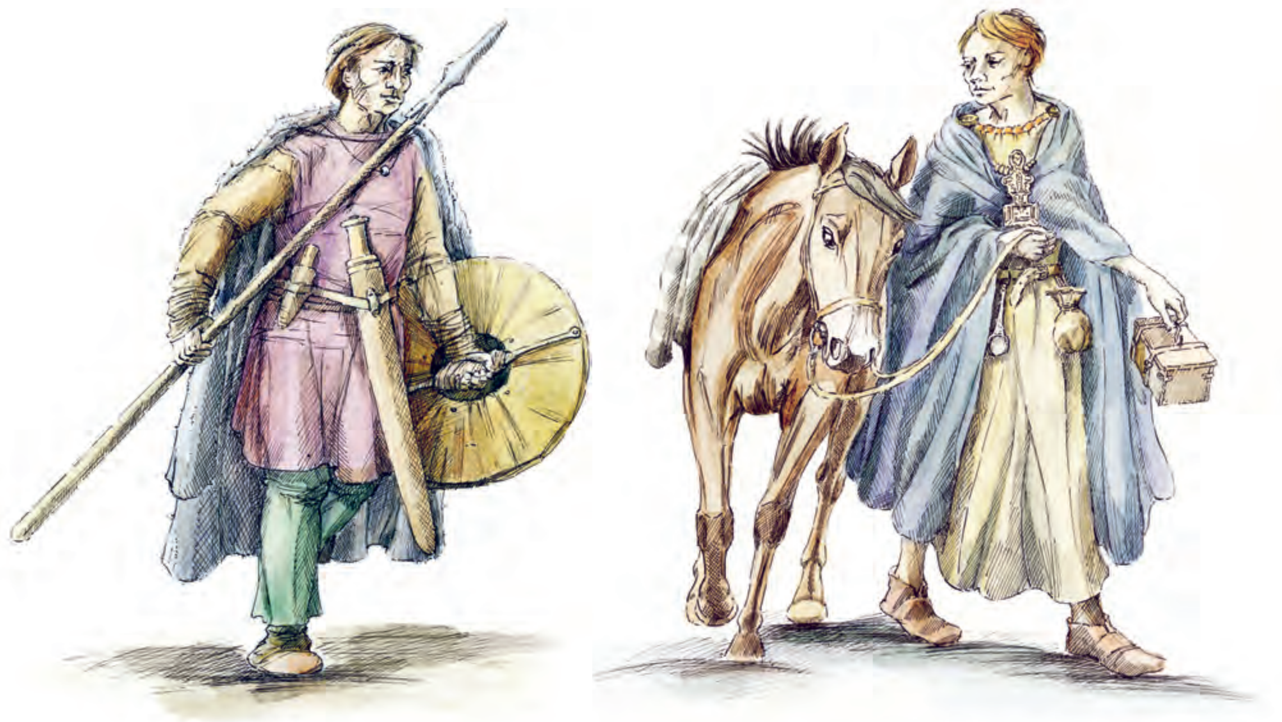


Figure 15.3 Dress reconstruction of male in grave 7082 and female in grave 2159 (drawing by Judith Dobie)

weapons, more types of jewellery were deposited, with multiple examples of some pieces. A simplified analysis has been attempted by placing females in one of four groups: 1) two or more brooches plus other jewellery, such as a necklace of beads, representing the standard female costume group found in Saxon areas; 2) single or no brooch plus other pieces of jewellery; 3) one type of jewellery; and 4) no jewellery. As a general rule, the more elaborate the jewellery the greater the number and types of grave goods that individual was buried with: Group 1 (8.2/5.5), Group 2 (6.2/5.2) and Group 3 (2/2). Ten women did not have jewellery (Group 4) and it is notable that only one had a grave good (2617, ?buckle). Thus, the deposition of jewellery could have been a statement by the family or household of its ability to acquire portable wealth and prestige objects.

Three of the graves in Group 1 had structural evidence: 6003 burnt material, 2699 a possible coffin and 7016 a burnt plank. One Group 2 burial was associated with some charcoal, but none of those in Groups 3 or 4 had evidence for a structural feature. On the basis of the quality and quantity of the grave goods and the investment in the structure of the grave, females in Group 1 occupied the highest social rank in the community. The woman with the strongest claim to having enjoyed high social worth within this community must be the individual in grave 2159 with *inter alia* a gilt great square-headed brooch of Hines' group I, a mainly Saxon subtype, that clasped a cloak of fine quality wool or cashmere (Walton Rogers, Chapter 13). The amount of raw materials and level of craft specialism required to manufacture these fine brooches has led to the notion that they belonged to high-ranking females in early Saxon communities (Hines 1997, 294–301; see also Hines, Chapter 12). Adding support to this belief is the pair of gilt saucer brooches, the relatively large collection of beads, and the probable chatelaine that included a spoon and bridle fitting (Fig. 15.3). Great square-headed brooches are exceptional in Wessex, and the only other Wiltshire example recovered under controlled circumstances came from Pewsey (grave 21). It is notable that this burial was also provided with a pair of saucer brooches and is of a similar date to grave 2159. Were there two adult women from two Avon Valley communities who lived at roughly the same time and who both had similar costume accessories symbolising their importance and standing in their particular communities? The spoon accompanying grave 2159 was an interesting choice of grave good because they are more commonly found in East Kent. Had this woman moved west through marriage, the spoon symbolising her place of origin, while the saucer brooches were an expression of the identity that she acquired through marriage? Patrilocal exogamy may explain the presence of intrusive metalwork at sites during the early medieval period (Hawkes 1956, 105), and the importance accorded to her in death might have been symbolic of a political alliance that had been sealed through a marriage between the two communities.

Community and Remembrance

Despite the strong Saxon character of the metalwork, the range of brooches is noteworthy: there is not a predominant type that could be interpreted as a sign of group membership. This is also found in the other Wiltshire cemeteries and it is difficult to know what this diversity stood for. It could simply be chronological: two generations of brooch-wearing women each choosing the types that were fashionable at that particular time, but the chronology is not precise enough to support or disprove this suggestion. On the other hand, it might reflect networks of exchange and interaction that took place between different early Saxon groups. Yet at the same time it should be remembered that the brooches were deliberately selected for the funeral, intended to serve as a highly visible element during the preparation of the body for interment and also for display before the grave was backfilled (Williams 2006, 46). The choice of brooch may have been part of a strategy employed *within* local communities; a medium through which individual families could signal allegiance or difference. To go a step further, the use of an almost standard dress template that different dress accessories could be arrayed on is significant in this respect. The actual form of the costume, that is the peplos, can be viewed as a symbol of a Saxon identity, but the types, combinations and quantities of brooches and other paraphernalia could have been the channel through which allegiances were signalled or disassociations from the group made. Williams' (2006, 46–55) analysis of the Upper Thames Valley cemetery at Berinsfield (near Dorchester), Oxfordshire, revealed a high degree of diversity within this cemetery that he interpreted as a means by which the mourners not only distinguished burials from earlier interments but also helped preserve the memory of the deceased. At Barrow Clump the differential use of brooches may be seen as part of a deliberate decision on the part of the mourners to distinguish the women and facilitate the survival of their memories. The implication is that at Barrow Clump the cemetery was an arena in which different, possibly competing, groups had an opportunity to express similarity and difference in a visual manner.

The unusual occurrence of three Roman fasteners within as many graves has already been highlighted: they were functional but they were also visible, and this decision may have been determined by the social memories that they had to the group from whom these individuals derived. Two of the burials were very similar: graves 2366 and 2397 with a single Roman fibula over the left shoulder. This may be read as an intentional act on the part of the mourners to symbolise a tradition that was different to that portrayed in the other artefact-rich burials. It may have had some special significance, perhaps establishing or maintaining a link between the owner and the (Roman?) past, or creating an imagined link in the same way that monument reuse in the early medieval period has recently been interpreted (Williams 1997; see below). To display an object in this way and the visual stories that it provided may have created a sense of continuity with the past (Bradley 1987), and through it political or social capital was conferred on the owner and/or their kin. It appears that at the same time the meanings that some objects had were, however, purposefully concealed. That the pre-Saxon penannular brooch in grave 2159 was apparently not worn but enclosed in a receptacle may suggest that the meanings that this artefact had were being hidden from the mourners, perhaps a symbol of a stage in this woman's life, for example, that the individuals responsible for arranging the funeral wished to minimize. The variety of different artefacts interred with this woman reflects a complex range of meanings and identities, and the mourners may have manipulated these messages by revealing some artefacts and concealing others. The choice not to display certain objects but to keep them concealed may have been dictated by their mnemonic links with previous owners (Williams 2006, 77) and perhaps the social, cultural or personal associations that they had for that particular person at certain times during their lifetime. Overall, the burial party orchestrated the ceremony, emphasizing those parts of that individual's life that they wanted remembered.

Barrow Clump in the Landscape

Because Barrow Clump was the subject of a modern and relatively large-scale excavation an attempt can be made to try to understand the factors underlying the location of the site in the wider landscape and, in particular, why the community decided to establish it over an earlier monument. Although the landscape context of early medieval cemeteries was first considered in the 19th century, the discipline has not until recently benefited from the type of sophisticated methodologies and theoretically informed perspectives that prehistorians have utilised to investigate the location of mortuary sites (Williams 2006, 179–81). The work of Lucy (1998; 2000, 124–30), Semple (2004) and Williams (1997; 1998; 2006, 179–214) has begun to redress this imbalance, and the relationship between burial locale and the landscape, both natural and manmade, is becoming clearer. A number of the topics raised by these scholars are of particular importance to Barrow Clump: the relationship between the cemetery and its settlement, the association with a Bronze Age monument and its proximity to routeways.

The barrow chosen as the focus for the Saxon cemetery was one of over 20 such monuments in an area covering roughly 13.5 hectares. It lies on the south-east limit of the group at a height of 110 m OD and is close to the edge and overlooks the valley of the River Avon. The whereabouts of its settlement is unknown, although it was probably in the valley bottom. At Collingbourne Ducis, settlement evidence was found beside the Upper Bourne about 150 m below the excavated cemetery (Pine 2001, 8–117). A pit containing, amongst other material, Saxon pottery was discovered close to the river Avon 800 m to the west of the cemetery at Petersfinger, while at Winterbourne Gunner pottery was recovered 400 m north of the cemetery near the river Bourne (Eagles 2018, 104). However, a cautionary note is sounded by the excavations at Market Lavington, which found settlement evidence above the cemetery (Williams and Newman 2006, 171–3); there was only 20 m between the two sites so it is probable that they were contiguous and not spatially separate. Elsewhere, research has revealed a range of different spatial relationships. Sam Lucy's (1998) work on the Anglo-Saxon cemeteries of East Yorkshire has shown that the distance between the settlements (in valleys) and the cemeteries changed over time and that by the 7th century the dead were being placed high up on the Yorkshire Wolds. That they moved further away from the living could indicate an increasing marginalisation of the dead (Lucy 1998, 99). This is an interesting idea and one that can be applied in modified form to Wiltshire. At Market Lavington the proximity of settlement to cemetery argues for a close relationship between the living and the dead, and might be explained by the fact that the community was on the edge of the Saxon cultural zone (Eagles 2001, 217), perhaps in an insecure position that required the emotional and ideological support that came from having the ancestors close by. Further to the east the concentration of Saxon sites suggests that the political situation was more stable and such supernatural intercession was not required. Hence the separate location of the ancestors, above, but nevertheless keeping a watching, albeit latent eye over the well-being of the living.

Proximity to the living was an important decision that determined where the dead were located. Taking this a stage further it is possible to suggest how at Barrow Clump the living and the dead were interlinked. A funeral procession can be visualised emerging from the settlement, rising up the valley and passing through the land that the deceased was once familiar with, before arriving at the burial ground. The procession could also be considered in metaphorical terms as a symbolic journey to the otherworld (Williams 2006, 196), and the requirements of such a ritual may have played a critical role in siting the cemetery. It is with this notion that the issue of the prehistoric monument can be brought into play. Meaney's (1964) gazetteer makes it abundantly clear that monument reuse was an established feature of mortuary behaviour in Wiltshire, and recent work on the topic (Williams 1997; Lucy 1998, 124–130; Semple 2004) has revealed the sheer complexity of the practice: not only were a wide range of different types of site reused, but chronological patterning is also apparent in respect of when particular monuments were utilised (Lucy 2000, 124–30).

Barrow Clump provides an opportunity to undertake a contextual analysis of monument reuse to try to discern the specific causes that influenced the location of this burial ground in the early medieval landscape. Because the cemetery was used during the 6th century, pre-dating the major period of monument reuse in Wiltshire, it may help to identify the origins of monument reuse, while at the same time disclosing some of the reasons for it. Lucy (2000, 128) found that the early Anglo-Saxons located cemeteries around sites with funeral associations, earlier settlements, and natural ridges and mounds. It seems that monument reuse may have been motivated by a desire to mark out the location of an early Anglo-Saxon cemetery. Earlier monuments and landscape features acted as markers calling and directing people to the cemetery for ceremonies of interment and remembrance. The prehistoric monument at Barrow Clump may have been chosen by the community because it was located on the edge of the valley and was visible from below (Pl. 15.5).

This might be correct but what complicates matters is the fact that the barrow chosen was but one of a group. This particular barrow may have been deliberately selected because it was an example of a bell barrow – a relatively rare type of earthwork with a berm of several metres separating the mound and ditch (see Chapters 2 and 8). The specific architectural details of this type of monument allowed the space within the cemetery to be more effectively controlled, as was seen in the way Plots A and B were laid out. A bell barrow may have provided the early Saxons with a more appropriate burial location than the more typical bowl barrows that predominated in this area. It was also one of the largest, if not the largest, in the group, many of the others possibly having been levelled or ploughed flat by the end of the Romano-British period.

In Wiltshire the reuse of Bronze Age barrows is mainly a 7th-century phenomenon. It usually involves singletons or a small group of interments, although it can be difficult to be certain because of the often partial nature of the work and poor level of recording that took place during these mainly antiquarian investigations. Monument reuse could have involved a cross section of society (Harding and Stoodley 2017; Williams 1997, 22), but it mainly figures in the mortuary strategies of a newly emergent elite and coincides with the expansion of the territory that accompanied the rise of Anglo-Saxon kingdoms (Bassett 1989; Scull 1993). It may have served as a mechanism through which the elite's status was both maintained and enhanced. Examples of high-status

Plate 15.5 Barrow Clump on the skyline, as seen from the south-west in the Avon valley, early morning December 2017 (© Harvey Mills)

barrow burials in Wiltshire include the male at Ford and the broadly contemporary female at Swallowcliffe Down. Williams (1997, 26) argues that the Germanic elite employed monument reuse as a way to represent their dead as the rightful descendants of the ancient inhabitants of the land; they legitimised their claims to territory and resources by linking with a mythical past.

The practice is rarer in the 5th and 6th centuries and when it did take place it is characterised by a greater number of burials, that is the communal reuse of monuments with the emphasis placed more on a *community* of ancestors. This certainly appears to be the case at Barrow Clump and probably also at Overton Hill (Semple 2004). Was this a strategy through which local communities attempted to underpin control of territory? And can the origins of the practice be traced back to the late 5th and early 6th century (Semple 2004; Harding and Stoodley 2017)? That the emphasis appears to be on the cemetery rather than on individual members of it accords with the generally flatter social structure and more communal-orientated character of society in the 5th and 6th centuries (Scull 1993). Most Wiltshire cemeteries of the migration period do not record an association with earlier monuments, a key example being Pewsey, located farther up the Avon. This in itself is significant: the decision whether to incorporate earlier monuments in mortuary practice may have been an additional method through which community identities were defined and differentiated. For example, during the 5th and 6th centuries monument reuse may have been employed as a tactic in the ethnogenesis that saw the assimilation of native and indigenous groups. Because monument reuse was practised during the Romano-British period, the appropriation of ancient monuments by Germanic groups may have served to unite the two separate traditions and symbolised a political strategy aimed at imposing a common identity upon mixed indigenous and immigrant populations (Williams 1997, 26). The cemetery at Barrow Clump could have included two different cultural traditions (see above), and at this point it is worth pausing to consider the evidence for Romano-British settlement in the immediate area. At Netheravon part of a large building, probably to be interpreted as a villa, was excavated in the early 20th century (Grinsell 1957, 91), while 500 m to the south, and roughly opposite Barrow Clump, geophysical survey has revealed the plan of a corridor villa lying amidst a range of multi-period features that include a small cemetery of round barrows (McOmish *et al.* 2002, 104–5, fig. 3.31). Selective excavation 150 m to the east of the latter villa has discovered extensive evidence for settlement that is likely to be associated with the villa (Graham and Newman 1993; McKinley 1999b). A tentative model for Salisbury Plain whereby the villas located in the valleys operated as estate centres for the goods produced by the agricultural villages located on the downlands can be suggested. Given the wealth of the area it is probable that production continued post AD 410, albeit in a scaled down form. With the arrival of immigrant Saxon groups in the later 5th century there may have been much to be gained by both indigenous and immigrant adopting a policy of accommodation and cooperation, and a strategy that involved the reuse of prehistoric monuments to meld together the different ethnic groups is a possibility. In fact, the Bronze Age barrows at Barrow Clump were constructed on an occupation site dating back to the Early Neolithic (see Last, Chapters 2 and 8). Whether this was known to the occupants of the land in the 6th century, and whether they would have been able to distinguish between events that were separated by 1500 years is unknown, but the range of evidence might have increased the attraction of the site and its political value.

Other important factors that might have been responsible for the decision to choose this particular location are that of routeways and movement through the landscape, as well as the inter-visibility of the cemetery with other contemporary sites. The inter-visibility of monuments and the view-sheds that they commanded are important because they help explain how monuments may have been encountered by the early medieval people who inhabited the locality and who also travelled through the area. The engagement with monuments at particular points may have served to integrate the ancestors into the fabric and routine of daily life. This seems to be the case at Overton Hill, West Overton, where a small group of early Saxon burials, although probably part of a larger cemetery, were interred in several barrows of Roman and Bronze Age date (Eagles 1986; Semple 2004). The barrows were located on downland close to where two major routes intersected: the Roman road from Bath to Mildenhall and the Ridgeway, and the decision to inter the Anglo-Saxon dead in the barrows at this particular spot has to be intentional and influenced by factors other than the ready availability of a pre-existing monument. Sarah Semple (2004, 76) points out that the monuments lie about 800 m from where artefacts indicate a settlement (underneath the modern village of East Kennett) next to the River Kennet. In addition, aerial photographs have revealed a series of buildings interpreted as sub-Roman or Anglo-Saxon (*ibid.*, 76) about a kilometre to the west. The West Overton burials were located within a populated landscape (*ibid.*, 76), and the context for monument reuse may have been to signal the ownership of that territory to parties travelling through the region, while at the same time serving as an *aide memoire* to the ancestors.

Barrow Clump is positioned above the River Avon and this itself may have determined the choice of burial location. The river was an important prehistoric routeway (see Last, Chapter 8), and would have remained important in the 5th and 6th centuries as it connected the communities in the Upper Avon with those to the south around Salisbury before providing access to the south coast. Settlement appears to have been relatively dense around Salisbury and to its south, while to the north chance finds point towards a network of sites strung along the upper reaches of the valley. At times the Avon must have been a busy thoroughfare and it is against this backdrop that the location of the Barrow Clump cemetery should also be evaluated. If moving southwards down the river, Barrow Clump would only come into view when passing almost parallel to the site; a ridge jutting out into the valley just to the north of the site would have obscured its view. Perhaps this was deliberate: the topography being cleverly manipulated for effect. Travellers coming up river from the direction of Salisbury would have had a different visual experience, however. In this part of the valley the Avon gently meanders and from about 2 km distant the cemetery would have slowly come into focus. Travellers would have been able to read the meanings that were invested in the cemetery: recognising it as a memorial to the dead, but conscious of the fact that it signalled the ownership of the territory that they were now travelling through. Perhaps also acknowledging that it resulted from the integration of immigrant and indigene, they may have used it, when necessary, as a reference point to disembark and make their way up to the monument to participate in ceremonies. Barrow Clump would also have been inter-visible with several other prehistoric monuments, particularly those to the west and south-west, some of which were over 10 km away. It is unlikely that all of these would have been the focus of early Saxon cemeteries; nevertheless, it remains a possibility that inter-visibility between such monuments played a major part in constructing mortuary landscapes and the particular views that they provided.

Chapter 16

Stories from the 19th and 20th Centuries

Military-related Artefacts

by Mark Khan

Introduction

Barrow Clump has been part of the military estate since the original acquisition of Salisbury Plain by the War Office in 1897. It has remained a 'dry' training area with no specific use identified. Its geographical location (high ground) and form (wooded cover) make it an ideal defensive position. It lies within a corridor linking the eastern training area with the west and, as such, it is ideal for covering the corridor and as a position to bivouac for troops moving between or protecting this route (Pl. 16.1).

The location is approximately 2.5 km south of Netheravon airfield. Training area maps dated 1969 and 1980 show a drop zone, the southern end of which lies within the very close environs of Barrow Clump. Second World War air assault training is known to have taken place approximately 2.75 km to the north-east (Holmes Clump), and specifically for the D-Day glider assault of the bridge over the Caen canal (Pegasus Bridge).

Plate 16.1 Extract from 1923 range map, showing Barrow Clump and surrounding area (Ordnance Survey)

Numbered and Dated Military Issue Fork

Items of a personal nature such as knives, forks and spoons are often marked with the owner's identity, sometimes names but more commonly Army numbers. The fork recovered at Barrow Clump was found to be dated 1931 and had a number stamped into the handle (Pl. 16.2). The Commonwealth War Graves Commission records show the number, 821579, to have belonged to a Gunner James Rodger Moderate of Glasgow who is recorded as having perished during the Second World War. He is listed as having served with 3 Battery, 6 Heavy Anti-Aircraft [HAA] Regiment Royal Artillery, and as having died aged 30 on 5 March 1943, the son of John and Susan Moderate, and husband of Mary G. Moderate. He has no known grave but is commemorated on the Singapore Memorial which stands in Kranji War Cemetery, 22 km north of the city of Singapore.

6 HAA Regiment had deployed as part of the British Expeditionary Force to France in 1939, but escaped back to England from Dunkirk in 1940 with the loss of much of its equipment. The Regiment comprising 3, 12 and 15 Batteries re-deployed to the Far East on 13 November 1941, and arrived at Durban on 18 December 1941. Following the Japanese attacks on Malaya on 7 December 1941 6 HAA Regiment, along with other units, were re-routed to Singapore arriving on the 13 January 1942. The Regiment's equipment had gone to the Middle East, so it was rapidly re-equipped from stocks in Singapore and deployed to gun positions around the town. On 30 January 1942 a convoy of small ships left Singapore carrying 6 HAA Regiment (less 3 Battery) and other artillery units bound for Sumatra; 3 Battery remained in Singapore manning eight 3.7-inch anti-aircraft guns (Pl. 16.3). The Japanese assault on Singapore lasted from 8 to 15 February 1942, ending with the British capitulation. This was described at the time by the Prime Minister Winston Churchill as the *'the worst disaster and largest*

Plate 16.2 Military issue fork found at Barrow Clump

Plate 16.3 *3.7 inch anti-aircraft guns in Hyde Park, London in 1939 (IWM H993 QF)*

Plate 16.4 *British surrender at Singapore, February 1942 (IWM HU 2781)*

Plate 16.5 *Location of Ballale Island in the western Solomon Islands (United States Marine Corps)*

capitulation in British history'. Amongst the 80,000 British and commonwealth troops captured were the surviving members of 3 Battery, 6 HAA Regiment (Pl. 16.4).

We know nothing specifically of James Moderate's time during the fall of Singapore and his subsequent time as a prisoner of war, but it is known that the prisoners suffered a time of great hardness, privation and cruelty at the hands of their Japanese captors. We can, however, pick up his story in early October 1942. At that time the Japanese decreed that 600 POWs, made up largely of men of The Royal Artillery with others from attached units, would be sent as forced labour to Rabaul on the island of New Britain in Papua New Guinea. Transported by ship in horrendous conditions, many of the men were already very ill at this time. Arriving at Rabaul the men were set to work in appalling conditions and treated cruelly by their Japanese captors. At the end of November 1942, 517 of the fittest men, including James Moderate, were selected to be transported once more under horrendous conditions to help build a new airfield on Ballale Island, located within the Shortland Islands Group in the Western Province of the Solomon Islands (Pl. 16.5).

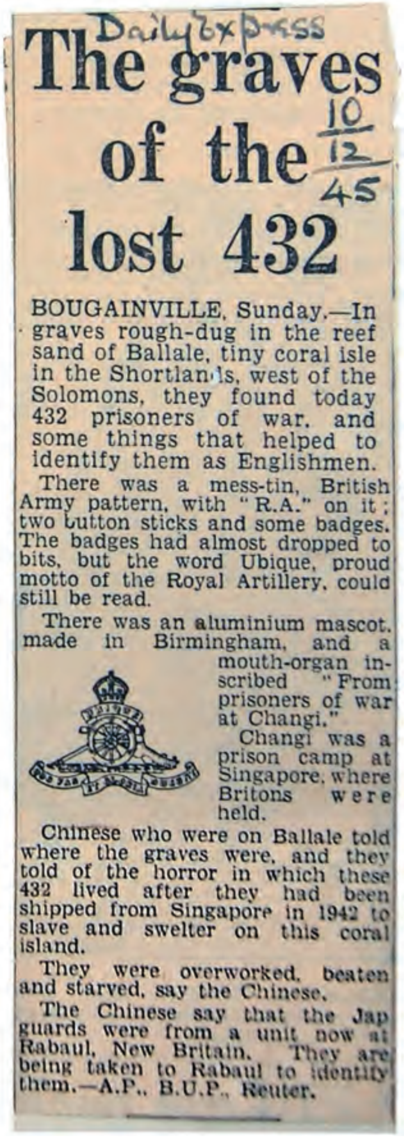
The airfield construction was the responsibility of a Japanese Naval Construction Unit. It is known that when the POWs arrived on Ballale Island most were suffering from beriberi, malaria and other sicknesses. Chinese prisoners and local natives were also conscripted by the Japanese to build the airfield. None of the POWs sent to Ballale Island survived. Many were killed accidentally by Allied bombing, with those that had survived the bombing being murdered by the Japanese.

Following the liberation of Ballale Island, an Australian Army Investigation Team exhumed 436 bodies together with artefacts proving these men were the POWs who had been sent as forced labour to the island (Pl. 16.6). None of these could be personally identified and the bodies were eventually re-interred in individual graves at the Bomama War Cemetery in Port Moresby, Papua New Guinea. Interestingly, one of the artefacts uncovered that helped prove the fact that the bodies were indeed those of Allied soldiers was a spoon made by the same company (Mappin & Webb) as James Moderate's fork, dated 1932 (James' was dated 1931) and also marked 'ZW' – exactly the same as James' fork. Despite interrogating Japanese personnel that had served on the island, the investigation team could not ascertain the true facts relating to the deaths of the POWs. They did conclude, however, that there was no doubt that a large number were killed by Allied bombing, mainly as a result of the Japanese refusing to let them take shelter in slit trenches or air raid shelters. From evidence given by two Koreans serving with the Japanese on the island, more forthcoming than the Japanese interrogated, it was ascertained that the remaining POWs were killed and buried at some time in June 1943. The reason for this was unclear, but evidence pointed to the possibility that the POWs were of no further use due to being too weak for further work, or else their task was finished, or that the Japanese feared an invasion by the Allies and did not wish the POWs to be discovered.

Whilst they could not ascertain the exact cause of the deaths, the investigation laid the blame for the atrocity firmly on the commander of the Japanese Naval Construction Unit, Lieutenant Commander Ozaki. On 18 January 1946 the Allied Supreme Headquarters in Tokyo issued an arrest warrant (statement dated Aug 1946) for the former Lieutenant Commander, Norihiko Ozaki of 18 Naval Construction Unit, to be tried as a suspected war criminal in connection with the deaths of 517 POWs on Ballale Island. Ozaki had survived the war and on 19 January 1946 he was arrested and detained in Sugamo Prison in Tokyo. Questioned about the deaths he claimed that Allied bombing had killed many POWs. He did, however, reveal the true fate of the surviving POWs. The island was bombed a number of times by US forces from January 1943 onwards. On 27 June 1943 US aircraft carried out another raid and during the night of 29 June US Navy Task Group 36.2 bombarded Japanese positions with selected targets on the island shelled from a range of 16,400 yards (Pl. 16.7). Lieutenant Commander Ozaki described what happened as a result of this attack:

> 'According to the fixed defence plan, the entire above-mentioned prisoners were already stabbed with bayonets, by the company in charge (the name of the company not known). I believe that hand grenades were not used. Every regiment was making arrangements for the eventual enemy's surprise landing and attack and were working hard all night, but the enemy did not attack our island. After all, because of vigorous changes and disadvantages in the war situation, everybody's morale was strained by extreme excitement. Under this pressure the provisions of the defence plan, including the execution of the prisoners, was carried out automatically. It can also be said that faced with a crisis, this action was unavoidable.'

Ozagi had admitted that the Japanese had wrongly assumed an invasion was about to take place and the contingency plan prepared for this possibility had been put in place. The surviving defenceless prisoners were murdered as part of a callous pre-meditated Japanese plan. Despite a confession by Ozaki, the best sources of information were from the two Koreans that had served with the Japanese on the island. However, this evidence was deemed to be only that of hearsay and circumstantial in nature, and it was not possible to place a specific charge against Ozaki due to lack of positive proof. He had to be released and was never brought to justice. Whilst the actual fate of James Moderate will most likely never be known, the excavation at Barrow Clump has once again highlighted his fate and that of his fellow soldiers and comrades (Pl. 16.8). His fork, presumably lost by him



Daily Express

The graves of the lost 432

10/12/45

BOUGAINVILLE, Sunday.—In graves rough-dug in the reef sand of Ballale, tiny coral isle in the Shortlands, west of the Solomons, they found today 432 prisoners of war, and some things that helped to identify them as Englishmen.

There was a mess-tin, British Army pattern, with "R.A." on it; two button sticks and some badges. The badges had almost dropped to bits, but the word Ubique, proud motto of the Royal Artillery, could still be read.

There was an aluminium mascot, made in Birmingham, and a mouth-organ inscribed "From prisoners of war at Changi."

Changi was a prison camp at Singapore, where Britons were held.

Chinese who were on Ballale told where the graves were, and they told of the horror in which these 432 lived after they had been shipped from Singapore in 1942 to slave and swelter on this coral island.

They were overworked, beaten and starved, say the Chinese.

The Chinese say that the Jap guards were from a unit now at Rabaul, New Britain. They are being taken to Rabaul to identify them.—A.P., B.U.P., Reuter.

Plate 16.6 Article in the Daily Express, *10 December 1945*

Plate 16.7 Aft 6 inch gun turrets of USS Columbia firing during the night bombardment of Japanese facilities in the Shortland Islands that covered landings on Bougainville, 1 November 1943 (Naval History and Heritage Command 80-G-44058)

Plate 16.8 The Singapore Memorial at the Kranji War Cemetery bears the names of over 24,000 casualties of the Commonwealth land and air forces who have no known grave (Banej: https://commons.wikimedia.org)

whilst training at Barrow Clump, was quite fittingly uncovered as part of the archaeological excavation carried out by fellow soldiers and comrades of a later generation.

1896 Dated 7 mm Mauser Cartridge Case

Britain's connection with the 7 mm cartridge began with the Boer War (Pl. 16.9). Large quantities of rifles and ammunition came into British possession at the cessation of hostilities. Some of this would have left South Africa for Britain, no doubt as souvenirs but

Plate 16.9 Boers using 7 mm Mausers (from a drawing by Caton Woodville – The engagement at Vlakfontein: the Derbyshires re-taking the guns at the point of the bayonet *(*Illustrated London News*, 20 July 1901). Inset: a Boer War 7 mm Mauser rifle*

also for ammunition research. The development of the P13 rifle and cartridge (in .276 Enfield calibre) relied heavily on Mauser 93/95 design principles and the search for a 'better' 7 mm (.276) cartridge.

During the First World War, Britain took into Royal Naval service a number of 7 mm Chilean Steyr M1912 rifles. These were part of the equipment from three cruisers contracted by Chile, the delivery of which was deferred to the end of the War. The Mauser rifles were replaced by SMLEs, then Ross M1910 rifles when the ships were handed over to Chile in 1919. Despite having stocks of Boer War (DM/DWM and FN manufacture) ammunition, Kynoch/Eley made fresh 7 mm ammunition specifically for Royal Navy use for sinking mines at sea (not 'blowing them up' as commonly supposed; several bullet holes would let the air out, and the water in, so the mines would sink in deep waters).

Britain also sent several acceptance commissions to Latin America to buy Mauser rifles of the M93/95 types, with ammunition, for the beleaguered Serbian Forces on the Salonika front (Serbia was standardised on 7 mm). It is unknown how much German ammunition was bought in to Britain. The presence of an 1896 DM cartridge at Barrow Clump (Pl. 16.10) could indicate several scenarios, including experimental shooting for trials between 1902–1913, wartime training use by the Royal Navy or Royal Marines on Salisbury Plain, using M1912 Steyr Mausers and old ammunition, or a lost souvenir. It is known that DM (Deutsche MetallPatronenFabrik, Karlshruhe) made cases in a particular year, then filled them as required by orders, so a case dated 1896 may have been filled at any time into the early 1900s. However, for 'Boer bring-backs', most of the cases have 1896 dating, even if delivered in 1897 and into the war years of 1899–1901 when smuggled through Lorenço Marques (Mozambique), then Portuguese territory. Chilean and Brazilian orders of ammunition would also have fallen in this DM production time period (http://iaaforum.org/forum3/viewtopic.php?f=8&t=17418&p=124612#p124612).

.303, 5.56 mm and 7.62 mm Ammunition

During the excavation various examples of small arms ammunition were uncovered (Pl. 16.11). Using both type and head stamp information these are possible to identify, the wide timeframe of the examples demonstrating the longevity and diversity of the military use of the Barrow Clump area. Most ammunition was of blank nature, associated with dry training, much of the World War Two and earlier material produced at Woolwich Arsenal and most of the more recent material at Radway Green. A single example of a (fired) live round was found – a 1937 dated armour-piercing round.

Parachute Regiment Cap Badge

On 22 June 1940 Prime Minister Winston Churchill wrote a minute to the British Chiefs of Staff directing the setting up of a Corps of Parachute soldiers. The Parachute Regiment and its supporting arms have trained on Salisbury Plain from its very early days through to the present, and the airborne forces trained in significant numbers here during the Second World War. The headquarters of the 6th Airborne Division were set-up at Syrencot House near Milston (approximately 1 km to the south-west of Barrow Clump) and played a significant part in the major parachute operations that took place on D-Day 6 June 1944. The airfield at Netheravon (located 2 km to the north of Barrow Clump) was heavily used prior to D-Day for training by Airborne Forces. The crown

Plate 16.10 Recovered and comparative 7 mm Mauser cartridge cases

Plate 16.11 Recovered and comparative .303, 5.56 mm and 7.62 mm ammunition

Plate 16.12 Parachute Regiment cap badge found at Barrow Clump

Plate 16.13 One of several Generator Smoke No. 8's recovered

Plate 16.14 Recovered and comparative Hand Fired Illuminating Para L3A1 rockets

represented on the Parachute Regiment cap badge found at Barrow Clump is of post 1952–53 date (Pl. 16.12), and the presence of the badge may relate to the airborne drop zones marked on the 1969 and 1980 range maps.

Plate 16.15 Composite ration tin from Barrow Clump

Generator Smoke No.8

This was designed to emit smoke for 80 seconds. It has a steel body and is 4 inches in diameter and 4 inches high (Pl. 16.13). It was filled with priming, igniting and smoke composition. A hole in the top was covered with a cellulose acetate disc. For use the disc was pierced and a 6-inch length of safety fuze (Fuze Safety No 11 Mk 2) was inserted and lit with a Match Fuzee. The safety fuze burned for about 15 seconds and the priming composition for a further 5 seconds before passing the flame to the igniting composition and from that to the smoke composition. This smoke generator was in use from the Second World War through until the 1980s.

Rocket Hand Fired Illuminating Para L3A1

This is a hand fired illuminating rocket (often known as a 'Schermuly') (Pl. 16.14). The launcher projects a flare, from which a small parachute is then deployed after the flare ignites, and it then falls to the ground slowly producing sufficient light to illuminate the immediately surrounding terrain. This enables surveillance to reveal enemy movement in the open, ambush situations and targets, or it is used as a target illuminator for weapon systems. The example discovered dates from the 1970s or 1980s (White and Munhall nd).

British Army Composite Ration Tin

This is part of a composite ration issue and is marked 'casserole steak & onions' and with makers name (Pl. 16.15). It is thought to date from the 1960s due to the marking of the tin being on the side; tinned rations were marked on the top from the early 1970s.

Arborglyphs

by Kathy Garland, Roger Collins, Dan Miles and Mark Khan

Introduction

The mature beech trees that form a horseshoe-shaped stand around the south side of Barrow Clump provided an ideal canvas for the graffiti art left by the military personnel training on Salisbury Plain from the late 19th century onwards. During their 'down time', during breaks in training for example, the soldiers used knives and perhaps bayonets to carve their names, hearts depicting their loved ones, their military insignia and other messages (Miles and Hack 2018). This form of graffiti has been given the term 'arborglyphs', and are usually found on beech, lime or aspen trees because of their smooth bark.

A procedure has been developed for recording arborglyphs. This involves locating the tree by hand-held GPS, noting the orientation of the arborglyph, transcribing the content using an established inscription format, and taking a series of measurements including the circumference of the tree, height and width of the arborglyph, and distance above the ground. External factors such as lichen and distortion of bark obscuring the arborglyph are also noted. Each tree is numbered as part of the recording, and a tree's first photograph taken with a ranging pole to provide an overall impression. An attempt is then made to identify each arborglyph present, and these are recorded and photographed. The first arborglyph would be 1a, the next 1b and so on until all have been recorded. Some of the markings may have deteriorated but these are photographed too as sometimes the letters/numbers are clearer on the photograph.

The Barrow Clump Arborglyphs

There are 37 beech trees at Barrow Clump which have (or have had) some form of arborglyph on them. We have recorded 80 readable arborglyphs, some of which have been researched. There are many more which are no longer decipherable because the bark has grown around and over them distorting the message.

There are 17 dated arborglyphs at Barrow Clump, the earliest of these being from 1916 by a New Zealand soldier. All but the first decade of the 20th century are represented, up to and including the 1950s, with eight from the 1920s, two from the 1930s, four from the 1940s and two from the 1950s. Other arborglyphs include three military cap badges, six romantic hearts, four place names – Bulford, Glasgow, Hull and Shropshire, and four from more distant shores – three from New Zealand and one from the United States. Most of the arborglyphs contain only initials and this makes it difficult to research the person who carved it, and there may also be civilian messages within those collected.

The soldiers were recording who they were and often who they missed from home, and some contain information about when and where they were training on the Plain. By recording these arborglyphs while they are still legible, we are collecting information for posterity, providing a useful tool for historians and archaeologists, and there is a possibility that some arborglyphs which survive may be as old as 250 years by the time the trees are fully mature.

Two WIMPY arborglyphs were found. This one, reading vertically, has two Ms, with an indication that the second M had letters before it and an S after (Pl. 16. 16). Possibly this could be the Wellington bomber, named Wimpy after the rotund character, J Wellington Wimpy in the Popeye series of cartoons. The first Wellington was produced by Vickers in 1936.

Another arborglyph shows DH, who served in the SWD (South West Division) on exercise on Salisbury

Plate 16.16 WIMPY arborglyph

Plate 16.17 Arborglyph 'DH'

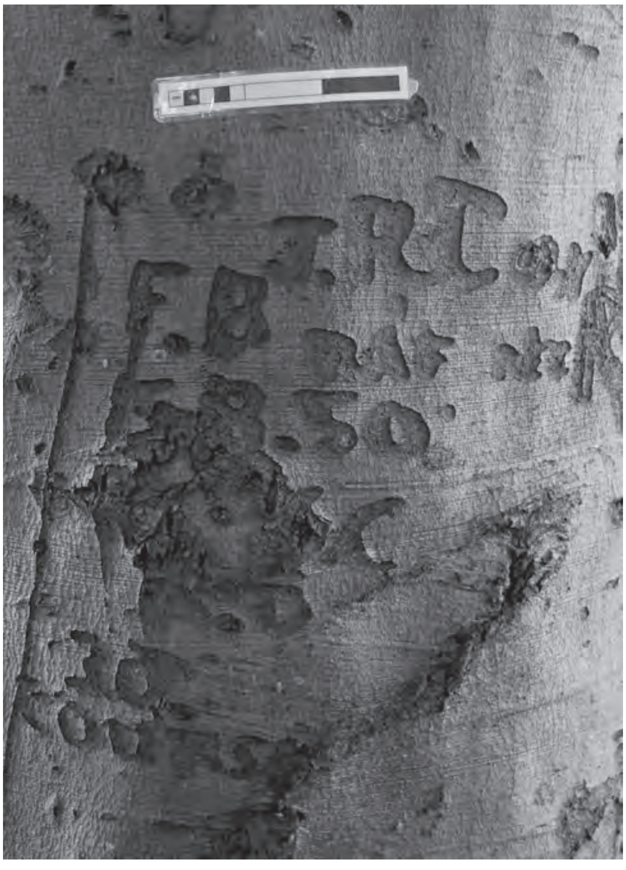


Plate 16.18 Rare arborglyph with initials, surname, regiment, date and country

Plate 16.19 Arborglyph with limited information

Plain in 1922 (Pl. 16. 17). The exercise can be verified from records, but it would be very difficult to trace who DH was.

One arborglyph (Pl. 16. 18) belongs to a very small number that appear to show name or initials (JRC) associated with service or regiment (RAF), date (5.8.50) and country (NZ), which means it could be further researched. In this example these details are accompanied by other, possibly related graffiti, though some clearly overlap.

A quite detailed arborglyph reads: R.e. / (stylised bird/phoenix) / H HASLAM / EL / 1929 (Pl. 16. 19), but unfortunately even in this case there is insufficient information included to identify it further.

One arborglyph shows two regimental badges (Pl. 16. 20). The best contender for the upper badge is that of the 6th Inniskilling Dragoon Guards (Pl. 16. 20). This unit was part of Northern Command and based at York from 1919 onwards, until its 1922 amalgamation with the 5th Dragoon Guards (Princess Charlotte of Wales's) to form the 5th/6th Dragoons. In 1927 it became the 5th Inniskilling Dragoon Guards, later gaining a 'Royal' prefix in 1935. The 5th Dragoon Guards were based at Aldershot over the period 1931–34. The most likely contender for the lower badge is the 1st (Kings) Dragoon Guards. Post World War One this unit was based in the UK at Edinburgh and Aldershot. During 1929–31 they were based at Tidworth.

Plate 16.20 *Arborglyph showing two regimental badges*

Plate 16.21 Arborglyph WWE / 20 BTY / RFA / Bulford 1927 / KS / 1928 YACL

A particularly informative example reads: W WE / 20 BTY / RFA / Bulford 1927 / KS / 1928 YACL (Pl. 16. 21). 20 Battery were part of the IX Brigade Royal Field Artillery and based at Bulford in 1927. From this arborglyph, and using available historical records, it is possible to identify an important individual associated with this artillery battery. This gives an interesting insight into the types of people who were serving at Salisbury Plain at this time. *Major Gerald Arthur Cammell D.S.O* was a battery commander at the time 20 Bty was located at Bulford in 1929. He was born in 1889 and educated at Repton. He entered the Royal Artillery in 1909, became Captain in 1915 and Major in 1917. He went to France in October 1914 with the 44th Battery, R.F.A., and won the D.S.O. for conspicuous gallantry at the battle of Neuve Chapelle in March 1915, when he was wounded. After recovery, he served with 108 Brigade in France from September 1915 until June 1916, and in 1917 was given command of 297 Siege Battery, which he commanded until August 1917 when he was again wounded. He went to Archangel, North Russia in September 1918 and served there with either 420 Battery or 1203 Battery until October 1919. For his services there he was mentioned in despatches and awarded the 3rd classes of the Orders of St Anne and St Stanislaus.

D.S.O. *London Gazette* 15 April 1915: 'For conspicuous gallantry at Neuve Chapelle. When employed as Observing Officer he saw that the second line of the 1st Battn. 39th Garhwal Rifles had lost their British officers, and at once proceeded to lead the men. He went forward in the attack with four men under very heavy fire, but was wounded after going 20 yards, as were three of his four men.' Invested by the King on 27 May 1915.

Mentioned in Dispatches: *London Gazette* 5 April 1915, 22 June 1915, 15 June 1916 and 3 February 1920 (North Russia). Also entitled to the Order of St Anne, 4th class with swords inscribed 'For valour in War', *London Gazette* 25 August 1915; St Anne, 3rd class with swords, and St Stanislaus, 3rd class with swords.

Chapter 17
Project Florence – the Community Engagement Programme

by Laura Joyner

Introduction

Wessex Archaeology was awarded a grant by the Heritage Lottery Fund to undertake a community engagement project in relation to the first (2012) of the three seasons of archaeological excavation at Barrow Clump. Entitled Project Florence, this initiative comprised an extensive and inclusive programme of activities running between June 2012 and August 2013 that aimed to engage all age groups within the local community. Particular attention was given to local garrison communities, a hard to reach audience.

The aims of Project Florence were threefold:

- Firstly, to complement the work of Operation Nightingale, the military initiative aiming to meet the demand amongst injured soldiers for viable recovery programmes utilising heritage, primarily field archaeology;
- The second aim was to increase public awareness of, and promote community interest in, the rich archaeological heritage of South Wiltshire and the Barrow Clump site in particular;
- The final aim was to provide a range of training opportunities for local people to enable them to acquire new skills and abilities for the future.

Site Activity Days

Site activity days provided local residents with opportunities to explore this exciting archaeological site, usually restricted from public access, during the excavation. Volunteers were given the chance to shape and organise these events which were offered free of charge.

Four activity days were held during the Operation Nightingale excavation at Barrow Clump. Three of these were organised for local groups that had expressed a particular interest; Figheldean parish residents, Salisbury Young Archaeologists' Club and The Girls, a youth group from Larkhill garrison. Each group was given a guided tour of the site and had the opportunity to get involved in hands-on activities. Activities included clay pot making (Pl. 17.1) and podcast recording, as well as excavation and finds processing.

The fourth activity day was an open day for the general public, which was attended by over 200 people of all ages in 2012 (Pl. 17.2) and by similar numbers in 2013 and 2014. This popular event was advertised via newspaper adverts, the Wessex Archaeology website and a promotional poster that was distributed throughout the local area. Transport was provided to the site from Salisbury, Bulford and Tidworth to encourage garrison communities to participate in the event. As well as being given tours and having access to hands-on activities (Pl. 17.3), visitors were able to speak to Operation Nightingale soldiers about their experiences, learn about Saxon warfare from an expert re-enactor and meet *Time Team*'s Phil Harding.

Promotional materials were prepared including pop-up banners, information panels, picture postcards and children's activity sheets.

Feedback from these events was overwhelmingly positive and there was high demand for further events, displays and information.

Plate 17.1 Making pots

Plate 17.2 Digging in the sand trays

Plate 17.3 Site open day 2012

Volunteer Programme

A volunteer programme was established following the excavation, with the intention of completing the post-excavation processing from the site. Volunteers were recruited during the open day, as well as via the internet and a promotional poster. An initial consultation meeting was held to gauge interest and ascertain the most popular days and times for volunteering sessions to take place.

Based at the Wessex Archaeology head office in Salisbury, volunteers were tasked with processing archaeological artefacts (Pl. 17.4) and wet sieving environmental samples (Pl. 17.5). Specialist training was provided for both activities and further training opportunities on other topics of interest were arranged whenever possible. For example, Wessex Archaeology's Conservator led an interactive session on the conservation of metal finds, using the metalwork from Barrow Clump. Opportunities were advertised through the Wessex Archaeology website and social media and via a regular email bulletin.

The volunteer programme has been a fantastic success. Twenty-seven people attended regular volunteering sessions and all processing was completed to a high standard well within the anticipated schedule. Feedback has been so positive that Wessex Archaeology has committed to extend the programme indefinitely and Operation Nightingale has requested that the Project Florence volunteers continue to conduct their post-excavation work in the future.

The volunteers themselves have expressed how much they have enjoyed coming to the sessions and

Plate 17.4 Volunteers finds processing

Plate 17.5 Sieving grave and environmental samples

Plate 17.6 Filming on site

how much they have gained from taking part in these activities.

> 'Having the opportunity to work alongside Wessex Archaeology and members of the military has proven to be an enlightening and thoroughly rewarding experience. Real people being given the chance to work with real archaeology in the landscape alongside the professionals, really brings it back home and is an immensely humbling experience.'
> – Dan and Janet

> 'It was a real privilege to take part in the Barrow Clump excavation and Project Florence. The opportunity to dig such an interesting archaeological site comes along very rarely, and being able to assist in the post-excavation work has enabled me to follow the experience through by working closely with the artefacts. The team at Wessex Archaeology have made us welcome and made sure that opportunities have been provided for us to learn more about the post-ex process as well as develop our skills.'
> – Briony

Make a Movie Project

The Make a Movie project was an exciting opportunity to engage young people with their local heritage and enable them to develop new skills and talents for the future.

Through this partnership project between Wessex Archaeology and Salisbury Arts Centre, a group of 14–25-year-olds were trained by professional film makers to film, edit and produce a 25-minute documentary (Pls 17.6–7). The young people, several of whom were members of the Wiltshire Young Carers, were actively involved in all filmmaking decisions and processes.

Operation Nightingale: Time Warriors follows the progress of the Barrow Clump excavation and features interviews with the soldiers, volunteers and archaeologists involved. The film premiered at Salisbury Arts Centre in November 2012 and received excellent reviews. Over 400 copies of the DVD have been given away and the film has been viewed over 3800 times on YouTube. In addition, it has been used

Plate 17.7 Editing in the studio

Plate 17.8 *The Barrow Clump tapestry*

Plate 17.9 *Neolithic house-building*

by the Rifles charity, Care for Casualties, to promote the good work of Operation Nightingale.

Each of the 11 young volunteers involved in the project collated a portfolio of work and achieved a nationally recognised Bronze Arts Award certificate. Their experiences are recorded in the behind the scenes *Making Of* film. Both films are available to view on the Wessex Archaeology website (https://www.wessexarch.co.uk/our-work/barrow-clump).

The Big Draw

The national Big Draw festival provided an interesting opportunity to use the Barrow Clump story and artefacts to inspire local people to get creative.

The Amazing Artefacts event was held at the Boston Tea Party Café in Salisbury and invited visitors to create a square of material inspired by the objects on display. Children and adults alike embraced the opportunity and produced some fascinating designs.

Squares were also contributed by students from St Michael's Primary School, Figheldean. The Project Florence Officer visited this school, being the nearest to the site, to deliver interactive workshops themed on the Barrow Clump excavation.

Ninety squares were designed in total and were stitched together by a local artist to form a Saxon-themed tapestry (Pl. 17.8). The tapestry was displayed, along with a list of contributors' names, as part of the Project Florence road show exhibition. It also featured as part of the temporary exhibition in Wiltshire Museum.

Plate 17.10 *Saxon 'shield wall'*

Plate 17.11 Road show exhibition on tour with Steve Winterton ('Winno')

Playing with the Past Archaeology Club

Playing with the Past was a free archaeology club for 8–16-year-olds. Meetings were held monthly at the Beeches Community Centre in Bulford and were organised in association with the Army Welfare Service.

Meetings covered a range of interesting archaeological topics and periods and featured hands-on activities and games. Highlights included discovering underwater archaeology, building Neolithic houses (Pl. 17.9) and the Victorian Christmas party.

Attendance of the club grew to 12 young people, and the club successfully gave these budding archaeologists an increased knowledge of their local heritage and may have contributed to the development of their social skills and creative talents (Pl. 17.10). The Army Welfare Service is eager to continue the club in the future and will be working with Wessex Archaeology and English Heritage to do this.

> 'The club has been a popular session full of wonderful and creative ways to explore archaeology and the history behind it. The children that participate once a month have committed to the group and thoroughly enjoy the activities provided by Laura. It was always the intention that the parents would use a separate space to have a tea or coffee and have some time for themselves, however they have enjoyed the sessions nearly as much as the children.
>
> This club has been a great opportunity for parents and children to learn together about archaeology and how important it is for us to discover our heritage. I have enjoyed being part of this project, which has been a great success.'
>
> – Amy Pugh, Army Welfare Service Development Officer

Road Show Exhibition

A portable road show exhibition was designed to showcase the discoveries from Barrow Clump and promote community interest in the site. An initial focus group was held to debate the format, content and design of the exhibition followed by a period of text writing and image selecting in conjunction with the Project Florence volunteers. The final high quality display was produced by Wessex Archaeology's dedicated graphics team.

Staffed by the Project Florence Officer and an Operation Nightingale soldier, the exhibition explored the archaeology of the Bronze Age burial mound and Saxon cemetery and featured informative posters, children's activities and replica Saxon tools and weapons (Pl. 17.11).

Plate 17.12 Talking to the public

Ten local venues were visited including libraries, museums, community centres, a leisure centre and a village hall. The highlight of the road show was the visit to Tedworth House, a Help for Heroes recovery centre, which provided a wonderful opportunity to promote the good work of Operation Nightingale to other injured soldiers. In addition, the exhibition went on display in Wiltshire Museum's temporary gallery space for six weeks.

The road show proved to be an excellent method of increasing public awareness of the Operation Nightingale project and Barrow Clump excavation. Over 530 people were engaged with during the 10 days of the road show and the variety of local venues selected ensured that a wide range of community groups were reached. Response to the project was very positive and over 100 people signed up to a mailing list to learn about the subsequent (2013–14) phases of the Barrow Clump excavation.

Communications

A targeted media campaign was implemented at the start of Project Florence, to advertise the main events and opportunities available. A press release was circulated to the local and regional press which generated significant interest in the project and resulted in coverage in several publications. Advertising space was also purchased in two of the most popular local publications, the *Salisbury Journal* and the *West Country Gazette*, to target key communities close to the site.

Event information was uploaded to several relevant websites, in addition to the Wessex Archaeology web pages, including *Wave 105*, *Spire FM* and *Drumbeat*, the website for the Tidworth, Netheravon and Bulford garrison community. Furthermore, the Project Florence Officer gave interviews to local radio and television stations including *Garrison FM* and *ITV Meridian*. High levels of interest were maintained throughout the project via the use of digital media.

In-depth talks and lectures were made available to interested groups and societies free of charge and were tailored to suit this specialist audience (Pl. 17.12). The Project Florence Officer delivered seven lectures throughout the life of the project to audiences including the Amesbury Society, Amesbury Abbey Nursing Home, South Wessex Archaeological Association and Shrewton Women's Institute. An

Plate 17.13 The appeal of archaeology

account of the various methods of communication used throughout this project was also given at the Council for British Archaeology Winter Forum 2012.

Digital Media

Digital media formed a key part of Project Florence. By uploading information to the internet, thousands of people were able to follow the project who would have been unable to learn about the site or the volunteering opportunities otherwise, and it also brought another 6000 people to the Operation Nightingale homepage.

Pages were established on the Wessex Archaeology website and updated regularly with project developments and events. A dedicated blog stream was also established for the project, which users were able to subscribe to and comment on. Sixty-two blogs were posted throughout the life of the project, several of which were contributed by volunteers, soldiers or specialists. Blog topics varied, as did the format; updates were posted as written text, audio podcasts or videos.

A Project Florence Twitter account was created to encourage a greater level of interaction with the public. This form of communication proved popular, with over 377 people following our Tweets by the end of the project. Updates were also posted on the Wessex Archaeology Twitter, Facebook and Flickr pages, all of which were already well established at the start of the project.

Outcomes

Through Project Florence, Wessex Archaeology has demonstrated an innovative and inclusive approach to community engagement (Pl. 17.13). The great success of this unique initiative can be seen in the many benefits it has made to heritage awareness, local communities, Wessex Archaeology as an organisation and Operation Nightingale as a viable recovery programme.

All components of the project, particularly the site activity days and road show exhibition, have increased awareness of the archaeological site at Barrow Clump. This awareness has generated a better understanding and appreciation of the site within local communities, who are now eager to contribute to the maintenance and conservation of the burial mound and cemetery. Far greater awareness of this site and the wider heritage of South Wiltshire has been achieved via digital media. Web pages and blogs on the Wessex Archaeology website have introduced thousands of people to the site who would never have had access to it otherwise, and enabled them to follow the progress of its excavation.

The benefits to local communities through Project Florence have been many. The opportunities to get hands on with heritage have inspired creativity and enjoyment in people of all ages. Local residents have been able to visit and take pleasure from a Scheduled Ancient Monument on their doorstep that is usually restricted in terms of access. In addition, volunteering opportunities, especially the Make a Movie project, have provided training in a wide range of skills and abilities that may improve people's quality of life in the future.

Wessex Archaeology has benefited from the project through the creation of the role of Project Florence Officer. This role, created specifically for the project, brought a staff member with new skills and experiences to the organisation and enabled a substantial increase in community engagement services to be offered to the public. Following the success of this project, the staff member was retained in a permanent position as Community & Education Officer, which has enabled the continuation of both the volunteer programme and the Playing with the Past archaeology club.

Project Florence made a significant contribution to the work of Operation Nightingale by raising awareness of the initiative. The positive attention received as a result of the on-site events and digital media coverage has increased support for the project dramatically within the local area. Targeting the advertising and events towards garrison communities created greater awareness of the project within military families, and the road show event at Tedworth House directly resulted in the recruitment of several injured servicemen. In addition, Project Florence volunteers have aided the work of Operation Nightingale by completing the post-excavation processing for several of their sites. This has enabled Operation Nightingale to focus their resources on offering excavation opportunities to a greater number of participants. Wessex Archaeology will continue to support the good work of Operation Nightingale by providing work placements for participants and by continuing to promote the project via the Wessex Archaeology website and social media pages.

Postscript

by Richard Osgood

Many feet have walked over Barrow Clump from the earliest Neolithic farmers through to the boots of modern soldiers and it has been a venerated place for millennia. We have seen burials from the Bronze Age and the graves of those that died in the Anglo-Saxon period, lovingly placed into this calm, tranquil spot on a beautiful hillside in the glorious landscape of Salisbury Plain. It is perhaps this atmosphere that contributed to the healing nature of the site. What made this excavation unique was the friendships it facilitated, the bonds of kinship (not unlike those that caused it to be of significance in the past) it created, and the modern lives it helped to heal. Barrow Clump has always brought people together – be it in grief or now with smiles – always with a sense of its importance. Anyone that has been there will know this, hopefully anyone that reads this volume will appreciate this. Our thanks to all involved in the work here, and our undying respect to all those in the past for whom Barrow Clump was special too.

Appendix 1
X-ray Fluorescence (XRF) analysis of the metalwork (2003–4)

Find no.	Object	Area	Elements detected*	Alloy type	Other components
200304401	Gt Square-headed brooch	Brooch	Cu, Sn, Pb, Zn	Bronze	Mercury gilding
		Catch-plate			
		Repair	Cu, Pb, Zn	Leaded Brass	Tin solder on pin
			Cu, Sn, Pb, Zn	Bronze	
200304402	Saucer brooch	Brooch	Cu, Sn, Zn, Pb	Bronze	Mercury gilding
200304403	Saucer brooch	Brooch	Cu, Sn, Zn, Pb	Bronze/Gunmetal	Mercury gilding
200304404	Spoon	Spoon	Ag, Cu, Snb	Debased Silver	
200304418	Penannular brooch	Brooch	Cu, Sn	Bronze	
200304485	Cosmetic brush	Brush	Cu, Zn, Pb, Sn	Leaded Brass	
200304506	Saucer brooch	Brooch	Cu, Sn, Pb, Zn	Copper Alloy**	Mercury gilding
200304518	Saucer brooch	Brooch	Cu, Sn, Pb	Copper Alloy**	Mercury gilding
200434641	Disc brooch	Brooch	Cu, Sn, Pb, Zn	Tinned Bronze	
200434690	Roman Two Piece Colchester brooch	Brooch	Cu, Sn, Pb	Leaded Bronze	
		Left spring			
		Right spring	Cu, Sn, Zn, Pb	Bronze	
		Pinr			
			Cu, Sn, Zn, Pb	Bronze	
			Cu, Sn, Pb	Bronze	
200434690	Roman Trumpet brooch	Brooch	Cu, Zn	Brass	
		Pinr			
			Cu, Sn, Pb, Zn	Bronze	
200434968	Knife guard	Guard	Cu, Sn, Pb, Zn	Bronze	
200434981	Cosmetic brush	Brush	Cu, Sn, Pb, Zn	Bronze	
200434986	Applied disc brooch	Brooch	Cu, Pb, Sn, Zn	Gunmetal	Applied tin with lead solder
200434690	Roman T-shaped brooch	Brooch	Cu, Sn, Pb	Leaded Bronze	Enamels
		Pinr			
			Cu, Sn, Pb	Bronze	
200435101	Applied disc brooch	Brooch	Cu, Zn, Pb	Brass	Applied tin with lead solder

Key: Elements present in relatively high levels (except copper in copper alloys) are underlined
** Corrosion was too prevalent to determine alloy type

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by Nicola King

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Place names are in Wiltshire, unless otherwise stated.

Barrow Clump, on the east side of the Avon valley, lies in the centre of the Salisbury Plain Military Training Area. It is the site of a large, partly extant Early Bronze Age burial mound which incorporates an earlier Beaker funerary monument, seals a Neolithic land surface, and was the focus of an Anglo-Saxon cemetery, most of the 70 graves dating to the 6th century AD.

Excavations in 2003–4 were carried out largely in response to the damage being caused to this and other prehistoric monuments by badgers. The subsequent work in 2012–14 was made possible by the participation of Operation Nightingale (Exercise Beowulf), an innovative military initiative to involve injured service personnel in archaeology to aid their recovery.

Radiocarbon dating has provided a coherent chronology for the important prehistoric sequence, and has also shown that Anglo-Saxon burial continued into the 7th and possibly the 8th century. Notable cemetery finds include a sword with well-preserved organic remains, a bucket with surviving yew staves, a fine great square-headed brooch and only the second Visigothic brooch of its type found in Britain.

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