Iron Age Ritual

a hillfort and evidence for a minster at Aylesbury, Buckinghamshire

Michael Farley
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With contributions by Sophia Adams, Phil Austin, Christopher Bronk Ramsey, Gordon Cook, Diane FitzMaurice, Barbara Hurman, Andrew Jones, John Meadows, Michael Metcalf, Andrew Middleton, Lisa Moffett, Christine Osborne, Jennifer Price and Ian Riddler.

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Summary

The excavation of an area within the grounds of the Prebendal, Aylesbury, Buckinghamshire, adjacent to the parish church of St Mary's, showed that the town, which lies on a slight spur, is sited within a univallate hillfort.

Use of the area in the earlier prehistoric period was indicated by worked flint and a Beaker sherd. In the early fourth century BC a striking ritual area was created. This contained the burials of four children and a young woman; most were accompanied by animals. Some additional unarticulated human bone was also present. The articulated burials adjoined a substantial deposit of animal bone consisting predominantly of sheep (a minimum of twenty-one), mainly disarticulated although some articulated joints were present. Age at death estimates indicate the season of the activities, and new methodological work is presented using teeth and long bones. Some of the bones from the 'bone mass' were burnt. A few artefacts and some ceramic were included within the deposit. The whole implies a complex ritual sequence. Radiocarbon dates on bone from the deposit suggest that some of the associated ceramic styles, which would conventionally be dated to the 'early' Iron Age, were still in use at the end of that period if not beyond, depending on where the Early-Middle Iron Age transition is placed.

Within a generation or so of the deposit's creation and still within the first half of the fourth century BC, a univallate hillfort was constructed. Immediately after its ditch had been dug, a human skull with attached vertebrae was deposited on the base of the ditch. Radiocarbon dates on the skull provide a sound construction date for the fort. The preceding ritual deposit would have lain just inside the first-phase rampart of this fort. Later in the Iron Age, the ditch was recut. The upcast which formed the new rampart would have sealed most, if not all, of the ritual deposit.

The only other excavated features certainly of Iron Age date were two pits close to the ritual area and a possible post-hole within it. However, Iron Age material contained within features of later date and from elsewhere within the town indicates extensive contemporary occupation within the fort which did not continue into the later Iron Age.

A possible circuit for the hillfort is suggested, based on other observations within Aylesbury, and the fort's relationship to others in the vicinity is discussed. There are reports on animal and human bone, pottery, small finds, molluscs, seeds and charcoal. It is noted that three 'new' hillforts have been discovered in Buckinghamshire during the last thirty years.

During the Roman period there was only slight use of the hillfort's interior, although there is plenty of evidence for occupation locally and the course of Akeman Street runs immediately east of the town.

Aylesbury is first mentioned as a place in the *Anglo-Saxon Chronicle* annal for AD 571, although the precise date and nature of this entry is disputed. Aylesbury's early Saxon origins are considered in relation to Walton, a nearby settlement which flourished in the early Saxon period and whose name may include a 'British' element.

Early in the Middle Saxon period a palisade trench was dug into the hillfort's ditch which by that date had been largely infilled. After an interval, in the early eighth century, the palisade was replaced by a ditch. Both palisade and ditch were almost certainly the boundaries of an early minster church and it is very likely that the former existence of the hillfort influenced its siting here. An unusual piece of Merovingian glass with a moulded cross on its base that was recovered from a later medieval context, is likely to have been one of the minster's possessions. The extensive minster cemetery and later Saxon development of the town is briefly noted.

A significant Saxo-Norman grain deposit which has been radiocarbon dated to the eleventh-twelfth centuries is described.

The site had a complex later history. It was extensively utilised in the medieval period and was later traversed by a Civil War defence before becoming a formal garden in the eighteenth century, probably when the Prebendal House was occupied by John Wilkes, the radical parliamentarian. The later periods are only referred to in outline in this report.

Résumé

Des fouilles d'une zone à l'intérieur des terres de Prebendal, Aylesbury, Buckinghamshire, qui est mitoyen avec l'église paroissiale de Ste Mary, ont montré que la ville, qui se trouve sur une légère saillie, se situe à l'intérieur d'une forteresse à un seul rempart.

L'utilisation de la zone au début de la période préhistorique est avérée par des silex travaillés et un tesson Beaker. Au début du quatrième siècle av.J.-C. fut créée une saisissante zone rituelle. Elle contenait les inhumations de quatre enfants et d'une jeune femme ; la plupart étaient accompagnés d'animaux. Des os humains supplémentaires, non articulés, étaient également présents. Les inhumations articulées se trouvaient à côté d'un substantiel dépôt d'ossements d'animaux consistant essentiellement de moutons (vingt et un au minimum), surtout désarticulés bien que certains joints articulés soient présents. Des estimations de l'âge au moment de la mort donnent une idée de la saison des activités, et on présente un nouveau travail méthodologique qui utilise les dents et les os longs. Certains des os de la `masse d'os' étaient brûlés. Quelques artefacts et de la céramique étaient inclus dans le dépôt. L'ensemble implique une séquence rituelle complexe. Des datations au C14 des os du dépôt donnent à penser que certains des styles de céramique associée, qu'on aurait conventionnellement datés du `début' de l'âge du fer, étaient encore utilisés à la fin de cette période, voire au delà, cela dépend d'où l'on place la transition âge du fer ancien-moyen.

En l'intervalle d'environ une génération après la création du dépôt et toujours à l'intérieur de la première moitié du quatrième siècle av.J.-C., fut construite une forteresse à un seul rempart. Tout de suite après qu'on eut creusé son fossé, un crâne humain avec ses vertèbres attachées fut déposé au fond du fossé. Des datations au C14 du crâne fournissent une solide date pour la construction du fort. Le précédent dépôt rituel se serait trouvé juste à l'intérieur du rempart de la première phase de ce fort. Plus tard, à l'âge du fer, le fossé fut retaillé. La terre enlevée qui forma le nouveau rempart aurait scellé la plus grande partie, sinon tout, le dépôt rituel.

Les seuls autres vestiges fouillés assurément de l'âge du fer étaient deux fosses proches de la zone rituelle et un possible trou de poteau à l'intérieur. Cependant, du matériel de l'âge du fer contenu à l'intérieur de vestiges plus récents et provenant d'ailleurs à l'intérieur de la ville témoigne d'une occupation contemporaine extensive à l'intérieur du fort qui ne s'est pas prolongée à l'âge du fer final.

On propose un pourtour possible pour la forteresse, reposant sur d'autres observations à l'intérieur d'Aylesbury et on discute de la relation entre cette foreresset et d'autres dans le voisinage. Il y a des rapports sur les ossements animaux et humains, la poterie, les petites trouvailles, les mollusques, les semences et le charbon de bois. On note que trois `nouvelles' forteresses ont été découvertes dans le Buckinghamshire au cours des trente dernières années.

Au cours de la période romaine, l'intérieur de la forteresse ne fut que peu utilisé, bien qu'il y ait beaucoup d'indicateurs d'occupation dans le voisinage et que le tracé d'Akeman Street passe immédiatement à l'est de la ville.

Aylesbury, en tant que lieu, apparait pour la première fois dans les *annales des chroniques anglo-saxonnes* de l'année 571 ap. J.-C., bien que la date et la nature exactes de cette entrée soient contestées. Les origines du début de la période saxonne pour Aylesbury sont examinées en relation avec Walton, un campement proche florissant au début de la période saxonne et dont le nom pourrait inclure l'élément `britannique'.

Au début de la période saxonne moyenne une tranchée pour palissade fut creusée dans le fossé de la forteresse qui, à cette date, avait été en grande partie comblé. Après un intervalle, au début du huitième siècle, la palissade fut remplacée par un fossé. La palissade et le fossé formaient tous deux presque certainement les limites d'une église abbatiale primitive et il est fort probable que l'ancienne présence de la forteresse a influencé le choix de son emplacement. Il est probable qu'un morceau de verre mérovingien portant à la base une croix moulée, qui a été recouvré d'un contexte médiéval plus tardif était un des biens de l'église abbatiale. On note brièvement le vaste cimetière de l'église et l'agrandissement de la ville vers la fin de la période saxonne.

On décrit un important dépôt de grains saxo-normand qu'on a daté au C14 des onzième-douzième siècles.

Plus tard, l'histoire du site se compliqua. Il fut utilisé extensivement à la période médiévale et fut traversé plus tard par une défense de la Guerre Civile avant de devenir un jardin formel au dix-huitième siècle, probablement quand le manoir de Prebendal était habité par John Wilkes, le parlementaire radical. Dans ce rapport on ne fait que succintement référence aux périodes qui ont suivi.

Zusammenfassung

Ausgrabungen im Areal der Präbende von Aylesbury, Buckinghamshire, neben der Pfarrkirche St. Mary, haben ergeben, dass die auf einem Geländesporn liegende Stadt innerhalb eines einfachen Ringwalls errichtet wurde.

Funde von bearbeitetem Feuerstein und einer glockenbecherzeitlichen Scherbe belegen die Nutzung des Areals in vorgeschichtlicher Zeit. Im frühen 4. Jahrhundert v. Chr. wurde ein bemerkenswerter Ritualbereich angelegt. Darin fanden sich die Bestattungen von vier Kindern und einer jungen Frau, von denen die meisten zusammen mit einem Tier bestattet worden waren. Des Weiteren wurden auch vereinzelte menschliche Knochen gefunden. Die noch komplett im anatomischen Verband befindlichen Bestattungen lagen unmittelbar neben einer umfangreichen Deponierung von Tierknochen, vor allem Schaf (mindestens 21 Individuen), die mehrheitlich einzelne Knochen enthielt, obwohl auch noch einige im anatomischen Verband befindliche Gelenke vorhanden waren. Die Ermittlung des Sterbealters erbrachte Hinweise auf die Jahreszeit, zu der die Aktivitäten stattfanden, und es werden neue methodologische Ansätze unter Einbeziehung von Zähnen und Langknochen vorgestellt. Einige der in dem Knochendepot gefunden Knochen waren verbrannt. Daneben enthielt es auch mehrere Artefakte und etwas Keramik. Im Ganzen betrachtet weist dies wohl auf eine komplexe rituelle Befundabfolge hin. Radiokarbondatierungen an Knochen aus dem Depot deuten an, dass die Nutzung einiger Keramikstile, die nach herkömmlicher Chronologie in die frühe Eisenzeit datiert worden wären, bis an das Ende dieser Periode reichte, wenn nicht sogar darüber hinaus, je nachdem wie der Übergang zwischen der frühen und mittleren Eisenzeit zeitlich definiert wird.

Ungefähr eine Generation nach der Niederlegung der Deponierung, und noch innerhalb der ersten Hälfte des 4. Jahrhunderts v. Chr., wurde ein Ringwall errichtet. Unmmitelbar nachdem der Umfassungsgraben ausgehoben war, wurde ein menschlicher Schädel mit noch verbundenen Wirbeln auf der Grabensohle deponiert. Die Radiokarbondatierung des Schädels ermöglichte eine verläßliche Datierung der Errichtung der Befestigung. Die vorausgegangene rituelle Deponierung hätte gerade noch innerhalb des Umfassungswalls der ersten Phase des Ringwalls gelegen. Zu einem späteren Zeitpunkt in der Eisenzeit wurde der Graben erneuert. Der Aushub, mit dem der neue Wall errichtet wurde, bedeckte die rituelle Deponierung fast vollständig, wenn nicht gar komplett.

Die einzigen weiteren, sicher in die Eisenzeit datierbaren Befunde waren zwei Gruben in der Nähe und ein Pfostenloch innerhalb des rituellen Bereichs. Eisenzeitliches Fundmaterial aus späteren Befunden sowie aus anderen Bereichen der Stadt weisen auf eine ausgedehnte Besiedlung innerhalb der Befestigung hin, deren Nutzung jedoch nicht bis in die jüngere Eisenzeit andauerte.

Unter Berücksichtigung anderer Befunde aus Aylesbury wird ein Vorschlag für den möglichen Verlauf des Ringwalls vorgelegt, und die Beziehungen zu anderen Befestigungen in der Region werden diskutiert. Der Band beinhaltet Berichte zu Menschen- und Tierknochen, Keramik, Kleinfunden, Mollusken, und paläobotanischen Resten einschließlich der Holzkohle. Darüber hinaus wird kurz auf die Entdeckung von drei neuen Ringwällen in Buckinghamshire innerhalb der letzten 30 Jahre eingegangen.

Während der Römischen Kaiserzeit wurde der Innenbereich des Ringwalls nur in geringem Maß genutzt, in der näheren Umgebung finden sich jedoch zahlreiche Hinweise auf Besiedlung, und die Route der ‘Akeman Street’ verläuft unmittelbar östlich der Stadt.

Die erste urkundliche Erwähnung Aylesburys findet sich im *Anglo-Saxon Chronicle* für das Jahr 571, obwohl die genaue Datierung und die Umstände des Eintrags umstritten sind. Aylesburys früh-angelsächsischer Ursprung wird in Verbindung mit Walton erörtert, einer benachbarten Siedlung, deren Blütezeit in der früh-angelsächsischen Zeit lag, und deren Ortsname möglicherweie ein britisches Element enthält.

Zu einem frühen Zeitpunkt in mittel-angelsächsischer Zeit wurde ein Palisdengraben im mittlerweile faßt gänzlich verfüllten Umfassungsgraben des Ringwalls angelegt. Nach einer Zwischenphase im 8. Jahrhundert wurde die Palisade durch einen Graben ersetzt. Sowohl die Palisade als auch der Graben dienten mit ziemlicher Sicherheit als Umgrenzung einer frühen Münsterkirche, und es ist sehr wahrscheinlich, dass die Existenz des ehemaligen Ringwalls deren Platzwahl beeinflußte. Ein außergewöhnliches merowingisches Glasstück mit einem Kreuzprofil auf der Unterseite, das aus einem später-mittelalterlichen Befund geborgen wurde, gehörte wahrscheinlich zur Ausstattung des Münsters. Der ausgedehnte Friedhof des Münsters und die spät-angelsächsische Entwicklung der Stadt werden kurz vorgestellt.

Eine wichtige saxo-normannische Getreidedeponierung mit Radiokarbondatierung in das 11.–12. Jahrhundert wird ebenfalls vorgelegt.

Der Fundplatz hat eine komplexe spätere Entwicklungsgeschichte. Er wurde während des Mittelalters extensiv genutzt und lag im Verlauf einer Befestigung aus der Zeit des englischen Bürgerkriegs, bevor er im 18. Jahrhundert zu einem formalen Garten umgestaltet wurde, wohl zu der Zeit als das Präbendenhaus von dem radikalen Parlamentarier John Wilkes bewohnt wurde. Auf die späteren Perioden wird in diesem Band nur summarisch eingegangen.

Acknowledgements

The site would not have been investigated had Peter Yeoman not made the initial discovery and the developers, Estates & General Investments plc, both permitted the excavation and grant-aided most of the initial cost. Thanks are due also to Terence Woram Associates for their assistance in the early stages of negotiations. Ginn & Co., then occupiers of the Prebendal, kindly supported the post-excavation phase, as did English Heritage. Grateful thanks are due to the following who supervised on site: Peter Yeoman, Hal Dalwood, Barbara Hurman and Lloyd Mills. Excavators from all over Britain worked on the project and thanks are due to them and in particular to members of the Buckinghamshire County Museum Archaeological Group who assisted in very many ways both during the excavation and subsequently.

The following gave considerable assistance at the post-excavation stage; Hal Dalwood in preliminary processing; Simon Smithson who produced many drawings, some reports and ordered the archive; Mary Evans and Barbara Hurman who managed finds and produced drawings. The pottery reports published here are from the original notes made by Barbara Hurman and have not been revised by her. Grateful thanks are due also to Gregory Speed for help with processing and George Lamb for assistance in many ways. A number of specialists kindly provided help or advice on aspects of the project including: Dr Mark Robinson, Mélanie Steiner, who drew most of the small finds, Lisa Moffett who examined charred botanical remains and who kindly revisited her original work many years later, and Christine Osborne who carried out the initial study of the human remains and is no longer working in this field but kindly allowed her data to be freely used and modified; Dr A. P. Middleton, then of the Research Laboratory, The British Museum, for his work on haematite ceramic; Diane Fitzmaurice for land mollusc analysis; Mr G. S. Hill who sampled for evidence of helminths in a soil sample; Dr Andrew Jones for examining the fish bones: the English Heritage Laboratory; Graham Morgan of Leicester University for arranging much of the conservation, and also Vanessa Fell; Ian Riddler for examining objects of bone and antler, Dr Michael Oates for commenting on the petrology of the stone items; Phil Austin for reporting on the charcoal; Sophia Adams for a note on an Iron Age brooch, and Dr M. Metcalf for commenting on the sceatta.

John Meadows of English Heritage kindly spent much time in ensuring that the radiocarbon dating was appropriate and sound, and Chris Welch provided helpful support for the re-dating programme. Caroline Howarth also of English Heritage helpfully advised on publication grant procedure. John Blair kindly provided comments on the minster section.

Grateful thanks are due to Pam Russell, who over many years interpreted the first author's scribble to produce perfect copy, and for her firm belief that that this report would eventually see the light of day! More than twenty years on, the present staff of Buckinghamshire County Museum, in particular Brett Thorn, have continued to support completion of the project in many ways, as have Julia Wise, Sandy Kidd and David Green of the County Archaeological Service, staff of the County Record Office and Hugh Hanley former County Archivist. Thanks are also due to English Heritage's referees for their comments on a final draft and to Bob Zeepvat for editorial assistance.

The principal author is extremely grateful to his co-author Gillian Jones, who kindly picked up her vital part of the project after a gap of many years and subsequently spent untold hours revising and reinterpreting her initial raw data. She in turn makes grateful acknowledgement to Terry O'Connor and the Department of Archaeology, University of York, for use of their collections for identification of several bones, especially the small mammals and amphibians; to Peta Sadler and The Natural History Museum at Tring for identification of bird bones; and to Peta Sadler for working through the boxes of bones from other periods to extract the human bones.

Finally the principal author wishes to thank his late wife Marian Farley for her constant support in the early stages of report preparation and many years later Jackie Farley for being so considerate during the extended completion stage.

The site archive is deposited at Buckinghamshire County Museum.

1. Introduction to the Excavation and to Aylesbury and its Early Prehistory

The town and the excavation

The large house known as the Prebendal lies immediately west of St Mary's, the parish church of Aylesbury. A handsome early eighteenth-century building, its main claim to fame lies in its former occupancy by John Wilkes, well known radical and member of parliament for the town between 1757 and 1764 when he was expelled from the Commons (Hanley 1986). In a sale catalogue of 1851 the house is described as being 'in perfect repair, and stands on a dry soil in Pleasure Grounds well planted with ornamental timber, sloping to the south and west, commanding fine views of the surrounding magnificent country, the rich Vale of Aylesbury …' (BRO D/TL/Box 49). The house and land changed hands many times and in the 1980s the sloping western part of its grounds was sold for housing, and the northern part which lay beside the house and adjacent to the parish church, was sold for office development. The excavation whose results are reported here, was carried out in 1985 adjacent to the church and house in advance of the office development (SP 8165 1392).

The Prebendal and its grounds lie on the western end of the slight spur of land on which Aylesbury itself is built, at a height of about 90m OD (Figs 1–4). The spur has a thin capping of Portland limestone over Portland Sands and clays. Immediately north of the town are Kimmeridge clays, and to the south, Gault (BGS 1994, 1995). Around its

Figure 1. Aerial view of Aylesbury, Buckinghamshire looking north-north-east, March 1998; area of excavation indicated; St Mary's church centre. Buildings now occupy the site of the excavated area. Photograph M. Farley.

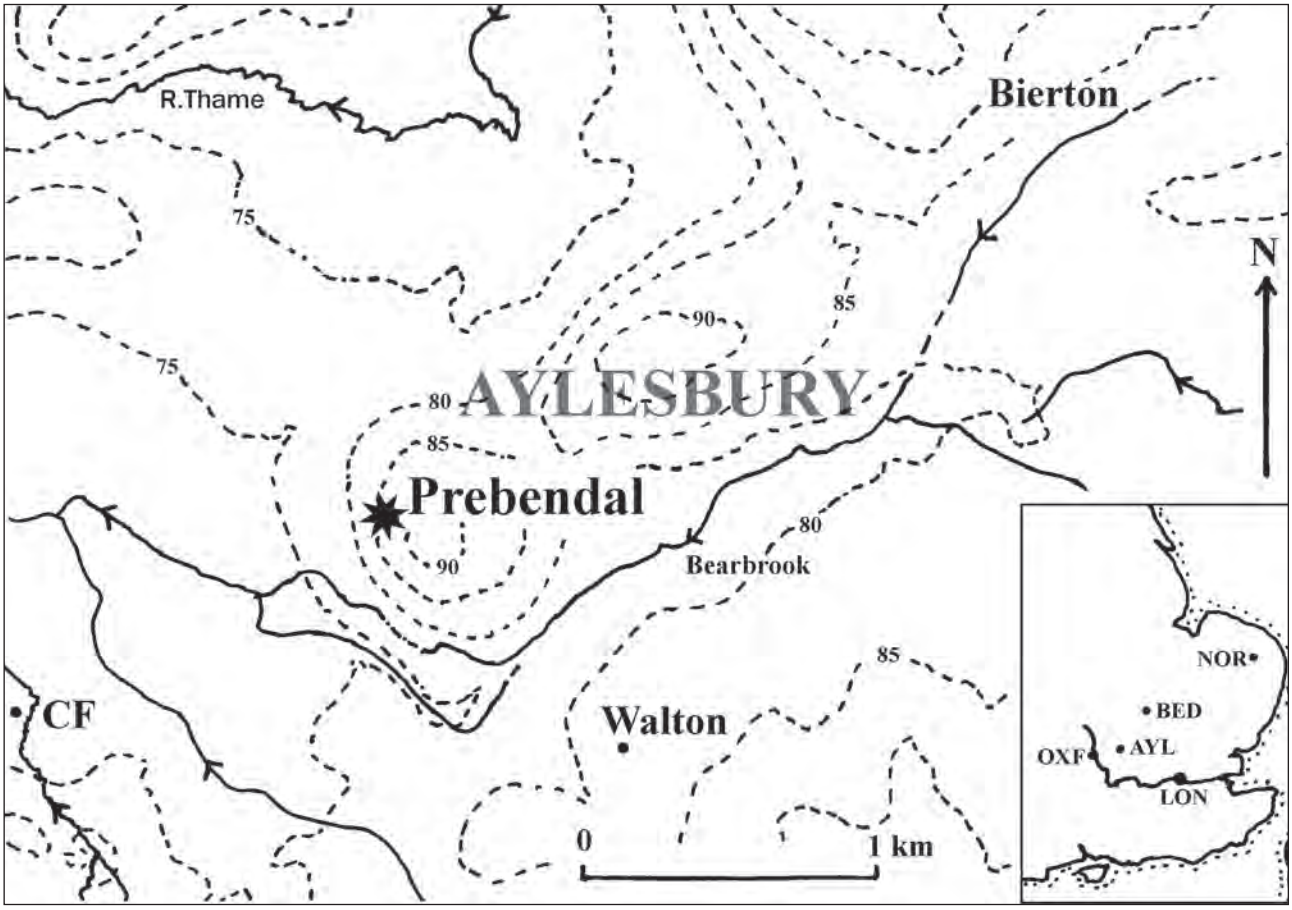


Figure 2. Prebendal, Aylesbury, Buckinghamshire; location and topography. CF = Coldharbour Farm (Iron Age site).

western and southern sides, the spur rises about 20m above the surrounding land, sufficient for it to be a significant landscape feature. In John Leland's notes of the 1530s to 1540s for example, he records that:

> The towne selfe of Aillisbyry standithe on an hill in respecte of all the ground thereabout, a 3. miles flate north from Chilterne Hills. The towne is metly well buyldyd with tymbar, and in it is a celebrate market.
>
> (Toulmin Smith 1964, vol. 2, 111).

To the east, beyond the early limit of the town, the spur slopes up gently towards the village of Bierton. The Bearbrook stream, which drains into the Thame and ultimately into the Thames, runs near the foot of the hill (Fig. 2).

Although the proximity of the site to the church, and indeed the general topography of the area, made it probable that archaeological features would be present here, the absence of any archaeological information about the development area meant that within the planning rules of the time it was not possible to seek funding for an evaluation of the site. However, in 1985 the developer dug a deep trench to test the extent of the roots of a mature beech tree. This trench was fortunately observed by Mr P. Yeoman, then Assistant Field Archaeologist at Buckinghamshire County Museum, who noted that it had neatly sectioned a substantial backfilled ditch that had been cut a little uphill of the slope defining the spur on which the town is sited. Following this discovery the developers, Estates and General plc., generously agreed to meet most of the costs of an excavation in advance of the construction of offices which were to include an underground car park. English Heritage subsequently also kindly gave a grant towards the work and funded the initial phase of post-excavation during the later 1980s.

There was initially no secure dating for the ditch that had been observed in the developer's test trench as only two tiny scraps of pottery and a minute amount of charcoal and animal bone had been recovered from its face. Although it was suspected to be prehistoric, the possibility that it was a later town defence could not be ruled out. The possible existence of a hillfort at Aylesbury, of which the ditch subsequently proved to be a part, had been suggested several years previously by Waugh *et al* (1974, 391); the 'bury' element of the place-name clearly indicating Saxon recognition of a defence of some kind.

The excavation area (Figs 3 and 4) encompassed the highest and most level part of the land that was to be

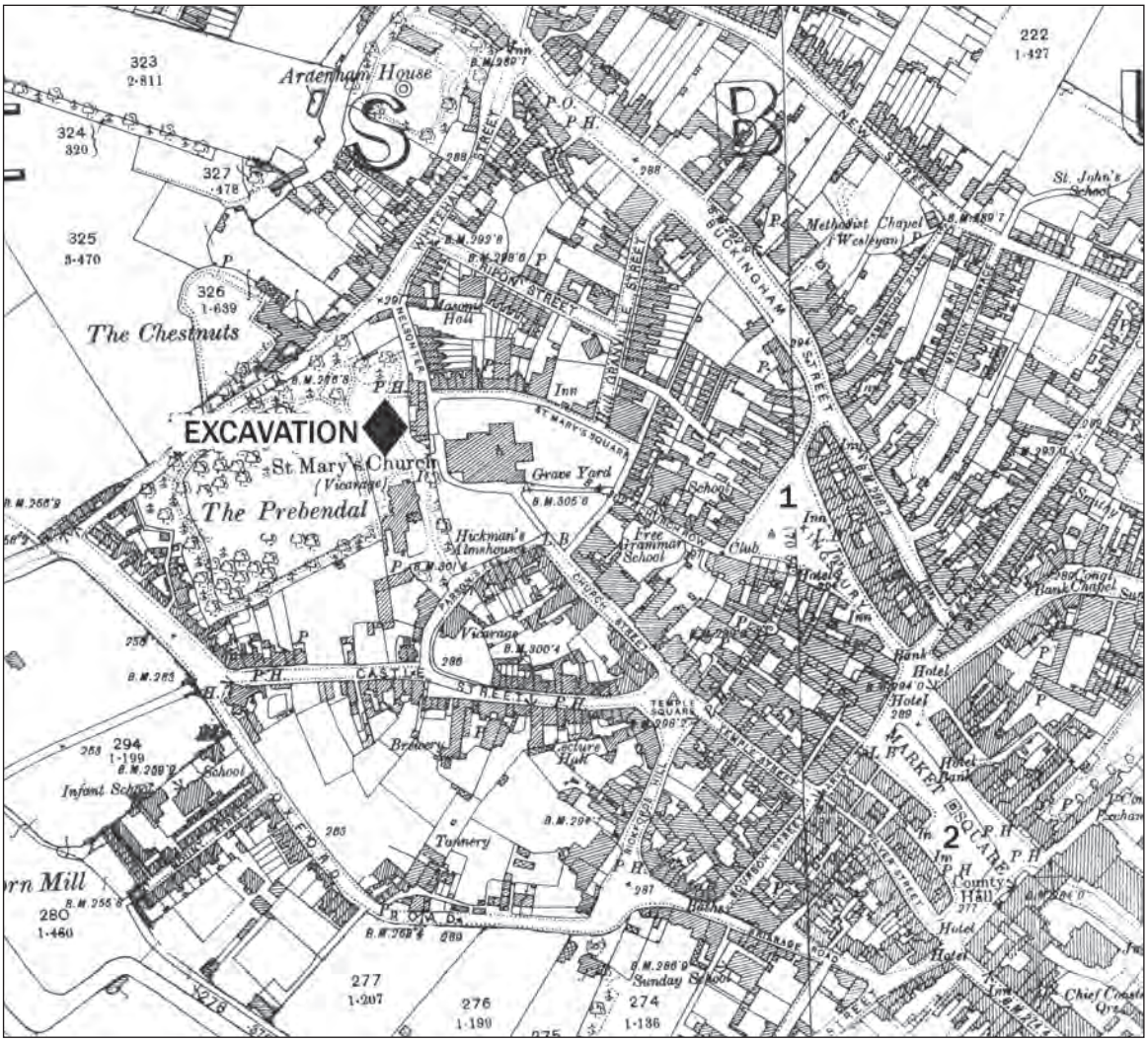


Figure 3. Aylesbury, Buckinghamshire: the historic core from Ordnance Survey 25" maps (28: 15 and 16) of 1899 with excavation indicated. Note also Kingsbury (1) and Market Square (2).

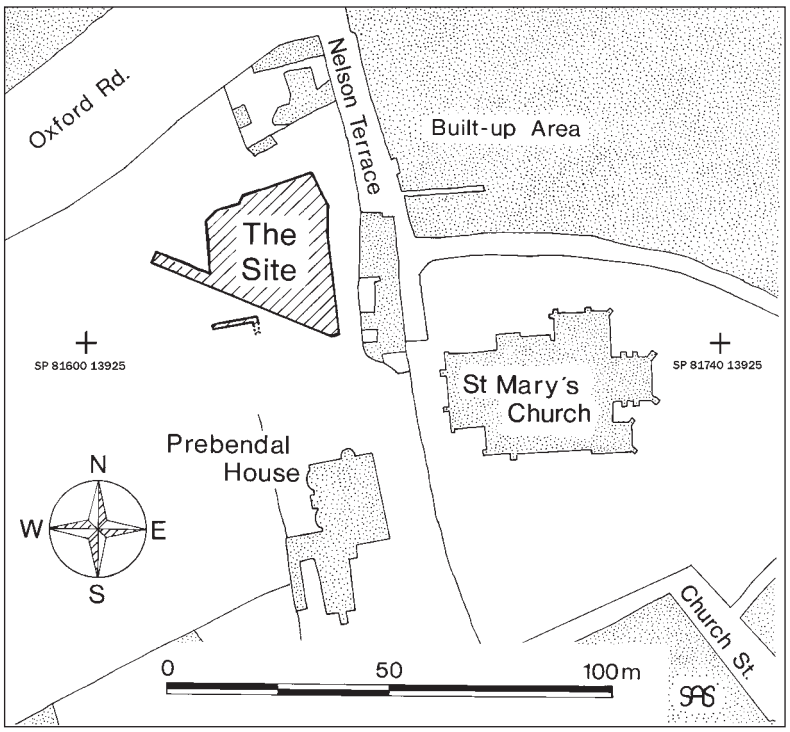


Figure 4. Area of excavation: developer's trial trench adjacent on south side. NGR indicated.

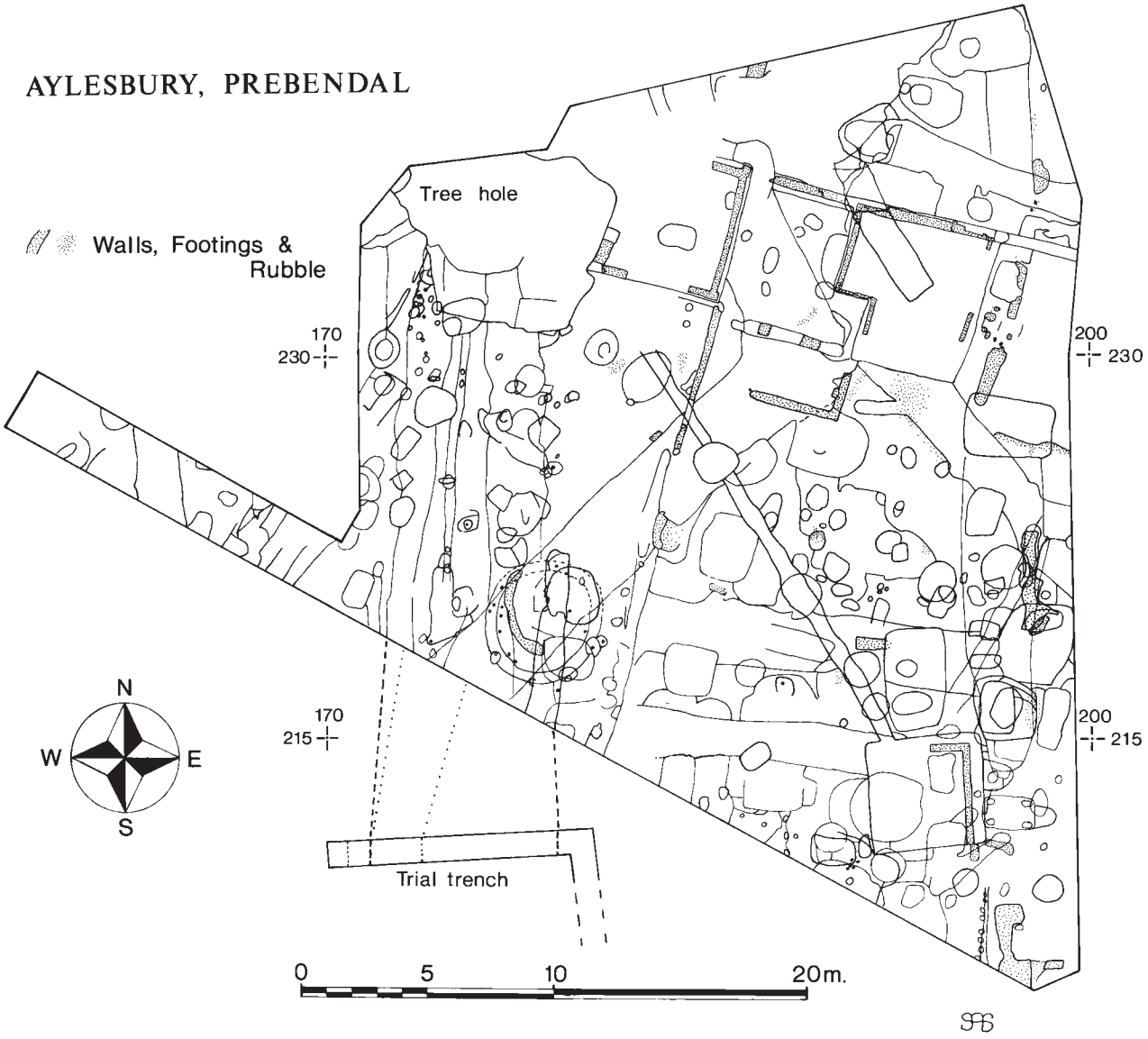


Figure 5. General plan of all excavated features with site grid: also location of developer's trial trench that sectioned the hillfort ditch.

developed. In addition, a single trench was cut down the slope of the hill towards the north-west to test for outer ditches, of which there proved to be none. The site itself, with the exception of the northernmost part which formerly contained stabling and cottages, had been gardens for at least two hundred years, although no plan earlier than the large-scale Ordnance Survey plan of 1851 exists. Initial machining revealed a dark well-worked loamy topsoil (100) and subsoil (125) up to 0.5m deep, with sparse limestone fragments interspersed with evidence of eighteenth-century garden use. After recording at this level, further machining took place until other features became visible, generally about 0.10–0.20m above the limestone bedrock. At this stage it was discovered that in the post-war years a substantial tree had been felled in the N-W corner of the site and its roots mechanically excavated and reburied, causing a major disturbance here. It also became evident that landscaping at the site's northern end, adjacent to demolished eighteenth-century buildings, had likewise cut down into the natural slope of the hill. Finally, in the eighteenth century, probably when the house was occupied by John Wilkes, a shallow terraced path had been cut into the hill slope on the western side. This path subsequently proved to follow the course of the hillfort ditch. Despite these intrusions a substantial number of features of Iron Age, Saxon, Medieval, Civil War and later date survived relatively undisturbed (Figs 5, 6, 61, 84–6).

The excavation was planned for ten weeks commencing April 1985, but due to the complexity of the site as revealed, work continued for a further four weeks on a diminishing

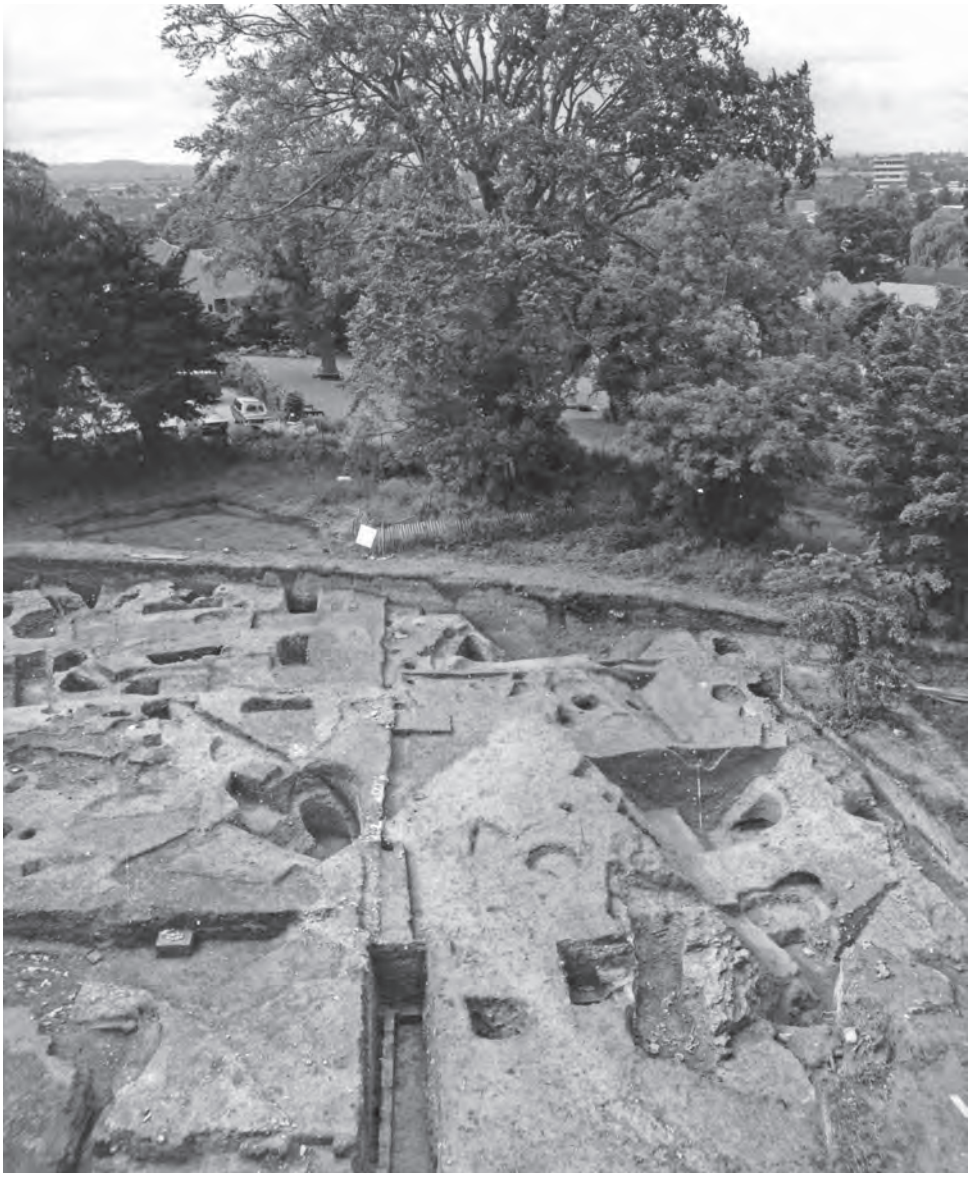


Figure 6. General view of the Prebendal excavation looking south. The hillfort ditch (with a ranging rod) is to the right.

budget and with increasing reliance on a largely volunteer workforce. The principal financial and logistic problem of the excavation, apart from lack of time, was the removal off-site of several hundred cubic metres of spoil, largely the deep topsoil. Development commenced immediately after the excavation had concluded, and an office complex, 'Prebendal Court', now stands on the site. Between the new building with its underground car park and the Prebendal House, which also has basements, substantial archaeological deposits should still survive.

Short notes on the project were published subsequently (Farley 1985 and 1986). Although substantial progress was made with post-excavation work in the two years subsequent to the excavation thanks to a number of individuals acknowledged above, the first author became increasingly involved with other archaeological duties in the county and attempts to raise further finance to complete the report failed. A little over twenty years later, in semi-retirement, the first author turned to the report's completion and is grateful for a grant from Buckinghamshire County Museum towards further specialist work on the all-important animal bone by his co-author and to English Heritage for meeting publication costs. For the rest, several authors who supplied reports many years ago, generously revisited what they had written. Inevitably under the circumstances not everything could be covered in equal detail, nor could everything be revised. In particular the medieval and later periods are only included in summary here.

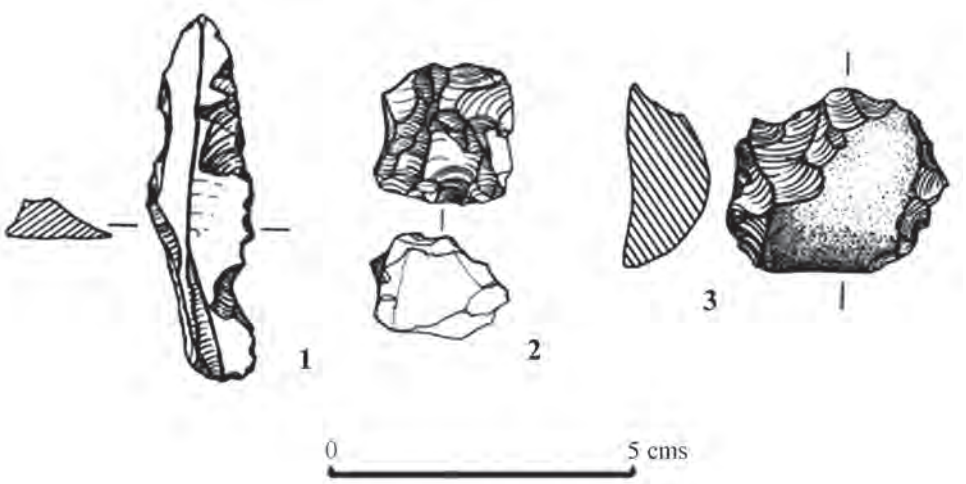


Figure 7. Worked flint from the site.

Early prehistory

The slight, but prominent spur on which Aylesbury is sited, is likely to have early attracted attention. At the Prebendal, the early prehistoric period is evidenced by worked flints, and part of a beaker. Worked flint has also been recovered elsewhere in the town, e.g. at George Street (Allen and Dalwood 1983, 16). Clearer indications of early occupation locally include Neolithic pottery from nearby Walton (Farley 1976, 160–161), and from Coldharbour Farm, Hartwell, just below the ridge on which Aylesbury is sited, where a Neolithic pit contained a tiny amber bead (Fig. 2 and Bonner and Parkhouse 1997).

Worked flint (Fig. 7)

A total of 68 pieces of worked flint were recovered from the excavation: 56 flakes, 5 blades, 2 scrapers, 1 flake with slight retouch, 2 core fragments and 2 roughly flaked lumps.

The dating for these is slight; blades and two small worn-down blade cores may be Mesolithic; the scraper and unclassified retouched piece are not datable and the small number of complete flakes preclude analysis of flake dimension. In the light of recognition that struck flint continued to have some use into the Iron Age (Humphrey 2007), it may be noted that although the majority came from Medieval or later contexts, thirteen pieces were from the early Iron Age 'ritual deposit', seven from the hillfort ditch, and two from an Iron Age pit (678). Three pieces are illustrated below.

1. Blade, snapped bulbar end, on black flint: length 61mm ?Mesolithic
(178, SF 2405). Post-medieval context.

2. Small two-platform ?blade core from angular water damaged pebble, height 22mm
(564). Medieval pit.

3. Scraper, small rounded, on naturally-fractured black flint pebble with some cortex remaining on flaked side; length 36mm (575, SF 2556). Medieval pit.

Beaker sherds (Fig. 44.1)

There were three Beaker sherds among the pottery from the Iron Age ritual deposit (see on). Although these might have been collected by those who created the deposit as curios the hilltop position of the site suggests the possibility of an earlier disturbed burial.

Beaker: three joining sherds, decorated with irregular herringbone-slashes and impressions made with a flint flake (slightly wavy line, sometimes interrupted). Simple rounded rim and slender sinuous profile. Surfaces pink-buff with reduced core; traces of burnishing ext. and int. rim. Fabric: fine grits and fine grog (grey) and occasional larger pieces of flint (724 and SF 3044). Thanks are due to George Lambrick for pointing out the nature of the decoration.

The form and decoration may be compared with a beaker from Beuern, Germany (Clarke 1970, no. 252) and one from a burial at Stanton Harcourt, Oxon (Clarke 1970, Fig. 261; Grimes 1943–4), although in the latter case the decoration is said to have been executed with a fingernail. This burial had also six barb and tang arrowheads and a bone ring-pendant.

An All-Over-Cord Beaker burial within an annular ditch has been excavated about 230m to the NE along the ridge in Bierton (unpublished but noted in Anon 1996, 253: HER 1047)

2. The Iron Age Hillfort

Introduction

The principal features uncovered during the excavation were the ditch of a hillfort and an unusual deposit of human and animal bone which will be described as a 'ritual deposit'. Apart from these features the only other cut features of Iron Age date recorded during the excavation were two pits and a possible post-hole (Fig. 8). There were, however, a substantial number of later features, in particular of medieval and post-medieval date. The number of Iron Age sherds recovered from secondary deposits across the site (and from elsewhere within the town), suggests considerable contemporary activity, but if there were once

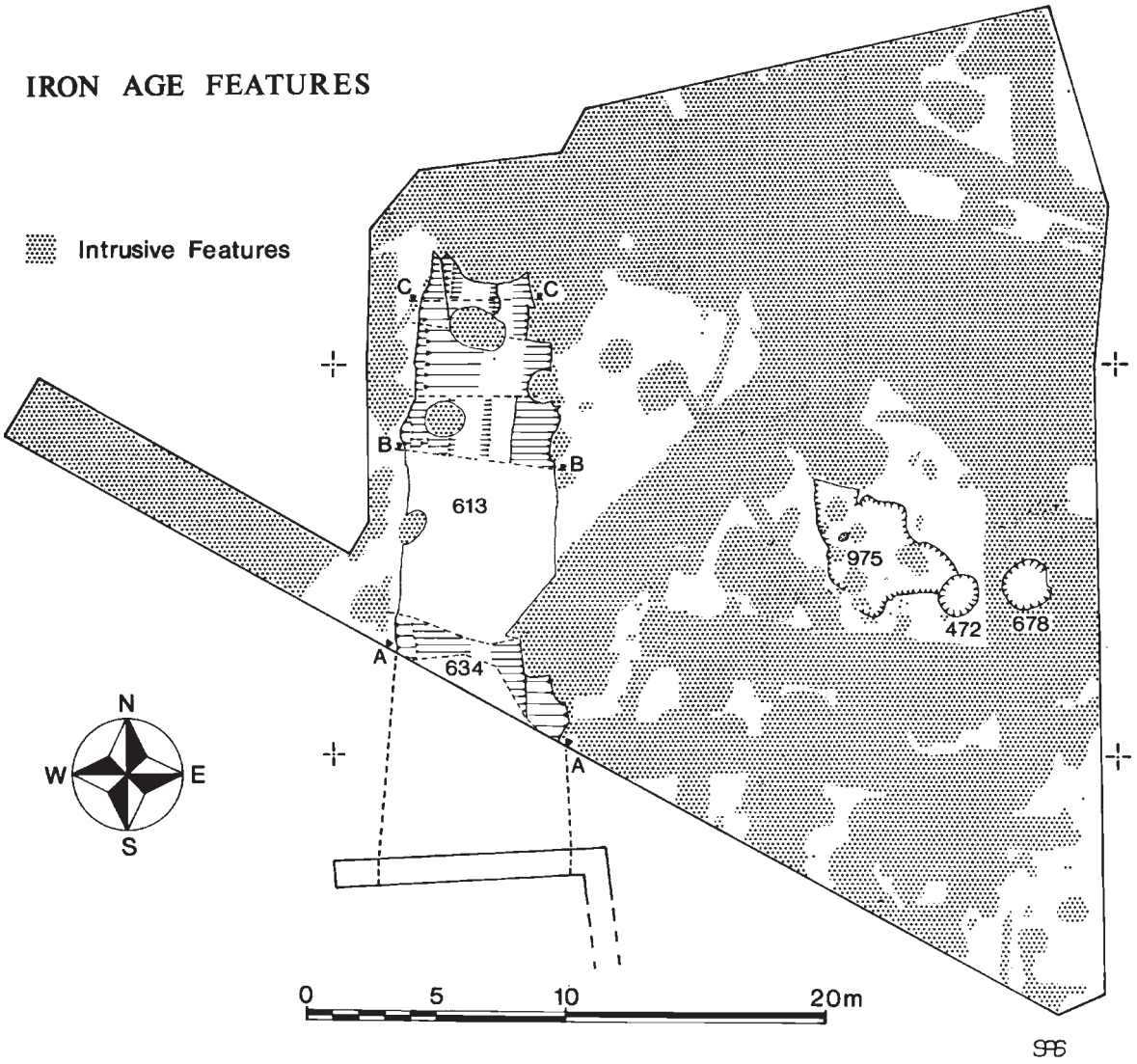


Figure 8. Iron Age plan showing hillfort ditch and location of drawn sections, the ritual deposit (975) and adjacent pits. Later features stippled.

Figure 9. The hillfort ditch looking south, section CC under excavation. The three central figures are standing in the Middle Saxon recut.

other features in the excavated area, subsequent intensive use has destroyed them.

During the excavation and the prolonged post-excavation process, it was presumed that the hillfort had been constructed *prior* to the creation of the ritual deposit containing human and animal remains, but a new series of radiocarbon dates, coupled with Bayesian analysis suggests that the reverse may be the case. The revised sequence is accepted here, but for convenience the original layout of the report has been retained and the hillfort is described first. The implications of the revised dating are discussed further on.

The hillfort ditch

The developer's trench which initially exposed the hillfort ditch proved to have been cut almost at right angles to its course (Fig. 8). A little over 24 metres of infilled ditch was subsequently recorded in plan. Apart from the initial developer's trench, three sections were hand-dug across it (Fig. 8): a long baulk section (AA), a complete section in the centre of the site (BB) and a further section (CC). In the latter area where the ditch proved to have been previously cut into by the machine-removal of a tree stump and its subsequent re-burial on site, the lowest level of the ditch survived. A further section was drawn here after the machine hole had been further cut back, but this also proved to have been disturbed, in this case by a well which had partially collapsed (213), and the section is not included in the figures here.

Once the ditch had been constructed it was to have a dominant effect on the development of the local landscape for many centuries (Fig. 9).

The primary ditch and a human skull on its base

The earliest cut of the ditch (634) was visible in all of the excavated sections (Figs 10–12). It had a flat base with its basal-width falling within fairly narrowly defined limits of 1.2–1.5 metres. The basal metre of the ditch had cut through the hill's Portland limestone capping into underlying silty-sand. The upper profile of the earliest ditch had been destroyed by a recut, but projection of the surviving slope upwards would give a fairly steep-sided profile with a *c*. 65° slope. Although this would have

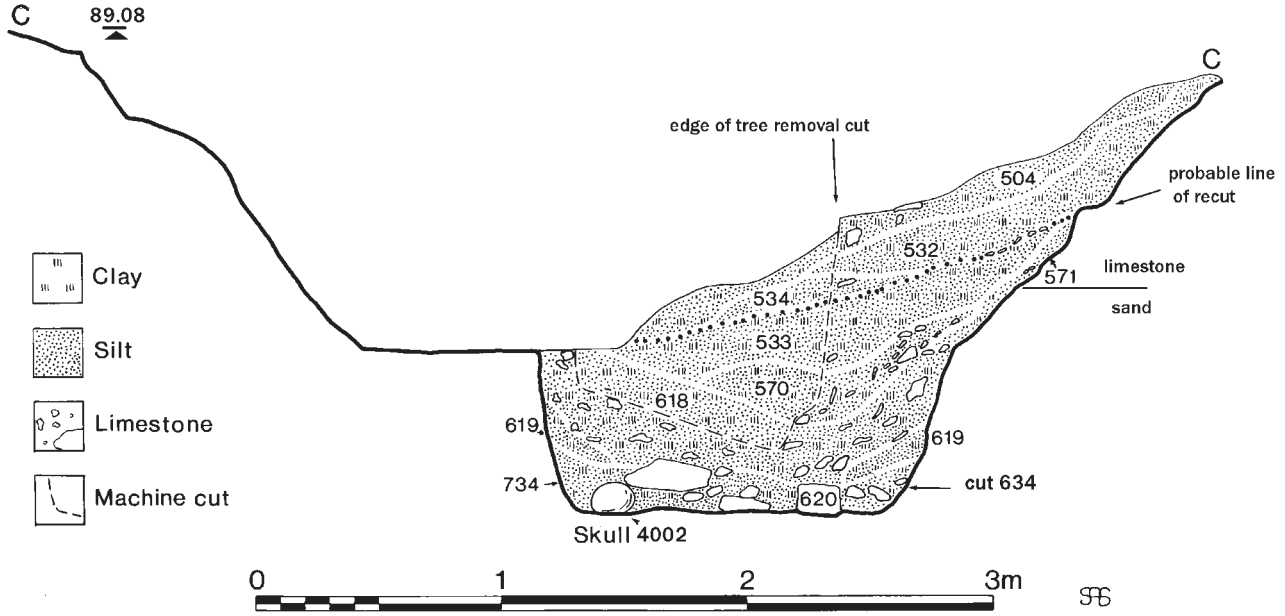


Figure 10. Section CC through primary hillfort ditch (634) looking south, showing human skull (4002) at base.

initially been stable in the limestone through which it was principally cut, the loose-bedded nature of the Portland stone in Aylesbury means that it would have been rapidly subject to considerable weathering.

A weathering profile of the primary ditch can be seen on the western face of all three sections (AA, BB, CC) in the form of a break of slope about a metre above the base, and probably also where the original profile is partly-preserved on the eastern side (AA).

The original depth of the base of the primary ditch below ground level can only be an approximation since the ground surface has been much modified over the ensuing centuries. The best estimate is provided by section AA (Fig. 11) where undisturbed bedrock survives to the highest level. Its depth here would have been *c*. 3.6m, after making allowance for a build up of post-medieval garden soil at this point. However, in this section it was difficult to establish an exact profile of the base due to waterlogging. It should be noted that the upper part of this section shows also both a Saxon recut, and a Civil War ditch (Figs 11 and 64).

The primary ditch fills were principally light yellow-brown silts, occasionally with a clay fraction, with small fragments of weathered limestone up to 5 cms. In general there was far less limestone in the fill than might have been expected from the erosion of the accompanying rampart which must have contained much stone upcast. This absence is probably due to the crumbly nature of the local Portland beds previously noted, little of which makes satisfactory building stone. Although it seems likely that the excavated stone would have been used in revetting, this cannot be proven.

In only one place did obvious pieces of limestone occur within the ditch fill (section CC; Figs 10, 14–16). Beneath these slabs, mostly 0.2 × 0.2 × 0.8m, was the complete skull of an adult male with attached vertebrae (4002) resting on the base of the ditch. It lay within a primary deposit, a firm, clayey-silt (734) but was packed round by tabular limestone blocks, which also partly overlay it (Figs 10 and 14). The skull was complete, although shattered by pressure, and faced west (4002, fill 734, cut 620). Layer 619 which sealed the deposit was clean and again appeared to be a silt. There was no evidence that the skull had been placed in a cut although the sandy base of the ditch would have provided no impediment to there being one.

The skull was examined by Christine Osborne who reported that:

> The skull and mandible articulated with the atlas and axis vertebrae which are both intact. There is no indication of decapitation although it could have been at the level of the missing cervical 4 or 5, especially as this is a common site for the cut. The skull is of a male aged 17–25 years, based on attrition rates, M1 = 3, M2 = 2+, M3 = 1.

The presence of attached vertebrae (Figs 15–16) show that the skull must have been placed on the base of the ditch whilst still fleshed, and its position here indicates that it had been placed a very short time after the fort's construction, so it was a natural candidate for radiocarbon dating. The dating of the find is fundamental to dating the initial construction of the hillfort and the result has caused the revision of the writer's previously held belief (Farley 1985 and 1986) that the hillfort's construction pre-dated the creation of the 'ritual deposit' that will shortly be described. The date places the skull in the early fourth century BC (see on).

A fragment from another skull, the left side of a mandible

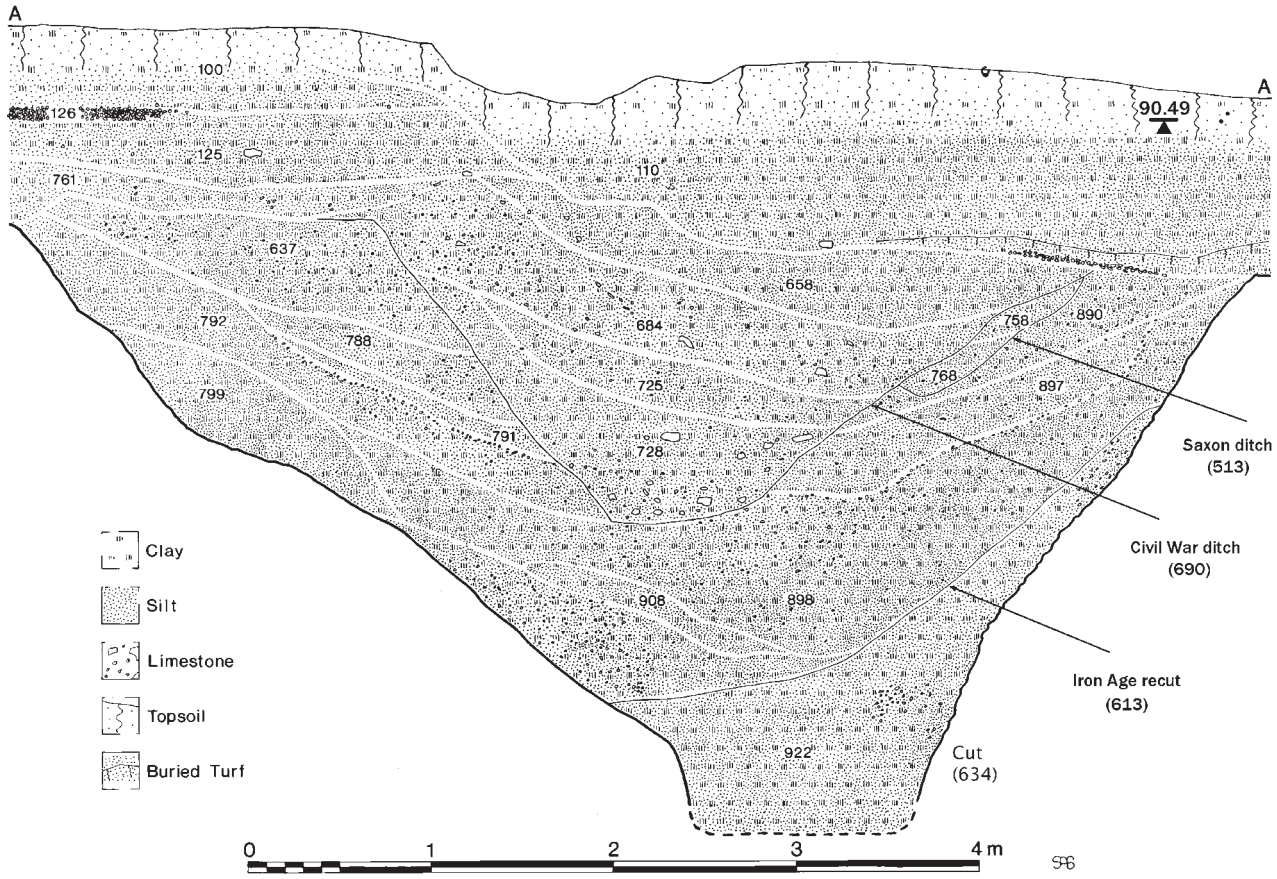


Figure 11. Oblique section (AA) through hillfort ditch at south edge of the excavation looking south, showing; primary Iron Age ditch (634), probable recut (613), Saxon ditch (513), Civil War ditch (690), 18th century garden soil (125), 19th/20th century terracing and footpath (126) and topsoil (100).

with molars 7 and 8 *in situ*, was retrieved from a fill of the primary ditch (931) in another section (BB) and four further fragments of human bone came from the ditch recut.

The significance of 'head burials' will be discussed in a later section on the dating and function of the hillfort.

An Iron Age recut of the primary ditch

The flat base of a recut (613) of the primary ditch was clear in section BB (Figs 12 and 13) where it formed a shelf, and in CC (Fig. 10) where its profile was visible on the margin of the tree-hole disturbance. It was also clear in an unpublished, disturbed, section, close to the tree hole noted above. In section AA (Fig. 11), the position of the recut is not so clear as there is no obvious flat base, but it is probably represented by the surface of 922 which provides a broadly similar profile. The roughly level base was far broader than its predecessor. It is clear that substantial weathering of the primary ditch had taken place before the recut was executed.

The slope of the recut ditch's sides, as dug, was shallower than that of the primary ditch and it would have been at least 50% broader. Its depth would have been about 2.9m below ground level. Its fills seem, as in those of the primary ditch, to be due to natural weathering processes, consisting largely of broad bands of silty clay with small pieces of limestone. Apart from a few Iron Age sherds there were very few finds from the lowest of these deposits.

In the centuries that elapsed between the recutting and the commencement of Romano-British use of the area, it is clear that a metre of silting had taken place leading to a shallow fill-gradient. About another metre of fill was to accumulate during the Roman period and before the cutting of a Saxon palisade and ditch on the same alignment (see on).

The problem of the accompanying rampart

The earliest ditch had been cut a few metres back from the break of slope of the hill, at around the 87m contour line in so far as it is possible to judge from modern topography. The area where the rampart would have once stood had subsequently been both levelled and terraced, initially during construction of a Civil War defence, and subsequently during eighteenth and nineteenth-century

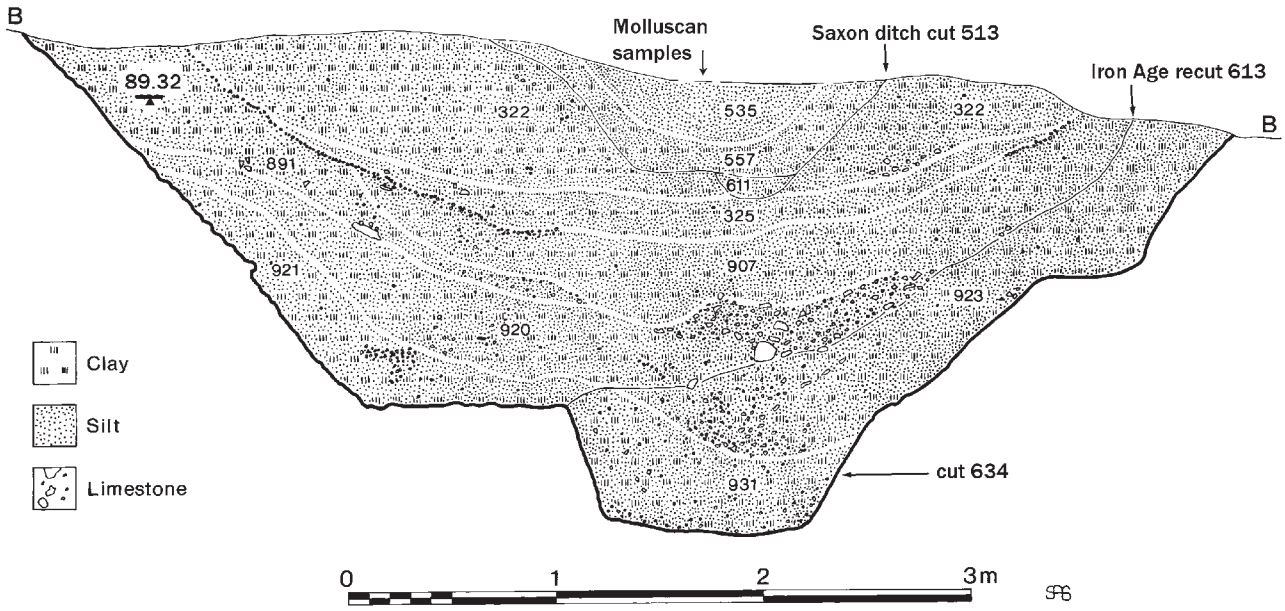


Figure 12. Section BB through hillfort ditch looking south; showing primary ditch (634), probable recut (613) and Middle-Saxon ditch (513).

Figure 13. Hillfort ditch section BB completed, looking south with the Saxon recut indicated in upper fill.

Figure 14. Human skull on base of hillfort ditch beneath limestone.

Figure 15. Human skull on base of ditch. 30cm scale.

Figure 16. Human skull on base of ditch showing attached vertebrae.

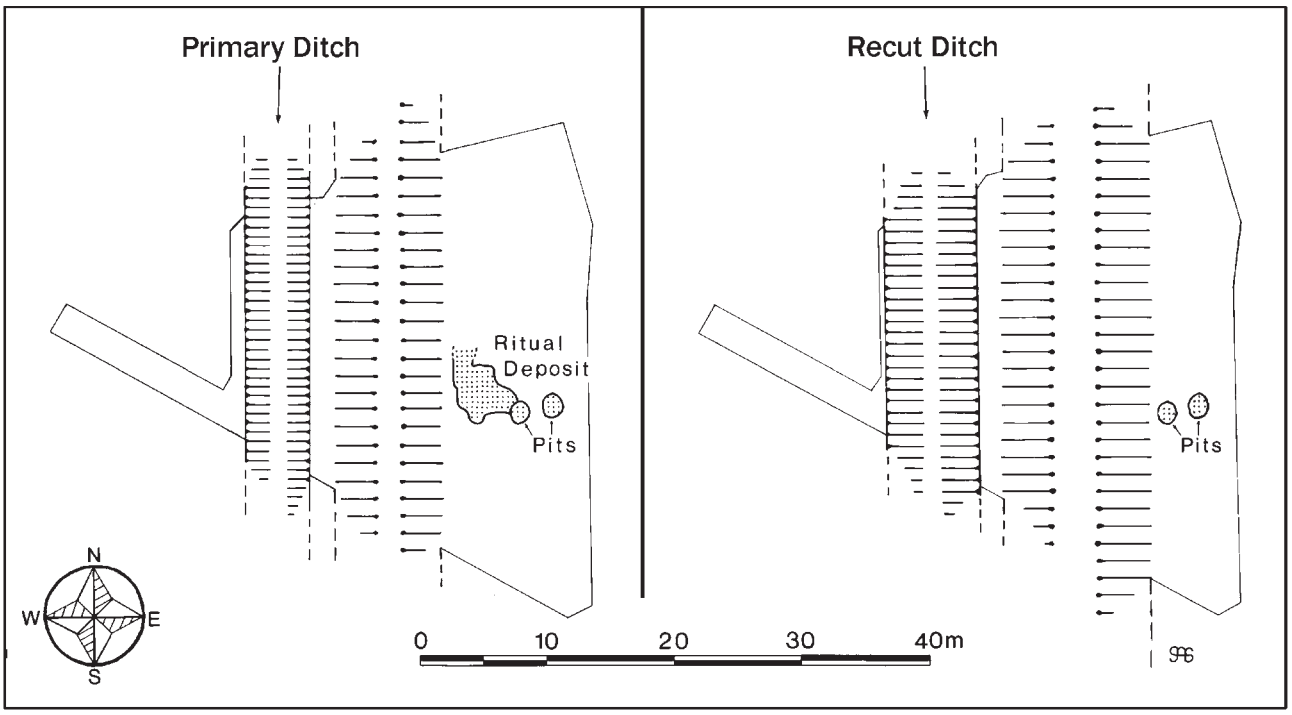


Figure 17. Reconstruction showing probable widths of hillfort ramparts (primary and recut), presuming that they were of dump construction, and their relationship to the other Iron Age features.

garden operations, which makes judging the precise location of the ditch's inner lip difficult (Figs 84–86). However, despite these disturbances, had the ditch been accompanied by a timber-revetted rampart with reasonably substantial post-holes, they would have been expected to survive, and none were observed. It would seem reasonable to assume that the limestone excavated during the ditch digging would have been used as rampart revetting, but as previously noted, there was no substantial limestone in the ditch fill, except around the head. The question must remain open as to whether the first rampart was initially stone revetted and the stone broke up rapidly through weathering, or whether it was from the outset a dump rampart.

On the presumption that both the rampart accompanying the initial ditch and the subsequent recut might have been dump ramparts, Figure 17 shows the approximate area that would have been occupied by the excavated soil at rest, after making allowance for expansion and for a minimal berm between ditch edge and rampart. It will be seen that if the recut ditch did have a dump rampart, its spoil would have covered much of the area examined during the 1985 excavation. The principal internal feature to have been covered by spoil from the recut would have been the 'ritual deposit'. That this feature was well-preserved may also be an argument in favour of this interpretation.

Study of molluscs from the ditch fills have helped to elucidate the local ecology.

Subfossil molluscan fauna from a section through the ditch

Diane FitzMaurice

(This report was prepared in 1989)

A sequence of twenty × 1.0kg samples was taken from section BB for molluscan analysis of the hillfort ditch fill, encompassing the sequence from primary ditch, secondary ditch, through to the Middle Saxon recut (Figs 18–19). The full report is included in Appendix 4. Each sample was water sieved on a mesh of 0.5mm and the minimum number of each species present determined. The results of the count were tabulated in absolute and percentage frequencies and a molluscan diagram based on the percentage representation of the different species drawn (Appendix 4). The occurrence of the burrowing species *Cecilioides aeicula* was recorded in Table 33 but excluded from Table 34 and the diagram.

The results may be summarised as follows:

The primary ditch (samples 2019–2032).
Phase One – Open and dry, inhospitable conditions in the ditch (samples 2029–2032).

The recut ditch (samples 2033–2046, referred to as the 'Secondary Ditch' in the full molluscan report).
Phase Two – Lush vegetation in the ditch (samples 2033–6). Iron Age.

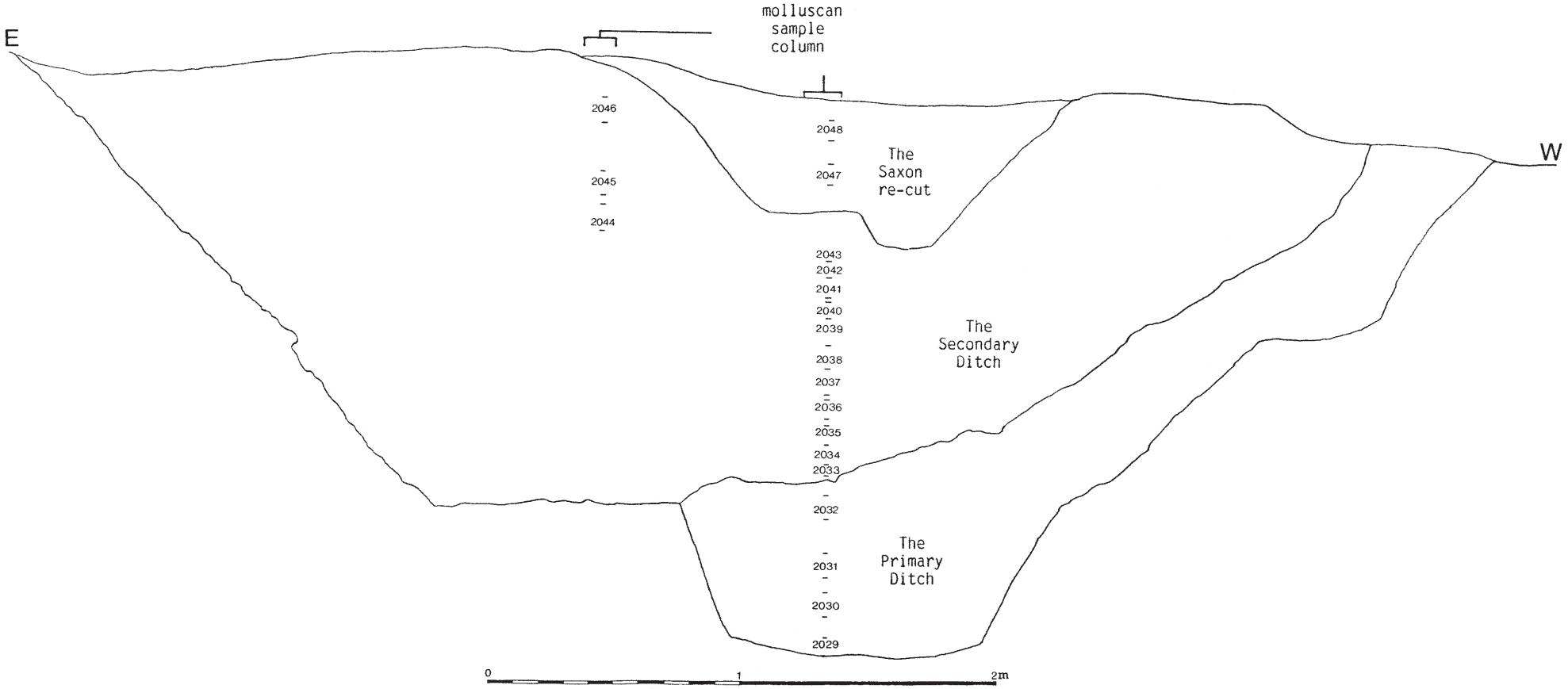


Figure 18. Position of molluscan samples on ditch section BB (Fig. 12).

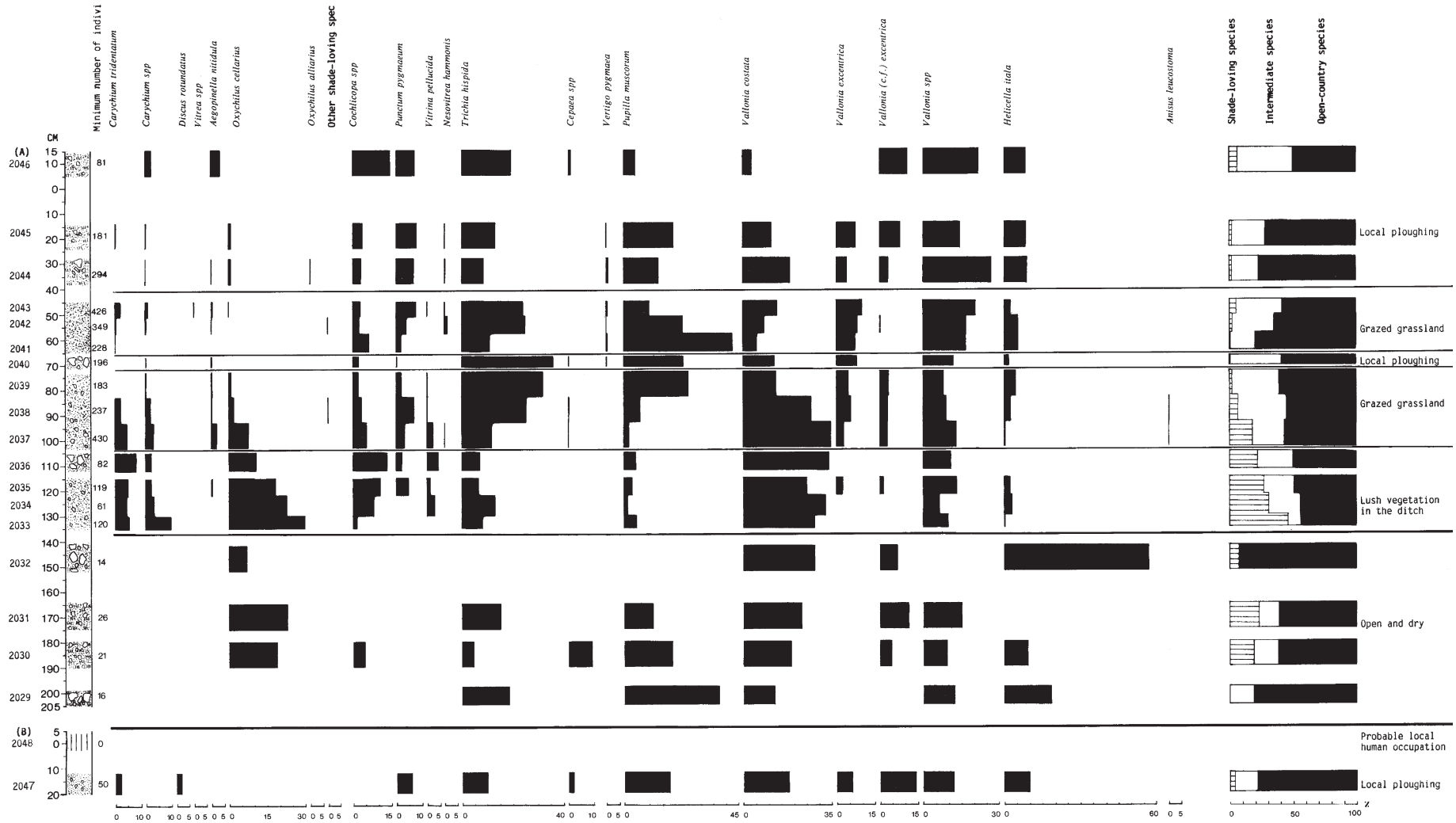


Figure 19. Mollusca recorded from hillfort ditch section BB. Percentage histogram of the results of the molluscan sample. Taken from (A) the primary and recut ditches (2029 to 2046) and (B) the Middle-Saxon Saxon recut (2047 and 2048).

Phase Three – Grazed grassland 1 (samples 2037–9). Iron Age.
Phase Four – Ploughing in the vicinity of the ditch (samples 2040). Iron Age.
Phase Five – Grazed grassland 2 (samples 2041–3). Iron Age to Roman.
Phase Six – Ploughing in the vicinity of the ditch (samples 2044–6). Roman/ possibly Early Saxon.

The Saxon recut (see on, samples 2047–2048).
Phase Six – Continued ploughing in vicinity (samples 2047). Lower Mid Saxon ditch fill.
Phase Seven – Local human occupation (samples 2048). Upper Mid Saxon ditch fill.

The general indications are of open landscape, grazed, with an episode of ploughing during the gradual infilling of the secondary ditch, and then a further episode of ploughing which appears to take place when Roman pottery was appearing in the ditch fills.

Finds from the hillfort ditch

Excavation by hand of three sections through the ditch produced from the primary ditch a few sherds only (618, 620, 734), a small amount of animal bone from all but one of the contexts, the human skull previously noted, and a separate piece of human mandible (931).

The fills of the recut, prior to the Roman-period infill, produced pottery, slingshot, loomweight, a few scraps of slag, animal bone and four pieces of human bone.

Iron Age Pottery

Barbara Hurman

There were approximately 1253 Iron Age sherds from the site as a whole, of which 53% came from stratified contexts, the remainder being residual. The stratified sherds were examined for fabric, finish, etc. Twelve fabric groups were identified (see below); the predominant inclusions were shell, flint, quartz and grog in various combinations. The principal fabrics (by percentage number of sherds) were 9: 17.57%, 1: 17.12%, 3: 16.36%, 4: 15.9%, 5: 14.69%, 6: 12.72%. There were very low numbers of the remainder. This indicates an overall dominance of flint/quartz fabrics (61%), the flint often being present as large inclusions in a finer rounded quartz matrix, with a clear, but subsidiary, role for shell (33%); the remaining fabrics were very small groupings containing limestone, grog, oolite and other combinations.

Pottery Fabrics

Fab. 1 Fossil shell, large pieces, colour green-purpley-grey pink, smooth feel, fine sandy matrix.
Fab. 2 Angular flint/quartz, occ. shell, clear rounded quartz.
Fab. 3 Rounded quartz, pink, clear or opaque, occ. grog? and sparse flint.
Fab. 4 As Fab. 1 but finely crushed shell.
Fab. 5 Angular flint and quartz, occasional large rounded quartz pebbles.
Fab. 6 Shell, sparse quartz, occ. grog.
Fab. 7 Very fine diversely packed quartz grains, generally less than 0.2mm.
Fab. 8 Beaker fabric.
Fab. 9 Fine angular quartz/flint in matrix on Fab 7.
Fab. 10 Limestone/grog and some organic.
Fab. 11 Small angular ?quartzite with some oolitic inclusions.
Fab. 12 Angular grog tempering.

In the lists of illustrated sherds throughout the report, the sherds are grouped by surface texture, burnished, smoothed, or coarse; the distinction between the two former being whether the sherd appears shiny or polished to the touch as distinct from merely smooth. The latter group could, of course, be a more weathered burnish. The fabric is noted with each entry followed by a bracketed context number, and small find number (SF) where appropriate. The abbreviation 'ext.' refers to both surfaces of the vessel, 'int.' to its core colour.

Only five sherds came from the fills of the primary ditch and ninety-two from the fills of the recut. The Iron Age pottery from the site as a whole and the identified fabrics are discussed further on. The illustratable sherds are listed below. A distinction is made below between sherds where the surface has been roughly smoothed and those where there are clear signs of burnishing. Sherds are body sherds unless stated.

(i) Sherds from the primary ditch (Fig. 20)
Smoothed
1. Rim upright, squared; ext. black-brown, int. black. Fab 3. (734). From the same deposit as the skull 4002.

(ii) Sherds from the recut ditch (Fig. 20).
Burnished
2. Dec. shallow overlapping slashes; ext. buff-black, int. black. Fab 9. (908).
3. Shallow burnished horizontal groove with diagonal line below; ext. buff-brown, int. buff-black. Fab 7. (908).
4. Rim, slightly everted; ext. black, grey int. Fab 9. (429).
5. Shoulder angle; ext. and int. black. Fab 3. (907).

Smoothed
6. Shoulder angle, shallow, cut, diagonal line, finger tipping below; ext. grey-buff, int. black. Fab 9 (907).
7. Heavy base; ext. orange-base buff, int. grey. Fab 1. (907).
8. Upright square-topped jar rim; ext. brown, int. black, sooted. Fab 11. (907).
9. Upright flat-topped rim, fingering ext; ext. and int. black. Fab 11. (932).

Burnished
10. Shallow tooled wavy-parallel lines, white inlay(?) dec. but could be re-deposited material; black ext. and int. Fab 7. (463).
11. Rim, slightly everted, ext. black burnished, int. brown-black smooth. Fab 6. (898).
12. Rim slightly everted; black ext. burnished, int. smooth. Fab 7. (898).

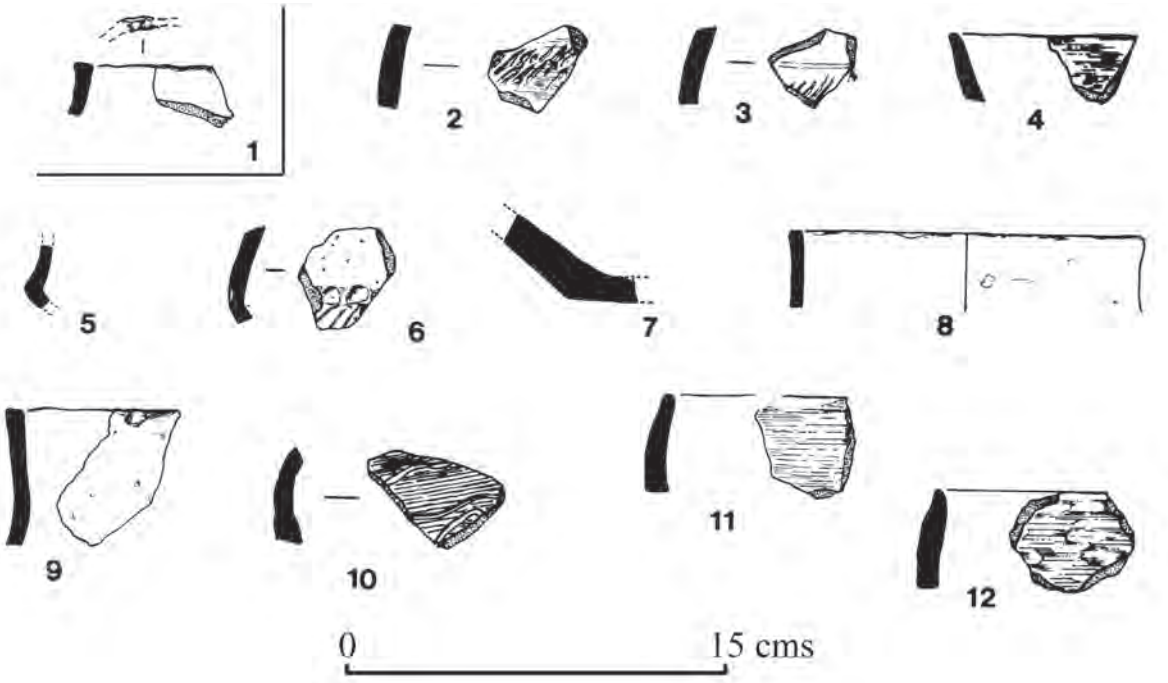


Figure 20. Pottery from the primary hillfort ditch (1) and recut (2–12) (1/3).

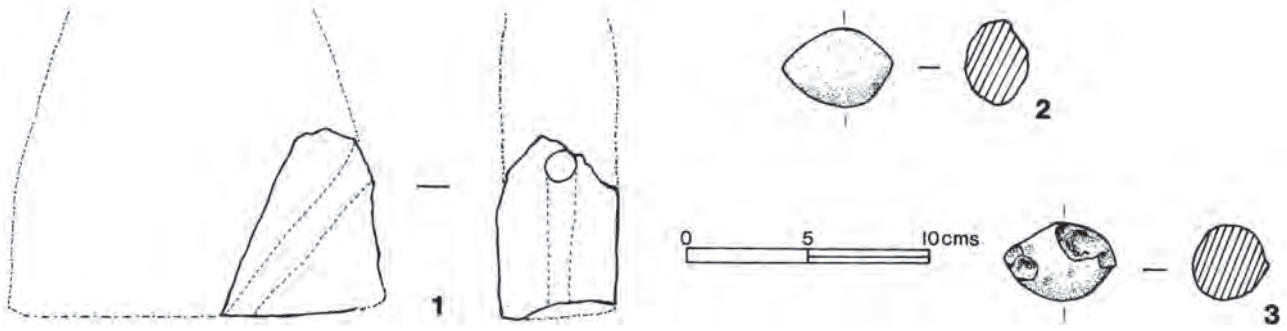


Figure 21. Finds from the hillfort ditch: 1. loomweight; 2–3. slingshot (1/3).

'Loomweight' (Fig. 21, 1)

1. Triangular, single corner; pierced hole from side to side, perforation diam. 11mm.
Oxidised, fine sandy fabric, small calcareous inclusions less than 0.3mm, occasional burnt out inclusions leaving a vesicular surface. (429. SF 2408). A commonly recognised form, *e.g.* Type I at Danebury (Cunliffe 1984b, 401–6). At Danebury the type was found in all phases, but more frequently in later phases (Cunliffe 1991, 372–380).

Although previously considered to be weights for warp-weighted looms, since the discovery of some unperforated examples, an observed absence of wear near perforations, and an apparent association with oven daub, Poole has argued that they may instead be 'oven bricks' (Cunliffe 1991, 380; 1995, 285–6; Barrett *et al*. 2000, 213–4). This interpretation would, however, also require a re-attribution for their presumed predecessors, the Bronze Age cylindrical, perforated 'weights', which might be considered ill-suited for use with ovens. Moreover a group of such 'weights' recently found in Buckinghamshire (Taylor 2008) included several decorated with 'multiple lines or fine or large impressed point decoration', implying that the objects may have had some intrinsic value, so the proposed re-interpretation does give some problems.

Also from the upper fill of the recut ditch came a small scrap of unformed burnt clay (792.2926) and a lump of unformed clay, possibly from another loomweight, but with only a tiny surface area surviving (325.2553)

Table 1 Animal bones from the Iron Age hillfort ditch.

	%	Total	Ditch cut 634	Ditch recut 613
Cattle	*47.3*	79	7	72
Sheep	*0.6*	1		1
Sheep/goat	*35.3*	59	4	55+1s
Pig	*12.0*	20	4	16
Horse	*1.2*	2	1	1
Roe deer	*0.6*	1		1
Water vole	*1.8*	3	2	1
Badger	*0.6*	1		1
Fowl	*0.6*	1		1*
Frog				1s
Total identified	*100*	167	18	149+2s
Large unidentified		87	4	83
Med. Unidentified		108	12	96
Small mamm. Un.				13s
Total		362	34	328+15s

* Fowl from Context 907, which could be later Iron Age or Roman.
s – sieved.

Clay slingshot (Fig. 21, 2–3)

Two similar clay slingshot were recovered from lower fills of the recut Iron Age ditch (613):

2. Slingshot, ovoid, chipped on one side, 43mm long, 31mm × 25mm in cross-section, weight 32g. (908.2523).
3. Slingshot, ovoid, with a number of chips, 45mm long, 31mm × 28mm in cross-section, weight 30g (920.2524).

The fabrics of both are similar, a smooth, fine matrix with sparse, rounded, clear to pinkish quartz grains ≤0.4mm. Slingshot (2) also has sparse ironstone fragments ≤2.0mm.

Finney (2006) studied 56 Iron Age sites, both hillforts and settlements, which have produced slingshots. The majority were unformed pebbles (sling stones) but at 20 sites there was clay shot. Nine of these were hillforts, including Danebury and South Cadbury. Several forts also had numbers of sling stones, which overall far exceed the handmade clay shot in number; clay slingshot are numerically uncommon. The Prebendal shot are similar in form, size and weight to those from Danebury, which ranged from 40–50mm in length, from 27–31mm in diameter, and 30–50g in weight (Poole 1984, 398, fig. 7 and 1991, 370). Finney carried out direct experiments with shot, casting with a sling using shot with a mean weight of 56.5g, and achieved a mean distance of 56 metres (Finney 2006, 100–102). The writer has personally observed slings in use in India to scare birds from crops and Finney cites their use in cattle herding. Of the 113 found at South Cadbury (Barrett *et al*. 2000), 108 came from one deposit and had not been fired (baked). These were much lighter than the Aylesbury examples and it was argued they might have been intended for hunting small game. Poole (in Cunliffe 1991, 370) has suggested that the generally heavier pebbles made them more suitable for warfare. However, the use of clay shot in warfare where a more consistent weight might be preferred, cannot be ruled out.

Slag

Three small pieces of slag were recovered from the ditch. (i) from section B-B, quite low in the recut (920); a dense piece with some flow marks, weight 122g. (ii) from section AA, higher in the recut (898) a tiny piece of 'clinker' and from a higher, pre-Roman fill (908) and (iii) a piece of smithing slag (68g).

Animal bone from the hillfort ditch

Gillian Jones

A small quantity of animal bone was found in the hillfort ditch (Table 1): 18 identified bones from the earliest ditch and 149 from the recut. Most were from cattle or sheep/goat, with pig bones forming a tenth of the total. In addition, occasional bones of horse, roe deer, water vole, badger and fowl were found. The bones were fragmented, only half being identifiable. Of the cattle and sheep/goat long bones, many were fragmented; for example, over a third of both cattle and sheep/goat long bones were classed as fragments (42% and 36%) and, of the bones with at least one zone present, an average 2.1 of the six zones were present for cattle and 2.5 for sheep/goat (for method see 'The Animal Bone from the Ritual Deposit'). Butchery marks were observed on only four bones. One was gnawed, providing the only evidence of dogs. Three were burnt and two large ribs may show signs of working.

The bones appear to be from ordinary butchery waste, occurring as isolated finds, with no evidence of any articulated remains, apart from a sheep/goat tibia and astragalus from cut 613/898 which are probably from one individual. They contrast strongly with the remains found in the ritual deposit (see below), in the greater proportion of cattle bones, the greater fragmentation, the lack of related bones, and also in the wider range of species found. Although at many Iron Age sites in southern England sheep/goat are more frequent than cattle, this does not apply to all sites, including sites in Buckinghamshire, where cattle are more frequent than sheep/goat in most Iron Age assemblages (Kidd 2009, Hambleton 1999, 2008, 2009, Albarella 2007, Albarella and Pirnie 2008).

The presence of one bone from roe deer (a metatarsal fragment) is of interest, suggesting that hunting of deer was an occasional pursuit. The badger bone (a complete humerus, GL 116mm) could also be from a hunted animal, but the dating of badger is always difficult because of the possibility that it is from later burrowing. The presence of water vole in both ditch cuts (Cut 634:534 and 734 and Cut 613:898) suggests wet conditions in the ditch. The bone from fowl is from a context (907) which could be late Iron Age or Roman. Fowl bones were present in the late Iron Age at nearby Bierton (Jones 1986).

Table 2. Animal bones from Pits 1(472) and 2(678); and the total Iron Age bone from the pits and hillfort excluding the ritual deposit.

	Pit 1 (472)	***Pit 2 (678)***	***Total IA pits and hillfort***	***Percentages pits and hillfort***
Cattle	11	8	98	*41.5*
Sheep	2	3	6	*2.5*
Sheep/goat	19	22	100+1s	*42.4*
Pig	2	2	24	*10.2*
Other species			9+1s	*3.8*
Goose		1		
Total identified	34	36	237+2s	*100*
Large unidentified	17	13	117	
Med. unidentified	46	0	154	
Small mammal un.		6s	19s	
Total	97	49+6s	508+21s	

s – sieved. For the hillfort ditch, see Table 1.

The sample is too small to justify age and measurement summaries, which are preserved in the archive.

The total Iron Age animal bone, excluding those from the ritual deposit, is shown on Table 2. This includes the bones from the hillfort ditch and from two pits (see p. 78).

Human bone from the recut ditch

Christine Osborne [adapted]

Five fragments of human bone came from three ditch fills (429, 534, 909). (Appendix 3).

Charred plant remains from the ditch

Lisa Moffett

Bulk samples were taken from the primary fill of the ditch (734/2017) and from the pre-Roman upper fill of the recut (907/2052). These were examined for charred plant remains by Lisa Moffett who found both to be 'virtually devoid of charred material', so they were not further studied.

Summary of the hillfort defence

An exploratory trench down the slope of the hill failed to produce any evidence for an outer defence, so the fort was univallate. The question of whether the rampart was revetted in any way must remain open. The skull placed directly on the base of the ditch provides a sound date for its construction (see on). The molluscan evidence from the first-phase ditch fill, not surprisingly, indicates open and dry conditions. Little artefactual evidence entered the ditch during its first phase.

The recut of the ditch, which had a shallower angle than the first ditch, would have produced a greater amount of spoil, resulting in a broader rampart – presuming that there was no revetting. Molluscan evidence from its fills show initially 'lush vegetation', then grazed grassland and an episode of ploughing, further grazed grassland giving way to ploughing – apparently in the Roman period, resulting in substantial infill. The whole indicates that the interior was consistently utilised, although substantially open, over several hundred years, there being no evidence of woodland formation. The probable extent of the fort will be discussed further on.

After several hundred years of gradual infill, the course of the ditch was precisely followed by a boundary feature of Middle Saxon date which probably relates to the nearby minster church. This is described further on.

3. The Iron Age Ritual Deposit: Introduction and Description of Human and Animal Remains

Introduction

Long term utilisation of the excavated site left few areas where features of prehistoric date could survive undisturbed (Fig. 5). Unexpectedly, however, just off-centre to the main excavation and beneath the overall dark topsoil and subsoil of the site, a mid-brown silty loam appeared (631), quite different in character to the fill of other features, and containing fragments of weathered limestone, bone and prehistoric pottery. The overall dimensions of the feature were 5.50m N/S × 5.30m E/W and it ultimately proved to have a maximum depth of 0.30m penetrating a little into the underlying natural limestone (cut 975). The feature was itself cut by a number of medieval and later features (Fig. 22). At its east end was an Iron Age pit (472) which apparently cut the deposit. A second, similar, pit (678) lay slightly to the east (Fig. 8).

The whole was initially presumed to be one of the irregular Iron Age features once categorised as 'working hollows', but it soon became apparent that this was an inappropriate description since it was filled with skeletal material, both animal and human, some articulated (Figs 22–37 and 42). The use of the phrase 'ritual deposit' to describe the feature was selected to be as neutral as possible. The deposit, the most complex feature on site, came to light, typically as time and money had largely run out. It is dated to the first half of the fourth century BC.

After the top surface of the feature containing occasional intrusive material derived from the worm-sorted subsoil above (631), had been cleaned, the underlying fill was initially divided into two zones (493 and 630) on the basis that the former contained a considerable amount of burnt material (bone, small pieces of natural limestone and charcoal) and the latter, in the same soil matrix, contained unburnt material. The burnt zone (493) occurred broadly within the eastern third of the deposit and extended along its southern margin, but during excavation burnt material was found to grade into, and interleave with, the unburnt, making it impractical to maintain a distinction between the two during excavation. A running section was initially established across the whole deposit (Fig. 42, top), but the density of bone made it impossible to maintain this without disturbing and cutting through intact bone, so it was later abandoned. The density also made it difficult to define discrete bone groups unless they were obviously articulated: bones from one level – in particular the larger ones – protruded up through material lying above. The excavation procedure adopted was to clean as large an area as possible at one time, plan everything visible at 1:10, define and number convenient groups – in particular obviously articulated material, photograph each group, lift each readily detachable piece, and then continue. One hundred and eighty-five bone groups were thus defined (numbered 3000–3184). The lifting sequence which is shown on Figure 41, is likely to roughly reflect the sequence of deposition, and was taken into account when the radiocarbon programme was devised, although it cannot technically be regarded as 'stratigraphy'. Samples from eight animals and five humans were radiocarbon dated (see Chapter Five).

The appearance of such an unexpected and important deposit at the end of the defined period of excavation (and of its funding), with development imminent, presented considerable problems. Nevertheless, although further resources would have been most welcome, and in particular the presence of an on-site bone specialist, in retrospect the recording method adopted proved reasonably effective. Figure 22 shows all of the bone individually drawn on site but the accompanying photographic record shows that some small bones were omitted.

On completion of the excavation, it became clear that the deposit's original extent had been fairly reliably determined on the east and west, but with less certainty on the north and south where there were substantial intrusions. Diminishing quantities of bone, however, suggest that the deposit never extended much further in these directions. During post-excavation the contents of the intrusions which cut the deposit, were also carefully considered.

The overall shape of the feature, as revealed at bedrock level on completion of the excavation, lacks regularity (Fig. 42). This could have arisen from there being a sequence of depositions which caused an irregular outline, or be due to the deposition process being largely a topsoil/subsoil activity which only incidentally resulted in cuts into the bedrock. That there was a concentration of bone which had been burnt and the presence of charcoal in the soil at the east end of the deposit, as noted above, indicates that some other activity apart from burial took place here; the localisation of the burning but the fact that it occurred throughout the depth

Figure 22. Plan of the ritual deposit showing all recorded bone: intrusive features stippled.

of the deposit, indicates accumulation over a restricted period of time. There was no evidence of *in situ* burnt limestone bedrock so the burnt material probably derived from elsewhere; however, it may be incidentally noted that intense heat from, *e.g.*, clamp firing, can over a period of time itself create a pit-feature (Reynolds 1979, 15).

One shallow feature, 0.80m in diameter, possibly a post-hole (Fig. 42 context 950) was recorded towards the end of the excavation, among the articulated animals of the northern group. It contained three Iron Age sherds and a little animal bone, and was apparently itself cut by a later pit but its relationship to the bone deposit is unclear.

Apart from bone, charcoal, and burnt stone (the local limestone of the hill), finds from the deposit included 371 pottery sherds (some quite large but nothing approaching a complete vessel), fragments of two weaving combs, stone – possibly from quern or querns, ten struck flints, and five metal objects.

As noted earlier, during the course of the excavation, and through most of the post-excavation phase, the deposit was presumed to have lain 'within' the hillfort and to have post-dated its construction. Some radiocarbon dates had been obtained after the initial excavation in1985, but these were insufficient to influence this view, particularly as there was initially a laboratory problem with dating the skull at the base of the hillfort ditch. A second date on the skull, arranged subsequently by Richard Osgood in the course of a study on warfare (OxA-8066, see on), suggested for the first time that the perceived sequence might be incorrect. The recent more comprehensive series of dates on bone from the ritual deposit, and a third sample on the skull combined with Bayesian analysis (see on), demonstrates conclusively that the deposit was being assembled early in the fourth century BC, but that it could have predated construction of the hillfort (dated by the placed skull). This gives the interpretation of the deposit a different emphasis. If it was not being shielded by the rampart of the hillfort the ceremonies associated with its creation would have had a high visibility, being potentially visible from eight kilometres north and lesser distances to the west and south. Moreover, the hillfort's builders could not fail to have been aware of the significance of the site they had selected, which albeit far greater in extent than the deposit itself, would have nevertheless encompassed its site.

In the description which follows the articulated human bone is considered first, then the animal skeletons associated with these burials, then the disarticulated human remains, and finally articulated and disarticulated animal bone from the 'bone mass'. The other finds are then discussed, the radiocarbon results presented, and the significance of the whole complex reviewed.

The human remains from the ritual deposit

Gillian Jones and Michael Farley, including identifications by Christine Osborne

Human bone was found spread across the ritual area, mainly occurring as partial burials but other bones occurring as single bones or disarticulated groups of bones (Fig. 23). Five groups of bones were found in articulation or partial articulation, and these are shown on Figure 23 as Humans 1 to 5. The articulated human burials were associated with animal burials, which are shown on Figure 30 as A1 (Animal 1) to A14 and which are described later. A total of approximately 242 human bones were found in the ritual place, 176 of them from Humans 1 to 5. This report is based on the recording and summary by C. Osborne, with further analysis and interpretation by G. G. Jones and M. Farley.

Six radiocarbon dates were obtained from the five partial burials (two from Human 1). These results and others were analysed using stratigraphical information and Bayesian modelling: see the Radiocarbon Dating report (Figs 47, 49–53 and Tables 14–15). In the description which follows, numbers in the 3000s refer to on-site collection units.

Method

Some information on the methods used is given in the introduction to the original human bone report (Osborne 1988). During recording, various methods were employed in attempting to 'rebuild' individual skeletons from the remains. Matching bones were paired on the grounds of similarity in size and shape. Bones which were broken, but where the break was fairly clean were pieced together in a 'jigsaw-like' manner, and some bones with surviving articulations could be matched. Plans and photographs were used to study the position and distance apart of the bones, and factors such as age were taken into account, as much of the material was immature. Many of the bones were broken and fragmented, and much material one would expect to be present was missing. In applying the methods of analysis, which can be quite subjective, care was taken to make conclusions on a sound basis and to accept the limitations of the material. Further details of each burial and the more scattered remains are given in Appendix 1.

It is presumed that dental age estimates were based on Brothwell (1972). It is not certain which source was used for age estimation from immature long bones, and more recent work (Mays 2007; Mays *pers. comm.*) has suggested older ages for the immature humans, than was proposed in the original report (which were 8.5 to 9.5 years for Human 1, 11–12 years for Human 2, 1.5–2.5 years for Human 4 and 6.5–8.5 years for Human 5). In the case of Human 2, the recorded radius length, 265mm, is very long for an immature radius, but it was not located in 2011 for re-measurement so there remains some doubt about the new age estimate, of late teens, for Human 2.

Human 1

Central to the western area of the site was the burial of a child, associated with a goat and several sheep, from 3040 (Figs 24 and 26). The bones were in their original position, and consisted of the lower body, lying supine, the upper leg bones and the right lower arm and hand. The orientation was with the head to the south-east, but the upper body and head, and most of the lower legs, were missing as these areas were cut by two medieval pits (624 and 800, respectively). From the length of the radius (172mm), the age at death is estimated as about 12 years. The gender is unknown. The legs were positioned most unusually, splayed outwards, the right femur lying on the upper body

Figure 23. Ritual deposit. Plan showing Humans 1–5 (blacked in) and the location of non-articulated human bone.

of the goat (A9, 3053/3059) and the left one on top of the right foreleg of the sheep A11 (3039). The right knee joint, which is flexed, and the upper ends of the tibia and fibula, are clearly visible on Figure 24, which confirms that the bones are in their original position. The right hand lies palm down, in correct position by the pelvis and with most bones preserved. The rib-cage of the sheep A11 lay just to the left of the child's lower back, and its left foreleg lay underneath the child's sacrum and pelvis.

A fragment of humerus from pit 624 and some foot and lower leg bone fragments found in pit 800 may also belong to this skeleton.

Figure 24. Human 1, with goat A9 on the left and sheep A11 on the right, looking south.

Figure 25. Human 3 and sheep skull A14, with Human 2 beyond, Human 5 (dispersed) and pits cutting; looking north.

Seven sheep and goat skeletons associated with this burial are described below, and are labelled A6 to A12 on Figure 33.

Human 2

Less than 0.5m to the SE of one of the sheep (A12, 3038) which was associated with Human 1, were two femora (3000, 3002), again from a child, which form part of a disturbed burial, Human 2 (Figs 25, 27 and 28). The most clearly articulated part of this burial was a left clavicle (3022), left humerus and radius (3011), which lay near the base of the deposit, lying prone and oriented with the upper end of the humerus to the south. Also belonging, were the right humerus (3007) and radius (3010) and the immature sternum (3005) which appear to be close to their original position, lying prone. The two femora were not in line with the sternum, but also lie prone (the left one to the north, 3000). The loose distal epiphysis and patella of the left one were found in position, which suggests that disturbance occurred early in the creation of the deposit. The age at death was estimated to be the late teens, from the state of epiphysial fusion and from the radius length (and see Method, for this estimate).

Other bones which probably belong to Human 2 are described in Appendix 1, including bones which were found in the fills of medieval pits 720 and 722. Also associated with Human 2 were the disturbed remains of a sheep (A13, see below).

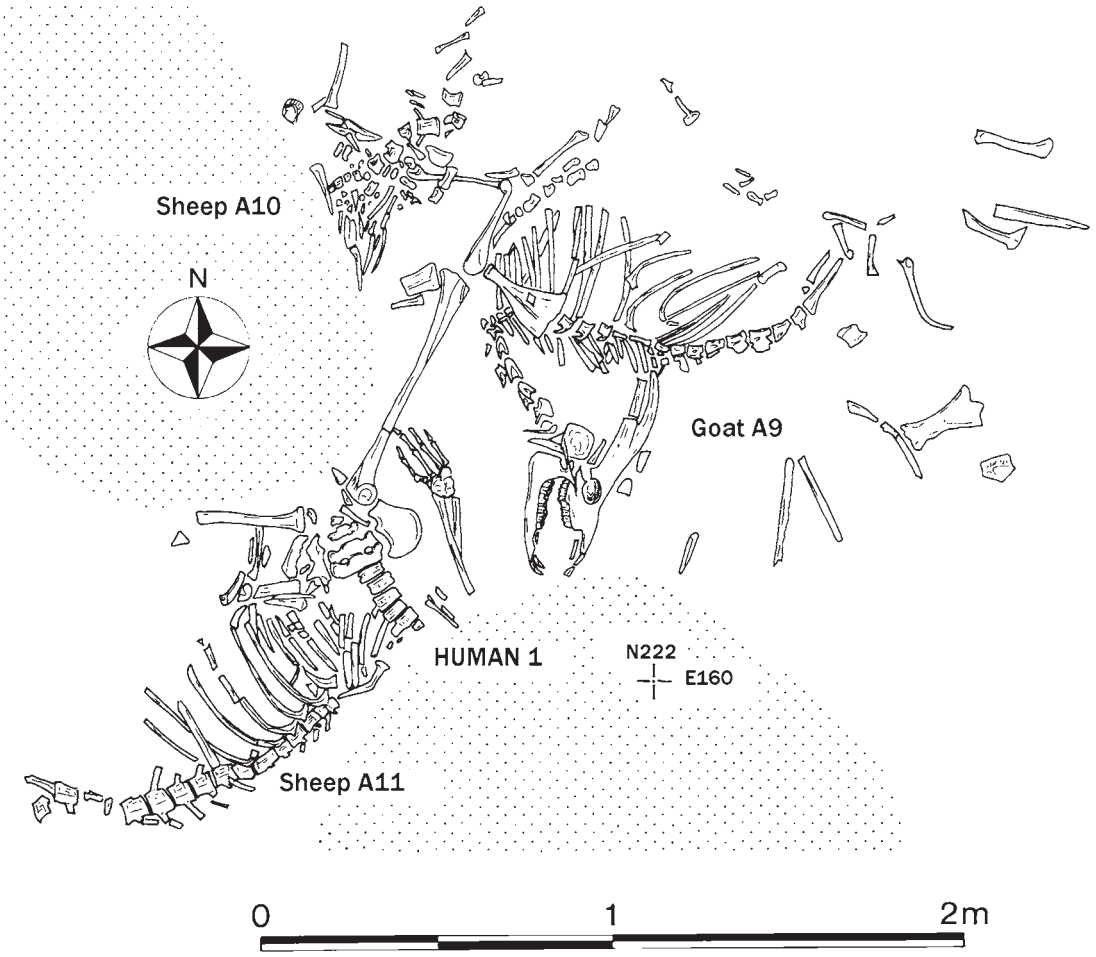


Figure 26. Plan of Human 1 and the nearest animals, Goat A9, Sheep A11 and Sheep A10: intrusive features stippled.

In close association with the left humerus (3011) and sternum of Human 2 are bones from a right foot (3006) and left foot (3024) which are thought to belong to Human 3. Also in this area was a group of articulated vertebrae from Human 5 (3026).

Human 3

To the south of Human 2, and almost certainly part of the same burial event, was another human burial, Human 3 (Figs 25, 27 and 28). This was an adult, probably a female, with the lower spine, lowest ribs and pelvis (3017) surviving, articulated and lying supine, oriented with the (missing) upper body to the south. Along the *right* side of the articulated bones lay the left humerus, radius, ulna and some left hand bones (3020), and the right radius and some right hand bones (3021, 3020). Although the left arm bones (3020) lay on the right side of the body it would appear to be part of the same skeleton. The left arm was fully flexed, with the hand resting close to the proximal humerus. The excavation record described the arm as 'so tightly bent' that it may have been 'tied together'. The elbow joint lay beneath the ilium of the right innominate (pelvis), and the fore-arm lay beneath the final rib. The arm is both to the incorrect side, and the head of the humerus is level with the lower thoracic vertebrae, i.e., the top of the left arm is level with the lower chest. So the arm had been detached at some stage, either at the time of burial or soon afterwards.

Degenerative changes to the vertebrae (Appendix 1) suggest a fully mature or older individual.

To the right of the pelvis was the skull of a sheep (A14; 3018), its front part lying under the iliac part of the Human 3 pelvis. The sheep skull was on top of the Human 3 elbow joint (distal humerus and proximal radius and ulna, 3020) of the displaced left arm.

A lower left leg and foot (3024) was found just north of the main articulated bones of Human 3, the heel lying 4cm from the pelvis (Figs 27 and 28). A little further north, was a fragmented tibia (3003) and fibula (3004), which lay above a well-preserved set of bones from the right foot, lying prone (3006). These lower limb bones are likely also to belong to Human 3. The position of the left arm and the two lower limbs suggest that a relatively large amount of

Figure 27. Human 3 with sheep skull A14 and Human 2 (top of image) with sheep A13 (fragmentary, top left).

displacement occurred after or at the time of burial, but before the bones became fully defleshed. The distal left tibia and fibula are broken where they meet the rim of the medieval pit 722. The distal shaft of the right tibia was found in pit 720.

If the left foot does belong to Human 3, then the leg must have been tightly flexed, the heel lying close to the hip, with the missing knee lying outwards to the left. The right foot bones thought to belong to this burial lie prone.

Presuming that the lower leg bones noted above do belong to Human 3, a close association with Human 2 is demonstrated, suggesting that the two burials occurred at the same time. The metatarsals of the Human 3 left foot are immediately adjacent and level with the clavicle and

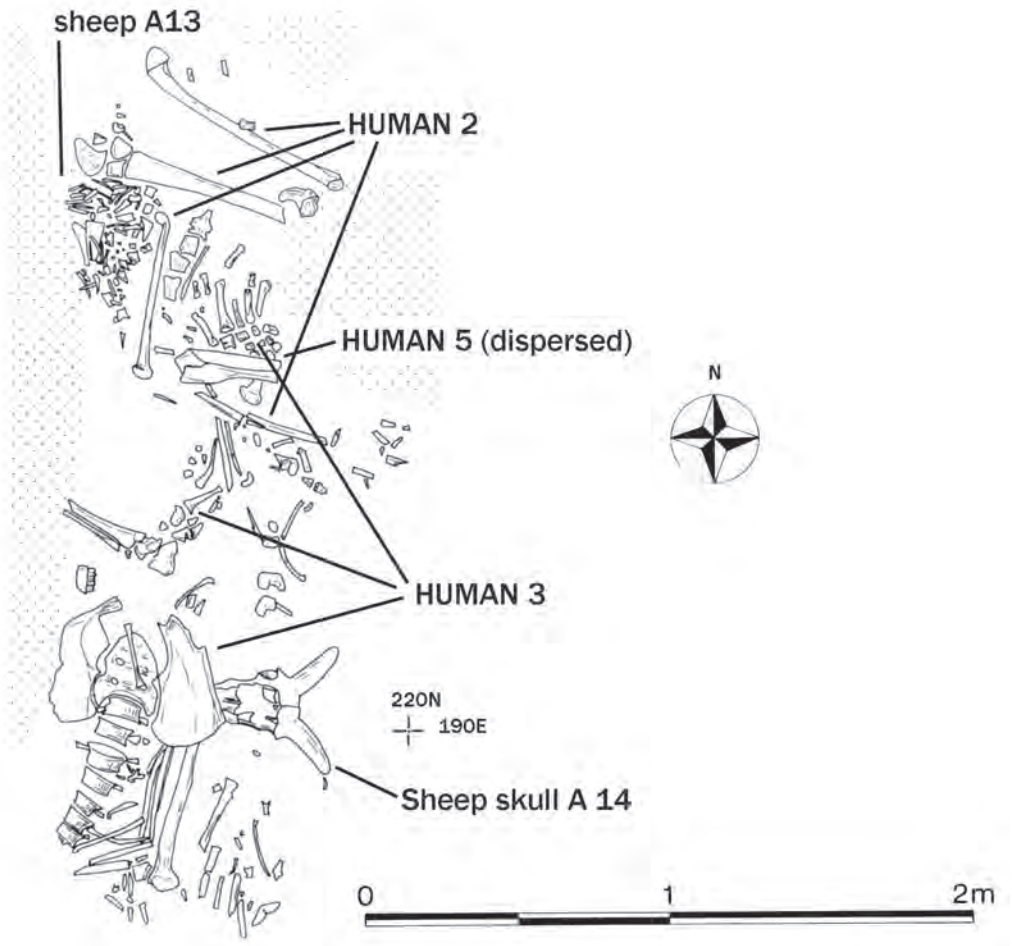


Figure 28. Plan of the southern area of the deposit showing Humans 2, 3 and 5 and sheep A13 and A14.

upper left humerus of Human 2 (3011), and the Human 3 right foot is adjacent to the Human 2 left elbow (3011) and sternum.

Human 4

In the northern part of the ritual area, the incomplete remains of a child were found (Figs 29 and 35), estimated to be about 4 years old at death. The bones were from the lower leg, both of which were articulated (tibia, fibula, some loose epiphyses) and from the feet (both calcanea and the left talus). The orientation of the bones was with the upper ends to the north-east, and therefore the missing upper body would have lain to the NE. However, both sets of bones have moved from their original position, as the fibulae lay on the anatomically incorrect side of the tibia. That is, some disturbance occurred at the time of burial or soon afterwards. The age at death is estimated from the right tibia (length 148mm).

The right leg (3099) lay parallel to, and 20cm distant from, the skull from the pig skeleton (A1, 3098, on Fig. 35), one of a group of animals to the NW of the ritual area (see below). It is possible that this pig was associated with Human 4. The human left leg bones of Human 4 (3100) are 20cm from a sheep skeleton (A3). Metatarsal bones (3104) which may belong to the child lie adjacent to this sheep. To the south, there is disturbance from a medieval pit (626), but the bones are only 30cm from the sheep A6 which is the most northerly of the animals associated with Human 1. There is thus a close association by proximity between the Human burial 4 and the animal burials in the NW area, and also a likely link with Human 1 which in turn suggests a direct temporal link with the other articulated human burials.

There is evidence about the season in which this burial may have occurred, from the age at death of the animals, see below.

Human 5

The final group of human bones which can be considered as a partial burial is a more disturbed collection, from the same area as Humans 2 and 3 (Figs 25, 27 and 28). The remains are of a child with an estimated age at death of about 10 years (from the right humerus and ulna, lengths 205, 174mm, respectively). Cervical and thoracic vertebrae

(3026) were found in articulation and were below, and therefore buried before the tibia (3003) from Burial 3. Their orientation indicated a burial with the head to the west. Other bones thought to be from this individual were more widely spread, in the area between and to the east of medieval pits 720 and 823, and with some matching bones found within these pits. Although similar in age to Human 1, the two could be distinguished in terms of general difference in size, duplication of various bones and distances apart.

Many of the bones from Human 5 are from 3026, which plans, photographs and notes show to have been on the base of the deposit. The bones from this child appear, therefore, to have been disturbed and spread before the deposition of Humans 2 and 3.

Other human bones from the ritual deposit

Other human bones were found in the ritual deposit, some of which may belong to Humans 1–5. They are listed in Appendix 1, in the order given in Table 3, and are shown in Figure 23. They add at least four further individuals, one immature and the others adult (based on the number and duplication of individual bones). Some bones occurred as small groups probably from one individual though not articulated, but most were scattered, totalling 66 bones (and given 34 different collection unit numbers), so they probably derive from more than four individuals. Bones from adults were more frequent than immature bones. None occurred near Burial 1, but several were found near Burials 2, 3 and 5, spreading northwards towards the central

Figure 29. Human 4 infant bones to the north of the deposit, looking east.

Table 3. Spatial patterning of the human bones from the ritual area excluding Humans 1 to 5.

Area	***Number of bones***	***Count of Special Find Numbers***
Other human bones near Burial 1	0	0
Near Burials 2, 3 and 5	9	5
Near Burial 5 and east of intrusive pit 720	8	3
Northwest area, near Burial 4	10	3
Central northern area, E of Burial 4	6	5
Central area, east of sheep/goats A6, 7, 8 and 9	12	6
Isolated human bone NE of intrusive pit 544	1	1
Central southern area, east of intrusive pit 624, NE of Burial 2/3/5 and SE of Burial 1	19	10
Within the eastern mass of animal bones	1	1
Total	66	34

area. Half of the bones occurred sporadically across the central area, from north to south, east of Burials 4, 1 and 2/3/5, but west of the main mass of animal bones. Only one human bone was found within the very dense mass of animal bones in the eastern part of the area.

One group of four human foot bones was found with the pig skeleton (Animal 1, 3098), the most northerly animal skeleton, quite near the human child, Burial 4. A few other human bones were found in this north-western area, including one found with the sheep skeletons A4 and A5.

Summary of human bone from the ritual deposit

To summarise, parts of five articulated individuals were identified, three of them children of about 4 years, 10 years and 12 years, one in the late teens and one an adult, probably female. The unarticulated remains indicate four further individuals, one immature and three adult.

Some human bones belonging to the articulated skeletons have been found in the intrusive medieval pits. For example, in Burial 2, the right proximal femur is from pit 720 and fits the distal femoral shaft from 3002.

The animal bone from the ritual deposit

Gillian Jones

Introduction

Associated with the Human Burials 1 to 5, to the western side of the ritual area, were the partial skeletons of eight sheep, two sheep(goat), that is, probably sheep not goat, one goat and a pig, plus two sheep skulls. To the east of these, there were further scattered animal bones, and in the eastern area there was a deep mass of bones. These included some further groups of articulated bones, but the majority were not articulated. Radiocarbon dates on one sheep skull (and six of the human bones) from the western area, and from eight sheep/goat bones from the bone mass, place the deposit as a whole in the early 4th century BC (see Radiocarbon Dating Report).

The bones were well preserved, many being complete. There was good survival and recovery of small bones, for example, carpals, tarsals, loose vertebral epiphyses and phalangeal epiphyses, although almost all were hand-collected. The surface of the bones was hard and little eroded. Only a handful bore chopmarks, and none showed gnawing marks. Burnt bones were fairly common, occurring mostly in the eastern mass of bones.

The location of the deposit is shown on Figure 8 (975), the overall distribution of bone within it on Figure 22, the animal partial skeletons on Figure 30 and the sequence of lifting and collection numbers on Figure 41. The bones found are summarized on Table 4 and illustrated on Figures 24–28 and 31–36.

Method

This section describes the methods used for identifying and recording the bones and classifying the partial skeletons. It gives some details and references regarding the age estimates for the sheep, which are used to interpret season of death from tooth wear. A re-interpretation of published sources, combined with the unusual collection of young sheep at the site, has also provided new information about the age of epiphysial fusion in young sheep.

Bone groups were classed as articulated on the basis of at

Table 4. Animal bone from the ritual deposit.

	Total BN	***BNZ***	***Min. No. Ind.***	***BN articulated, assoc. with Humans 1–5***	***BN eastern mass articulated***	***BN excluding articulated***
Cattle	207	136	5		19	188
Sheep/goat	2055+15s	1877+14s	28	414	80	1561+15s
Pig	65	61	3	55		10
Horse	2	2	1			2
Deer, probably red	3wkd		1			3
Total, main species	2332+15s	2076+14s	38	469	99	1764+15s
Cf. field vole	1					
Water vole	1					
Common toad	5					
Total identified	2339+15s					
Unidentified						
cattle-size	140					
sheep-size	684					
small mammal	5s					
Total	3163+20s					

S: sieved; wkd: worked; BN: number of bones; BNZ: the more complete bones, where at least one zone is more than half present, see Method; Min. No. Ind.: the minimum number of individuals. The final three columns show: the articulated remains associated with the human burials; articulated groups and skulls in the eastern mass of bones; and other bones found. The deer bones are all worked antler combs.

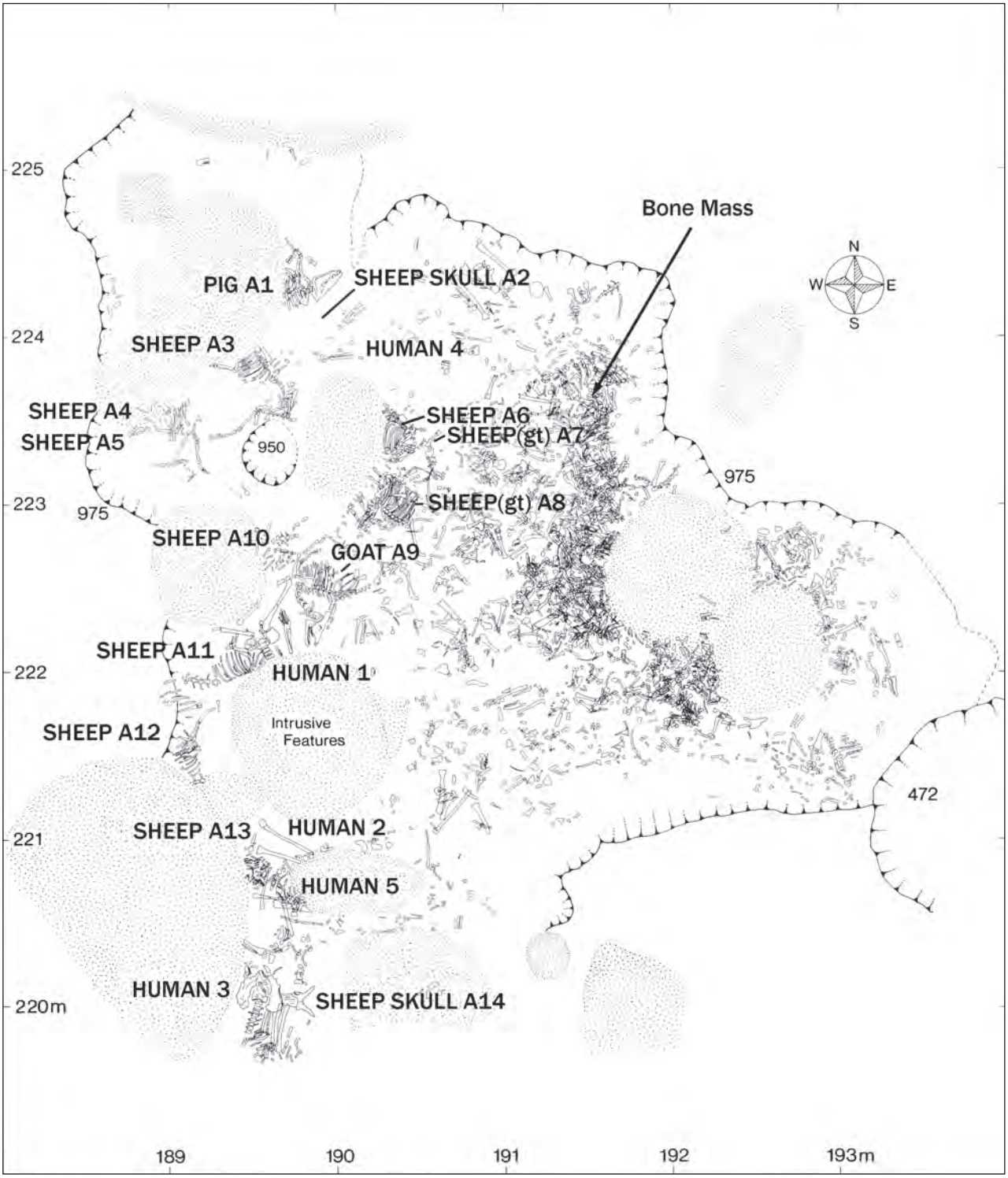


Figure 30. Plan showing human burials 1–5 and their associated animal burials 1–14, lying west of the 'bone mass'.

least two sources of information: the excavation notes, plans and photographs, and the bones themselves.

Articulated groups were classified following Grant (1984b), as:

a) skeletons: articulated skeletons with at least some of the axial skeleton and at least some limb bones;
b) articulated remains: less complete groups (*e.g.*, sets of vertebrae, or related groups of long bones) but recognized as articulated on excavation;
c) skulls.

The animal bones from the site were recorded on paper in

Figure 31. Goat A9 after excavation of Human 1, looking south.

1988 on two lists, one for the more complete bones (the 'zone' list), and the other for fragments. On the zone list (BNZ), were recorded:

- substantial pieces of skull; jaw-bones with at least one tooth.
- the following when more-than-half complete: tooth, vertebra, distal scapula, acetabulum of the pelvis, calcaneum, astragalus and phalanges.
- for the long bones the following parts (zones) of bones when more-than-half complete: proximal epiphysis, proximal metaphysis, upper and lower shaft, distal metaphysis and epiphysis; the main long bones have six zones and the metapodials have five (only one zone for the proximal end) (Jones 1994, Fig. 22).

The minimum number of individuals for the deposit as a whole was calculated from the most frequent more-than-half complete zone, which for cattle was five (right tibia distal metaphysis), for sheep/goat was 28 (right humerus lower half of the shaft) and for pig was three (right squamous temporal bone of the skull).

Identifications (including sexing pelves) were made using reference collections of the author and the Environmental Archaeology Unit, University of York, and published work by Lawrence (1980), Boessneck, Müller and Teichert (1964) and Payne (1987). Adult criteria were used for sexing immature pelves.

The method for recording mandibles and teeth followed Payne (1973) for sheep and goat and Grant (1982) for cattle and pig. The sheep and goat mandibles were summarized using Payne's wear stages, subdivided using wear on the most recently erupted tooth. Age at death estimates for sheep are based on observations of live sheep including traditional and rare breeds (Jones 2006). Summary statistics are shown on Table 6, column 3 – the central point, majority and range excluding outliers (based on Jones 2006, Figs 9 and 17). In Figure 38, the central point only is shown, for economy of space. Variation around the central point is of a few weeks at birth, months during the first year, but increases to years at later ages. In order to show more detail for lambs, Payne's stage B was also subdivided, with age estimates based on Figure 3 (Jones 2006) and the primary records, into B15 (one to five cusps in wear), B6+ (6 or more in wear and M1 before half up), and Bt (B terminal, M1 half up to enamel wear only, judged to be visible in the live animal), see Table 9.

As an example to show the method used to suggest season at death, see Table 6, there were three cases at stage Bt (skull A2 and two others). In the live sheep study, the majority of lambs at stage Bt were in the 3 months age class, which included sheep aged 2 months 16 days to 3 months 15 days. The likely season at death is thus 2½ to 3½ months plus the likely birth season (see *ibid*., 156–7, 168–9). The underlined area uses the central point (also 3 months, for Stage Bt), plus the central five weeks of the birth season. Measurements followed von den Driesch (1976), with additional measurements defined by Davis (1996).

Age at death estimates for epiphysial fusion in sheep

Table 5. Animal bone groups associated with human remains.

Context	***A1***	***A2***	***A3***	***A4***	***A5***	***A6***	***A7***	***A8***	***A9***	***A10***	***A11***	***A12***	***A13***	***A14****
	3098	3104	3128/	3045	3045	3144/	3143	3142/	3053/	3059	3039	3038	3008/	3018
			3078			3143		3126	3059/				3010/	
									3141				3012	
Species	Pig	Sheep	Sheep	Sheep	Sheep	Sheep	Sh(gt)	Sh(gt)	Goat	Sheep	Sh(gt)	Sheep	Sheep	Sheep
Class	skel.	skull	skel.	skel.	artic.	skel.	artic.	skel.	skel.	skel.	skel.	skel.	skel.	skull
Figure	30, 35	30	30, 33	30, 33	30, 33	33, 34	33, 34	33, 34	24, 26	33	24, 32	33	27, 28	27, 28
Plan	120	120	120,127	120	120	129	129	127,129	119,129	119	118	118	117,118	117
Assoc. Human	4	4	4	4	4	1	1	1	1	1	1	1	2	3
	L R	L R							L R				L R	L R
Skull	+	+							+				+	+
horncore		+ +							+ +					+ +
maxilla	+ +								+ +					+ +
mandible	+ +	+							+ +					
Axial														
cervical v	7	2		2		6	5	7	6		2		4	
thoracic v	4		12	7		12		12	13	9	12		8	
lumbar v			6					1	6	6	6	2		
sacrum			1						1	1	1			
caudal v			1								7			
rib p	7		24	4		15		20	20	11	12			
sternal v	2		5	4		6		7		6	7	3	19	
Fore limb	L R		L R	L R		L R		L R	L R	L R	L R	L R	L R	
scapula d	u u		u u	u +		u u		f f	f f	u	+ f		y +	
humerus p	u u		u	u u		u u		y y	f f	u	u u		u	
d	u u		u	y y		y y		f f	f f	u	y y	f		
radius p	u u		u	f f		f f		f f	f f		f f	f	f	
d	u u		u	u u		u u		f	f f		u u	f	u	
ulna p	u u		u	u u		u u		f f	f f		u u	f		
carpal	12		5	11		3		1	6		5	4		
metacarpal	uuuu		u	u u	u	u			f f		+	f	+	
Hind limb			L R	L R	L R				L R	L R	L R	L R		
pelvis acet.			u u							u u	y y	f		
femur p			u u							u		f		
d			u u							u	u u	f f		
tibia p			u u		u					u u	u u	y y		
d			u u		u					u u		f		
tarsal			6	6					10	6				
metatarsal			u u	u	u				f f	u u	u			
Phalanx 1st	4u		4u	13	u	2u			8f	3u				
2nd	3u		5u	12	u	2u			8f	2u				
3rd	1		3	10		2			8	1				
Sex			M						F	?M	-	F		F
Side on which														
buried	R		R	L		L		L	L	L	R	L	L	
Age estimate	6m	3m	1–3m	2–4m	2–4m	2–4m	-	29–42m	4½–6½yr	1–3m	3–5m	26–36m	3–5m	4–5yr

skel. skeleton; artic. articulated remains; + present; v vertebra; acet. acetabulum; p proximal; d distal; u not fused; y partially fused; f fused.
* radiocarbon date. Carpals, tarsals and phalanges from A4 and A5 were not separated. For age estimates, see Method, Appendix 2 and Table 9.

follow the combined ranges, quoted in Moran and O'Connor (1994), found by Lesbre, Tschirvinsky, Smith, Garcia-Gonzales and Hatting for the early-fusing elements, that is, the scapula (coracoid), distal humerus and proximal radius. It is known that these authors present original work, and the information is therefore likely to be more reliable than the much later figures given by Silver in 1969. The source of Silver's 1969 figures for sheep appears to be unknown. Additional information and useful discussion is available for the mid- and late-fusing elements, in Davis (2000) and Clutton-Brock *et al.* (1990). For the mid- and late- fusing elements, the ranges shown by Tschirvinsky, Smith, Garcia-Gonzales and Hatting, plus those found by Davis, are used (Table 5). Most of the ranges for rams in Davis' study (2000, 375) are within those shown by the other authors. The estimated age of fusion for castrates (*ibid.*, 381) may be very much delayed, and these are shown in parentheses. Lesbre's figures for mid- and late-fusing elements have a higher upper range for most elements compared with Tschirvinsky, Smith, Garcia-Gonzales and Hatting. These upper ranges are within Davis' estimates for castrates for the proximal humerus, distal femur and proximal tibia, and outside them for the proximal ulna (olecranon), distal radius, proximal femur and calcaneum. The work of Chaix and Grant (1987) on 55 prehistoric sheep skeletons from the Sudan was helpful in comparing the order of fusion. In Garcia-Gonzales' work (1981), the 'partially fused' category is combined with the 'fused'. In the current work, bones were defined as partially fused when the shaft and epiphysis were joined but there remained an area not yet filled with bone.

For the sheep skeletons, comparison of which elements

Figure 32. Sheep A11 after excavation of Human 1, looking south.

were unfused, partly fused or fused has allowed a closer age estimate than can be made from single long bone elements. For example, using the estimates shown on Table 10, in sheep A8, the proximal humerus was partly fused, indicating that it is between 16 and 42 months old, but the distal radius and olecranon were both fused, suggesting that the sheep is older than 16–36 months. It is more likely, therefore, that the age at death is in the upper half of the proximal humerus range (29–42 months), and this was used as the age estimate. A similar method was used for sheep A12.

Articulated groups associated with Human Burials 1 to 5

The bone groups associated with the human burials are shown on Figure 30, as animals A1 to A14, numbered from north to south. They are described individually in the Catalogue (Appendix 2) and are cross-referenced to figures and plans (Fig. 41) on Table 5.

Animals associated with Human Burial 1

The largest group of partial skeletons, a total of seven sheep or goats, is related to the child, Human Burial I (Figs 24, 26, 31, 32, 33, 34). To the child's left, the skeleton of a young sheep (very probably sheep not goat) – A11, 3039 (Fig. 32) – lay on its right side facing the child skeleton, with the anterior rib-cage and fore legs underneath the left femur, sacral and pelvic region of the child. The skull is missing but this area was disturbed by two later pits. The pelvis and upper hind limbs lay awkwardly, bent up and over the spine. On the right hand side of the child lay the skeleton of an adult female goat (A9, 3053/3059). It lay on its left side with the neck bent back and the proximal humerus a few centimetres from the knee of the child. When deposited the knee appears to have been resting on top of the front of the animal (the sterno-cephalicus muscles). The head is on its left side, near the child's right fore arm. The burial may have been done very soon after slaughter, while the neck was still easily flexed. The toe bones of the left fore leg are curled back against a large stone. No marks were observed on the bones. On top of the fore feet of the goat was another young sheep (A10, 3059). The poorly-preserved rib-cage lay just north of the right knee of the child. The better preserved lower spine and hind legs were close to the large stone. In relation to the child skeleton, it lay with its back parallel to the child's right shin. There is no evidence about either the child's lower right leg or the sheep's head and neck region, due to disturbance by the later pit.

North-east of the main part of the goat skeleton (A9) there was a pair of goat lower hind limbs (3141), visible to the lower right on Figure 34. They were not recognized on excavation as belonging to the goat, but photographs and sketches of their position, and the maturity of the bones, make it certain beyond reasonable doubt that they do belong. This links the group of animals associated with Human Burial 1 to a further group of articulated remains, A8, A6 and A7 (Fig. 33). The hind limbs of goat A9 lay

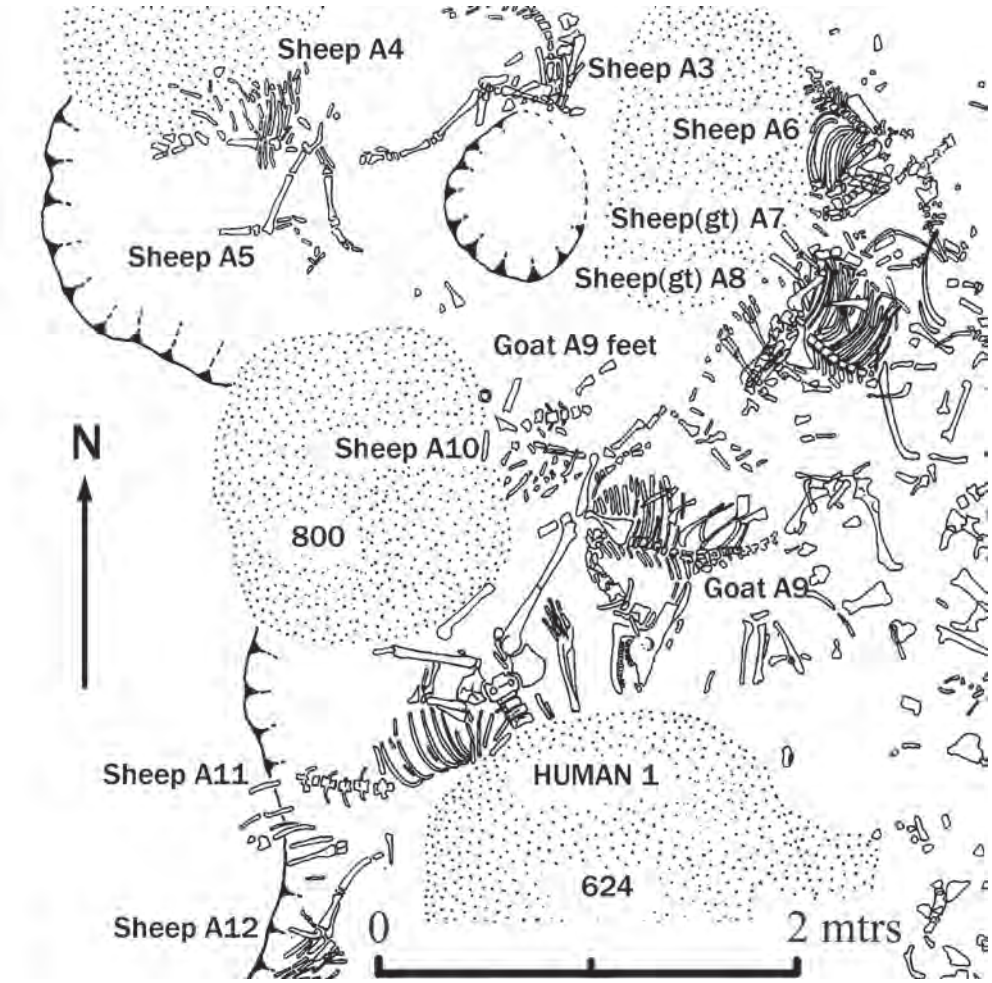


Figure 33. Plan of Human 1 and immediately associated animals (A6 to A12), with A4 and A5 to the north-west

underneath the bent-back neck of a sub-adult sheep(goat), A8 (3142/3126). The rest of this partial skeleton lay on its left side and with a similar orientation to the goat, and to the previously noted sheep A10 (3059). No skull was found, but this area seems to have been disturbed, as is seen in the absence of the upper hind limb bones of the goat. Only 5cm away from sheep(goat) A8 was the partial skeleton of another young sheep, A6 (3144/3143), and associated with this was a row of neck vertebrae from an adult sheep(goat) A7 (3143). The skull was missing from both of these (A6 and A7), but the bones which did survive were well preserved and the area where the skull would be expected was not disturbed by later pits. It may be that the skulls had been removed before deposition. The young sheep A6 was, again, on its left side, but with a different orientation.

To the south-western side of the child (Human 1), beyond the sheep A11 previously noted which lay partly beneath the child, was a further sheep skeleton, A12 (3038). Its fore leg was only 7cm from the tibia of sheep A11, and the burial therefore probably occurred at the same time. The shape of the pelvis and the maturity of the bones suggest a young adult ewe, which might have indicated the loss of a valuable animal. However, this sheep was extremely small (see below) and may have been chosen because of its small size.

There is thus a group of seven partial animal skeletons which form part of the same event as the burial of this child (Human 1). The two animals on either side of the child were buried first. Two have the neck bent back, which may intentionally mimic the position of the animal at the moment of slaughter. Sheep A10 overlaid the feet of the goat, and must therefore have been deposited at the same time or a short time afterwards. No butchery marks were observed, and it is thought that the meat was not removed. For example, sheep A6 was found with the forelegs bent up close to the rib-cage, all the bones being in their correct anatomical position.

Articulated animal bones were found also with the human Burials 2 and 3 (see below). Although intrusive later pits prevent a direct link being made between these animals and those associated with Human 1, they were only 40cm distant.

Figure 34. Sheep A6, Sheep/goat A7 and A8 and the feet of goat A9, looking east towards the eastern mass.

Animals associated with Human Burial 2

Associated with the Human 2, another child, was a sheep skeleton, A13 (3008/3010/3012) (Fig. 27), which was more fragmented, incomplete and disturbed than the previously-described animal skeletons. The rib-cage lay on top of the right humerus of this child (3007), and the left radius and metacarpal lay very close to, and at a slightly higher level than, the distal end of the child's left radius, which indicates that the sheep was buried after or at the same time as Human 2. The neck bones of the sheep (3012) were not found in a continuous line with the thoracic vertebrae, but it is thought they do belong, given their position and similar immaturity. The neck bones were underneath the right foot bones thought to belong to Human 3 (3006). The sheep skeleton was on its left side, with its neck bent back.

The sheep A13, therefore, confirms the link between Human 2 and the human lower limbs that probably belong to Human 3, and suggests that the order of deposition was, first, Human 2, then the sheep, then Human 3.

Animals associated with Human Burial 3

The skull of an adult ewe (A14, 3018) was placed at right angles to, and partly under, the right pelvis of Human 3 (3017, Figs 25, 27, 28). The absence of the lower jaws and any neck vertebrae seems to be significant, as they would certainly have been recovered had they been present, and are unlikely to have decayed given the survival of the much more fragile maxillae. No butchery marks were seen. Either the mandibles were removed when the skull was fresh, or the skull was deposited after decay of the soft tissues. The latter seems the more likely judging from the bones as found, although the rest of the bones considered so far are thought to have been deposited when fresh. Lying in the pelvic area of Burial 3 lay a single immature sheep metatarsal bone.

Animals probably associated with Human Burial 4

In the north-western part of the area, north of Human 1, were three partial animal skeletons, a pig and two sheep, plus a fragmentary sheep skull and other articulated sheep bones (Figs 30 and 35). The association of the pig, A1 (3098), and the sheep, A3 (3128/3078), with the Human 4, an infant, has been described above in the section on human remains. From the same context as the Human 4 metatarsals, were skull fragments, a lower jaw and two neck vertebrae from a young sheep (A2, 3104). The western part of this context was adjacent to the thoracic area (3128) of the sheep A3. Other than this, there was no stratigraphical relationship between the animal skeletons, so the association is inferred from their proximity and the

Figure 35. Pig A1 looking SE, with right tibia and fibula of Human 4 top right.

good state of preservation, indicating that the material must have been covered soon after deposition. The pig A1 and sheep A3 are cut into by a later pit (489), but the orientation of the skeletons suggests that the head of the sheep must have been quite near the tail end of the pig. Both the pig A1 and the sheep A3 lay on their right side, the pig oriented roughly E/W and the sheep NW/SE.

The pig skull and upper body (A1) were well-preserved. There was certainly no use of the meat, as both shoulder blades were intact and in place either side of the rib-cage. Survival, for example, of the tiny epiphyses of abaxial phalanges, suggests that the skeleton was covered moderately quickly and was not disturbed (other than by the later pit). The pig died at about six months old. Taking an expected season of birth as late March or early April, the pig was probably slaughtered in September or October (for method see Appendix 2).

The sheep A3 (3128/3078) was more complete, though the skull region was cut into by the later pit. It appears to have been buried whole, with no use of the carcass, although in theory the skin could have been removed. No marks were observed and the feet were found intact. As with some of the other skeletons, its position was somewhat awkward. The right hind leg lay normally, but the left one was bent up to lie close to the pelvis.

The other sheep in this group, A4 (3045), was 10cm to the west of the right hind foot of sheep A3 (3078). The left side of its rib-cage and both fore-limbs were very well-preserved. The lower hind limbs were present but the pelvic region was disturbed by the later pit, and the right side of the rib-cage was rather broken and disturbed, showing perhaps some erosion of the upper part of the burial. The sheep A4 lay E/W and on its left. Also in this area were two articulated limbs from another young sheep, A5 (also context 3045).

The A3 to A5 skeletons were separated by three pits (950, 626 and 800) from animals A6 to A10, which were associated with Human Group 1. There is therefore no direct link with this human burial but they are at the same level and within a metre of each other, and are possibly part of the same event.

Animals associated with Human Burial 5

There were no articulated animal groups directly linked to Human Burial 5, although some bones probably belonging to this child were spread over a wider area where animal bones do occur.

Discussion of the articulated animal remains associated with humans

Nine of the fourteen articulated animal bone groups or skulls died at less than one year old, and an estimate has

Table 6. Likely age and season at death of the young animals.

	Assoc. Human	*Age estimate (months)*	*The months, to ¼ of a month, beginning in March* M---A---M---J---J---A---S---O---N---D---J---F---M---
Likely farrowing time			--A-
Likely lambing time			- A---M-
			Likely season at death (birth season plus age estimate)
Pig A1	4	*c.* 6	S---O---
Sheep skull A2, stage Bt	4	3; 3; (2–4)*	---J---A---
Sheep skeleton A3	4	1–3	-M---J---J---A-
Sheep skeleton A4	4	2–4	-J---J---A---S-
Sheep artic. A5	4	2–4	-J---J---A---S-
Sheep skeleton A6	1	2–4	-J---J---A---S-
Sheep skeleton A10	1	1–3	-M---J---J---A-
Sheep(goat) skel. A11	1	3–5	-J---A---S---O-
Sheep skeleton A13	2	3–5	-J---A---S---O-
Eastern area mandibles			
2 at Bt (+ see A2, above)		3; 3; (2–4)*	---J---A---
10 at C1–2		4; 3–5; (3–7)*	---J---A---S---O---

For general method, see Method. Bt: see Table 9. *The three figures show the central point, majority and (in parentheses) the range excluding outliers found in the live sheep study (Jones 2006, figs 9 and 17). The dotted line uses the 'majority' figure plus the lambing season; the underlined area shows the 'central' figure plus the central five weeks of the lambing season; months: *e.g.*, 3 months includes from 2.5 to 3.49 months. For pig, see Appendix 2.

been made of the season in which the immature animals are likely to have died, see Table 6. More detail is given in the Method section, in Appendix 2 for each animal, and in the section below, 'Evidence for season, from the age at death of the sheep'. In only two of the articulated groups, the pig A1 and the lamb skull A2, were the teeth present, and therefore most of the estimates are based on epiphysial fusion.

Of the sheep buried with Human 1, three were immature, A10, A11 and A6. They are estimated to have died at 1–3, 3–5 and 2–4 months, respectively. There are stratigraphical links between A11, the child, A9 and A10, which show that the older lamb A11 (3–5 months) was deposited before the younger one (1–3 months). Making the assumption that all were deposited as one event, the overlap in age estimates is at 3 months. This is still consistent with both being born in the same year and within the normal lambing season, one being born early and the other late in the lambing season. The overlap in the season at death estimates is in late June to early August, which thus gives an estimate of the season during which the burial of the child and animals occurred.

In addition to these three (A10, A11 and A6) all the other young animals, A2, A3, A4, A5 and A13, could have died at the same time, using the seasonal evidence shown on Table 6, apart from the pig A1. Breeding in pigs is more variable than in sheep, so the season estimate is much less certain than for sheep where breeding is more strongly seasonal.

Of the young sheep, the pelvis was generally absent and only two could be sexed, one being male and one probably male (A3 and A10). It is the young ram lambs which are mostly surplus to breeding requirements and may most easily be spared. Three of the five adult animals could be sexed and they were all female, viz., the goat and two sheep. The goat was estimated to have died at 4½-6½ years (Deniz and Payne 1982). Two of the sheep, the ewe A12 and the unsexed sheep (goat) A8, were young adults, which probably represent the loss of valuable, breeding animals. A12, however, was an exceptionally small sheep (see below) and may have been chosen because of it diminutive size. The sheep A7 and A14 were both adults, the latter a ewe, four to five years old at death.

To summarize the age evidence; the animals associated with humans consisted of eight lambs of about three months old, a pig about six months, a sub-adult sheep, a sub-adult sheep(goat), two adult sheep and an adult goat.

Some general comments may be made on the articulated bones. The very good preservation can be seen by the recovery of different long bones zones. Each long bone was divided into six zones (five for the metapodials), see Method. For these articulated groups, on average 5.3, 5.8, 4.9, and 4.6 of the 6 zones were present (for the humerus, radius, femur and tibia, respectively), and for the metacarpal and metatarsal, 4.5 and 4.8 of the five zones were present (Table 7). A high number of vertebrae and phalanges were present. It can be said, therefore, that there was little bone loss after the bones had been fully covered, *e.g.*, by erosion or recovery, with the exception of the late intrusive pits. They were probably covered by a considerable depth of soil, for the preservation to be so good (see previous discussion of possible rampart cover).

It was striking that two skulls, both sheep, were found without postcranial bones, and that no skull was found with any of the sheep and sheep(goat) partial skeletons. Only in the cases of the pig and the goat was the skull present. Of the eight sheep groups without skulls, four provide no data due to intrusive later pits. For three of the remaining four animals (A6, A7 and A8) where skulls might be expected to survive it appears that the skull had been removed before deposition. (Evidence for the group A10 is uncertain).

In conclusion, most of the animals associated with

Table 7. Anatomical analysis of the sheep/goat bones.

	Articulated remains assoc. with humans			***Artic. remains in eastern area***			***Other bones, almost all from eastern area***			
	BNZ	Zone L+R	Average z/bone	BNZ	Zone L+R	Average z/bone	BN	BNZ	Zone L+R	Average z/bone
skull	4						162	110		
horncore	(6)						9	7		
maxilla	(4)						25	23		
mandible	3						42	20		
loose teeth							35	33		
vertebra	158				40		452	449		
scapula	14						51	24		
humerus	14	12	5.3/6	3	3	6.0/6	49	46	18	3.7/6
		11			3				28	
		12			3				30	
		13*			3*				33*	
		13			3				31	
		13			3				31	
radius	13	13	5.8/6	4	3	4.8/6	38	35	23	3.3/6
		13			3				23	
		13			3				21	
		13			3				20	
		12			4				16	
		11			3				12	
ulna	12			3			35	23		
pelvis	7						44	38		
femur	7	4	4.9/6				61	59	28	2.8/6
		4							30	
		5							25	
		7							28	
		7							26	
		7							27	
patella	4						20	20		
tibia	9	8	4.6/6				83	63	24	2.7/6
		8							24	
		8							34	
		7							30	
		6							32	
		5							27	
carp/tars	63			7			159	159		
metacarpal	10	10	4.5/5	4	4	5.0/5	29	20	17	3.8/5
		10			4				15	
		9			4				16	
		8			4				16	
		8			4				11	
metatarsal	9	8	4.8/5	2	2	5.0/5	50	38	26	3.1/5
		8			2				23	
		9			2				26	
		9			2				24	
		9			2				19	
metapodial							15	15		
1st phal	31			9			91	90		
2nd phal	30			6			57	57		
3rd phal	26			2			54	54		
Head	7			0			273	193		
Body	238			50			833	757		
Foot	169			30			455	433		
Total 2055	414			80			1561	1383		
*MNI 28:	7			2				19		

BN: number of bones; BNZ: more-complete bones (at least one zone more than half complete); zones: proximal epiphysis, proximal metaphysis, upper and lower shaft, distal metaphysis and epiphysis, see Method; average z/bone: average number of zones present.

* MNI: minimum number of individual (right humerus distal shaft).

Human 1 appear to have been deposited when fresh. For the goat A9 the whole animal was buried, although there was some disturbance after burial, *e.g.*, the pelvic region and upper hind legs were missing. For the sheep A11 again the whole animal appears to have been buried, although the hind legs lay awkwardly. For the other animals associated with Human 1, A6, A8, A10 and A12 were in articulation and their missing parts can be explained by later pits and post-depositional disturbance, apart from the absence of skulls referred to above. The final animal group associated with Human 1, A7, was a set of neck vertebrae. The most disturbed animal was A13 near Human 2, where the degree

Figure 36. Vertical view of part of the eastern bone mass cut by pit 544 at the top of photo: north on left.

of disarticulation was considerable and comparable with the disturbed condition of the human bones in this area. The disarticulation seems to have occurred either fairly soon before or after deposition, or as part of the actual process of deposition since the bones which have survived are uneroded, and small bones and loose epiphyses have survived.

Some thought and purpose seems to have gone into the positioning of the animals. The sheep and goat were on either side of, and facing, the Human 1 child. The four animals most closely associated with the child, *i.e*., linked stratigraphically, all have the spine nearer the child and their feet further away (A8, A9, A10 and A11). The head of the goat A9 was placed to the right of the hip of Human 1. This is similar to the placing of the sheep skull A14 from 3018, which was tucked under the right hip of Human 3.

The bending-back of the neck of buried animals has previously been referred to. Some element of careful positioning in relation to human burials seems evident in the case of the goat A9, and, probably, the sheep (goat) A8. However, other aspects of the positioning suggests rather less care, viz., the position of the hind limbs of the sheep A11 and A3.

A few miscellaneous animal bones were found in the same area as the articulated groups. Of these most were sheep/goat (67 bones, the majority of which were considered probably to belong to the articulated groups), a few (eight bones) were cattle, none were pig and one was horse. There were a few unidentified bones, seven of cattle-size, and 46 of medium-sized which may or may not belong to the articulated bone groups. Two were small mammals: one a water vole (*Arvicola terrestris*), found with sheep A4 and A5, and one a (?field) vole (*Microtus* species), found near Human Burial 2.

Only a few burnt fragments were found near the articulated groups, in contrast with the bone mass shortly to be described. There were five burnt bones (from 3026 and 3012, one sheep and four sheep-size), all from the area of Human Groups 2 and 3, where the human bones and the sheep bones from A13 were partly disarticulated.

Description of the eastern bone mass

The animal skeletons and articulated remains described so far formed 20% of the total identified animal bone from the ritual area (469, of 2359 bones). All were to the western side of the area. At the eastern edge of the deposit, there was a deep mass of bones. Here the bones were much more scattered, and were mostly disarticulated (Fig. 36). An example of the relationship of the skeletons with the rest of the bone is shown on Figure 34 where a group of disarticulated bones to the upper right may also be seen to the lower-middle of Figure 36. The bone as a whole is shown on Figure 30, and the relationships of contexts on Figure 41. A more detailed description is given in Appendix 2. Only one human bone was found in the eastern mass of bones.

Various aspects of the bones are relevant in attempting to interpret the origin of the deposit as a whole. There are points of similarity and of contrast between the western largely articulated groups and the rest of the bone. In the field, the eastern deposit seemed to be in part characterized by having a darker soil matrix (discussed above) which was due to charcoal and the occasional burnt bone, but it was not possible to separate these characteristics during the excavation process.

The bones from the eastern area do not appear to be ordinary butchery waste. Many were in a similar state of preservation to the western groups, and seem to be from a limited number of individuals. Few bore butchery marks and they have not been broken for use of the marrow. The most plausible explanations is that the animals have been slaughtered, the meat used, or the animals used in some form of ceremony, with little breakage of bones and the bones then deposited largely undamaged and still partially articulated. That is, the activity which preceded the eastern mass deposition was different from the activities involved in the western area.

Most of the bones (88%) were from sheep/goat, some were cattle, a few pig, two horse, and five common toad (*Bufo bufo*). Cattle bones were much more common than in the western area, where only eight bones were found. They mostly occurred as scattered, unrelated bones, and were less complete than the sheep/goat bones. Only in one case were cattle bones in articulation. This was a calf skull, with mandibles, neck, partial rib-cage and right scapula (from 3060/3070). It was on the south-eastern edge of the ritual deposit (the lower jaws are visible on Figure 22 just west of Pit 472). This articulated group was, like the western skeletons, at an upper level. The age at death of the calf, which was at Mandible Stage JS Bd+, is estimated at 2 to 3 months (Jones and Sadler in press, and see Appendix 2).

Apart from this calf, there were fourteen other articulated groups of bones, all from sheep or goat (totalling 80 bones, see Table 4, 7 and Appendix 2), for example see a group of lumbar vertebrae (Fig. 36, top left).They consisted of short sections of articulated vertebrae, or incomplete fore limbs, or lower limbs. Nearly all the bones were complete and undamaged, and their state of preservation was similar to bones from the western groups. Presumably the deposit itself was not disturbed after the point of decay of the soft tissue holding the bones together. If the mass of bones originates from redeposition of skeletons, it must have occurred soon after the animal's death, otherwise these groups of bones would not have been found articulated.

The non-articulated bones were also often in groups which were probably from very few individuals. For example, in context 3054 there was a group of articulated lumbar vertebrae, a pelvis which may be in articulation with them, some ribs and thoracic vertebrae described in field notes as 'stray', and several long bones, all of similar preservation and maturity and all probably one individual, but certainly not found in articulation. Similarly, 118 bones, grouped as context 3158, came from a lower level of the deposit and clearly were mostly disarticulated, but they appear to be from only three individuals; they included five groups of bones found still articulated (two groups of vertebrae, and three metapodials with their tarsal bones and/or phalanges). No butchery marks were observed. For many other contexts there were very well preserved but disarticulated groups that probably belonged to one animal, (*e.g.*, contexts 3131, 3132, 3148, 3149, 3179, 3182). This suggests that bones in the bone mass were in an environment protected from scavenging or much erosion. In some cases bones from contexts above and below were found to match, *e.g.* 3164 and 3174 (a probable pair of tibiae), but in most cases no probable match was found, *e.g.*, contexts 3094, 3149, 3161.

It would be of interest to determine to what extent the bones are from very few individuals whose bones have been jumbled. The extreme of this position would be that all the 1656 sheep/goat bones from the eastern mass are from the 21 individuals represented by the right distal shaft of the humerus. However, the general lack of probable matching between contexts suggests that the mass of bones is not from so few individuals.

The character of the sheep/goat bones from the bone mass can be seen on Table 7. As with the western groups, there was a high survival and recovery rate for all bones in the skeleton, see, for example, the large number of vertebrae, carpal and hock bones, and phalanges. The number of first phalanges was close to the number which would be predicted from the metapodials. There were at least 17 metacarpals and 26 metatarsals, which gives an expected full complement of first phalanges of 86. In fact, ninety were found. Recovery of as many as 57 second and 54 third phalanges is also of note, and indicates that the deposit is a primary one, and that the standard of bone recovery, for hand-collected material, was high.

The number of bones from the head, body and feet are shown on Table 7 (see the lowest section for bone totals, and the individual zones for minimum number of individuals). It can be seen that all parts of the body are represented. There is not an over-abundance of bones from the head,

Table 8. Burnt bones from the ritual deposit.

	Total	*Black*	*bl/calc.*	*Calcined*
cattle	2	2	0	0
sheep/goat	108	70	19	19
cattle-sized unidentified	5	3	1	1
sheep-sized unidentified	151	76	49	26
	266			

Totals include 5 burnt bones, all black, from the area of human burials. Of the sheep/goat bones, 36 were fragments (not on the zone list). From the sieved samples, there were 3 additional burnt bones, from sheep/goat.

Figure 37. The ritual area towards the close of the excavation, looking south-west. Iron Age pit 472 in foreground.

as might be expected given the absence of skulls in some of the western groups.

Many of the long bones were in a fairly complete state. Of the sheep/goat long bones, 84% had at least one zone more-than-half complete, and of these, on average more than half the zones were present (Table 7). This is much higher than for sites where the bone is general butchery waste, and can be contrasted with the sheep/goat long bones from the Iron Age hillfort ditch (64% with at least one zone more-than-half complete, and of these an average 20% of the bone present). But the state of completeness is noticeably lower than for the western group. Taking the humerus as an example, for the western articulated groups, on average 5.3 of the six zones were present, but for the rest of the bone deposit, 3.7 zones were present. There was certainly some loss of the more fragile parts of the bones, but much less than might be expected. This can be seen by comparing the proximal and distal metaphyses (zones 2 and 5) for the humerus, radius and tibia, where one end of the bone, due to its much less dense structure, is more subject to decay than the other. There are only marginally fewer proximal than distal metaphyses for the humerus and tibia. For the radius, loss of the distal end is somewhat greater. For the femur, survival of both of the fragile, cancellous metaphyses was as high as for the stronger shaft.

Some bones were rather fewer than would be expected. Only nine horncores were found (and there is no evidence that any sheep were hornless), and there were fewer ulnae and metacarpi than other long bones. These may have been removed for bone and horn working.

While most contexts produced certainly – or probably – related bones, there were also some fragmentary ones. Of the sheep or goat bones 11% were fragmentary (no zone more-than-half present), consisting mostly of pieces of skull, scapula, ulna, tibia and metatarsal. A third (34%) of the cattle bones was fragmentary. In addition, 26% of the bones from the area consisted of unidentified fragments, most of them probably from sheep/goat. Fragmentation

tended to be greater where bones were few and scattered, *e.g.*, contexts 3181, 3183, in the south of the area. Many, but probably not all, of the fragments appeared to be pieces originally belonging to the more complete bones. There were few modern breaks.

The bones were studied carefully for signs of butchery but extremely few were found. Such marks as there were consisted of light cuts which did not break through the bone, as follows: three sheep/goat bones (a radius, a femur fragment and a sternal vertebra); two probable sheep ribs and one vertebra; four cattle bones (malar bone of the skull, horncore, pelvis and tibia); and one pig atlas vertebra. All were from the eastern mass of bone, with two exceptions, the sheep/goat radius and sternal vertebra, which were near Human Burial 2.

Burnt bones were fairly common in the eastern area (Table 8). Most were black in colour, with a smaller proportion calcined, or mixed black/calcined. Most were within the eastern mass of bones, with a spread towards the centre and the south, and a few in the extreme east of the area. As referred to above, just five were in the area of human and animal burials. Of the identified bones (excluding those from articulated animals A1 to A14), 5.9% were burnt, most of them being disarticulated sheep(goat) bones, though one group of metatarsals and phalanges are likely to be from one sheep (3117). These could be interpreted to be remains from roasting. The proportion of burnt bone amongst the unidentified bone was much higher, at 18.9%. Most of these were sheep-sized fragments (151 of them), half of them calcined or mixed black/calcined, which, as with the charcoal evidence, suggests a fire of some intensity. (Percentages are based on the bones as a whole, *i.e.*, they include the few bones from the western area not definitely part of animals A1 to A14).

There were a few bones from sieving (context 493), all from the eastern area, consisting of sheep/goat bone fragments and five unidentified small mammal bones (Table 4). Of these, two sheep phalanges and a sheep/goat carpal bone were burnt.

The identification of sheep and goat

In Table 4, the sheep and goat bones are combined. Other than the goat skeleton, Animal A9, there were no certain identifications of goat, that is, of horncores, lacrimal bones of the skull, metapodials or third phalanges. There were just seven other bones which are probably goat, from at least three individuals: a mandible (context 3131) where the shape of the condyle and the angle of the jaw, and the shallowness of the bone below the cheek teeth, were goat-like; a humerus, radius and pelvis also from 3131 and probably from the same, fully adult individual; and a scapula and two left sub-adult humeri. On the other hand, many bones were identified as sheep: eight horncores, seven lacrimal bones, 37 metapodials and 51 third phalanges. Eight stage C mandibles bore either three or four characteristics typical of sheep and one at stage B bore six (Payne 1985). In one mandible, an identification as sheep could be on the basis of the order of eruption of M_3 and P_4. M_3 was in recent wear (2A) and P_4 showed enamel-wear only, that is, M_3 was in advance of P_4. This is a characteristic of sheep (Jones 2006) as in goats, P_4 comes into wear before M_3 (Deniz and Payne 1982). Less certain identifications as sheep were made on 100 other bones, using comparative material, Lawrence (1980) and Boessneck *et al* (1964). Where there was an articulated group, the identification, for example, of a metacarpal as sheep permitted the identification of the rest of the skeleton as sheep, which is most useful for study of measurements.

Evidence for season, from the age at death of the sheep(goat)

The maturity of the sheep(goat) bones is shown on Figure 38 and Tables 9 and 10, with the individual tooth wear information shown in Appendix 2, Table 31. Of note were thirteen lower jaws, three with the first molar half up (stage Bt) and ten with just the anterior pair of cusps of M1in wear (stage C12). More than half of the mandibles found were at this very restricted state of dental development, with no cases younger, and none older until the much later Stage D34. Since age at death can be estimated quite closely from the teeth in young sheep (Jones 2006), this can be used to suggest the season during which the events occurred.

The season at death estimates for the young animals are shown on Table 6, which has previously been referred to under the Method section. There are two aspects which present new research, viz., the subdivision of Mandible Stage B (Table 9), and the literature search regarding long bone fusion (Table 10, second column). Using, first, the information from mandibles, an estimate of season can be made for the skull A2 and the twelve mandibles from the eastern area. Assuming a birth season from the last week of March to the second week of May, it can be seen that the greatest likelihood is that, if all died at one time, this was in July or August. If the age of slaughter was spread over a longer time, this is likely to have been from June to September. No mandibles were found with M1 before the stage 'half up', and it is therefore unlikely that any died during May: in the reference study (Jones 2006 and primary records), the earliest case of M1 being visible in the mouth was at 2.27 months, based on 62 lambs seen aged from birth to 2.27 months. (Note that 'erupted' in the live sheep is equivalent to 'half up to unworn' in archaeological material). At the later end of the season, the restricted range of stages found in the mandibles is useful. Although the range for the mandibles at C12 does include October, C12 is unusual by six months of age, where the normal stage is C34 (M1 with three or four cusps in wear with no dentine joins), and none at this stage were found.

The single mandible from the area of human and animal burials, the sheep A2, at Bt, can be aged with some certainty to three months. It is of a similar age to the mandibles

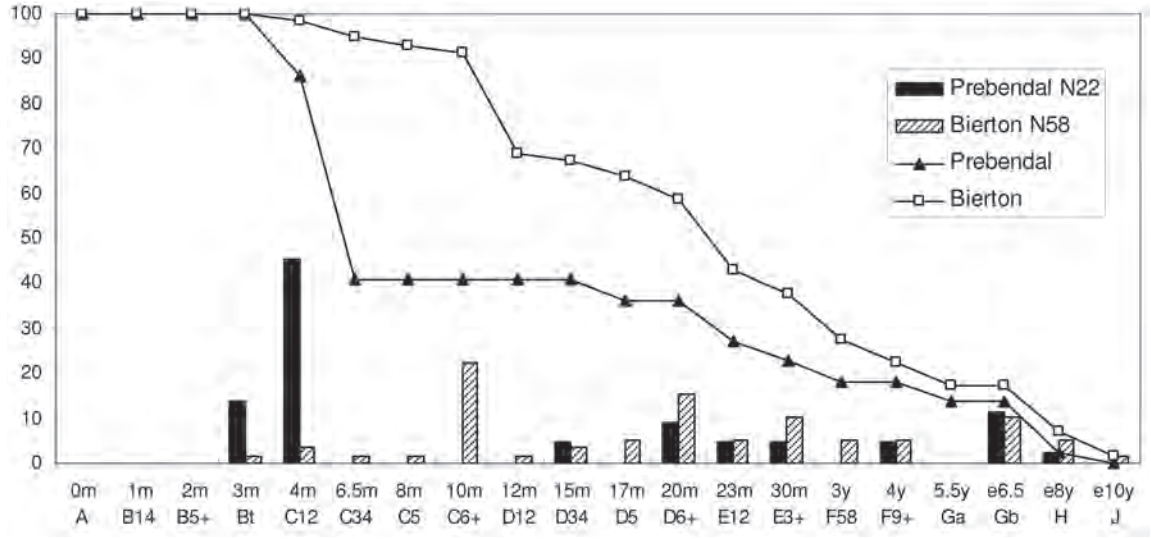


Figure 38. Sheep and goat mandible stages from the ritual area, compared with nearby Late Iron Age Bierton. The mandible categories show the Payne (1973) wear stage, subdivided using wear on the most recently erupted tooth; the age shown is the 'central point' of the live sheep study (Jones 2006, figs 9 and 17), around which there is variation, see Table 9 and Method. Separation of sheep and goats: sheep – one at Bt, eight at C2; goats – F10 (Animal A9) and one at Gb. For individual tooth wear stages, see Appendix 2, Table 31.

in the eastern bone mass, being at the same stage as the two at Bt, and very close in age to the ten at the adjacent stage C12. In the area of human and animal burials, there were seven sheep(goat) which were less than a year old, and where an age at death could be estimated from the long bones. These are shown individually on Table 5, and their estimated season of death is shown on Table 6, based on work which has been discussed in the Method section (and see below), and the ages of fusion suggested on Table 10. It can be seen that all could have died at the same time, in which case this was from the end of June to early August. Or they may have died over a longer season. Both possibilities are consistent with the mandibles from the eastern bone mass.

For the sheep skeletons A10 and A11, estimated to be 1–3 and 3–5 months old respectively (from the maturity of the long bones), there is additional information, as they are linked stratigraphically. The evidence from the positions in which the skeletons were found – the two lambs, the goat and the child Human 1 – is that their burial occurred as one event and that all are contemporary. The overlap, at three months, makes it unlikely that A10 died during May, or that A11 died later than mid-August.

The few mandibles at later stages (9 of 22, 41%) show that animals from their second year (stage D) and older are present but not numerous. They are fewer than found in the typical late Iron Age domestic site at nearby Bierton (Jones 1986: 40 of 58, 69%, at Stage D and older), also shown on Figure 38. Note that at Bierton mandibles at Bt and C12 were present but there was a spread of slaughter occurring during the first two years, with the mode at C6+ (aged 8 to 12 months, using Jones 2006, Fig.17, majority of records). Hambleton's study of Iron Age sites also found two contrasting patterns in the proportion of mandibles found beyond Stage C (Hambleton 1999). In both 'Wessex and Central Southern England' and the 'Upper Thames Valley and Surrounds', the sites formed two groups, one similar to the Prebendal, with only 40–55% of mandibles beyond Stage C, the other similar to Bierton, with 60–80% surviving beyond Stage C.

At an earlier stage of analysis, Silver's figures for long bone fusion for sheep were used (Silver 1969), and it appeared that the long bones found were not from the same individuals as the mandibles, which ran counter to the excavation evidence where it appeared certain that the bones and mandibles were from a limited number of individuals. This raised doubt over the reliability of Silver's figures. Several sources of original research on epiphysial

Table 9. Results from the live sheep reference study for the subdivision of Stage B, and other example ages.

	Central point	*Majority of records*	*All records except outliers*	*No. of sheep observed*
B15	1 mos	1 mos	1–2 mos	20
B6+	2 mos	2–3 mos	1–4 mos	33
Bt	3 mos	3 mos	2–4 mos	35
C12	4 mos	3–5 mos	3–7 mos	80
D12	12 mos	10–13 mos	10–14 mos	51
E12	23 mos	20–30 mos	19–36 mos	85

B15: dp4 with one to five cusps in wear; B6+: all cusps in wear *and* M1 before 'Half up'; Bt: 'terminal', M1 'half up' to 'enamel wear'. The age class, *e.g.*, '2mo', includes sheep 1 month 16 days to 2 months 15 days old (Jones 2006 and the primary records).

Table 10. Sheep/goat epiphysial fusion.

	Age of fusion (months)	***% Unfused***	***% Partially fused***	***% Fused***	***Total***
Radius proximal	1.5–4	*3*	*0*	*97*	38
Humerus distal	2–4	*6*	*38*	*55*	47
Scapula coracoid	3–5	*31*	*9*	*59*	32
Pelvis acetabulum	est. 3–5	*38*	*10*	*51*	35
male		*90*	*0*	*10*	(10)
female		*6*	*6*	*88*	(17)
Second phalanx	5–7	*45*	*4*	*51*	93
First phalanx	6–8	*46*	*1*	*53*	124
Tibia distal	12–24	*50*	*3*	*47*	38
Metacarpal distal	12–24	*57*	*0*	*43*	28
Metatarsal distal	12–24	*47*	*0*	*53*	36
Calcaneum	15–24	*46*	*0*	*54*	35
Ulna olecranon	18–30(31)	*60*	*0*	*40*	35
Radius distal	16–36(39)	*59*	*0*	*41*	32
Femur distal	16–36(48)	*61*	*0*	*39*	33
Tibia proximal	16–36(48)	*63*	*13*	*25*	32
Humerus proximal	16–42(52)	*65*	*8*	*28*	40
Percentage		*44*	*6*	*50*	
Total number		302	38	342	682

The articulated groups are included. Counts for unfused bones includes only metaphyses, not epiphyses, and, for the pelvis, only the iliac part of the acetabulum. Age of fusion from Lesbre, Tschirvinsky, Smith, Garcia-Gonzales and Hatting, quoted in Moran and O'Connor 1994, and Davis (2000, 375) rams, with Davis'estimate for castrates in parentheses (2000, 381); pelvis estimated from Chaix and Grant (1987) (and see Method).

fusion in sheep are quoted by Moran and O'Connor (1994 and see Method, above), and their results have been useful in interpreting the long bones found. Some aspects of the long bone evidence are of interest. If the figures for proximal radius and distal humerus are compared (Table 10), it can be seen that nearly half of the humeri were in the process of fusing, while the radii were almost all fused. That is, the proximal radius is in advance, developmentally, of the distal humerus, which confirms the earlier figures for fusion of the proximal radius found by Garcia-Gonzales, a difference which is not given by Lesbre, Tschirvinsky, Smith, or Hatting. In Garcia-Gonzales' study, 'partially fused' bones were included with 'fused'. It is likely that the proximal radius completes fusion before the distal humerus, and the distal humerus category 'partially fused' occurs for a longer period of time. Fusion of the acetabulum of the pelvis appears to occur somewhat later than the distal humerus and at a similar time to the coracoid of the scapula, see the higher proportion of coracoid and acetabulum unfused, rather than partially fused, compared with the distal humerus (Table 10). The same order of fusion in young sheep was found by Chaix and Grant (1987) in their study of prehistoric sheep from the Sudan, that is, proximal radius, distal humerus, scapula, pelvis, 2nd phalanx and 1st phalanx. Where the sex of the pelves could be identified, almost all the immature ones were male, and almost all the mature ones were female, see Table 10. Of the three skeletons where the distal humerus was partially fused (animals A4, A6 and A11), the proximal radius was fused in all, and the coracoid of the scapula was fused in two and unfused in one. Only A11 included the pelvis, which was partially fused.

The long bones are shown on Table 10 in the order in which they fuse, and it can be seen that there are two points at which some bones are partially fused, firstly for bones which fuse during the first year, already discussed, and secondly for the proximal humerus and tibia, which are the latest to fuse. The percentage fused remains at about 50% for the mid-fusing elements, and decreases as expected for the late-fusing elements, reflecting the number killed at mandible stages D and E, *i.e.*, during their second or third year. For the latest-fusing elements, a quarter were fused, which is higher than the proportion of mandibles at late stages, where only three (14%) were at stages G or H. Some adult skulls may therefore have been removed and deposited elsewhere.

The proportion of adults is quite low, even using the long bone evidence, and suggests selection of animals from a larger flock or from several flocks belonging to, or under the control of, the community responsible for the deposit. Animals may, for example, have been supplied as tribute from dependent communities (Serjeantson 2007, 90), or they may have been supplied as part of a wider communal gathering.

In summary, all the animals from the ritual deposit could have been slaughtered as one event, occurring probably in July or early August, and involving at least 28 sheep/goats. The high number of young lambs follows the same pattern found at Late Bronze Age/ Early Iron Age Runnymede (Serjeantson 2007, 84–85), where half of all mandibles were at stages B and C, and of those at stage C, half were very early within the stage. Serjeantson discusses several other sites with similar age profiles, which are thought to indicate the keeping of sheep for milk and milk products, with the surplus ram lambs killed before their first winter. The same interpretation was made for Danebury in 1984

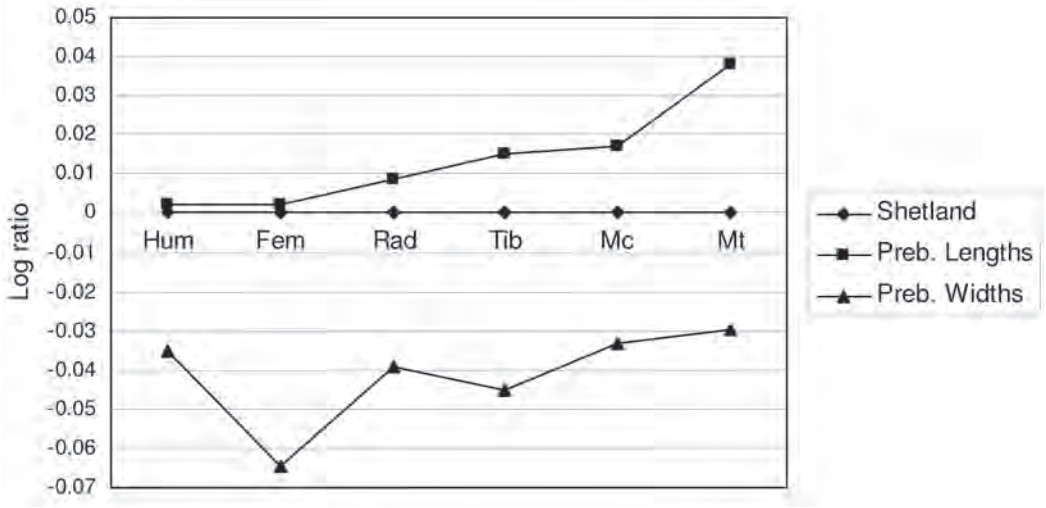


Figure 39. Comparison of average lengths and widths of the Prebendal sheep with the Shetland Standard. Measurements are combined, in the log ratio method, and compared with a Standard based on a group of modern Shetland sheep, shown as zero in the figure, see Davis 1996. Lengths: GLC for humerus and femur, GL for others; Widths: humerus BT, radius Bp, metacarpal BFd, femur SD, tibia Bd, metatarsal BFd. For measurements see Appendix 2, Table 32.

(Grant 1984a, 107), and the use of sheep milk, as distinct from ruminant milk (cow, sheep or goat), is now known from lipid residue work (Copley *et al.* 2003, Serjeantson 2007).

It is a general pattern at Iron Age sites (Hambleton 1999) that many young sheep are slaughtered or die from natural causes during their first year, with relatively fewer dying during their second or third year as is common in later periods. The identification from lipid residue studies of the milking of sheep is important in considering this pattern, because cheese would then become available as a stored food source. It has also been suggested that the difficulty of providing winter provisions may have meant that only those animals needed for the flock were kept through the winter (*e.g.*, Maltby 1981). Another consideration, which is rarely discussed, is whether castration of sheep was known and in general use in the Iron Age. As ram lambs become active by their first autumn (Jewell 1974) they may have been culled early so that the flock was easier to manage. This would also allow selection of males for breeding. Once castration is available, the surplus males can be kept into their second or third year, where the carcase size is much greater. There is a modern parallel here, where the modern Welsh Mountain breed has recently been managed specifically to provide mutton, defined as meat from sheep over 12 months old. The carcase size is then, in this fairly small traditional breed, of a more suitable size for the butcher.

The size of the sheep

The sheep bone collection was an unusual one, in that most bones were complete or substantially so. They produced a useful dataset of long bone lengths and widths, with several bone groups certainly, or very probably, from single individuals. The individual measurements and summaries are presented in Appendix 2 (102 bones, 339 measurements). In Figure 39, some of the length and width measurements are combined, using the log ratio method, and compared with a Standard based on a group of modern unimproved Shetland sheep (Davis 1996), shown as zero in the figure. Compared with the Shetlands, the Iron Age sheep were of similar height or rather taller, but considerably less robust. It was found that the upper limb bones, the humerus and femur, were of similar length to the average for the Shetlands. The radius and tibia were slightly longer, and the lower leg bones, the metacarpal and metatarsals were longer still. That is, the physical proportions of the sheep were different, and the sheep would have stood somewhat taller than a typical Shetland ewe. For each long bone length, one width measurement is also shown, and it can be seen that for all bones, especially the femur, the Early Iron Age sheep were more slender.

Figure 40 shows again the Shetland Standard, at zero, and the Early Iron Age means for lengths, with the fore limb to the left and the hind limb to the right. It also shows individual animals A8 and A12 from the western group of human and animal burials, and other individuals where at least three limb bones were present. Every individual shows the same general pattern of relatively greater length in the lower than the adjacent upper limb bone, with one exception, the femur and tibia from sheep 3164. This context included more than one individual, so it is likely that this femur and tibia are from different individuals; the tibia and metatarsal were linked by tarsal bones which refitted well, and these two bones show the expected pattern. The sheep A12 was exceptionally

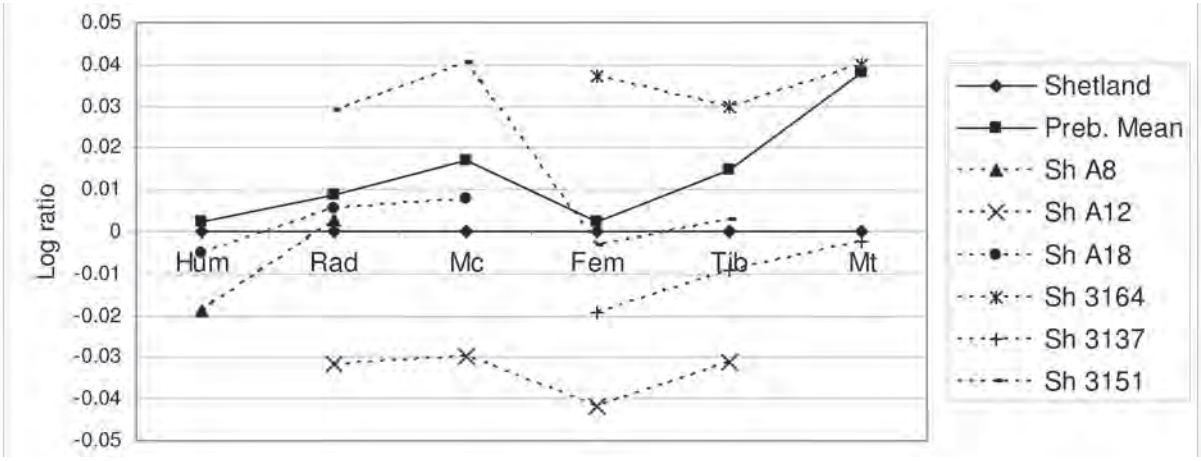


Figure 40. Comparison of long bone lengths of individual sheep with the Shetland Standard. Lengths only are shown (GLC for humerus and femur, GL for others). For measurements see Appendix 2. Those with four-figure numbers are probable-individuals from the bone mass.

small, all its bones being smaller in length and many in width also, compared with others found. Its tibia length (GL), for example, was only 172.0mm, compared with the Prebendal average of 191.25mm, and the Shetland standard of 184.8mm. Its relative proportions, however, follow nearly exactly the same pattern as the averages.

Some males may be present among the Prebendal measured bones. The metacarpal is the bone which shows sexual dimorphism the most clearly (Davis 2000, fig. 3). At the Prebendal, it may be that the three longest bones (Greatest Length 120.3, 122.4 and 122.7mm) are from males (Table 32 in Appendix 2). They are longer than any of the Shetland ewes in Davis' study (Davis 1996), but are within the range for the rams studied (Davis 2000). The evidence from pelves found at the Prebendal is that the immature bones are nearly all from male lambs, and the mature bones nearly all are from ewes, see Table 10, so it could be that the longer metacarpals (and other bones) are from long-legged ewes rather than from males. However, the latter is the more likely, as the measurements are towards the upper end of the range of measurements in the larger collection of Iron Age sheep in the Animal Bone Metrical Archive Project (ABMAP), *e.g.*, metacarpal GL 108.5 to 123.0 (mean 116.1, N18).

The estimated average shoulder height of the sheep is 58cm (using Teichert's factors quoted in von den Driesch and Boessneck 1974).

Other species from the ritual deposit

The 207 cattle bones from at least five animals, found in the ritual deposit, formed 9% of the identified bones. In comparison with the sheep/goat bones, they were more fragmentary and there were fewer groups of probably-related bones. The skull and neck from 3060 has been referred to above, and there were several other small groups of bones which probably belong, *e.g.*, a group of caudal vertebrae (3090), and skull and mandible fragments with two cut-marks (3174) from the base of the eastern mass, which are probably from one calf. But in general the cattle bones were scattered, occurring in 55 different excavation collection groups. As with the sheep/goat, they were well preserved, with vertebrae and cancellous bone ends (*e.g.*, the proximal tibia) well represented. There was a surprising absence of bones from the elbow joint, with no proximal radius or ulna and only one distal humerus (compared with 7 proximal humeri), and there were few metapodial bones, with only three metatarsal bones (compared to 21 from the tibia) (Appendix 2). Ribs were not identified to species-level, but large ribs were doubtless almost all from cattle, and were less numerous than expected, 26 being found, only four of which retained the articulation, which compares to 60 cattle vertebrae, 47 of which bore at least one zone (centrum and/or spine). With such a small sample, differences can be the result of chance, but it is possible that only certain parts of the carcase were brought to the site, and that metapodials were removed for bone working.

Many of the cattle bones were from immature animals, and these included fairly frequent bones from calves. There was epiphysial fusion information from 55 long bones, of which nine were calves (from eight context numbers, so probably from several individuals). Only 16% of long bone elements were fused, indicating a greater proportion of immature cattle than is typical for Iron Age sites, cf. late Iron Age Bierton (Jones 1986), where 28% were fused (N 46). The commonest element was the distal tibia (which fuses at 2–2½ years) where six were unfused, two were fusing and one was fused. Four cattle bones bore butchery marks, consisting of light cut-marks. One of these was on the inside of the malar bone of the calf skull 3174, indicating that the skull meat was made use of. A single complete metatarsal gives a shoulder height estimate of 1.07m.

There appears to have been selection of young cattle, and it is likely that butchery occurred largely without

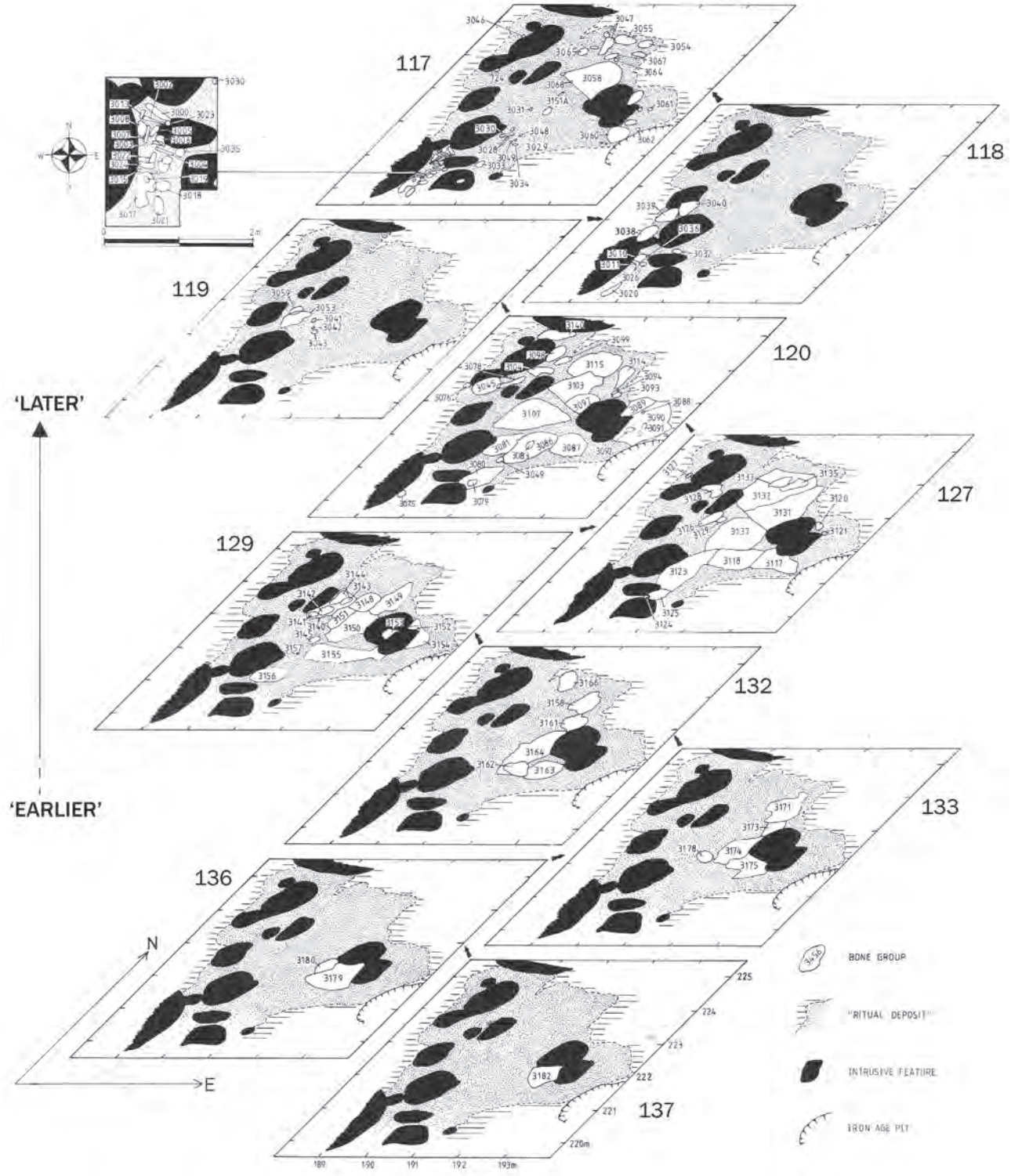


Figure 41. Exploded view of the lifting sequence of numbered bone groups within the ritual deposit. Original plan numbers shown. Inset top left shows detail from three plans.

marking the bones, and that some parts of the carcase (ribs, the elbow joint, metapodials) were deposited elsewhere. However, part of the deposit was destroyed by medieval pits, so the surviving bones are only a proportion of the original deposit.

Other than the pig burial A1, only ten pig bones were found, all from the eastern mass of bones. Most were immature, one of them a maxilla aged a few weeks (dp4 just in dentine-wear, M1 erupting through the bone). One atlas vertebra bore several fine cut marks. Separation of the skull

was thus done with minimal marks on the bones. Before the period of heavy metal cleavers, lack of chop-marks does not necessarily mean a lack of butchery. The probable continuing use of flint in the Iron Age has been noted elsewhere.

Two horse bones were found, one of them a third tarsal, which showed slight pathology (slight lipping on the anterior facet and irregularity on the outer articular surface), indicative of a fairly old individual. It was from quite low down in the eastern mass (3118). The other bone was from 3140, which is near the sheep/goat A8. It was a 4th metacarpal, the long narrow bone on the lateral side of the main bone, and sometimes used as a bone point. A fragment of tile found with this context may, however, indicate some intrusive material.

It is worth noting that no bones of dog were found, and neither were any marks of gnawing by dogs found, which suggests that the deposit was protected from scavenging animals during the period between its creation and sealing. At the much later temple sites such as Great Chesterford (Legge *et al.* 2000) the lack of dog-gnawing, and presence of an enclosure, suggested that dogs were excluded. King (2005), noting the low numbers of dog bones at Late Iron Age to Romano-British temple sites, similarly suggests the exclusion of dogs. Although there was no evidence at the Prebendal that the area was fenced off in any way, the existence of a temporary barrier is a possibility, although rapid burial seems more likely.

Three pieces of antler combs, thought to be from red deer antler, were found, and are described elsewhere. Two of them were burnt.

Other bones from the ritual deposit are probably natural occurrences, viz., the vole and water vole mentioned above (water vole mandible length including the incisor 27.1, cheek tooth row 9.5mm); and five bones of common toad, *Bufo bufo*, found in the eastern mass.

Pathology

Evidence for pathological bone changes were seen in one cattle bone, one horse bone, and eleven sheep/goat bones (Appendix 2). For the sheep/goat, two affected teeth; five affected the axial skeleton (vertebrae and ribs), two of them suggesting trauma; three affected joints, at the elbow and hock; and one was a fully healed break in a metatarsal. Pathology was seen in two of the animal skeletons, a fractured rib from the lamb A3, and bone alterations in the hock joint of the goat A9.

Bones from the upper layers of the ritual deposit and intrusive features

Bones from the uppermost layers of the ritual area (context 975, fills 630 and 631) and medieval pits cutting through the area (contexts 719, 543, 545, 627, 629, 801, 824 and 945) were recorded but not studied in detail. They are similar in species present, state of preservation, and presence of young sheep/goat, to those within the ritual area. The number of identified bones from context 975, for cattle, sheep/goat and pig were 1, 24 and 2 and the total including unidentified was 60.

Comparison with other sites

It is typical for Iron Age sites, that sheep/goat are more common relative to cattle than earlier, in the Bronze Age, and later in the Romano-British period (Hambleton 1999, 2008, 2009; Albarella 2007; Albarella and Pirnie 2008). In Buckinghamshire, some sites follow the pattern as found in other parts of central and southern England, for example the multi-period site at Aston Clinton (sheep/goat 59.7% in the Early Iron Age phase, Sibun 2008), but at many sites, particularly in the Milton Keynes area, cattle bones dominate (Kidd 2009; Hambleton, *ibid*.). The dominance of sheep, found in the collection from the ritual area, is unusual. Very high numbers of sheep in comparison with cattle are commonest in Wessex and central Southern England, although there is considerable variation. Using the commonest method of counting bones, the number of identified fragments, the percentages of cattle, sheep/goat and pig for the ritual area are 9%, 88% and 3%. This gives a cattle to sheep/goat ratio well beyond any of the sites quoted by Hambleton. Using the minimum number of individuals, the proportions of cattle, sheep/goat and pig are 14%, 78% and 8%, which is at the extreme edge of the range of sites quoted. A low proportion of pig bones is typical of Iron Age sites in Britain and the number at the Prebendal, by both methods, is at the low end of the ranges.

The choice of animal for the burials with humans excluded the use of cattle, but did include goat and pig. For the bone mass, which may be interpreted as evidence of a large scale feast or communal gathering of limited duration, lamb was the animal of choice. The bone mass may be compared with Late Bronze Age to Early Iron Age sites discussed by Serjeantson (2007) where the density of animal bone deposits at several sites has been interpreted as evidence of feasting, sometimes, as at the very large bone collection at 'Earliest Iron Age' East Chisenbury, based on sheep; and sometimes, as at Late Bronze Age/Early Iron Age Potterne and Runnymede, using all species but with an unusually high proportion of pig. Moving forward in time, at the late Iron Age and Romano-British site at Harlow, most remains were from sheep which formed 88% of bones in the Belgic phase (N2022) and 81–82% (N 685, 212) in the two temple phases (Legge and Dorrington 1985). The lambs were interpreted to be sacrificial animals, and the majority of them were at mandible stage C6+, aged 6–13 months at death (age estimates from Jones 2006). At the Romano-British temple site at Great Chesterford (Baxter 2011), sheep were the dominant species in the votive deposits. Most were lambs, which gave seasonal information for the different phases of activity. At the late Iron Age shrine at Hallaton, in the East Midlands, 97% of remains, interpreted as from feasting, were from pig (Score and Browning 2010).

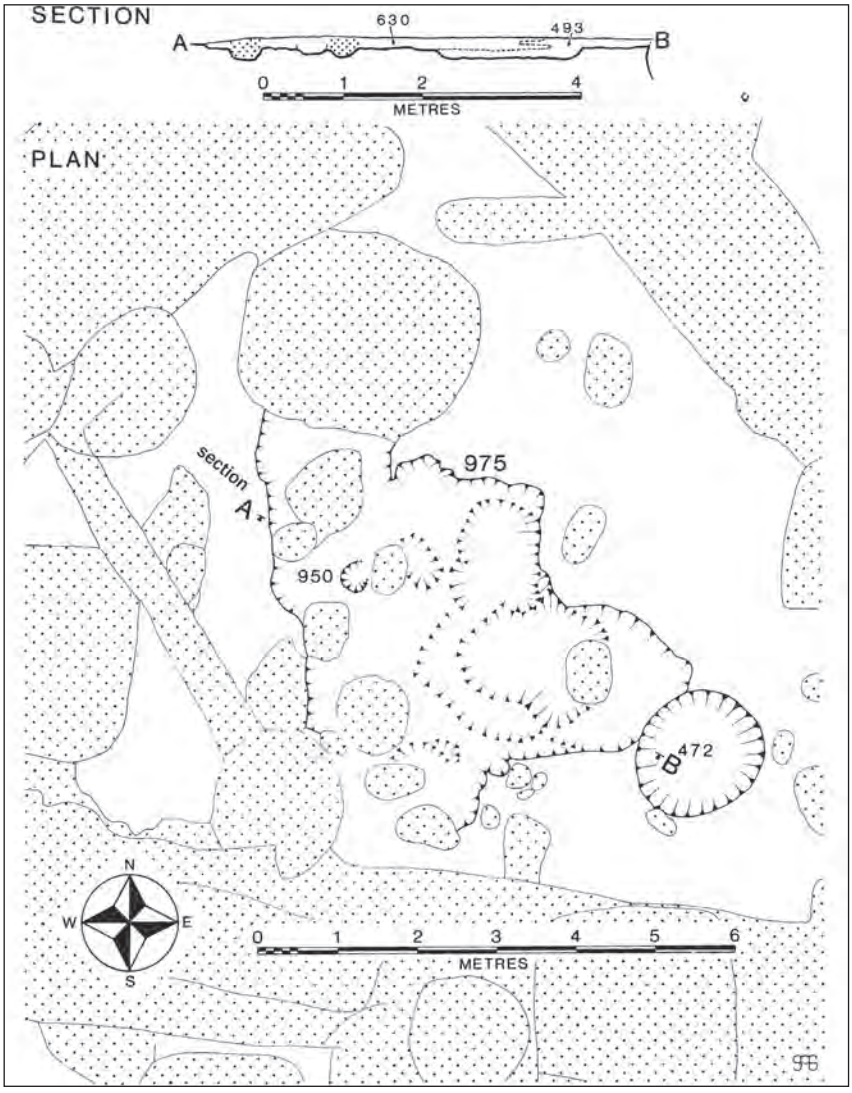


Figure 42. Post-excavation plan of sunken outline of ritual deposit (975); later features stippled. Section A–B through the deposit (top of figure) shows the relationship between layers 630 and 493 (burnt matter).

A deposit which bears some similarity to the ritual area, but using cattle, was found at Coldharbour Farm, less than 2km west of the Prebendal. One context (6249) contained almost exclusively cattle bones, consisting of disarticulated remains from whole animals, of a variety of ages, with no butchery marks (Johnstone 1997).

Another deposit from Buckinghamshire, although of much earlier date, is the very large collection of cattle bones from the Early Bronze Age Barrow 2, at Gayhurst, Newport Pagnell (Chapman 2007; Deighton and Halstead 2007). There are some points of similarity with the Prebendal deposit in the dominance of the deposit by a single species, the presence of many complete bones but which were disarticulated when deposited with very few cut marks. However, in contrast to the Prebendal, at Gayhurst many bones were missing, with bones of the foot almost absent, far fewer lower main limb bones than upper main limb, and most unfused bones lacking their loose epiphysis. There was no evidence of burning, and the bones were somewhat weathered. Unlike at the Prebendal, therefore, it was concluded that the cattle could not have been roasted whole and then deposited soon after.

An Iron Age fish bone

Andrew K. G. Jones

A single fish bone was recovered from the ritual deposit, a single fin ray that could not be assigned to species (SF 3142). See below for a second fish bone from an adjacent pit. Fish bones, even where sieving programmes are extensive, are found in low numbers at Iron Age sites, suggesting that there was very limited exploitation of fish (Hambleton 2008).

4. Other Finds from the Ritual Deposit and Further Environmental Evidence

The pottery from the ritual deposit

Barbara Hurman and Michael Farley

There were 371 sherds amongst the bone, relatively evenly distributed throughout; their distribution is shown on Figure 43. Sherds were present in 89 of the 185 on-site collection units. This represents 30% of the total identified Iron Age sherds from the site as a whole. Amongst the total there were 30 refits, 20 of these from four vessels. Sherds from the four vessels were principally concentrated among five

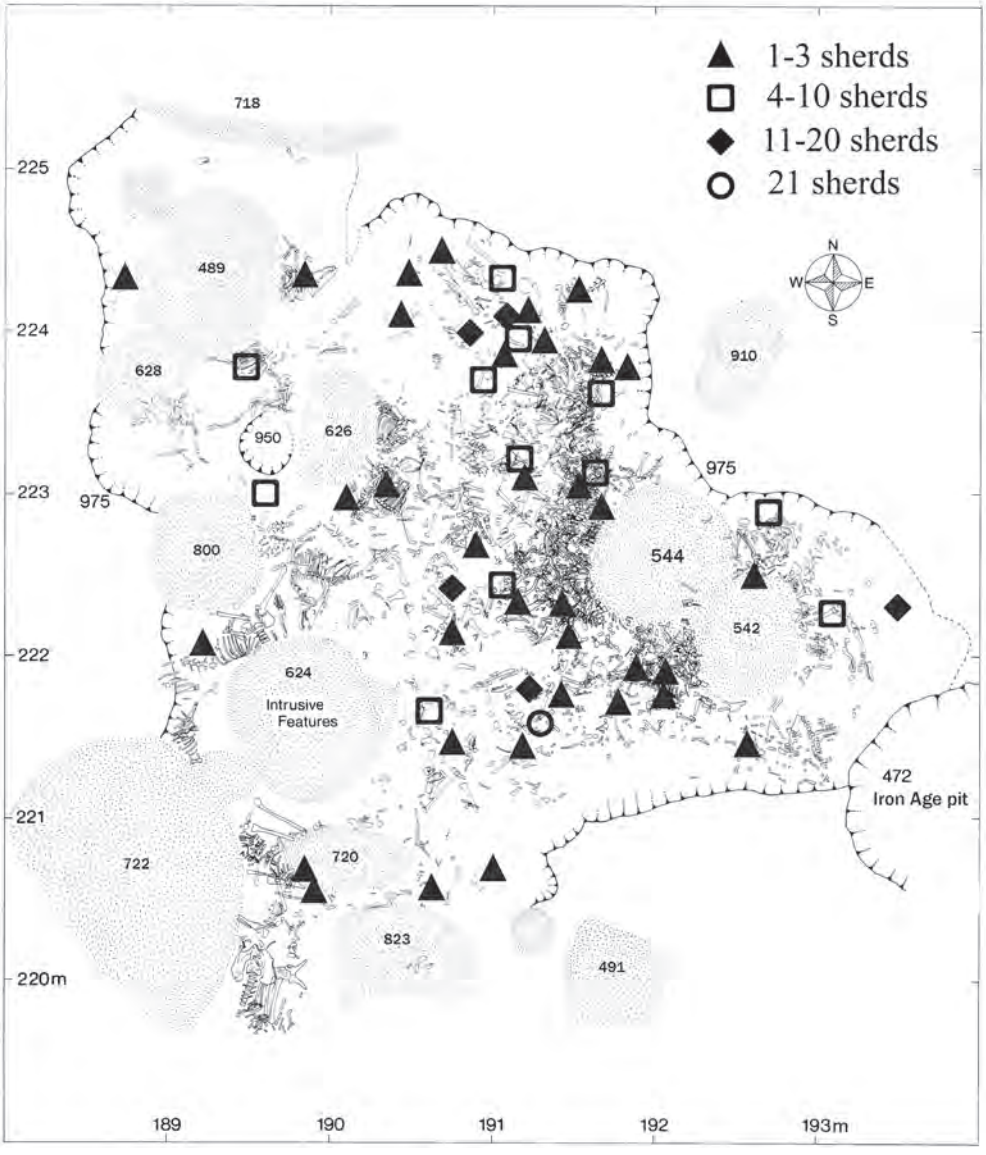


Figure 43. Pottery sherd distribution in ritual deposit. Note, positions are to the collection unit area only and not all sherds recorded from the deposit could be allocated in this manner.

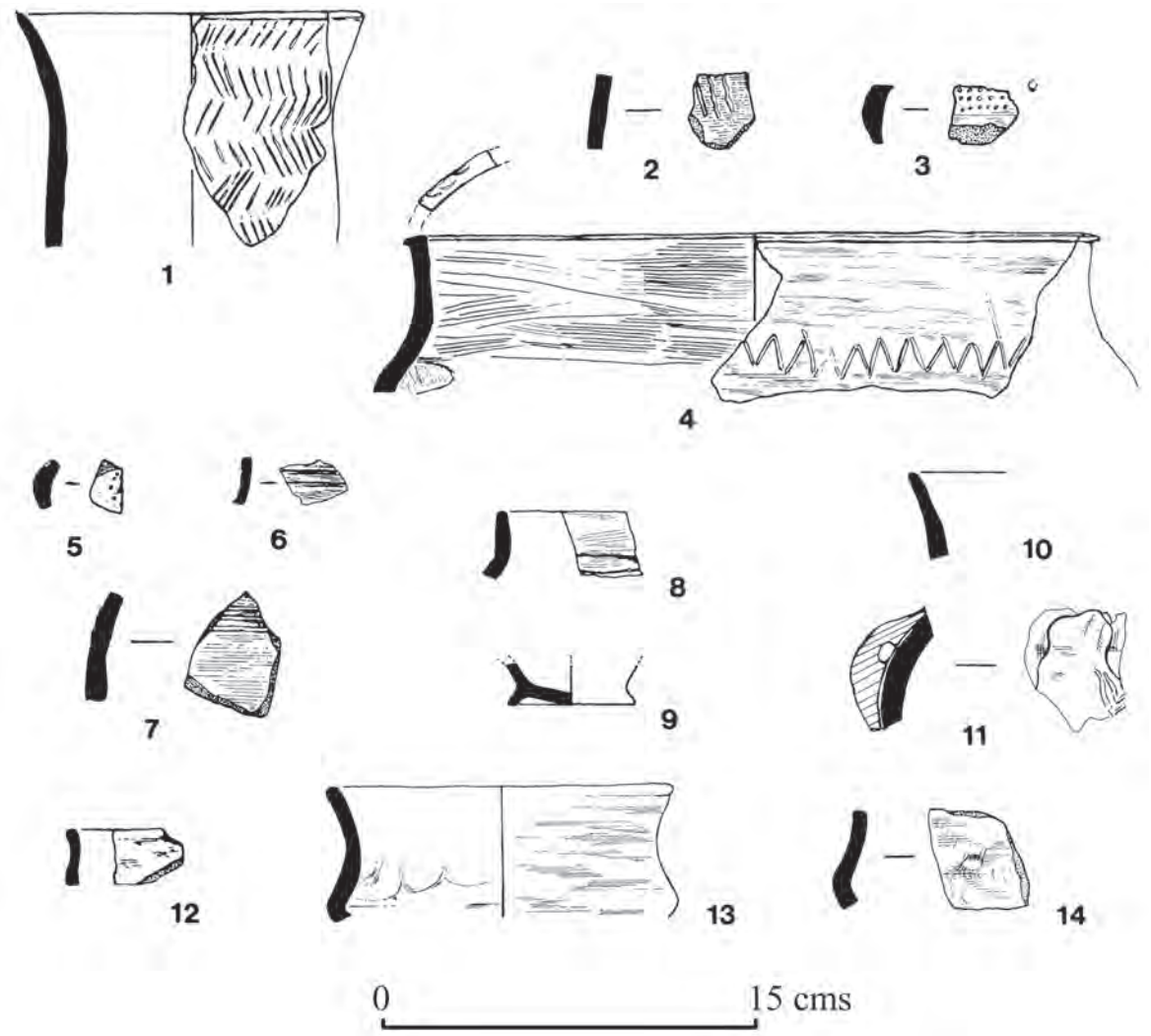


Figure 44. Pottery from the ritual deposit. Figure 1 of 2 (1/3).

of the collection units (3064, 3110, 3134, 3135, 3159). Four of the other joins came from deposits that were close to each other in the lifting sequence (3160/3167 and 3174/3180). Sherds from the deposit were slightly larger (average 9.46g) than those from the hillfort ditch and from the two adjacent pits (average 6.48g).

Eleven fabrics groups were noted amongst all of the Iron Age material from the site (see previously) and the assemblage from the ritual deposit reflected their overall proportions except that there was 3% more shell. Amongst the sherds were ten (none illustrated) which had traces of a red coating, often worn. Six of these were examined by Dr A. P. Middleton, then at the British Museum Research Laboratory (Appendix 5) who records a fabric of sandy, glauconitic clay, possibly from a relatively local source. The colour is due to the application of a slip rich in iron oxide which has been burnished. None are illustrated.

Compared with the mass of bone, sherds seem to have been numerically of little significance, and judging by the observed joining sherds the whole could represent less than thirty or so pots at the point of origin. However, the presence of a number of refits and the slightly greater than site-average sherd size makes it likely that the sherds arrived in the deposit with the gathered bone.

The illustrated sherds have been divided into those with fairly clear burnish; those with a smooth surface but not showing any burnishing lines, and those where there has been no attempt at surface finishing. All are single sherds unless otherwise stated.

Illustrated pottery from the ritual deposit

Burnished (Fig. 44, 2–14)

2. Shallow-tooled vertical wavy lines, possibly scored on pot post-firing, with white inlay. Ext. light-brown, well burnished, black int. and core. Fab. 3, 3051 (493).

3. Shoulder sherd, stabbed dots with trace of white inlay, dark grey ext. and int. Fab. 9. 3182 (493).

4. Jar/Bowl, high shouldered, slightly flaring flat-topped rim, finger-nail impression on rim top, shallow tooled zigzag composed

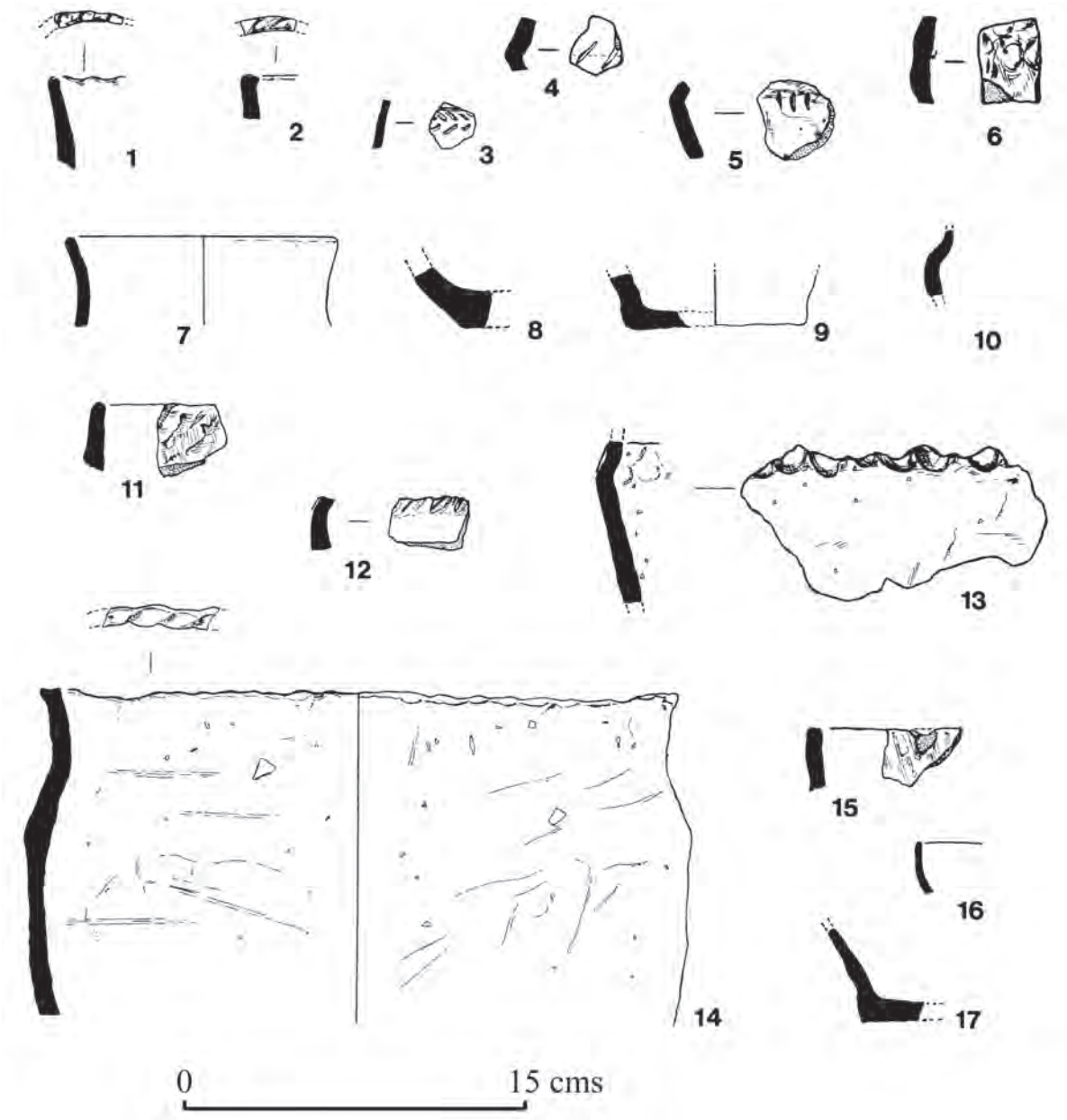


Figure 45. Pottery from the ritual deposit. Figure 2 of 2 (1/3).

of single lines, trace of white inlay dec, ext. high burnishing, int. heavy wiping marks, black int. and ext. Fab. 5. 3073 (630).

5. Stabbed dot dec., black ext. and int. Fab. 9. 3086 (630). Possibly same vessel as 3 above.

6. Shallow tooled horizontal lines, burnished ext., black ext. and int. Fab 7. (631).

7. Shallow tooled, precise horizontal lines, highly burnished ext., black ext. and int. light brown ?coating. Fab. 7. 3056 (630).

8. Jar/Bowl, upstanding squared rim, shallow groove at neck/body angle, some ext. burnish, black ext. and int. Fab. 3. 3027 (630).

9. Base foot ring, ext. brown-grey burnished, int. black. Fab. 6. 3177 (493).

10. Jar/Bowl, rim everted, burnished surfaces ext. and int., ext. light brown, int. black-brown, dark core. Fab. 6. 3090 (493).

11. Lug, horizontal perforation, lightly tooled incisions lower right-hand side. Ext. reddish-brown burnish, int. and core brown-black. Fab. 9. 3084 (630) (Joins 3086). Part of a second lug, 3087, (not illustrated) was also present.

12. Small jar, flat topped rim, very worn ext. burnished surface, ext. and int. brown-grey. Fab. 9. (631).

13. Bowl, carinated, slightly flaring rounded rim, ext. black worn burnish, int. neck burnish, finger shaping int. dark grey ext. and int. Fab. 7. 3077 (630).

14. Shoulder angle, ext. worn burnish, dark grey ext. and int. Fab. 7. (631).

Smoothed (Fig. 45, 1–10)

1. Jar? upstanding squared rim, finger tip dec. on top. Ext. and int. black. Fab. 9. 3171 (630).

2. Jar? upstanding squared rim, close finger tip dec. on top; grey-black ext. and int. Fab. 9. 3171 (630).
3. Smooth surfaces, shallow tooled chevron and dot dec., ext./int. brown-grey. Fab. 3. 3086 (630).
4. Shoulder angle, two diagonal slashes, black-brown int. and ext. Fab. 3. 3131 (630).
5. Shoulder angle, finger nail dec. on angle. Ext. brown-black, int. black. Fab. 9. (631).
6. Finger tip dec. on external surface, ext./int. brown-black, sooted surfaces. Fab. 7. 3180 (493).
7. Bowl, slightly everted rounded rim, grey-brown ext. and int. some burnish. Fab. 6. 3155 (493) (Joins 3119).
8. Base, ext./int. black. Fab 7. 3164 (493).
9. Base, brown-grey ext and int. orange-brown core. Fab. 9. 3144L (630).
10. Shoulder, ext. grey-brown int. black. Fab. 9. 3174 (493). Probably belongs to a footring from same context.

Coarse (Fig. 45, 11–17)
11. Jar/Bowl, upright rim. ?scraped ext. surface finish, ext. brown-grey, int. pink-grey. Fab. 1. 3063 (630).
12. Shoulder angle, deep diagonal grooving, ext. red-brown, int. brown-grey. Fab. 6. 3163 (493).
13. Jar, shoulder angle, deep finger impressions formed by pressing finger from inside the vessel, surface grey-brown sooted ext. dark grey int. Fab. 2. SF3009 and SF3156 (630).
14. Jar, high-shouldered, slightly flaring rim, deep finger tip dec. on rim top. Ext. grey-buff, int. dark grey. Surfaces wiped. Fab. 1. (3064, 3134, 3135, 3159, 3110 joins) (630).
15. Jar, upstanding rim, ext. grey-brown, int. brown. Roughly wiped, surface flaking. Fab. 1. 3025 (630)
16. Small curved-wall bowl, squared rim top, ext. black-brown, int. black. Fab. 5. 3104 (630).
17. Base, large inclusion underside of base (?heat spalling), rough finish, some wiping base edge and side, ext. brown-black, int. black. Diam. uncertain. Fab. 9. 3089 (493).

The haematite-coated sherds noted below are also from the ritual deposit; none are illustrated. See Appendix 5.

The cultural affinity of the pottery from the ritual deposit

The radiocarbon dates from the deposit (see below), show that it was created in the early fourth century BC. As previously noted there could have been more than one episode of bone deposition but the interval between each is likely to have been short, as the radiocarbon dates and other evidence indicate.

In the absence of whole or substantial parts of vessels, there seems little likelihood that pots were deposited whole at the burial place itself. However, the combination of joins within the material and larger sherd size suggests reasonably close proximity to the parent vessel; the pots could have been used in accompanying ceremonies near the site but apart from the presence of the few haematite sherds, there is nothing distinctive about the pottery to indicate the use of special vessels. Theoretically the vessels could have been 'curated' for a period elsewhere, for example at a 'shrine', but even allowing for this and presuming that incomplete vessels had been moved here from such a place, given the relatively short life-span of low-fired pottery such a collection can still be reasonably regarded as a 'contemporary' assemblage – apart from the piece of Beaker which clearly did have another history.

If the contemporaneity of ceramic and bone is accepted, then the radiocarbon dates on the bone must also be close to the date of the ceramic and herein lies a small problem since conventional dating of the ceramic would place it earlier – some of it considerably earlier, than the first half of the fourth century BC. There is no clearly defined boundary (or agreement) between the terms 'Early' Iron Age and 'Middle' Iron Age (discussed further on) and seeking to define such a boundary will always be fraught with difficulty, but at least so far as southern and central England, for purely practical reasons changes in ceramic styles are likely to continue to play an important part in defining chronological divisions so this observation may be of some interest.

The most distinctive elements amongst the ceramic from the ritual deposit are:

a) Well-burnished bowls in fine-gritted fabrics, generally dark in colour.
b) Tooled lines infilled with a white slip, also stabbed dots likewise filled.
c) The use of fingertip and fingernail decoration on rim tops and on two jars on the shoulder angle, generally on coarse fabric vessels.
d) Burnished, haematite-coated sherds, although in small numbers and fragmentary.
e) A handled vessel with adjacent incisions.
d) A footring.

These elements can be closely paralleled at the site of Chinnor on the Buckinghamshire/ Oxfordshire border fourteen kilometres to the south-west of Aylesbury where ceramic was abundant (Richardson 1951). Chinnor, apparently a settlement site, consisted of a series of intersecting pits – some containing hearths, across an excavated area of about 12 × 19 metres. Amongst the finds were iron ring-headed pins and a weaving comb. The Aylesbury assemblage, although smaller in total and more fragmentary, includes most of the Chinnor types, although only a few sherds from the characteristic, highly-decorated Chinnor bowls. An apparent difference between Chinnor and Aylesbury is in the occurrence at Aylesbury of sherds with an oxidised ferruginous slip (analysed by Dr A. P. Middleton, Appendix 5). Ferruginous slip was present at Chinnor but it was dark in colour, having been fired in a reducing rather than an oxidising atmosphere, so even this slight difference between the assemblages may be more apparent than real.

Another similar local assemblage comes from Ellesborough, seven kilometres south of Aylesbury – like Chinnor sited on the northern edge of the Chilterns (Cocks 1909), and more recently from two pits excavated on the Stoke Hammond and Linslade Bypass (Moore *et al.* 2007;

Pits 32198 and 32203). At the latter site coarse vessels with fingertip decoration were attributed to 'phase 1' and Chinnor-type wares to 'phase 2', but at other local sites such as Puddlehill, Beds (Matthews 1976, 143; Pit 3), at Chinnor itself, and now at Aylesbury, associations suggest that these wares were contemporary, presumably reflecting cooking and storage vessels versus 'tablewares'.

The Chinnor site, together with Wandlebury, Cambridge, are key sites for one of Cunliffe's 'ceramic style-zones' which he attributes to the early (as against 'earliest') Iron Age *c*. 600–400/300 BC. He notes that there is evidence for some phasing within these centuries, but that 'dating with precision is impossible … no internal evidence is yet available.' (Cunliffe 2005, 101–2). Although the concept of 'style zones' is very helpful, the temporal and geographic boundaries of some of their components, as Cunliffe himself recognises, are not easy to define closely. For example, almost all of the distinct elements recorded from the ritual deposit at Aylesbury that match the 'Chinnor-Wandlebury' zone definition, can also be seen at the 'Late Bronze Age' site of Potterne, in Wiltshire (Lawson 2000), well beyond the nominal heartland of the zone. These elements include white infill, and of course haematite wares that at Potterne are commonest in zone 7–3, there roughly dated 8–7th century BC.

There is always a risk of circular argument with ceramic chronology, but it seems that if this particular style-zone is to have value, unless it was extremely long-lived and taking into account the fact that the early dating of the material at Potterne is tentative, the commencement date of *c*. 600 BC for some of the elements that define the Chinnor-Wandlebury zone may be too early, although the provisional 'latest' end date of 300 BC may still hold. The Prebendal assemblage indicates that shouldered jars in coarser fabric continued in use into the first-half of the fourth century BC, a later date than generally attributed to this form. The Aylesbury dating may also impact on the commencement dates of ceramic conventionally labelled 'Middle Iron Age' and which may now need nudging a little later.

(The writer is grateful to Lisa Brown and George Lambrick for discussion on these matters, although they bear no responsibility for the views expressed here.)

Other finds from the ritual deposit
(Fig. 46)

Although most of the finds listed below were recorded in the field, a few were recovered during post-excavation processing.

Antler combs

A substantial part of the note below was contributed by Ian Riddler.

There are three pieces of comb, a minimum of two combs. They come from different collection units within the eastern sector of the deposit; the bone mass. The antler is from red deer.

1. Segment of antler comb. Decorated with two parallel incised grooves with trace of a third where snapped, at terminal end on curved exterior of antler. Segment missing at side. All of teeth missing, but trace of eight grooves define missing teeth. Burnt brown-black. Length 50mm, max width 32mm. (SF3088, (2779), 493).
2. Two teeth of antler comb at edge of comb. Curvature superficially matches missing piece of 2779 above, but does not belong as the outer surfaces of the antler do not match. Outer tooth rounded in profile, second tooth oval. Burnt (white). There were, therefore, a minimum of two combs from the ritual deposit. Length 38mm, width 7mm. (SF 3161, (2780), 630).
3. Part of circular terminal of antler comb. On curved outer surface, two lightly incised lines (?knife cut). Burnt underside (white). Probably the same comb as 2779 above (SF 3179, (2781), 493).

Parts of thirty-nine combs from Danebury have been discussed by Sellwood (1984, 371–8, 438–9). They were distributed through all datable phases here, and there were slightly more of bone than antler. Those with circular or ovoid terminals, similar to Aylesbury's, were confined to Danebury's earliest ceramic phases. Subsequent excavations at Danebury produced 33 further combs and confirmed that those with ovoid or circular butt forms fell almost exclusively into these earlier phases (Cunliffe and Poole 1991, 354–7).

The circular butt form corresponds with Tuohy's shape E (Tuohy 1999, vol. I, fig. 7). Very few prehistoric combs have been retrieved from Buckinghamshire and the county lies to one side of the main East Anglian cluster, centred on the Cambridge area, and above the south-western group of sites (Tuohy 1999, vol. II, fig. 2). Sellwood elegantly summarised the possible functions of these combs and added a consideration of wear patterns, as well as noting the curved section of many of them (Sellwood 1984, 377–8). It is often the outside teeth of the combs that have fractured, as seen here. Whilst Sellwood related this wear pattern to use of the combs in weaving on a warp-weighted loom, Tuohy has suggested that they were actually used to produce narrow strips of textile braids or webbing. In terms of the warp-weighted loom, they would only have been needed for starting borders (Sellwood 1984, 378; Tuohy 1999, vol. I, 57). As weaving implements, they are likely to have been used by women and sometimes occur in pairs, suggesting that they might have been kept as sets, rather than individual items, a situation reflected with this group (Tuohy 1999, vol. I, 59–61).

Copper alloy

4. Copper-alloy disc, slightly domed both sides, apparently undecorated, diam. 10mm, thick 1mm. (630. 3072). Not identified; x-ray does not add further information.

Also a piece of thin copper-alloy wire, bent at right-angles, total length 36mm. (630. SF3018/ 2778).

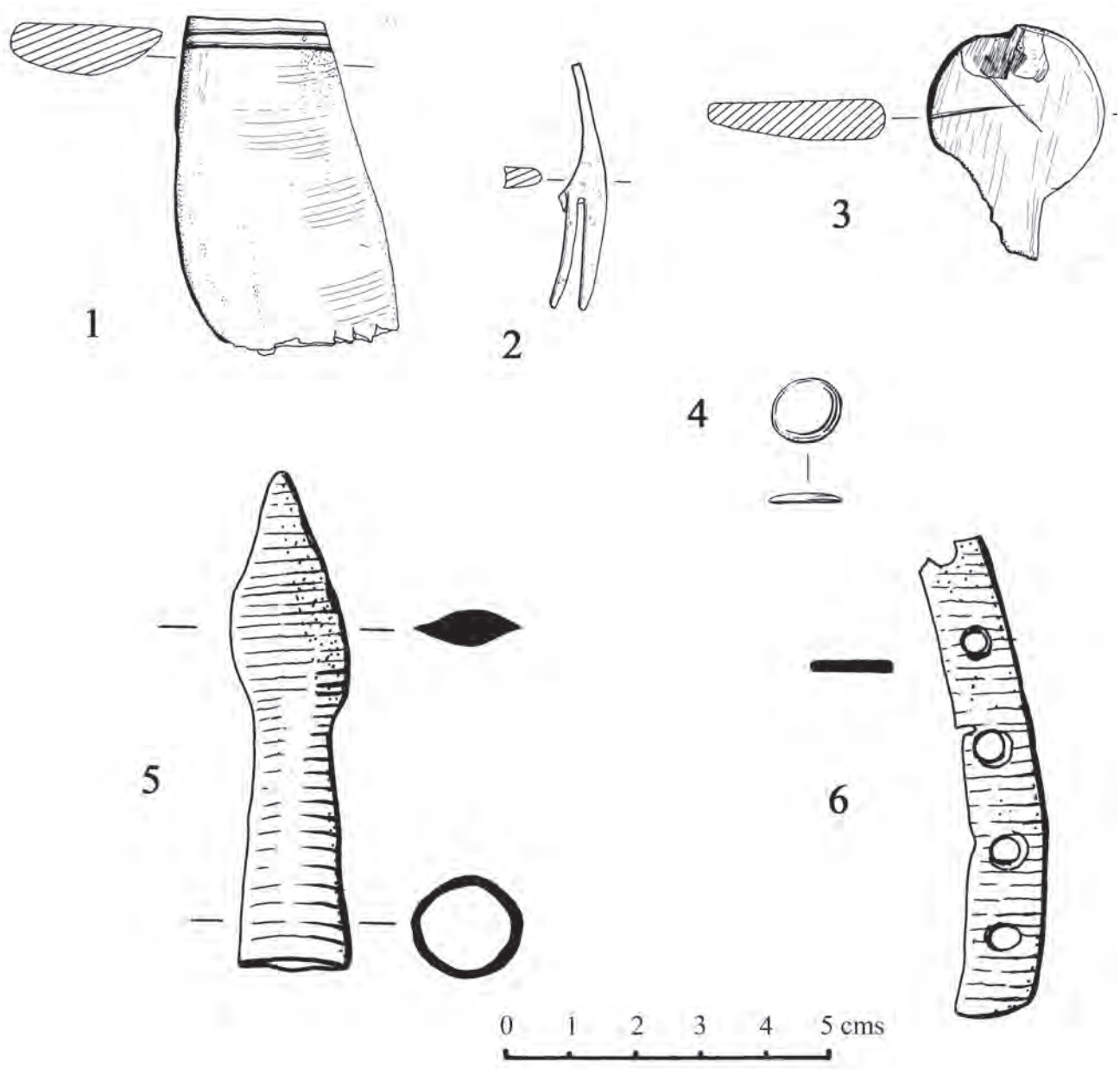


Figure 46. Finds from the ritual deposit: 1–3 combs; 4 copper-alloy disc; 5 iron arrowhead; 6 iron perforated plate (1/1).

Iron

There were three pieces of iron in the deposit. There is always the risk of such small mobile items being intrusive; however, iron objects are increasingly being recognised from early and Middle Iron Age contexts.

5. Socketed iron leaf-shaped spear or arrowhead with traces of wood in socket. Length 76mm; diam. of socket ext. 16mm. (493.3062).

Arrowheads and spears are rare in earlier Iron Age contexts. Locally there is a possible example from Puddlehill, Bedfordshire, of similar size and with similar ceramic associations to Aylesbury, but it is tanged (Matthews 1976, fig. 28). There is one fairly close parallel from Danebury (Cunliffe and Poole 1991, 352 and fig. 7.18) and the point of another (Cunliffe 1984b, 366 and fig. 7.19). Spears are common in the mid-late Iron Age East Yorkshire cemeteries (Stead 1991, figs 123–124).

6. Iron plate with four perforations and trace of fifth. Length 75mm, 2.5mm thick (493/630.3076). The function of this object is not known. Superficially it looks like a piece of medieval fiddle-key horseshoe, in which case it would obviously be intrusive, but, compared with, *e.g.*, medieval examples from Exeter (Allan 1984, fig. 189), it has a symmetrical outline and is narrow. From Danebury, Cunliffe illustrates one certain fiddle-key horseshoe (1984b, fig. 7.14) but also a curved plate with two perforations not dissimilar to this piece. Both of the Danebury pieces were unstratified but ‘from soil accumulations at the entrance’.

Flint

There were 13 struck flint from the deposit (context 630, 734, 836) which included 3 flakes, 6 broken flakes, 2 spalls, 1 flaked lump, 1 broken core.

The numbers of worked flints occurring in late Bronze Age/ early Iron Age sites, for example locally at Ellesborough (Cocks 1909) and at Potterne, Wiltshire (Healey in Lawson 2000), and more generally, Humphrey (2007), has confirmed beyond reasonable doubt their continuing utilisation for specific functions. This small assemblage does not, unfortunately, advance the discussion much further, in view of the probability of earlier occupation at the site; however the few cut marks on animal bone are noted to be very fine.

Stone not native to the site

Identifications are by Dr Michael Oates; none are illustrated.

Of the non-local stone from the deposit, two small pieces of chert could be from relatively local Portlandian deposits. Of the three other pieces, two were unformed grits or sandstone not local, and are likely to have come from querns, although no formed surfaces survived. The other, a smoothly rounded strikingly egg-shaped piece might have been traded or collected for its curiosity value.

3042. A grit with well polished clasts.
3086. Fragment of well-cemented, coarse quartz sandstone ?
3101. Hen-egg shaped pebble with signs of bedding ? Dolomite. ?burnt
3107. Small piece of banded chert (possibly local from Lydite beds)
3183. Flint pebble and piece of chert (possibly local from Lydite beds)

In addition there were two local burnt Portland fossils (3086 and 3156) and two pieces of unformed burnt flint (3182).

Further environmental evidence from the ritual deposit

Charred plant remains

Lisa Moffett

One soil sample was submitted. All samples from the site were floated by field staff using a Siraf-type flotation machine (French 1971). The volume of flot recovered and the percentage of flot analysed are given in Table 11 as are the approximate number of items per litre. There were only a few grains of wheat and barley, and three weed seeds. The sparsity of the assemblage from the ritual deposit suggests that the seed material was not a deliberately included part of the ritual deposit, but is more likely to be residual material which was present on the site as a result of human activities there.

Table 11. Iron Age plant remains. Taxonomy follows Stace (1997).

Sample number		2051
Soil sample volume (litres)		10
Total flot volume (mls)		11
% of flot analysed		100
Items per litre		2
Context description		ritual deposit
Date		Iron Age
Species		**Common name**
(i) Crops/food plants		
T. spelta/aestivum grains	1	spelt/bread wheat
Triticum sp free-threshing grains	1	free-threshing wheat
Triticum sp grains	3	wheat
H. vulgare L. hulled grains	2	hulled barley
H. vulgare indeterminate grains	1	barley
Hordeum s. grains	1	barley/wild barley
Cereal indeterminate grains	3	cereal
(ii) Wild Plants		
Stellaria media type	1	stitchwort
Vicia/Lathyrus	1	vetch/vetchling
Poaceae	1	grass
Total items	15	

Wood charcoal macro-remains

Phil Austin

Introduction

A total of 13 wood charcoal samples was submitted for analysis from the ritual deposit dated to *c*. 400–350BC, two Iron Age pits and a Middle Saxon recut of the Iron Age hillfort ditch (see on for the latter). The aim of the investigation was to identify the range of tree and shrub taxa represented as a means of gaining an insight into contemporary wood use and the nature of the local environment in the Iron Age and Saxon periods.

Methodology

The charcoal submitted for analysis had been recovered mostly by hand-picking. Sample 2049 (context 493) was retrieved by wet sieving. All samples were sieved prior to examination to separate >2mm fragments from any fragments <2mm. Fragments <2mm are too small to be identified securely. Fragments were prepared and examined following standard procedures as described in Hather (2000). To assess the relative abundance of each taxon both fragment quantity and weight (g) were recorded. Where samples contained <100 fragments every fragment was examined. In samples containing >100 fragments 50 fragments were randomly selected for analysis. Nomenclature follows Stace (1997).

Results

A total of 201 fragments were examined from ten Iron Age samples. In total five taxa were identified. These are listed below in Table 12 and the contexts in Table 13. The total fragment count and weight for each taxon is also shown. All the woods identified are hardwoods (Angiosperms)

Table 12. Summary of wood-charcoal macro remains, all Iron Age samples.

Genus/Species	***Common Name***	***Frag. count.***	***Wt. (g)***
Corylus avellana	Hazel	44	3.343
Fagus sylvatica	Beech	15	0.210
Fraxinus excelsior	Ash	7	0.411
Prunus sp.	Blackthorn; Cherries	11	1.066
Quercus sp.	Oak	98	4.80
Indeterminate	-	26	0.307
	Totals	**201**	**10.137**

Table 13. Full Results: wood-charcoal macro remains, ritual deposit and Iron Age pits.

Feature/Context Description: c. 400–350BC, Ritual deposit (inc. human/animal bone)				
Context No.	Sample No.	ID (Qty)	Wt. (g)	Comments
493	2049	*Corylus avellana* (1)	0.001	Many fragments (all taxa)
		Fagus sylvatica (15)	0.210	distorted by high level of
		Fraxinus excelsior (5)	0.071	thermal degradation
		Prunus sp (2)	0.084	
		Quercus sp (29)	0.683	
		Indet. (19)	0.190	
493	-	*Corylus avellana* (16)	1.094	'handpicked'
		Quercus sp (2)	1.905	
493	3061	*Quercus* sp (22)	0.470	Most from same wood?
630	3054	*Corylus avellana* (3)	0.143	'charcoal sample from pelvis'
		Quercus sp (10)	0.468	
630	3171	*Prunus* sp (9)	0.982	Charcoal within 3171
		Quercus sp (1)	0.139	
630	3131	*Corylus avellana* (8)	0.479	-
		Quercus sp (3)	0.376	
		Indet. (3)	0.074	
630	3162	*Corylus avellana* (9)	0.614	-
		Quercus sp (9)	0.086	
630	3175	*Corylus avellana* (7)	1.012	-
		Quercus sp (19)	0.558	
		Indet. (2)	0.117	
Feature/Context Description: Iron Age Pits				
Context No.	Context	ID (Qty)	Wt. (g)	Comments
Pit 472	502	*Fraxinus excelsior* (2)	0.34	-
		Quercus sp (3)	0.115	

native to southern England. No softwoods (Gymnosperms) or alien taxa were identified.

The two native Oaks, *Q. petraea* (Sessile Oak) and *Q. robur* (Pendunculate Oak), cannot be differentiated anatomically. Fragments of *Prunus* could not be confidently determined beyond genus and it is not known which species are represented here.

Discussion

Taphonomy and fragment condition

Despite the presence of accumulated mineral deposits within many of the charcoals, fragments from all contexts were generally well preserved. However, it was noted that the majority of fragments from most Iron Age contexts exhibited greater levels of thermal degradation than may be expected in charcoal from 'domestic' hearth contexts. Though no fragments were actually 'vitrified' many were close to being so. Acute thermal degradation was not confined to any particular taxon or to charcoal from a particular context type and was present in samples from both the Iron Age ritual deposit and pits. The cause of 'vitrification' (and acute thermal degradation generally) in wood charcoal is poorly understood and its cause remains uncertain. However, recent research surmises that high temperatures are not the cause of 'vitrification' in charcoal and suggests that other factor(s) are involved (McParland *et al*. 2010). Whilst much of the charcoal from the Iron Age ritual deposit was highly thermally degraded, fragments from Samples 3162 and 3175 were much less so. This suggests that charring conditions or, perhaps, wood properties, were not the same for all the charcoal recovered from this feature. If so, it is possible that the remains represent debris from more than one fire event and that these fire events may have been of different types.

Biological degradation, evident as fungal mycelium within the structure of the wood, was present in fragments from all the samples studied, though not necessarily in every fragment. The presence of fungal mycelium indicates that the wood was undergoing the processes of decay

when charred and was most likely gathered as dead-wood from the woodland floor. Ring curvature suggests that most of the charcoal appeared to derive from unmodified branches (round-wood) rather than large timbers, though Oak and Beech fragments appear to have derived from more substantial wood than those of Hazel or Prunus sp., for example.

Wood use and resource management

Almost certainly all the Iron Age charcoal studied derives from wood used as fuel and represents re-deposited fire debris. The woods represented, especially Oak, Beech and Ash, are all excellent fuel woods. Knowledge of their burning properties would have favoured their exploitation in the past and, given the absence of poor quality fuel-woods, it appears that they were preferentially selected for use at Prebendal.

The majority of the charcoal was retrieved from an apparent 'ritual' context. This raises the possibility that the charcoal represents wood that was in some way directly implicated in ritual activities. But, what these ritual activities were, what they signified and how the wood may have featured is beyond recovery. Whilst likely and even probable, it remains unknown and entirely speculative whether (or not) individual species were attributed with esoteric meaning. Equally elusive is if fire itself played a significant part in the ritual activities at this site. Fire rituals have an ancient and long history throughout Europe and the occurrence of comparable rituals in the Iron Age is not implausible.

There is no direct evidence that any of the wood derived from managed woodland. Too little is known about the anatomical characteristics of coppiced wood, when compared to that of un-coppiced wood, to confidently conclude that coppicing (or any other form of management) was practised. However, it may be more than coincidence that of the seven woods identified, five (Oak, Hazel, Beech, Field Maple and Ash) have all been traditionally managed, principally through coppicing or pollarding, and respond particularly favourably to such treatment. These taxa continue to be managed in the present for timber, charcoal and other woodland products. Woodland management is believed to have been practised to some extent as early as the Neolithic and, whilst it cannot be demonstrated on the evidence available here, it is feasible that the Iron Age charcoal derived from managed woodland.

The contemporary vegetation

The ecological preferences of the taxa identified shows a clear bias towards dry calcareous habitats. Beech, Ash, Field Maple and Holly are commonly associated with chalk and limestone soils and would have thrived locally in the past. Oak (most probably Pendunculate Oak) is the only taxon identified that is intolerant of alkaline soils and would have had a localised presence where suitable neutral to acidic soils were present. Nonetheless, Oak was the only taxon to be represented in every sample (except Pit 678, 841, in which no woods were present) suggesting that it was highly valued. Its presence here is probably not a faithful reflection of an actual abundance in the landscape. The greater prevalence of calcareous soils suggest that it is more likely that Beech woodland was a more common component of the local vegetation than Oak. The dense shade characteristic of Beech woodland tends to exclude other plants from becoming successfully established. It is thought therefore that patches of mixed deciduous woodland, containing quantities of Oak and/or Ash with an understorey of Hazel, would also have been present. Taxa more or less exclusively associated with wetlands or watercourses (*e.g.* Willow or Alder) were not represented. Whilst it is possible that apparent absence of wetland taxa could reflect some form of human selection/avoidance strategy, it is more likely that suitable habitats were not present and thus these taxa were not growing locally.

Parasitological analysis

In 1987, Mr Gordon Hill, at the time at the North East London Polytechnic studying human parasitic helminth infection, kindly checked three soil samples from the ritual deposit for ova (2027 × 2 and 2051). No helminth ova were detected.

5. Radiocarbon Dating of the Skull from the Hillfort Ditch and Human and Animal Bone from the Ritual Deposit

John Meadows, Michael Farley, Gillian Jones, Christopher Bronk Ramsey, and Gordon Cook

Introduction

Six radiocarbon samples from the Prebendal, Aylesbury, were dated in 1988 by Accelerator Mass Spectrometry (AMS), then a new technique, at the Oxford Radiocarbon Accelerator Unit: two human bones, three animal bones, and one sample of charred wheat. One of these human bones and two animal bones were from Iron Age contexts, one animal from a Saxon context, cereal from a Saxo-Norman context and one human bone from a Medieval context. In 1998, a sample of bone from the Iron Age head burial in the enclosure ditch, which could not be dated in 1988, was successfully dated, again at Oxford.[1] In 2008, a new programme of radiocarbon dating was undertaken, following a reassessment of the site's Iron Age chronology using Bayesian modelling. The ceramic evidence suggested a sixth–fifth century BC date. Thirteen radiocarbon measurements were obtained on bone samples, including replicate measurements on two of those dated previously. Two further measurements were obtained in 2010 on single charred grains from a Saxo-Norman burnt grain deposit. These samples were dated by AMS at Oxford and at the Scottish Universities Environmental Research Centre (SUERC). All twenty-two radiocarbon measurements are reported here, together with stable isotope measurements on the six human bones dated in 2008.

Objectives

Calibration of the radiocarbon results obtained before 2008 (Fig. 47) did not provide a clear chronology of the Iron Age use of the site, other than dating it to the early-middle Iron Age, due to the relatively small number of samples dated, and the relatively large error terms in the original measurements, as well as the shape of the radiocarbon calibration curve in this period. Given the improvements in laboratory precision, and the availability of software for Bayesian chronological modelling, the 2008 radiocarbon dating programme aimed to determine:

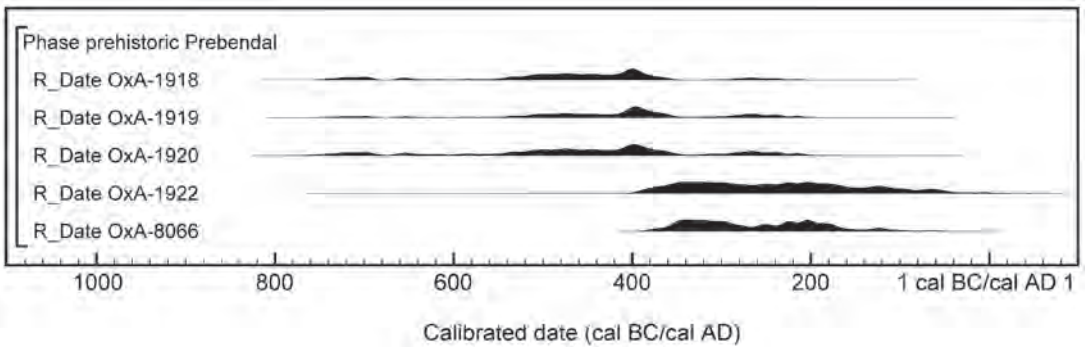


Figure 47. Calibration by the probability method of the Iron Age radiocarbon results available before the 2008 dating programme. The height of the probability distribution at any point corresponds to the probability that the sample is of this calendar date.

1. This is the only radiocarbon measurement from Aylesbury Prebendal not funded by English Heritage, and was part of a programme of thematic research on prehistoric warfare by Richard Osgood (1998).

1. *The temporal relationship between the bone mass (containing largely animal bone, some articulated), and the group of articulated human burials (an adult and four young children, accompanied by at least fourteen animals), which adjoins the bone mass deposit on its west*. It was conceivable that a disarticulated human bone within the bone mass was derived from another, disturbed burial, and that the bone mass was therefore appreciably later than the articulated burial phase.
2. *Whether the on-site vertical collection sequence used during the excavation of the bone mass accurately reflects the depositional sequence, and whether this deposition took place over a long or short period of time.* The sheer density of animal bones (predominantly sheep/goat) within the bone mass, made it difficult to define discrete bone groups, unless it was obvious that the bones were articulated. To deal with this 185 groups were defined during excavation. The sequence of lifting should, therefore, roughly reflect the sequence of deposition, although no actual 'layers' were encountered within the deposit, which was homogenous in character, and the deposit may represent a rapid process of accumulation. If the bone mass accumulated over a significant period of time, however, the depositional sequence should reflect real differences in date between the articulated bone samples.
3. *The temporal relationship between the ritual deposits (burials and bone mass) and construction of the hillfort within which they lie.* Although the hillfort's second-phase rampart would probably have sealed the bone mass, no stratigraphic evidence survived to indicate whether the ritual area was in use during the primary phase of the hillfort, or whether the ritual deposits actually preceded the hillfort construction. The artefactual assemblages from the hillfort ditch fills (albeit limited) and the ritual deposits provide no indication of temporal discontinuity within the Iron Age. A complete human skull with three articulated vertebrae attached appears to have been placed on the base of the primary cut of the earliest hillfort ditch, and packed around with tabular limestone, either at the time of its construction or very shortly afterwards. A radiocarbon date on this skull (OxA-8066, 2180 ±40BP) gave the impression, against expectations, that the hillfort could have been significantly later than, and hence unrelated to, the ritual deposits dated in 1988.

In 2010, following a reappraisal of the archaeobotanical remains, two single grains of free-threshing wheat were dated, to provide a more precise date for a deposit of burnt grain, previously dated to cal AD 890–1210 (OxA-1923; 1005 ±70), which includes chaff attributed to rivet wheat, a compact variety introduced in the medieval period.

Approach to sample selection

The samples submitted in 1988 were assessed against the criteria of Waterbolk (1971), which draw attention to the chronological relationship between a sample and its archaeological context, and the intrinsic age of the material being dated. All the samples were of short-lived material, and, with the exception of OxA-1923 (*'seeds from a layer of charred grain'*), a Saxo-Norman deposit, each sample was from a single organism. Most samples must have been freshly deposited, but for:

- a disarticulated, immature pig skull from the base of a ditch, dated to confirm the mid-Saxon date of the ditch (OxA-1921, 1310 ±60BP),
- a disarticulated bone from a Medieval context, which produced an Iron Age date (OxA-1922, 2180 ±70BP), and
- a disarticulated sheep's skull buried with Human 3, which was regarded as a possible curated object.

The skull from the hillfort ditch, 4002, was sampled in 1988, but produced an aberrant result, suggesting some form of contamination (Hedges *et al.* 1990, 223). A second sample from the same specimen was eventually dated, however, confirming the Iron Age attribution of the hillfort ditch. Unfortunately, there was no other material from the hillfort ditch fills that were suitable for radiocarbon dating (*i.e.* which could not have been residual).

All the samples selected in 2008 were from bones that were found in articulation or closely associated with bones almost certainly from the same individual. As well as having a negligible intrinsic age, such samples are extremely valuable in Bayesian chronological models (see below), because it can reasonably be assumed that they have not been deposited more than a few months after the death of the animal, or person, in question (Mant 1987). Their calibrated radiocarbon ages are therefore excellent estimates of the dates of their contexts, and the relative dating implicit in stratigraphic relationships between contexts can be used to constrain the modelled dates.

A large number of articulated animal bones was available for dating from the Iron Age ritual deposits, in addition to the five human burials, and the human skull from the hillfort ditch, which had been deposited with vertebrae attached. Possible samples were carefully considered, using information such as skeletal element, age, and sidedness, to determine whether any might belong to the same individual (human or animal). Potential new samples were thus chosen to ensure that any individual could only be dated once (except for known replicates). Although all the animal bones in the bone mass were probably fleshed until shortly before deposition, the deposit probably representing ritual feasting or sacrifice nearby, the radiocarbon samples were selected from those bones which were either found in articulation (3115, 3149, 3173A, 3180), or which were almost certainly from the same articulation or individual as other bones found in the same collection group (3137,

left and right metatarsals; 3150, left and right metatarsals, phalanges, tibia and calcaneum; 3174, right metatarsal, two first and two second phalanges; 3158J, right immature humerus, part of a complex group of semi-articulated bones, with many small loose epiphyses). In addition, the very good and similar preservation of each bone selected for dating in comparison with other bones in the sample makes it very unlikely that any are residual.

Bayesian simulation models were then created, incorporating the existing radiocarbon dates and possible new samples, and the relative dating of these samples derived from the lifting sequence, to determine how many samples might be necessary to meet the dating objectives. Thirteen samples were thus selected, and when these had been dated a second round of sample submission was considered, but further simulation exercises suggested that additional refinement of the Iron Age chronology would be difficult to achieve.

All the articulated humans in the burial group were thus dated, in addition to Animal 14, a disarticulated sheep skull which was evidently buried with Burial 3. Later pit-digging had removed most evidence of stratigraphic relationships between these burials, but Human 5 was apparently disturbed by the burials of Humans 2 and 3. In the bone mass, it was possible to select samples whose depositional sequence could be inferred from the vertical collection sequence (see above).

The head burial from the hillfort ditch was sampled again, to obtain a more precise radiocarbon date for this individual. One of the bones sampled in 1988 was also re-dated, to confirm the accuracy of the original measurements, undertaken when AMS dating was a new technique.

Two grains from the charred grain deposit in fill 2006, cut 400, were dated, as simulation modelling showed that an unambiguous Saxon or Norman date could be obtained for this deposit, given the much better radiocarbon measurement precision now available.

Laboratory measurement

The samples measured at the Oxford Radiocarbon Accelerator Unit were processed according to methods outlined in Hedges *et al.* (1989) and Law and Hedges (1989; OxA-1918–23); Bronk Ramsey *et al* (2000) and Bronk Ramsey and Hedges (1997; OxA-8066): and Brock *et al.* (2010) and Bronk Ramsey *et al.* (2004a; 2004b; OxA-18623–7, OxA-23361–2). Samples dated at SUERC were processed following Longin (1971, modified), Vandeputte *et al.* (1996), Slota *et al* (1987) and Xu *et al.* (2004). Both laboratories maintain continual programmes of quality assurance procedures, in addition to participating in international inter-comparisons (Scott 2003). These tests indicate no significant offsets and demonstrate the validity of the precision quoted.

Results

All the radiocarbon results are given in Table 14. These are conventional radiocarbon ages (Stuiver and Polach 1977), quoted according to the international standard set at the Trondheim convention (Stuiver and Kra 1986). The radiocarbon ages have been calibrated with data from Reimer *et al.* (2009), using OxCal (v4.1) (Bronk Ramsey 1995; 1998; 2001; 2009). The date ranges given in Table 14 have been calculated by the maximum intercept method (Stuiver and Reimer 1986), at two sigma (95% confidence). They are quoted in the form recommended by Mook (1986), rounded outwards to 5 years if the error term is less than 25 radiocarbon years, or to 10 years otherwise. The probability distributions of the calibrated dates (*e.g.* Fig. 47) were obtained by the probability method (Stuiver and Reimer 1993).

Where more than one radiocarbon result is available for the same individual, Ward and Wilson's (1978) method has been used to obtain a weighted mean, which is the best estimate of that individual's radiocarbon age, and it is the calibration of the mean which provides the most accurate estimate of the individual's calendar date (Table 14). As well as giving a more precise date for each sample, the statistical consistency between the old and new radiocarbon measurements of samples 3040 (Human 1) and 4022 (the head burial in the ditch) confirms that, despite several improvements in the pre-treatment of bone samples at Oxford since the late 1980s (Bronk Ramsey *et al.* 2004a; Brock *et al.* 2010), the original measurements are likely to be accurate, and can be used with confidence in the chronological model. The $\delta^{13}C$ measurements of OxA-8066 and the 2008 samples also suggest that the estimated values of $\delta^{13}C$ used to correct the measured radiocarbon ages of OxA-1918–1922 for fractionation are valid.

Dietary stable isotope values ($\delta^{13}C$ and $\delta^{15}N$) were measured in the human bones dated in 2008, to identify any individuals whose diet had a large marine protein component, which would affect their radiocarbon age (Schoeninger *et al.* 1983). The results indicate that all six dated individuals derived their protein mainly or exclusively from terrestrial sources (Chisholm *et al.* 1982; Mays 2000; Fig. 48), as suggested by the faunal assemblage. Although some of the reported C:N ratios fall outside the range normally used to indicate good collagen preservation (2.9–3.6; DeNiro 1985), a broader range, which takes into account differences in laboratory instrumentation and procedures, is considered suitable, as there is no evidence of poor collagen preservation.

The calibrated radiocarbon results (Table 14) should therefore accurately date all the individual samples. Figure 49 shows the calibration of the Iron Age radiocarbon results by the probability method (Stuiver and Reimer 1993). These are discussed in more detail below. The early medieval radiocarbon results are discussed further on.

*Table 14. Radiocarbon results, Aylesbury Prebendal. All samples except OxA-1923 were from single entities (Ashmore 1999). No individual was dated more than once, other than the head burial (4002) and Human 1. * $\delta^{13}C$ values for OxA-1918–23 are laboratory estimates. Posterior density estimates are derived from the model shown in Figure 51 and would change if the model structure or dating results included in it were changed.*

Sample reference	*Material dated*	*Laboratory number*	*C/N*	*$\delta^{15}N$ (‰)*	*$\delta^{13}C$ (‰)*	*Radiocarbon age (BP)*	*Calibrated date range (95% confidence)*	*Posterior density estimate (95% probability)*
Head burial								
4002	human, skull	OxA-8066			-19.9	2180 ±40		
	human, mandible	OxA-18629	3.2	8.9	-19.6	2226 ±24		
	weighted mean (T' = 1.0, T'(5%) = 3.8, ν = 1)					2214 ±21	380–195 cal BC	*390–290 cal BC*
Burials								
3026	human 5, thoracic vertebra	SUERC-18214	2.8	8.8	-19.3	2265 ±35	400–200 cal BC	*400–360 cal BC*
3040	human 1, left femur head	OxA-1918			-21.0*	2350 ±60		
	human 1, right ulna	SUERC-18212	2.7	9.5	-20.3	2315 ±35		
	weighted mean (T' = 0.3, T'(5%) = 3.8, ν = 1)					2324 ±31	410–370 cal BC	*400–360 cal BC*
3099	human 4, right tibia	SUERC-18213	2.7	10.2	-20.4	2300 ±35	410–230 cal BC	*400–360 cal BC*
3007	human 2, right humerus	OxA-18627	3.2	9.1	-20.0	2246 ±25	390–200 cal BC	*390–350 cal BC*
3020	human 3, left ulna	OxA-18628	3.2	9.1	-19.8	2269 ±25	400–210 cal BC	*400–360 cal BC*
Animal 14	sheep, left horn core and parietal	OxA-1919			-21.0*	2330 ±60	710–200 cal BC	*750–350 cal BC*
Bone mass								
3115	sheep/goat, mature, lumbar vertebra	SUERC-18211			-21.9	2240 ±35	400–190 cal BC	*400–350 cal BC*
3149	sheep/goat, two lumbar vertebrae	OxA-1920			-21.0*	2340 ±70	750–200 cal BC	*390–360 cal BC*
3173A	sheep(goat), immature, right humerus	OxA-18626			-21.5	2267 ±26	400–210 cal BC	*400–360 cal BC*
3137	sheep, mature, right metatarsal	SUERC-18210			-22.4	2280 ±35	400–200 cal BC	*390–360 cal BC*
3150	sheep, mature, right metatarsal	OxA-18623			-21.2	2249 ±25	400–200 cal BC	*390–360 cal BC*
3158J	sheep(goat), immature, right humerus	OxA-18624			-21.2	2285 ±25	400–230 cal BC	*400–360 cal BC*
3174	sheep, mature, right metatarsal	SUERC-18209			-21.2	2290 ±35	410–220 cal BC	*400–360 cal BC*
3180	sheep/goat, mature, lumbar vertebra	OxA-18625			-21.2	2323 ±25	410–370 cal BC	*400–370 cal BC*
Others								
474	pig, immature, skull fragment	OxA-1921			-21.0*	1310 ±60	cal AD 630–880	-
164	human bone	OxA-1922			-21.0*	2180 ±70	400–40 cal BC	-
2006	bulk charred grain, *Triticum aestivum*	OxA-1923			-26.0*	1005 ±70	cal AD 890–1190	-
2006A	single charred grain, *Triticum aestivum*	OxA-23361			-22.4	952 ±22	cal AD 1020–1160	-
2006B	single charred grain, *Triticum aestivum*	OxA-23362			-22.6	969 ±23	cal AD 1015–1155	-

Interpretation

Although the calibrated date ranges of all the Iron Age samples overlap, it is unlikely that these samples are all of exactly the same date, as the radiocarbon results (including the weighted means for 4002 and 3040) are not statistically consistent (T' = 25.1, T'(5%) = 25.0, ν = 15; Ward and Wilson 1978).

The presence of a disarticulated human bone within the bone mass might imply that the bone mass deposits were cut into pre-existing burial deposits, perhaps after a significant interval, but the results from the hilltop ritual deposits (burials and bone mass) are statistically consistent with a single radiocarbon age (T' = 14.2, T'(5%) = 22.4, ν = 13), which suggests that any interval between these deposits was very brief. It is feasible, however, that they represent two closely-spaced events, but it is not possible

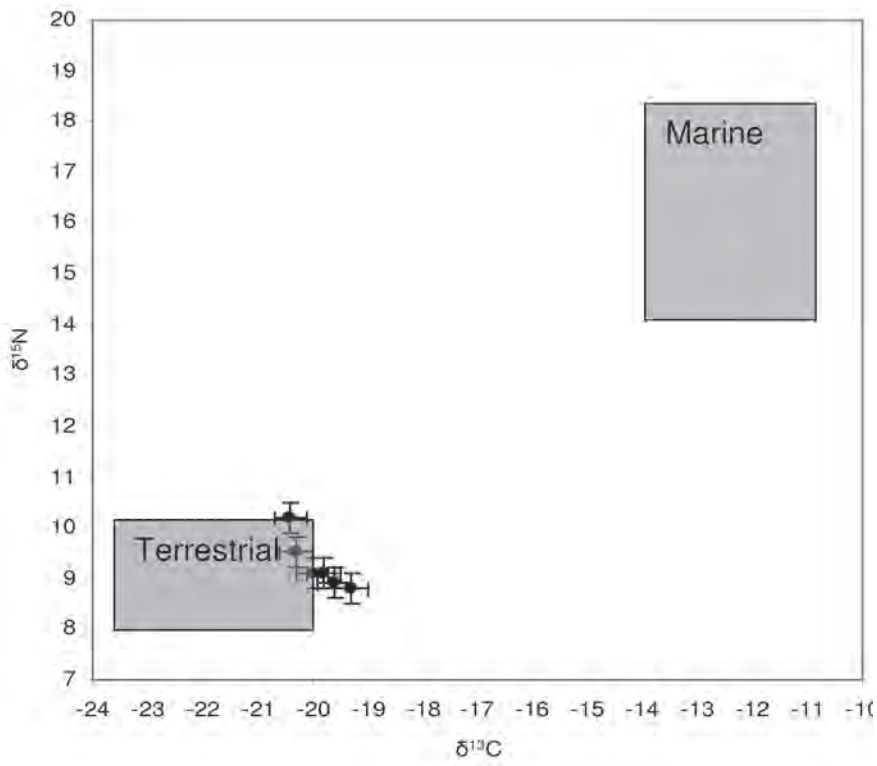


Figure 48. Stable isotope measurements on human bone samples dated in 2008, with error bars of ±0.3‰. The boxes (after Mays 2000) indicate the expected range of stable isotope values in bones from humans with fully terrestrial and fully marine diets.

to prove, by radiocarbon dating, that two or more events are exactly simultaneous.

Radiocarbon results from all the human remains dated are not consistent with a single date (T' = 17.3, T'(5%) = 14.1, ν = 7). It appears that the head burial in the hillfort ditch and the residual Iron Age bone dated by OxA-1922 may be slightly more recent than the hilltop burials. It is also possible that the OxA-1922 bone from a medieval pit is too recent to be from a burial disturbed by the bone mass, but as this was a single radiocarbon measurement with a relatively large error term, some ambiguity is inevitable (see below).

The Bayesian approach

The Bayesian approach to chronological modelling (Buck *et al.* 1996) is based on the premise that whereas radiocarbon dating (and other scientific dating techniques) may accurately estimate the dates of individual samples, archaeologists are generally more interested in the dates of events, such as the establishment or abandonment of a site, that are directly or indirectly associated with these samples, or in the order of, or length of time between, such events. Bayesian models allow scientific dating results to be combined with relative dating information, such as that provided by stratigraphy, to produce mathematically robust *posterior density estimates* (which, by convention, are always given in italics) of the dates of the events of interest.

It is important to stress that (unlike simple calibrated radiocarbon dates) such estimates are inherently interpretative, and may change if additional scientific dating results are obtained, or if the same data are remodelled under different assumptions about the chronological relationships between samples. When radiocarbon results are not explicitly modelled, however, archaeologists tend to over-estimate the spread of the underlying dates (Bayliss *et al.* 2007, 7–8). This is a danger particularly when the relevant part of the calibration curve includes long 'plateaus', as it does in the first millennium cal BC (Reimer *et al.* 2009); simple calibration of the 1988 results, for example, only dates the burials and associated bone mass to the Iron Age, as also demonstrated by ceramic associations (Fig. 47), and it is difficult to estimate the duration of this phase by inspection.

A Bayesian model of the Iron Age chronology, created in OxCal (v4.1) (Bronk Ramsey 1995; 1998; 2001; 2009), is given in Figure 50. This incorporates all the radiocarbon results in Figure 49. The relative dating information incorporated in the Bayesian model, which can be derived from the brackets and keywords in Figure 50, is shown in the pseudo-Harris matrix of samples and events (Fig. 51).

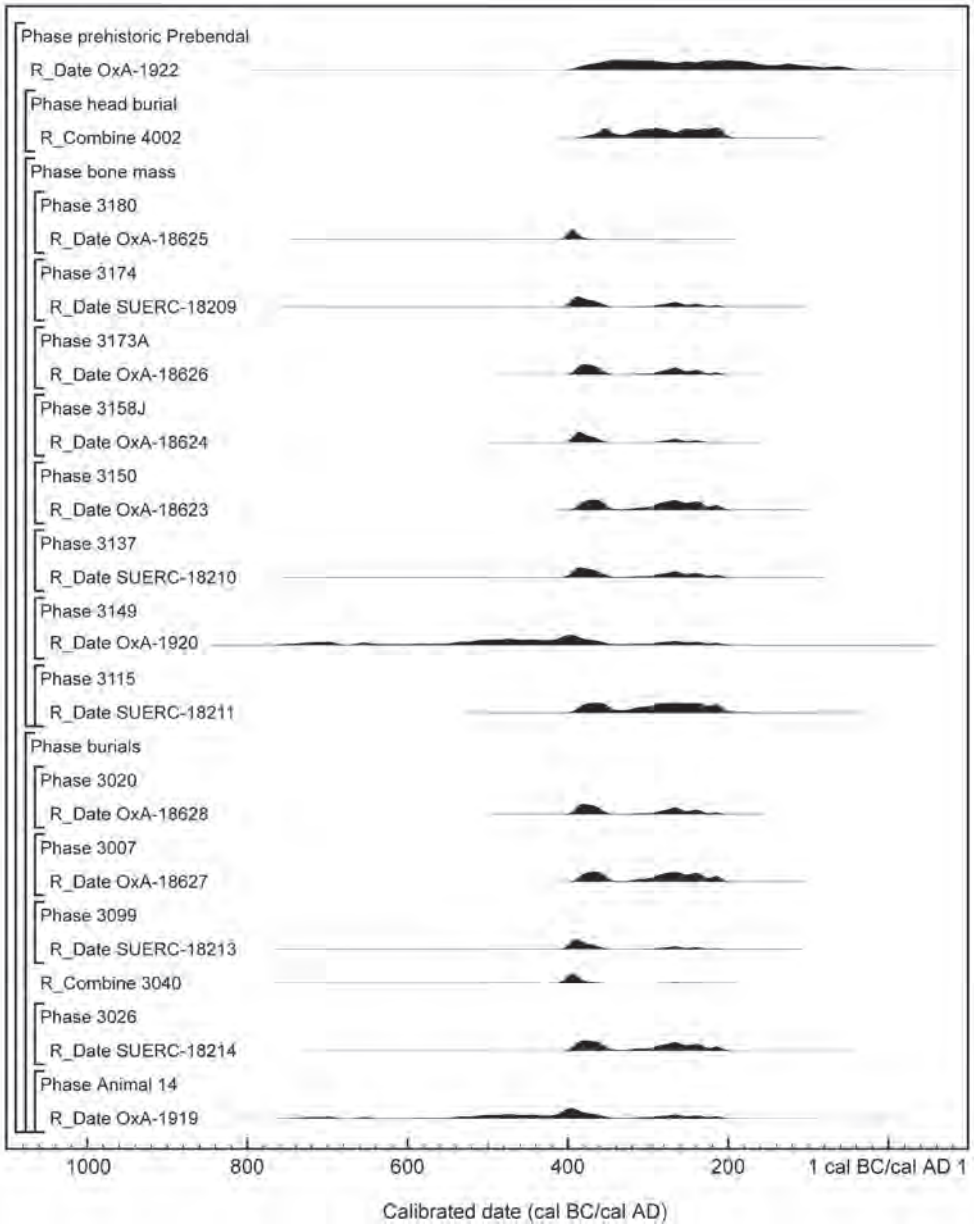


Figure 49. Calibration by the probability method of all the prehistoric radiocarbon results. Where the same sample has been dated twice, the weighted mean of the two results (R. Combine) has been calibrated (Table 14).

Replicate radiocarbon dates on samples 3040 and 4002 were combined before calibration (Table 14), and their weighted means (Ward and Wilson 1978) have been used in the model. The model's satisfactory overall index of agreement (A_{model} >60%, Fig. 50) indicates that the radiocarbon results are consistent with the relative dating built into the model structure. It is also notable that none of the individual indices of agreement (shown in brackets in Fig. 50) is below the notional 60% threshold (Bronk Ramsey 1995), which again supports both the relative dating and the individual radiocarbon measurements.

The model treats the Iron Age occupation of the Prebendal, Aylesbury, as a single, uniform phase of activity (Bronk Ramsey 2000), with a beginning (Boundary *begin*, Fig. 50) and an end (Boundary *end*, Fig. 50). The 'bounded phase' model accounts for much of the statistical scatter inevitable in radiocarbon measurements, and produces a far more realistic impression of the site chronology (see discussion in Bayliss *et al.* 2007). Boundaries have also been placed around the hilltop burial phase (*start burial* and *end burial*, Fig. 50) and the bone mass deposition (*start bone mass* and *end bone mass*, Fig. 50), as these deposits may represent separate phases of activity.

Animal 14, the sheep skull buried with Human 3, provides only a *terminus post quem* for this burial, as the skull, which was suspected to have been defleshed when

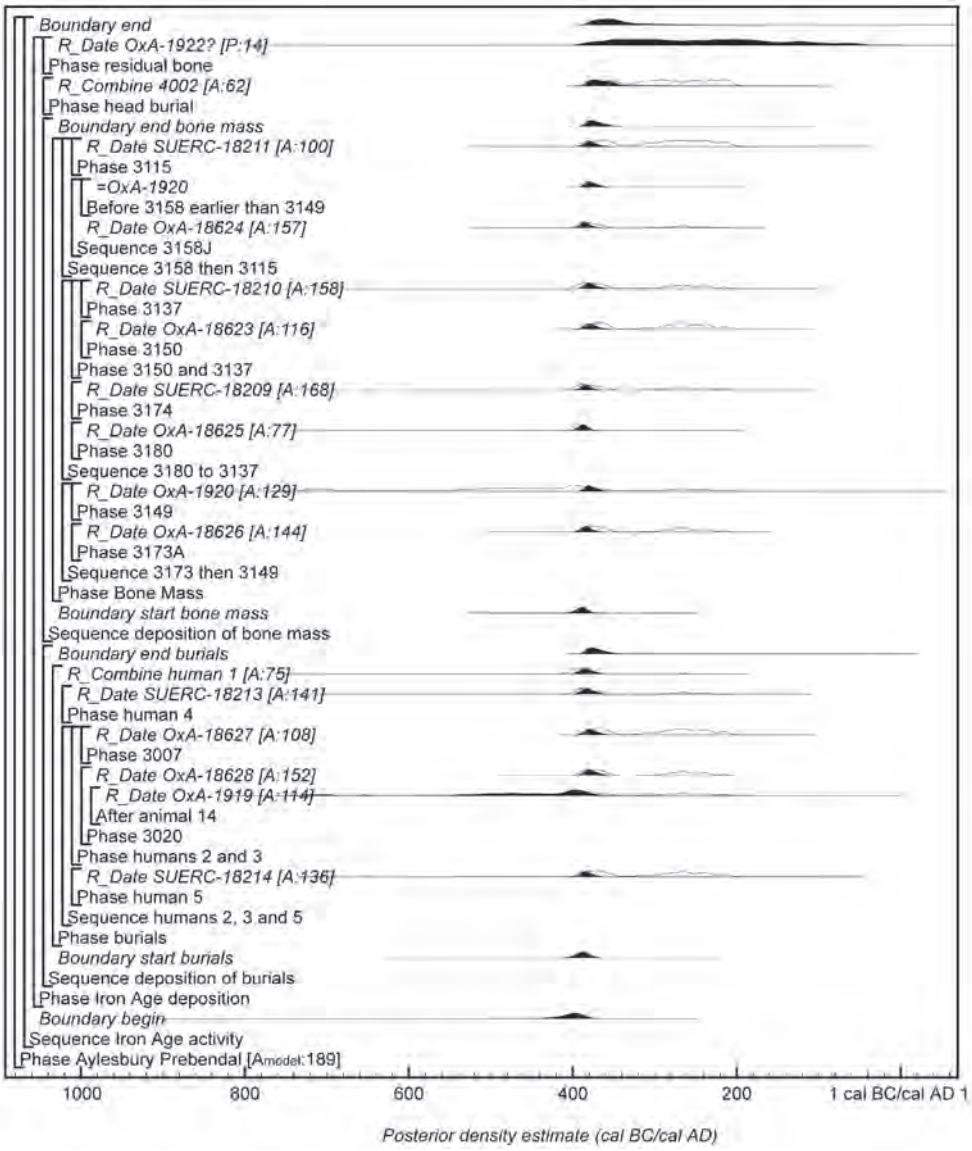


Figure 50. Bayesian model of prehistoric chronology, Prebendal, Aylesbury. Distributions in outline are the probability distributions obtained by simple calibration of the radiocarbon results, as shown in Figure 49. Solid distributions are posterior density estimates of the dates of these samples, and of events associated with them. OxA-1922 is omitted from the model, and the distribution shown is that obtained by simple calibration. The model structure is exactly defined by the brackets and keywords on the left-hand side of the figure.

deposited, is potentially older than the burial. Other than OxA-1922 (see below), all the other samples are assumed to date their deposition.

The model assumes that the hillfort ditch was excavated between the beginning of the phase of Iron Age activity (Boundary *begin*, Fig. 50) and the date of the head burial (*4002*, Fig. 50). Finally, the model tests whether OxA-1922 (a stray human bone) could date to the Iron Age phase of activity.

The posterior density estimates of the dates of significant events derived from the model are shown separately in Figure 52, with the date ranges given in Table 14. It is clear that the ritual deposits are almost exactly contemporary with each other, and that all these events could have occurred in the first half of the fourth century cal BC. The same conclusions can be drawn from Figure 53 and Table 15, which show the estimated duration of intervals derived from the same model. The dated Iron Age activity phase lasted *0–100 years (95% probability)*, but probably less than *50 years (68% probability)*.

Using the OxCal function *Order*, we can show that neither ritual deposit seems to predate 400 cal BC (*start burials, 8% probability; start bone mass, 5%*); both could have begun before 390 cal BC (*start burials, 34%; start bone mass, 38%*), or more probably 380 cal BC (*start burials, 79%; start bone mass, 87%*), and both deposits

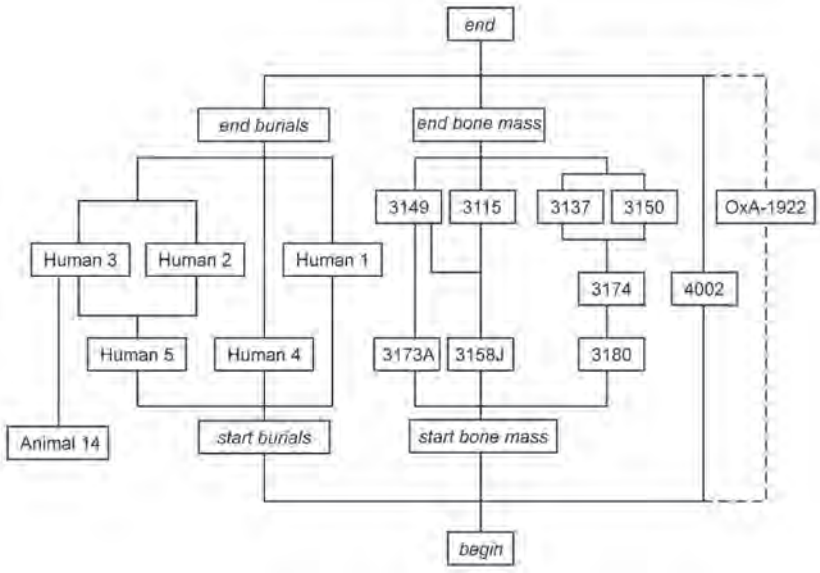


Figure 51. Relative dating of bone groups and events incorporated in the Bayesian model (Fig. 50). The dashed line indicates that OxA-1922's inclusion in the Iron Age phase is not based on stratigraphic evidence and that the model does not assume that it belongs in this phase.

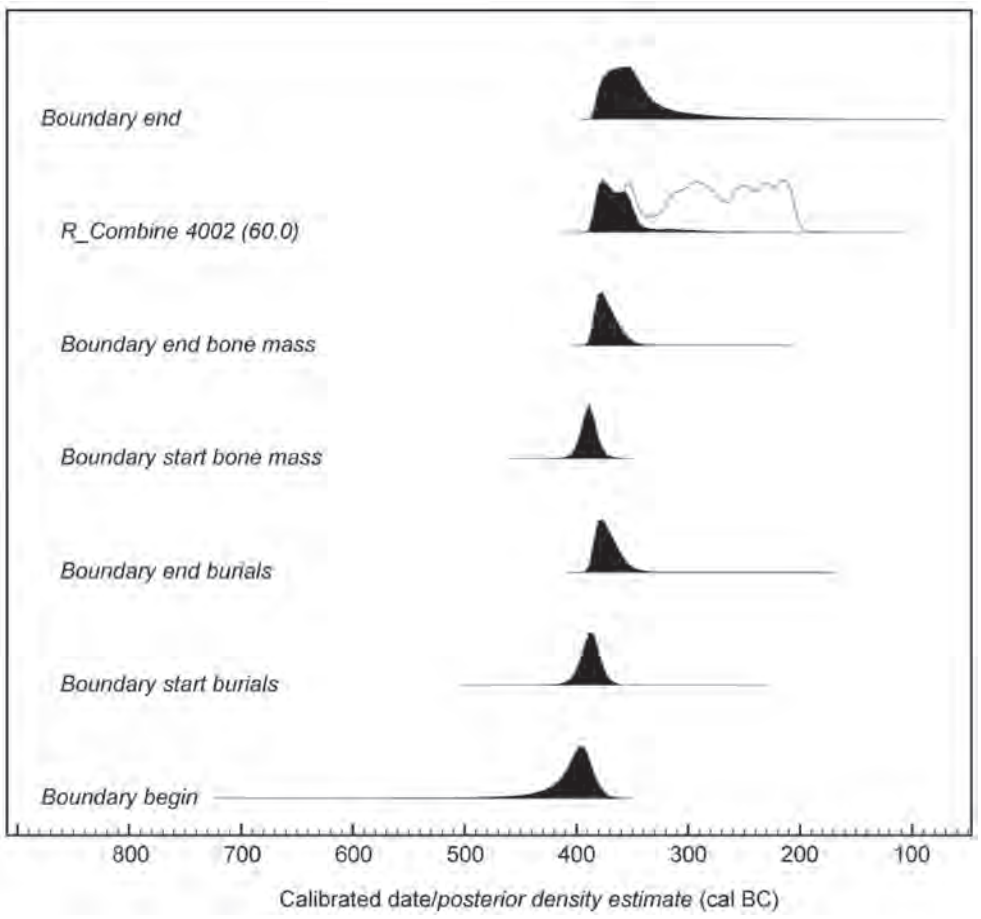


Figure 52. Posterior density estimates of the dates of significant events, derived from the model shown in Figure 50.

Table 15. Modelled date estimates, rounded outwards to 10 years. These distributions are derived from the model shown in Figure 51, and are shown in Figures 52 and 53.

Event	***68% probability***	***95% probability***
begin	420–380 cal BC	470–360 cal BC
start burials	400–370 cal BC	410–360 cal BC
end burials	390–360 cal BC	390–340 cal BC
start bone mass	400–380 cal BC	410–370 cal BC
end bone mass	390–360 cal BC	390–340 cal BC
4002	390–350 cal BC	390–290 cal BC
end	380–330 cal BC	390–250 cal BC
Span		
duration of Iron Age activity	0–50 years	0–100 years
bone mass duration	0–30 years	0–50 years
burial duration	0–30 years	0–50 years

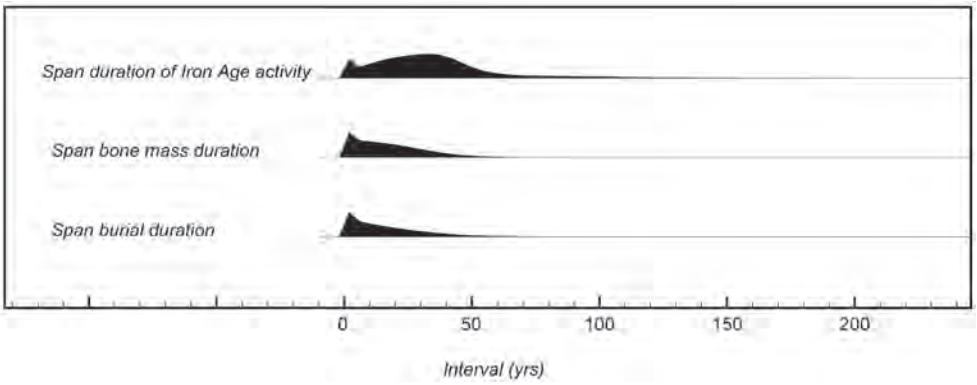


Figure 53. Posterior density estimates of the duration of phases (Span), derived from the model shown in Figure 50.

ceased before 370 or 360 cal BC (*end burials, 60%* and *85%; end bone mass, 62%* and *87% probability*). Assuming (as in the model shown in Fig. 50) that it only provides a *terminus post quem* date for its context, the skull of Animal 14 could be significantly older than the burial of Human 3 (*OxA-1919* before 400 cal BC, *73% probability*), but an alternative version of the model which assumed this sample, like Human 3, post-dated Human 5 gave satisfactory overall agreement, so we cannot conclude that the skull was curated. The residual bone dated by OxA-1922 could date to the same Iron Age phase; the probability of 14.1% that it fits in this phase (Fig. 50) is not negligible, although it appears very likely that this individual postdates the ritual activity (OxA-1922 after *end burials: 95% probability*, after *end bone mass: 96% probability*).

Given the absence of any radiocarbon sample that must predate the hillfort ditch, we cannot be certain when construction began, but it must have been completed by *390–350 cal BC (68% probability)*, or *390–300 cal BC (95% probability)* (*4002*, Fig. 51), though perhaps not before the end of ritual deposition (*4002* before *end burials, 32% probability*; before *end bone mass, 31% probability*). Nevertheless, it is very likely that the hillfort was built within the lifetime of someone who witnessed the ritual deposition on the hilltop, if not of one of those buried there.

6. Discussion of the Ritual Deposit

The character of the ritual deposit

The direct archaeological evidence, in particular the seasonality of the animals, the interrelated character of material in the bone mass *etc*., factors previously discussed, suggests that the deposit was formed over a short period of time.

The Bayesian model of the radiocarbon results (above) suggests that the deposit spans at most a few decades and that both the burials and the bone mass were deposited at about the same time, in the first third of the fourth century cal BC. The hillfort ditch was probably excavated very soon afterwards, before the middle of the century based on the dating of the head burial on the base of the ditch.

Before summarising the character of the deposit it is worth again remarking that its survival in a heavily-utilised urban setting was both fortuitous and unexpected, but at the cost of its being partially destroyed by cut features of medieval and later date. Less obvious loss may also have occurred through factors such as cultivation. It is not always possible, therefore, to determine whether what appears to be a partial corpse was originally interred intact.

The deposit owes its survival principally to the fact that much of it lay within a shallow, limestone-cut feature. The irregular outline of the feature suggests that there was no clear communal concept as to its final form and it is possible that its shape arose from several conjoining excavations. The Bayesian analysis of the radiocarbon dates indicate that its creation could have preceded construction of the hillfort. If this were the case, subsequent to the construction of the hillfort the deposit would probably no longer have been visible from a distance and it would very probably have disappeared under the rampart of the hillfort's second phase (see rampart reconstruction Fig. 17).

The bone assemblage has been described in detail above, but for convenience the principal elements are summarised below. Orientation of the head end of the body is given. In the absence of the head, this is derived from other body parts.

The articulated human element consisted of the following:

Human 1. Child, aged about 12 years, supine, upper legs flexed. Some missing body parts due to later pits. Skull missing, head to SE. Remains of seven animals: a goat, four sheep and two sheep/goat closely associated (animals A6–A12).

Human 2. Child, aged in the late teens, prone, some missing body parts due to later pits. Some major displacement of bone (*e.g.*, femora) not long after deposition while still fleshed. Head to south. Associated with sheep (A13). Close proximity to foot and elbow of Human 3.

Human 3. Adult, mature, probably female. Supine, both arms are on right side of the body, so one has been displaced; left arm tightly flexed. Lower limb bone which probably belongs to this person also moved before it was defleshed. Head to SSW. Sheep skull (A14) partly under pelvis and on top of the displaced arm. The sheep skull lacks its lower jaw so disarticulated when placed.

Human 4. Child, aged about 4 years. Only lower legs present and disturbed foot bones. Head to NE. Original degree of completeness not known. Right leg close to pig (A1), left leg close to sheep (A6).

Human 5. Child, aged about 10 years. Only articulated vertebrae survive. Other bones which probably belong to this child spread to the east. Original degree of completeness unknown. Head to W legs to E. Lay beneath Human 3. No animals certainly associated.

Animal associations apart, none of these burials were straightforward interments. One child was buried prone and another, a supine burial, had flexed legs. There are indications from the adult Burial 3 that some mutilation may have occurred prior to burial, and from child Burial 2, that either mutilation or post-depositional re-arrangement took place.

The group of one adult and four children (one a late teen) is itself obviously not a typical cross-section of the population. Additionally, with the exception of child burial 5, the burials all had animals placed with them at the time of burial, ranging from a single animal (Humans 2 and 3), to seven with Human 1. The intimacy of human and animal burial can be clearly seen with limbs resting one on another, and from the striking posture of the goat (A9) that accompanied Human 1 with its head bent back and lying adjacent to the child's right hand. Whatever the cause of human death, the burial process clearly required an accompanying animal sacrifice. However, no artefactual material can be certainly associated with any of the burials.

Apart from one pig and one animal certainly a goat, all of the animals associated with these burials were sheep or probably sheep. The skull A2 and the immature sheep(goat) from the area of human burials could be given

age estimates, from which the season of death could be estimated. If the assemblage was created as a single event (or a single time of year), the evidence suggest that this was in July or early August. If the event was of longer duration, this occurred from June to September.

Interspersed among this articulated or semi-articulated group of human remains were sixty-six other human bones that could not certainly be attributed to the five 'formal' burials (Fig. 23). These represented not less than four further individuals, one immature, the rest adult, indicating a different age structure than those more formally buried. The incompleteness of these remains cannot in this instance be attributed to later disturbance at the site, but suggests that the partial remains were brought in from elsewhere either as dry bone, or at least de-fleshed. Radiocarbon dating of these remains was not undertaken as it would only have successfully distinguished between the recently deceased and ancient bones if there was an interval greater than about 350 years between death and deposition, due to the shape of the calibration curve in this period (see discussion of the possibly curated sheep skull in the radiocarbon section). Their order of deposition in the burial sequence unfortunately cannot be determined. None occurred near Burial 1, but several were found near Burials 2, 3 and 5, spreading northwards towards the central area. Half of the bones occurred sporadically across the central area, from north to south, east of Burials 4, 1 and 2/3/5, but west of the main mass of animal bones described below.

To the east side of these human and animal burials, but not clearly separated from them, was a dense mass of animal bone approximately 0.30m deep which contained 80% by number of the animal bone from the deposit as a whole. For convenience this deposit has been referred to as the 'bone mass'. Within the bone mass were remains from at least twenty-one sheep, five cattle, a horse, and two pigs. As with the articulated human remains, sheep predominated. The principal distinguishing feature of this dense group of bone in comparison with the group associated with the human burials, was that most of the bones were not articulated; only fifteen groups of articulated bones were recorded. A further notable feature was that 8.4% of the bone showed signs of burning, consistent with a proportion of the animals having been roasted, whereas from the western articulated group only one context included burnt bones. Although the distribution of this burnt material within the bone mass was not precisely defined, it seems to have occurred largely within its eastern area; discolouration of the soil caused by charcoal was also noted here during the excavation. It is significant that within the bone mass there was only one human bone. The bone mass deposit, although intimately associated with the intact burials, was therefore of quite a different character to it.

Spread throughout the deposit were small amounts of ceramic (Table 16): parts of two burnt weaving combs; two pieces of formed stone, probably from querns; a striking, but naturally formed egg-shaped stone; three pieces of iron and one of copper-alloy. Wet sieving produced cereal and weed remains in single numbers only, so their inclusion was incidental.

Whereas the articulated burials clearly have coherence, the situation is less clear for the material in the bone mass. There was obviously no intent to bury whole carcasses here. Where articulated 'joints' were buried (almost entirely of sheep/goat), these represented less than half of the skeleton of the slaughtered animal. Moreover there was some selection and significant omissions, such as horncores. Numbers of mandibles were higher providing good evidence for age and season at death. The results from the bone mass were entirely consistent with the seasonal evidence from the young sheep(goat) from the area of human burials.

The on-site evidence suggests that although there was clearly a sequence of deposition within the bone mass in that some bones obviously lay over others, this was over a very short period of time. Had there been a number of widely-separated episodes then some on-site evidence might have been observed: for example, discrete soil-separation elements, whereas as previously noted arbitrary lifting-units had to be utilised precisely because bone projected from a unit below into one above. This interleaving could have arisen if some or all of the bone had been deposited fleshed and decayed in situ. A proportion certainly did, as indicated by the few articulated groups, but the presence of these seems insufficient to produce large-scale movement through decay processes so it seems more likely that the entire bone mass was deposited over a short period of time.

The predominance of sheep bones, as with the burials accompanying the humans, is again striking. The articulated remains included only one calf, and unarticulated cattle bones were relatively few, pig bones were rare, and there were only two of horse (Table 4). Deer was represented only by the worked antler comb pieces. Vole, water vole and common toad were also present. The largely de-fleshed bones had perhaps been selected from a larger mass accrued elsewhere, probably quite close by.

Surprisingly, there is sparse evidence of the butchery which one might expect to be associated with, *e.g.*, feasting. In contradiction, however, as noted above, there is evidence for burning on 8.4% on the bones which could

Table 16. Number of ritual area contexts that contained sherds, showing that where sherds occurred in ritual area contexts they were thinly spread, e.g. 28 contexts had only one sherd.

No. of sherds	1	2	3	4	5	6	7	8	9	10	11	12	14	15	21
No. of contexts	28	20	7	4	6	3	5	4	2	1	3	3	1	1	1

(but does not have to) imply food preparation. Moreover, this seems to have taken place in the immediate vicinity since charcoal was present amongst the soil matrix from the bone mass in the south-east of the deposit. The most satisfactory explanation is that selection of bones was made from material generated in the immediate locality. This could have been from sacrificed animals that were cooked and subsequently eaten, or possibly from animals sacrificed but not eaten. At a much later date, Folly Lane, Verulamium, an early first century AD site, had cremated animal remains (cattle, pig, sheep and hare or cat) that were associated with large quantities of pyre debris from a burial pit which in turn appears to have been associated with a pyre about eighteen metres away (Niblett 2000). At the King Harry Lane cemetery, also near Verulamium, 87 amongst 388 late Iron Age cremation burials, contained animal bone (Davis 1989). This could indicate that people and sacrificed animals were burnt on the same pyre.

Providing a coherent explanation for the deposit as a whole is obviously not straightforward. Although included within an irregular cut into the bedrock, its limits were not otherwise defined by any obvious marker-feature, such as a ditch, which could have provided material for a superimposed mound, although this does not rule out the presence of some distinct covering, such as a turf mound. That the deposit must have been reasonably protected from the depredations of scavenging animals is indicated by the relative coherence of the articulated remains, by the presence of small bones in their correct anatomical position, good preservation and the absence of signs of gnawing.

There are few stratigraphic sequences relating the human burials, other than Human 5, or what was left of it, being below Human 2; and the foot possibly from Human 3 being above sheep A13, which was above Human 2. Comparison of the radiocarbon dates from the articulated burials with those from the bone mass shows that they are statistically consistent with a single date. The dramatic character of both deposits suggests that those creating either deposit must have been well aware of the existence of the other and while wishing to avoid any disturbance wished the two events to be closely associated. There is, in other words, a continuity of view of rite on the site although the two acts were different in character, and quite probably complementary. Other human bone was also recovered elsewhere on the site away from the ritual deposit and this is discussed further on.

It is worth mentioning that the process of deposition here was clearly quite different from that which has been observed in some striking midden deposits of LBA–EIA date such as at Potterne, where the abraded material that the deposit contained arose from the concentration of animals at the site, perhaps over centuries (Lawson 2000), so the authors are confident that the term 'ritual' is not being misused for the Aylesbury site.

Other human bone from the site and a radiocarbon determination

Before discussing the character of the Aylesbury deposit in relation to other sites, the presence of other single human bones in many medieval and later deposits should be noted (Fig. 54). The bones were 'severely mixed and broken and fragmented'. It was reported that in total there are the remains of at least eight adults and four immature individuals (based on a count of individual bones), see list in Appendix 3. None came from the Saxon ditch (see on).

It was initially presumed that this bone might be from a disturbed Saxon cemetery in view of the proximity of the site to a minster (see on) but no single inhumation grave-cut, of which several have been found elsewhere in the town, was recorded. Despite the extent of later disturbance, had a regular cemetery of Middle or Late Saxon date been present here, part at least of one grave would have been expected to survive. To test the date of this residual bone, a human vertebra from a medieval pit some distance from the ritual deposit was included in the initial radiocarbon dating programme (fill 164, cut 296: OxA-1922: Table 14). This produced a date of 2180±70BP, cal 400–40 cal BC, confirming that the bone was Iron Age. The Bayesian model suggests there is a very low probability that it derives from the ritual deposit.

Clearly one date is insufficient to date all of the stray human bone that is widely dispersed across the site (for example the Beaker sherd might have originally accompanied a burial), but it does raise the possibility that some at least of the 'stray' bones may come from other ritual-related activity on the hilltop in the vicinity of the ritual deposit.

Comparable discoveries in England[2]

In order to place the site in context it is worth briefly reviewing current knowledge of burial practice for the period in England. It will be concluded that the association of complete animals and humans, placed together in an intimate position, is extremely unusual, and possibly unique, in southern and central England.

In seeking comparable early fourth-century deposits, archaeological terminology for the period has given some problems. The historic use of terms for the British Iron Age has been extensively reviewed by Cunliffe (2005, 1–23) and slightly more recently in introductory essays to Haselgrove and Pope (2007, 1–23) and Haselgrove and Moore (2007, 1–15). The titles of the latter two volumes, in accordance with their introductory essays, employ 'Earlier', for *c*. 800 BC–400 BC, and 'Later', for 400 BC onwards, disallowing the concept of a 'middle'. Nevertheless, both essays then require a 'transition zone' for the period *c*. 400–300 BC, which, for convenience, the

2. As this report was in its final editing stage, an interim account was published of another good example of the ritual burial of a large number of animals together with part of a person, at High Post near Salisbury, apparently deposited prior to the construction of a substantial defence (*British Archaeology* July/August 2011, 6.). Unfortunately it has not been possible to take account of this most interesting parallel in the discussion which follows.

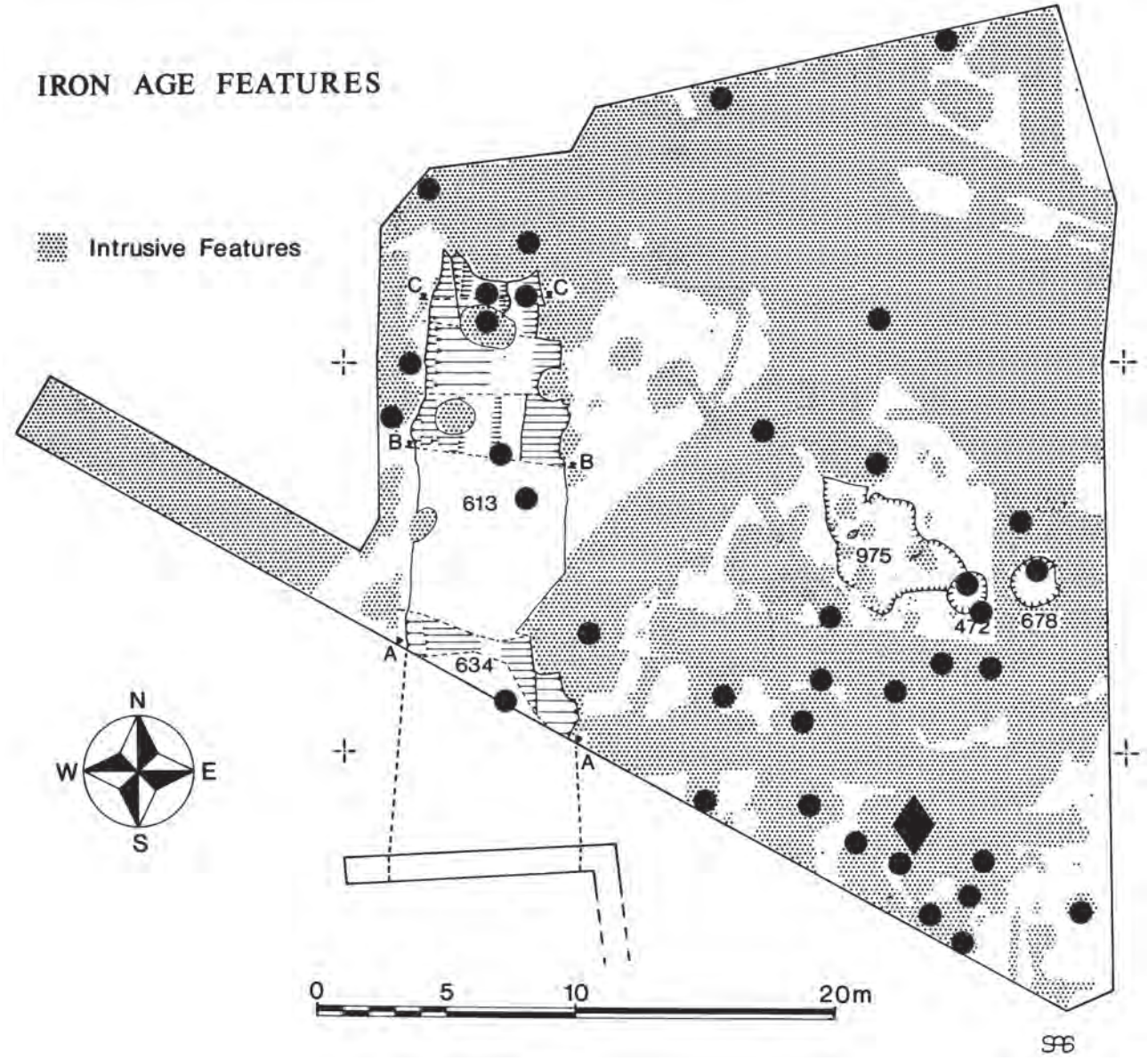


Figure 54. Plot showing human bone of all periods from the site, excluding bone from the ritual deposit and features cutting it. Indicative only as some bone occurred in general layers and some came from multiple deposits in a single feature e.g. medieval pits. Diamond indicates radiocarbon dated human bone (164) from one medieval pit (296).

essays place in the 'Late' period. Although this two-part division has value in considering broad-brush change, as a tool it produces unwieldy blocks of time which make cross-site comparison difficult and also makes little allowance, for example, for the many local but dramatic changes experienced in southern and central England in the second half of their defined 'Late' period. In contrast the framework used by Cunliffe over a number of years (based largely on ceramic), does allow local refinement (Cunliffe 2005, 32, 88):

LBA transitional *c*. 1100–800: Earliest Iron Age *c*. 800–600: Early Iron Age *c*. 600–400/300: Middle Iron Age 400/300–100: Late Iron Age 100–*c*. AD 50

With Cunliffe's scheme, the fourth century BC again falls, by default, in a transition zone, in part due to the imprecision of radiocarbon measurements in this area. So far as Aylesbury is concerned, given the available terminology, the site may inconveniently be classified as 'Early' or 'Middle' or following the earlier discussion 'Transitional', which makes cross-site comparison difficult as many authors without benefit of sound radiocarbon dates use precisely these terms. In the discussion which follows an author's own phase terminology is used. In the light of the current author's previous discussion of the affinities of the ceramic associated with the Aylesbury site, the term 'Early Iron Age', following Cunliffe, would seem preferable for the deposit.

In recent decades much effort has gone into establishing the character of later Bronze Age to Iron Age burial practice. Gazetteers and relevant studies include Whimster (1981), Wait (1985) and Brück (1995). For the earlier Iron Age, Brück studied 99 sites of late Bronze Age – earlier Iron Age date which contained, or might be expected to contain, cremated and inhumed remains, and identified nine broad categories of deposition including caves, deposits in wet places, etc. Across the categories she found very few examples of complete or even semi-complete human inhumations, although it has to be said that her search was hampered by many incomplete accounts and uncertainties about date. She concluded that selection of individual or small groups of human bone as a 'symbolic resource' was the primary objective at this early period, rather than any formal deposition rite. However, even this modest conclusion appears to be at variance with practice at some Late Bronze Age/ earlier Iron Age sites such as the Potterne 'midden' where single bones of a minimum of 15 individuals were distributed, apparently randomly, throughout layers of material (Lawson 2001, 95–101). Here at least the possibility of casual discard may have some validity and as Wait (1985) had previously concluded on burial of the period: 'the normative archaeological rite is one that has left no archaeological traces'.

Probably by the fifth, and certainly by the fourth century BC, the placing of whole or partial human burials within the backfill of previously functional pits and ditches, had become relatively common. This method of burial has been interpreted as a specific rite by Cunliffe (1992) and others, and is now recognised as the most visible form of Iron Age burial in southern and central England. The practice is reviewed below at three sites where human remains occur in some quantity and detailed reports are available: the settlements at Gussage All Saints, Dorset; Gravelly Guy, Oxon; and the hillfort at Danebury, Hants. The association between human and animals at these sites, pertinent to the Aylesbury deposit, as distinct from the 'special deposits' of animal remains by themselves identified by Grant (1984a), is then discussed, and finally the evidence that is emerging for a distinct class of dedicated cemeteries in the middle Iron Age, in addition to the 'pit' rite.

At Gussage All Saints, Phase 1 (dated to the 4th–3rd centuries BC), the only human burial was of an infant in a shallow pit. In Phase 2 (attributed to 3rd–2nd centuries BC) an adolescent female was buried in a pit and the remains of six infants came from other pits and the enclosure ditch. From Phase 3 (1st century BC and later – 'Durotrigian'), there were the remains of 14 adults, of which nine were crouched burials from pits, the remainder partial deposits only. There were also 31 infant burials (Wainwright 1979).

At Gravelly Guy bones from 16 adults and 47 infants were recorded from Early-Middle Iron Age contexts. The majority were disarticulated but all of the articulated adult burials were crouched and the majority of them had been placed in storage pits or ditches (Lambrick and Allen 2004).

The mode of deposition of human remains for the first phase of excavation at Danebury was reviewed by Lucy Walker (Cunliffe 1984, 442–463). She classified the deposits principally in terms of completeness. Ten percent of the Danebury pits contained human remains, a disproportionate amount being from adult males. Intact burials (20) were mainly crouched, apart from a few whose posture often indicated that they may have been thrown in. This analysis was not substantially altered by second phase study after a further 13 complete burials had been found (Cunliffe 1991, 418–431), although it was then observed that some neonatal infants were deposited in small holes rather than in pits. A total of 300 separate deposits of human bone was present at Danebury.

The question of associations between the human dead, or parts of them, with artefacts or animals, has been much discussed in recent years (*e.g*., Grant 1984b, Hill 1995). The search for conclusive associations in the early and middle Iron Age of central and southern England has on the whole been disappointing since, as previously observed, the majority of the human remains have been found in pits and ditches, features which themselves form natural traps for discarded material. Proving *intentional* associations between objects occurring within such deposits is not easy. Interpretation is not helped by the fact that the excavation and recording of stratigraphy within pits often takes place in a physically constrained environment on site: pits are commonly half-sectioned (which makes linking deposits from the two halves quite difficult), and the analysis of fills is normally retrospective; 'associations' often are identified only during the post-excavation process. Potential direct associations between humans and animals (and some artefacts) from the three sites noted above, together with a few additional sites, are briefly noted below.

At Gussage, only one of the intact inhumations had any 'grave goods', a young male from Pit 285, with iron fragments at his waist (Wainwright 1979, 32). The report on the animal bone from the site does not generally record whether the material is articulated, but one crouched burial from Pit 387 is reported to have had 'numerous animal bones and the articulated remains of dog and horse' in the same layer (*ibid*. 33–4 and pl. xxv).

At Gravelly Guy, there were only a few instances where animals and humans could conceivably have been part of the same deposit (Pits 1367, 1376, 1371 and 2024), although the topic was considered in some detail. Of these, in Pit 1367 a human skull fragment was on top of a basal deposit of three animal bones: in 1376 a mandible was on top of a basal deposit of animal bone, sherds and fired clay; in 1371 a neonate lay at the edge of a pit on the same 'level' as horse bones; and in 2024 a neonate was grouped with animal bone including a pig's mandible. In contrast there were a number of discrete animal burials, particularly of dogs (14) and one each of sheep/goat and cattle. Associations between human and animal here are, therefore, tenuous. In a review of regional deposition patterns in the same publication (pp. 243–249), Healy and

Wait found the Gravelly Guy position not untypical (in Lambrick and Allen 2004, 243–249).

A few examples of association at Danebury are noted below, for simplicity considering only associations with intact, as against partial, human skeletons. Only one, amongst all of the articulated burials, had an associated artefact which may have gone into the grave with the person; a glass bead found beneath the neck of an unsexed adult (Cunliffe 1991, 421). Of animal associations among the pit deposits (Walker in Cunliffe 1984b, 442–463), in Pit 437 a foetal/neonatal child was loosely associated with a neonatal calf; in Pit 587 a broken cattle skull was in a layer over a male burial; in Pit 1015 a large amount of sheep bones were found in various layers, some around the body. Three bodies in Pit 9935 were 'associated' with a broken ox skull, and an almost complete horse skull and a horse lower limb. From a charnel pit, Pit 1078, came part of a foetal/ neo-natal pig and large amounts of cattle and sheep skull bones. Links between human and animal burials are, in summary, fairly loose. Annie Grant in discussing the animal remains notes, 'even where animal deposits and human bones were found in the same pit, they were only rarely found in close association ...' (Grant in Cunliffe 1984b, 540).

A probable association between human and animal of late date, occurs in a second-first century pit burial at Viables Farm, Basingstoke. Here, two adult females, 'with animal bones around and beneath them', are noted in the same layer. The head of one of the females rested on an immature sheep. The carcass of a second sheep was present as well as two partial horse and two partial cattle skeletons. These burials are unusual in that finds of antler including weaving combs were also thought to be associated, as well as ceramic and a terret (Millett and Russell 1982). Finally, a human burial and horse seem to be closely associated in the infill of Blewburton hillfort ditch but not well dated (Collins 1953, 30).

Although this cannot be considered an exhaustive review of the literature, with the exception of the probably late burial at Viables Farm, noted above, it is clearly rare for burials in pits, the commonest form of human deposition in southern and central England, to be accompanied by intact animals or even joints of meat at the time of burial. Moreover, even where there are possible associations none seem to be reliably dated before the fourth century BC. The Aylesbury burial deposit clearly does not fit the usual burial deposition pattern of central and southern England.

Turning to other deposition modes – apart from 'pit burials', the discovery, within the last decade or so, of a few formal 'cemeteries' containing several individuals, of middle to late Iron Age date, has transformed the previously dominant picture of burials as secondary deposits. Like the pit burials, these inhumation cemeteries contain mainly crouched burials. These discoveries bring burial practice, in some parts of England at least, more in line with the rest of Europe where flat inhumation cemeteries become common in the La Tène period from *c*. 400 BC onwards (Collis 1984, 130; Stead *et al.* 2006), although in contrast on the continent these are commonly extended inhumations and are frequently accompanied by grave goods.

All the middle-late inhumation cemeteries discovered in England so far appear to have associations with settlements, not hillforts. The character and dating of four of them are briefly reviewed.

At Suddern Farm, Middle Wallop, Hants., over 30 individual graves (crouched) were found in the backfill of an early quarry, probably part of an even larger cemetery. The dating of the cemetery to the early to middle Iron Age, is inferred from a loosely-associated iron ring and a brooch, but there was 'little direct evidence for the date' (Cunliffe 2000).

At Yarnton, Oxfordshire, 46 inhumations and several cremations were excavated. Although this number includes some which are certainly of Romano-British or later date, at least nine crouched burials were certainly Iron Age, probably Middle Iron Age. None of the crouched burials (thirty-five in total) contained grave goods or had associated animal burials. All ages and sexes were present. Bayesian analysis indicated 'poor convergence' and that the cemetery was 'either in use in the first half of the 4th century cal BC or that it was in use in the first half of the 3rd century cal BC' (Hey, Bayliss *et al.* 1999).

A small group from Kemble, Gloucs. (King *et al*. 1997), consisting of two crouched burials, one with two bones from a third person in the same grave, is slightly more problematic as dating is based on only a few sherds of mid-late Iron Age ceramic in the grave fills. There were no other associations.

At Mill Hill, Deal (Parfitt 1995), the position is complicated by the presence on the site of later burials including Saxon graves; however, Parfitt concludes that 45 of the 132 burials were Iron Age and many more must have been previously disturbed. The series starts with a single crouched grave dated eighth to fourth centuries BC and continues with the well-known Grave 112, a furnished 'warrior burial' (see on) of *c*. 200 BC. The subsequent cemetery, unusually, consisted principally of extended inhumations. These were generally orientated N/S and were mainly without grave goods, but six had brooches of La Tène II–III type. None contained animal burials.

Apart from these formal cemeteries, the identification of (apparently) isolated single burials of mid-late Iron Age date, mainly crouched, is also becoming slightly more common. In Buckinghamshire, for example, there is one placed in a pit alignment at Olney (Webley 2007) and another close to a settlement site at Gayhurst (Chapman 2007). Just over the border into Bedfordshire, the discovery many years ago of a crouched burial at Egginton, although less securely recorded, is of particular interest since, unusually, it was associated with two middle Iron Age vessels (Gurney and Hawkes 1940). Finally the presence of occasional inhumations sometimes accompanied by grave goods, within large late Iron Age cremation cemeteries, such as King Harry Lane, St Albans, may be noted. The

ratio of inhumations to cremations at this site was 17:455 (Stead and Rigby 1989, 81).

None of the burials in these southern English 'cemeteries' noted so far are, however, reported to have been accompanied by animals. Nor are animal burials a feature of the so-called 'warrior burials' of 'late La Tène' date and thinly distributed across the country, with some examples in the midlands and south, including Mill Hill, Deal, previously noted. This group, characterised by Collis some years ago (Collis 1973) has recently been reviewed by Cunliffe (2005, 555–6).

The purpose of this short survey of burials in southern/central England has been to demonstrate that the Aylesbury burials do not conform to any readily existing category in the region. Nor, however, are there obvious comparanda in other well-studied areas such as East Yorkshire which has produced numerous Iron Age burials, although bone preservation here is generally reported to be poor. Stead's study of a substantial number of inhumation burials here, several with La Tène I-II associations (roughly equivalent to the southern middle Iron Age), shows that whilst grave goods, some of exceptional quality, are not an unusual accompaniment, in over 230 graves animal remains were present in only 54, and with rare exceptions these deposits consisted of selected joints from pig or sheep (Stead 1991).

It is acknowledged that many authors consider that 'ritual' and everyday life are so intertwined in the prehistoric period that such theoretical divisions are unhelpful (Hill 1995; Brück 1999; Bradley 2005); however, given the atypical character of the Aylesbury material in relation to burial practice of the period, the term 'ritual' for the Prebendal deposit does seem justified.

What kind of 'ritual' took place at Aylesbury?

Some discussion of this issue has taken place above. Opportunity is taken here to set the deposit in a wider context. The individual burials and the 'bone mass' were closely associated in the field and must have been linked ceremonially. There is insufficient evidence to give either deposit priority or to determine whether they occurred at the same time. The presence of dispersed unarticulated bone from another immature individual and three adults, mainly to the west of the deposit as a whole and in the area of articulated burials (Fig. 23), could indicate that there had been earlier deposition activity here or close by prior to the main deposition event.

As has previously been noted, extended burials that can be confidently dated to the fourth century BC are uncommon in southern-central England, and burials accompanied by whole animals even more so. There is no doubt that the burial of Human 1 (the child with flexed legs) was accompanied by the sacrifice of seven animals. To the north of this human burial, the animal burials A1 and A3, which appear to have been complete burials at the time of deposition, can be associated by proximity with the incomplete infant burial Human 4. To the south of Human 1 the question of association is less clear as the bones of Humans 2 and 5 are quite displaced and Human 5 (deposited earlier) was fragmentary. However, Human 3 had a sheep skull placed beneath its pelvis and sheep A13 lay partly above Human 2 and partly below the foot bones of Human 3. The question has to remain open as to whether any of the intact animals were buried unaccompanied, as the association of animals A1 to A5 with Human infant 4 is by proximity only.

There is some evidence from the Aylesbury deposit that human body parts were missing at the point of deposition after making allowance for possible post-deposition processes, and there was certainly evidence for re-arrangement of other parts.

A brief search for Iron Age parallels for flexed leg burials such as Human 1, has produced only two other examples; one of Late Iron Age–early Roman date from Stonea (Malim 2005, 69–70) and the other, unfortunately undated, from Southwark (Merrifield 1983, 21 and plate 6). In view of the intensity of Roman occupation in Southwark the latter might be of similar date to Stonea. Unfortunately neither has any clear associated context.

The few objects incorporated within the deposit as a whole, included burnt combs, stone (probably bits of quern), parts of pots, and a few metal items. None of these is particularly distinctive. Although any of them could theoretically have been 'placed' objects, the lack of clear associations with the intact humans and the greater concentration of pottery sherds within the bone mass, as against in the vicinity of burials (Fig. 43), argues against this. It would seem probable that like the few grain seeds retrieved by wet sieving, these objects are more likely to be incidental inclusions to the actual deposition process, coming in with the bone and charcoal from the cooking or burning of animals (the combs are also burnt).

The high proportion of sheep(goat) included in the deposit, and the dominance of lambs, suggest that a specific choice was made for ritual associated with the human burial, drawing on sheep, and particularly lambs, from the surrounding agricultural area. The age selection is not typical for a self-sustaining flock and must have been drawn from either a large flock or several flocks. If all was one event, this occurred in July or early August. It is also possible that the event occurred over some months, in which case the age at death gives good evidence that this occurred some time during June to September.

The killing of the animals that accompanied the human burials and partial burning or cooking of others prior to their inclusion in the bone-mass, are clearly intimately associated events. The bones from the bone mass bear some characteristics which may be interpreted as feasting (Hayden 1996, Score and Browning 2010), *viz*., the large quantity all apparently deposited within a short time period, the disarticulation, the presence of burning, and the

unintensive use of the bones (*e.g.*, the lack of breakage for marrow extraction). However, there were very few butchery marks (only three, on the identified sheep/goat bones). The presence of charcoal (see P. Austin report previously) and of burnt bones (the latter in 34 of 185 collection units) taken with the lack of marks suggest that the animals may have been cooked whole and portions detached leaving no marks. It is possible that the act of sacrifice was of greater significance than feasting.

The burial of four children one prone, and another supine with legs arranged in flexed position, and of an adult (probably female) with a displaced arm would not appear to represent either a normal burial pattern nor a typical cross-section of the population. Although there is little to compare with, the question has to be asked whether as well as the undoubted slaughter of animals, humans were also sacrificed here? In the absence of evidence of trauma on the bones this question cannot be definitively answered, but the combination of circumstances seems to make this a real possibility.

There is no direct evidence that the ritual deposit was protected in any way, presumably apart from being covered with soil, but the absence of evidence for gnawing on the bones indicates that this covering was effective against scavenging animals. Given the excellent preservation, the remains are unlikely to have been exposed for long.

One Iron Age pit (472) on the margins of the deposit on the east side was recorded in the field as probably cutting the deposit. The interval between the disuse of the ritual area and the pit cut cannot be determined, but is likely to have been prior to construction of the second hillfort rampart which would almost certainly have buried the area in which it lay.

Apart from the articulated and unarticulated human bone directly associated with the deposit, as previously noted there is other 'stray' human bone both from the ritual deposit and from other parts of the site. Although only one piece of this bone found some distance from the ritual deposit has been dated, this also turns out to be early Iron Age. Stray pieces of human bone are a fairly common component of British Iron Age sites. However, in view of the particular circumstances and the fact that human bone has been retrieved from over a hundred non-Iron Age contexts (Appendix 3), it is possible that there might have been a wider ritual process taking place on the hill which would also account for the unarticulated human bone found within the deposit itself.

In the later Iron Age there is some structural evidence for shrines. Woodward (1992) notes seventeen probable examples, but virtually nothing for earlier phases of the Iron Age. At Aylesbury, apart from the hole in the ground itself and a single possible post-hole, no structure can be associated with the ritual, although the substantial later disturbance previously noted could have removed evidence for ephemeral structures.

In Britain, violent death in prehistory has been recorded on a number of occasions, notably on 'bog bodies'. Recently recorded instances include Irish finds from Clonycavan and Oldcroghan (Mulhall 2010). There is obviously a range of reasons why violent death may be meted out to individuals in this manner, and in prehistory it is rarely obvious whether such a killing was murder, a communally-agreed execution, or carried out incidentally to the achievement of a hoped for objective, such as crop growth, to avert a potential disaster, *etc*.

The topic of ritual during later prehistory in continental Europe and possible links with such practices in Britain have been researched from both an archaeological and documentary standpoint by a number of writers, in particular Green (2001). Violence apparently associated with communal ritual has been noted in a number of instances in western Europe. Amongst the more dramatic examples from Gaul, for instance, is the site at Ribemont-sur-Ancre, Picardy, where excavation revealed a third century BC deposit containing the dismembered remains of 200–250 individuals, mostly young males, whose thigh and arm bones (apparently dismembered) had been arranged in layers (Brunaux 1988, 16; King 1990, 137; Knüsel 2005, 59). Although this could have taken place following a conflict, the procedure does perhaps put into perspective the possibility of the sacrifice of a few young people and one adult at Aylesbury.

It has been previously noted that there is seasonal evidence from the young sheep that if the event(s) was of quite short duration, it took place in July or early August. The vexed issue of how far it is reasonable to consider ritual in the British Isles during later prehistory in relation to broader European pan-Celtic tradition is briefly discussed later in relation to the head-burial in the hillfort ditch. However, utilising only British 'Celtic' material, reference may be made to the work of MacNeill (1962) who studied the well-documented tradition in Ireland, and to a lesser extent in the Isle of Man, of festivities and assemblies centred on or around 1st August. She identified 195 sites where these were once held, always at special places topographically; hills, lakes, rivers, or 'holy wells'. This festival, Lughnasa, was one of the four quarterly festivals of the Irish year and in its surviving form came to be associated with harvest, hence its translation in the early Christian era into Lammas or 'loaf mass'. It is a big jump from an amiable affair recorded to be largely associated with music and picnics to an occasion for sacrifice but a possible association is worth considering.

One other imaginative suggestion may perhaps be permitted. If the ritual deposit was created not long before hillfort construction commenced – a possibility suggested by Bayesian analysis of the radiocarbon dates, then one option is that a ritual act was required precisely because work on construction of the hillfort (which would have involved many communities), was about to commence.

Finally, it may be noted that the wood used in the fire associated with the bone mass, reflected a calcareous environment, that is the environment of the hill rather than the surrounding area. It is possible that the hill was partially wooded before clearance started for hillfort construction.

7. The Hillfort and its Region

The interior of the hillfort

Two Pits adjacent to the ritual deposit and a post-hole(?) *(Figs 8 and 55)*

Two pits and a possible post-hole, both previously noted, were the only other features internal to the hillfort dating to the Iron Age amongst the wealth of later cut features. Pit 1 (cut 472) was on the margin of the ritual deposit and judging by its relationship in the field was thought to have cut the deposit, but study of the animal bone (see on) shows that this is unlikely unless the material from the cut was not used in its refill. Pit 2 (cut 678) lay about a metre to the east.

The pits were of similar dimensions, both being 0.8m deep and with diameters 1.5 and 1.8m respectively, and may have been contemporary (Figs 8 and 55). Their fills were similar to those of the main hillfort ditch, namely clayey-silts with sparse limestone. Both contained pottery, animal bone, some charcoal and a few other finds. Pit 1 contained three human bones (contexts 482, 502) and Pit 2 one (context 841, Appendix 3). No soil samples from these pits were studied for charred plant remains.

The contained pottery is stylistically later than that from the ritual deposit. As Pit 1 almost certainly cut the ritual deposit, given the argument that the second phase rampart would have sealed the ritual deposit then both could either have been cut through the tail of the second rampart and belong to the recut phase or have been sealed by it. As there is so little stratified pottery from the fort, illustrable sherds from the pits are included here.

The largest number of similar pits to be recorded elsewhere in Buckinghamshire is from the Milton Keynes site of Pennyland (Williams 1993) where eighteen were excavated. The Pennyland pits range in depth (below stripped surface) from 0.6 to 1.65m. Williams argues that they were storage pits and that their small size, in comparison with those of the Wessex chalklands may be due to 'the relative instability of the soils and the relative heights of the permanent water tables.' Unfortunately this argument cannot be marshalled in the case of the limestone-cut Aylesbury examples so their function here remains unknown.

Finds from the two pits

(a) Pottery (Fig. 56)

Pit 1 (1–6)
Upper fill 482, lower 502; total sherd count 52.

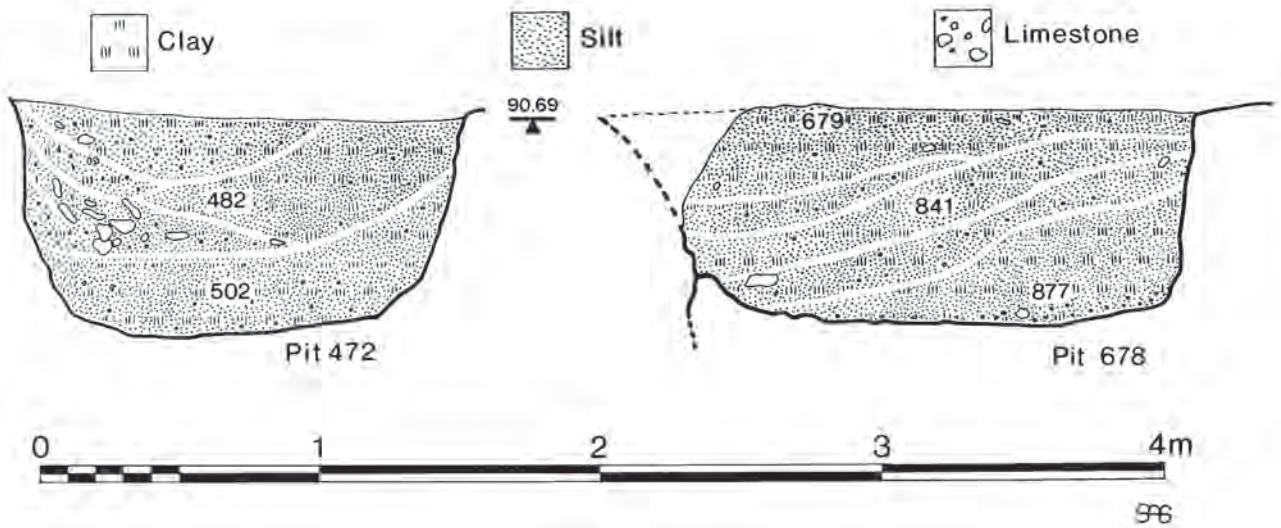


Figure 55. Sections of two Iron Age pits adjacent to ritual deposit. Pit 1 left, Pit 2 right.

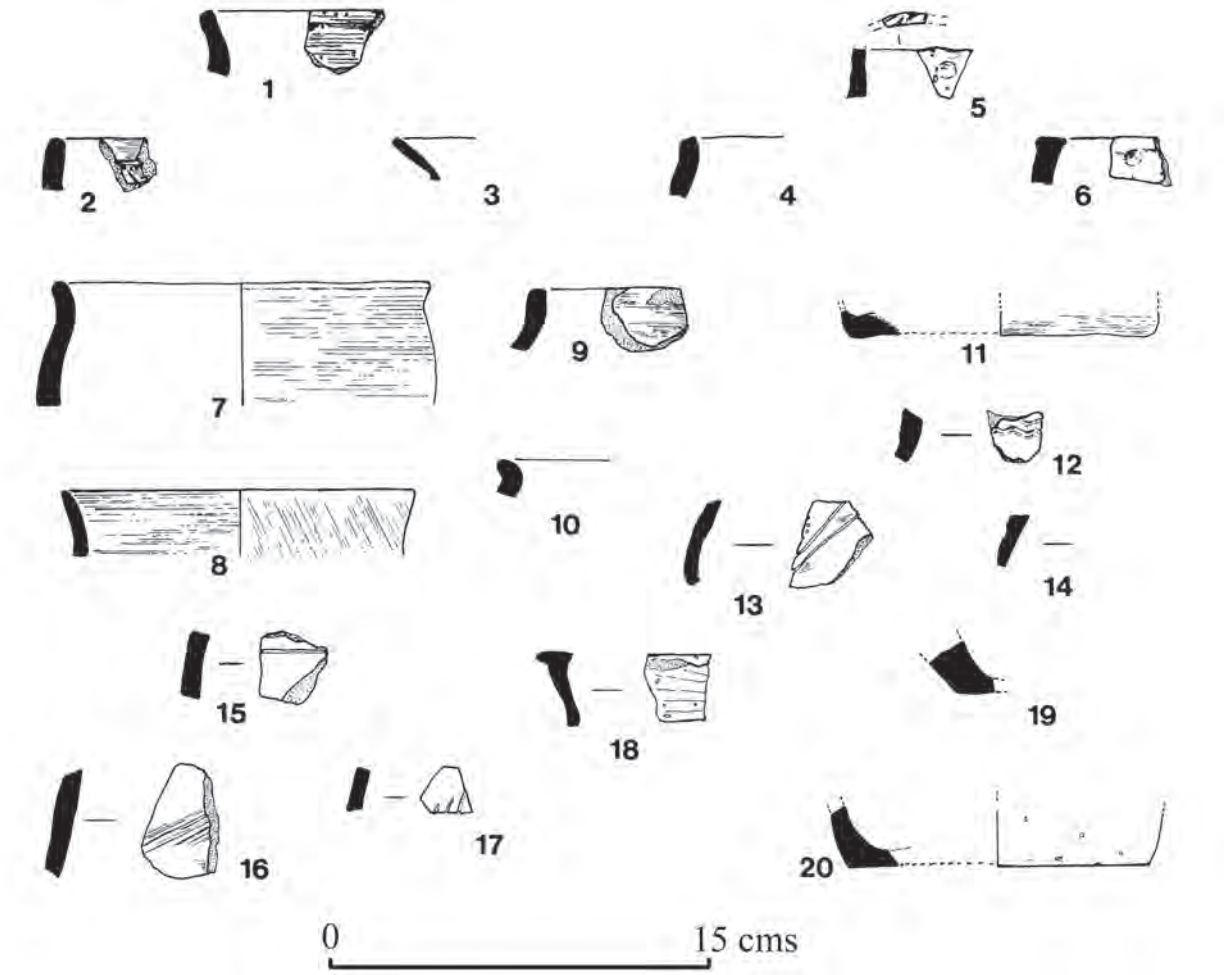


Figure 56. Pottery from the two Iron Age pits. Pit 1, 1–6; Pit 2, 7–20 (1/3).

Burnished: (1–3)

1. Rim, surfaces black, ext. burnished. Fab. 11. (502).
2. Rim, shallow tooled line, stabbed dot dec., ext. brown int. black, ext. burnished. Fab. 7. (502).
3. Bowl rim, thin, black-brown, black int., ext. some burnish. Fab 7. (482).

Smoothed: (4–6)

4. Rim, slightly beaded, ext. buff, int. black. Fab. 5. (482).
5. Upstanding rim, finger dec. top of rim, ext. buff-black, int. black. Fab. 5. (502)
6. Upstanding rim, finger imp. below rim, ext. buff-brown, int. black. Fab. 1. (502).

Pit 2 (7–20)

Upper fill 679, lower 841: total sherd count 129.

Burnished: (7–14)

7. Jar, rim rounded, slightly everted, some good burnish ext. to rim, black ext. and int. Fab. 3. (841).
8. Bowl, rim rounded everted, ext. brown-grey, int. black. Fab. 9. (841).
9. Jar, rim upright, flat topped, ext. burnished, brown ext., dark int. Fab. 6. (841).
10. Jar, rim frag. slightly everted, ext. burnished, black ext. and int. Fab. 9. (841).
11. Base, frag., ext. some burnish, ext. brown, int. black. (841).
12. Sherd, two scored parallel wavy lines, buff surfaces ext. dark core int. some burnish. Fab. 7. (679).
13. Sherd, diagonal shallow-tooled lines with cluster of stabbed dots on one side, brown-grey ext. and int,, dark core, some burnish. Fab. 9. (679).
14. Sherd, shallow groove ext. brown-grey ext., black int., some burnish. Fab. 7. (679).

Smoothed: (15–20)

15. Sherd, broad shallow tooled line dec., surfaces brown-grey, core black. Fab. 6. (679).
16. Sherd, combed buff surfaces, some black int. Fab. 6. (841).
17. Sherd, shallow-scored diagonal line dec., black ext. and int. Fab. 6. (841).
18. Rim, flat topped, buff-orange ext. and int., dark core Fab. 1. (841).

Coarse: (19–20

19. Base, frag. dark ext. and int., grey smooth finish. Fab. 5. (841).
20. Base, ext. buff and int. brown, smooth finish, Fab. 1. (841).

(b) Other finds

Pit 1 (678):
Copper-alloy: flat, round, some decoration, diam. *c*. 9mm; copper-alloy; from wet-sieving. Not located in post-excavation phase (877, SF 2725).
Flint: 1 flake and a flaked lump (678).

Pit 2 (472):
Fired clay with one smooth surface, possibly part of a loomweight (502. SF2925); also two unformed scraps of fired clay (482, SF2474 and 502. SF2698).
Quern(?): a small angular piece (33 × 20mm) of quartz sandstone grit, moderately well-rounded and sorted with quartz cement overgrowth; non-local; burnt (?). Possibly quern material but no dressing or wear marks evident (679)

(c) Charcoal

No charcoal was retrieved from a sample from Pit 2 (841). A very small amount was recovered from a sample from Pit 1 (502) as follows (see P. Austin, previously, for methodology).

Fraxinus excelsior (2): 0.34g
Quercus sp. (3): 0.115g

(d) Animal bone

Gillian Jones

A few animal bones were found in the pits, 34 identified bones in Pit 1 (cut 472) and 36 in Pit 2 (cut 678), from sheep/goat, cattle and pig, plus one from goose (Table 2). In both pits, sheep/goat bones were the most numerous. Cattle were more common than in the ritual deposit, but less common than in the hillfort ditch. Pig was present but uncommon.

The bones from Pit 1, the more western of the pits, appeared to be general butchery waste, with few related bones. Only one, of 14 main long bones, was more than half complete. Eight bones showed butchery marks, six of them very fine marks not cutting through the bone, and two cutting through the bone. Burnt bones were quite common (N22: 6 black, 1 calcined, 12 mixed; 1 sheep/goat, 2 large unidentified, the rest medium unidentified fragments).

Animal bones from Pit 2 included fourteen sheep/goat bones which were probably from one individual, consisting of skull fragments, three vertebrae of similar immaturity, and an immature humerus, tibia, metacarpal and metatarsal, the last two identified as sheep not goat. Epiphyses were all unfused except the distal humerus which was fusing. This gives an age at death estimate of two to four months, which is similar to that found for the sheep in the ritual area. The group of bones contrasts with those from the ritual deposit, in that none included loose epiphyses (the immature separate ends of bones), so it may be that they are a secondary deposit, deriving from the ritual deposit.

Other bones from Pit 2 appeared to be general butchery waste, with no other related bones, and none of six main long bones more-than-half complete. The pig bones included a young mandible (Stage B, dp4 at d, M1 half up, dp4 Length 18.9, posterior width 8.4). The goose was a tibiotarsus shaft piece, which could not be identified to species. Butchery marks were seen on only one bone; one large unidentified showed signs of bone working; and two bones were burnt. Fragments, of small mammal size, were found in sieved material from the base of the pit.

The total Iron Age animal bone excluding that from the ritual deposit, remains a small collection from which large conclusions cannot be drawn. But it suggests a more equal contribution of cattle and sheep/goat (Table 2) than is evident from the ritual deposit. The proportion of pig is also higher, at 10%.

(e) Fish bone

Andrew K. G. Jones

A single fish bone was recovered from a basal layer of Pit 2 (877), the precaudal vertebra of a medium-sized eel, *Anguilla anguilla.*

A Post-hole(?) *(950 cut, 951 fill; Fig. 30)*

A single 0.8m diameter post-hole, probably shallow but its depth was not recorded. The feature lay just south of sheep A3.

Residual Iron Age finds

The long sequence of post-Iron Age occupation on the site meant that residual Iron Age material could not always readily be identified. The principal residual Iron Age material that could be identified was pottery. There were also over 30 small pieces of quern from the site but the majority of this could not be tied to period. Overall, however, there is sufficient material to suggest that there was extensive Iron Age occupation on the site during the Early and perhaps middle Iron Age.

Pottery

Barbara Hurman (Fig. 57)

(i) *Burnished, decorated* (1–6)
1. Upright flat topped rim, incised vertical wavy lines white inlay dec., black ext. and int. Fab. 7. (229).
2. Sherd, scored fine line, surfaces black ext. and int. Fab. 9. (188).
3. Sherd ext. good black burnish, burnishing lines, int. black smooth. Fab. 7. (849)
4. Base, good burnish ext., black ext. and int. May belong to no. 6 below. Fab. 7. (719).
5. Pedestal base, ext. worn grey-brown burnish, int. black. Fab. 8. (125).
6. Rim, upright flat, slightly everted, highly burnished, black ext. and int. May belong to no. 4 above. Fab. 9. (719).

(ii) *Smoothed* (7)
7. Upright rim, slightly inturned, slight fingering on top, ext. and int. black. Fab. 9. (164).

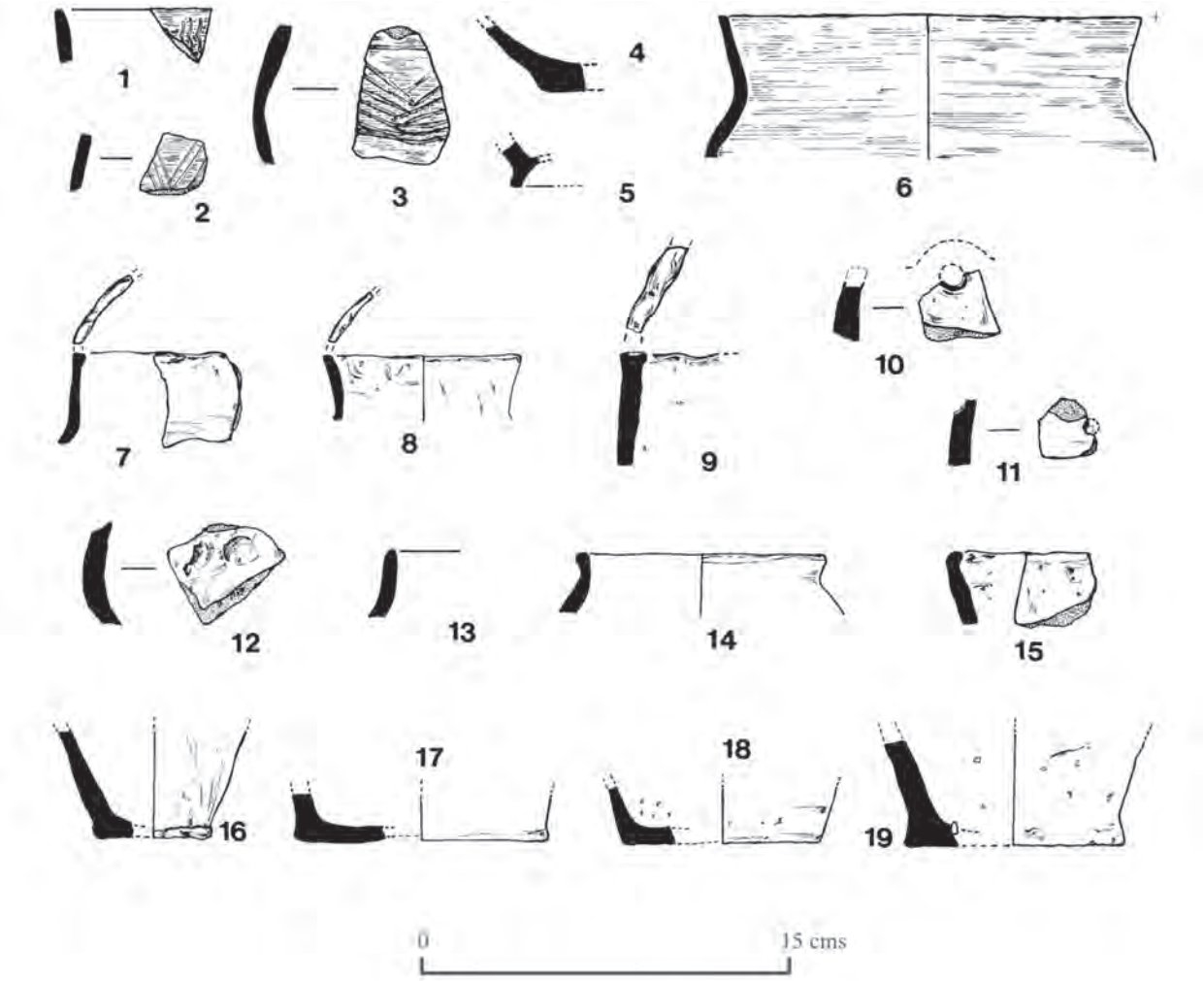


Figure 57. Residual Iron Age pottery from the site (1/3).

(iii) *Coarse* (8, 17–19)

8. Upright rim, slight fingering on top ?accidental, black ext. and int. Fab. 5. (164).

(iv) *Smoothed* (9–16)

9. Upright rim, fingertip dec. on top, buff ext., grey int. Fab. 2. (189)
10. Perforation ? lug, black ext. and int. Fab. 8. (164).
11. Sherd with perforation, ext. grey, black int. Fab. 9. (938).
12. Sherd, ?shoulder, with deep finger indentations. Buff-black ext., black int. Fab. 2. (471).
13. Jar, upright rim, ext. brown-black, int. brown. Fab. 9. (125).
14. Rim, upright flat topped, surfaces black-brown. Fab. 7. (208)
15. Cup/ bowl, inturned rim, black-brown ext., black int. Fab. 11. (229).
16. Base, ext. grey-brown, some surface wiping, int. brown. Fab. 6. (252).

(v) *Coarse* (17–19)

17. Base, black-buff ext. smooth ext. black int. Fab. 5. (882).
18. Base, ext. black-brown-buff, int. black. Fab. 5. (886).
19. Base, buff-grey ext. and int. Fab. 5. (321).
20. Base, light buff ext., int. and core. Fab. 1, large inclusions. (841).

Quern

A piece of quern (not illustrated) with grooved, polished surface identified as having been made from 'medium-fine quartz sandstone with 20% glauconite: siliceous cement: Greensand', came from the fill of a medieval pit (164: SF 2433). The stone matches the description by Peacock (1987) of that from the quarry site at Lodsworth, West Sussex where production commenced with saddle querns in the late Bronze Age/ early Iron Age (with a fairly local distribution), to be replaced by rotary querns that had a much wider distribution and continued in production into the later Roman period. Rotary querns from the quarry have been found as far north as Northampton. Four Lodsworth querns have been recorded in Buckinghamshire, including an earlier find from Aylesbury's cemetery in the Tring Road (BCM 157.21). It is possible that the Prebendal piece is Roman but in view of the relatively small amount of Roman material from the site might belong to the hillfort phase.

From later contexts, there are at least two dozen pieces of 'ferruginous sandstone' from the Lower Greensand. This stone was certainly in use for querns locally in the early Saxon period but the source could have been exploited earlier.

The extent of the hillfort

The Old English 'bury' element of the Aylesbury place-name is commonly associated with defensive earthworks: about 100 such are recognised as hillforts in England (Ordnance Survey 1962) and recently another example has been recorded at Whittlebury, just over the border into Northamptonshire (Jones and Page 2006, 46–9). In Buckinghamshire, Cholesbury, which also gives its name to the parish, is the most obvious example, and there is a 'plateau' fort at Norbury (Padbury). Although no earthwork survives at Aylesbury the link between the name and a possible hillfort was suggested in the 1970s following the discovery of Iron Age ceramics in the town (Waugh 1974). Following the excavations and other watching briefs in the town it is now possible to suggest the likely extent of the fort (Fig. 58). In the account which follows the County's Historic Environment Record number (HER) is noted where no fuller published record is available.

On the excavated site the hillfort's ditch lay just back from the edge of the ridge within which the early part of the town stands. Its course was straight in the excavated area but beyond that to the north it would need to have curved east in order to utilise the contour. Unfortunately its potential survival in this northern zone will have been considerably affected by construction of a dual carriageway (Whitehill) and beyond this by office blocks sited on the edge of the break of slope.

Returning southwards from the excavated site and working anti-clockwise, the eastern edge of the ditch was recorded in August 2008 in a footing trench during a watching brief by Oxford Archaeology, within one of the outbuildings of the Prebendal not far south of the excavated area ('The Prebendal' on Fig. 58). It can be presumed that its course south of this point would continue roughly following the 87m contour. The break of slope marking this contour is evident within the present town, first crossing Parsons Fee, then Castle Street (formerly the principal way into Aylesbury from Oxford) and then across Rickford's Hill.

Beyond this in 1973 the writer recorded a section through a substantial rock-cut ditch 5.3m wide by 2.6m deep that had been exposed in a basement under development at the junction of Bourbon Street and Temple Street (Fig. 59 and Farley 1974). Due to lack of dating evidence, at the time it was suggested that the ditch was late Saxon, a period when Aylesbury was a mint town, but the discovery of the ditch at the Prebendal and elsewhere has shown that this interpretation was incorrect and that it was a length of the south-eastern side of the hillfort. The picture at this point is complicated by the probable existence of a short-lived earthwork castle in the same area, which could have utilised the course of the rampart.

In 1998 about 240m east of the Prebendal site in Kingsbury, a substantial rock-cut ditch was observed by June Strong, running roughly parallel to Buckingham Street and thought to be swinging slightly NW. (HER 6743). Recording was under difficult circumstances and at a time when the County Museum's archaeological field unit had just been closed. This ditch was about 2.9m deep on the north face of the cut section but only 1.8m deep on the south. Presuming that the two separated sections belonged to the same feature despite differences in depth, a possible explanation is that the depth differences could indicate that they were adjacent to an eastern entrance. The few sherds recovered from one of the sections were handmade but undiagnostic; however an unstratified finger-nail decorated rim in fine flint-gritted fabric collected from the site was certainly of early Iron Age date. It seems reasonable to presume that this was another length of the hillfort ditch. It should be noted that there are no natural defensive features on the eastern side which could have been utilised. The land here is initially level before rising gently towards the nearby village of Bierton.

Since 1998 there have been five other development sites which could have lain on or near the line of the ditch, and have been the subject of watching briefs and trial trenching, largely with negative results, as follows.

1. At the north end of Market Square bedrock was observed close to the surface (HER 6742).
2. An exploratory hole relating to service trenches dug in the middle of Buckingham Street encountered a deep fill, but the presence of pipe trenches made it unclear whether this was ancient or modern. (HER 9530)
3. A large development on the west side of Buckingham Street was partly evaluation-trenched and a watching brief carried out prior to development. A Late Saxon pit and other later pits were observed but there proved to have been major terracing here and also little opportunity to observe bedrock, so although no evidence for the ditch was observed, this is not conclusive. (HER 9332)
4. North of the above at Litton House, Buckingham Street on the site of a former petrol station, although severe truncation was noted no evidence of a ditch was found; had it run through here, its deeper parts should have survived. (HER 9324)
5. Finally at a development at Ardenham Hill House south of the former Royal Bucks Hospital, on the hill slope a few metres below the presumed contour of the fort ditch, trial trenches and a watching brief again failed to locate the hillfort although two slighter ditches, possibly of later Iron Age date were identified (HER 6753).

The hypothetical course of the ditch shown on Figure 58, takes both positive and negative evidence into account and is influenced by the presumption that there was a favoured

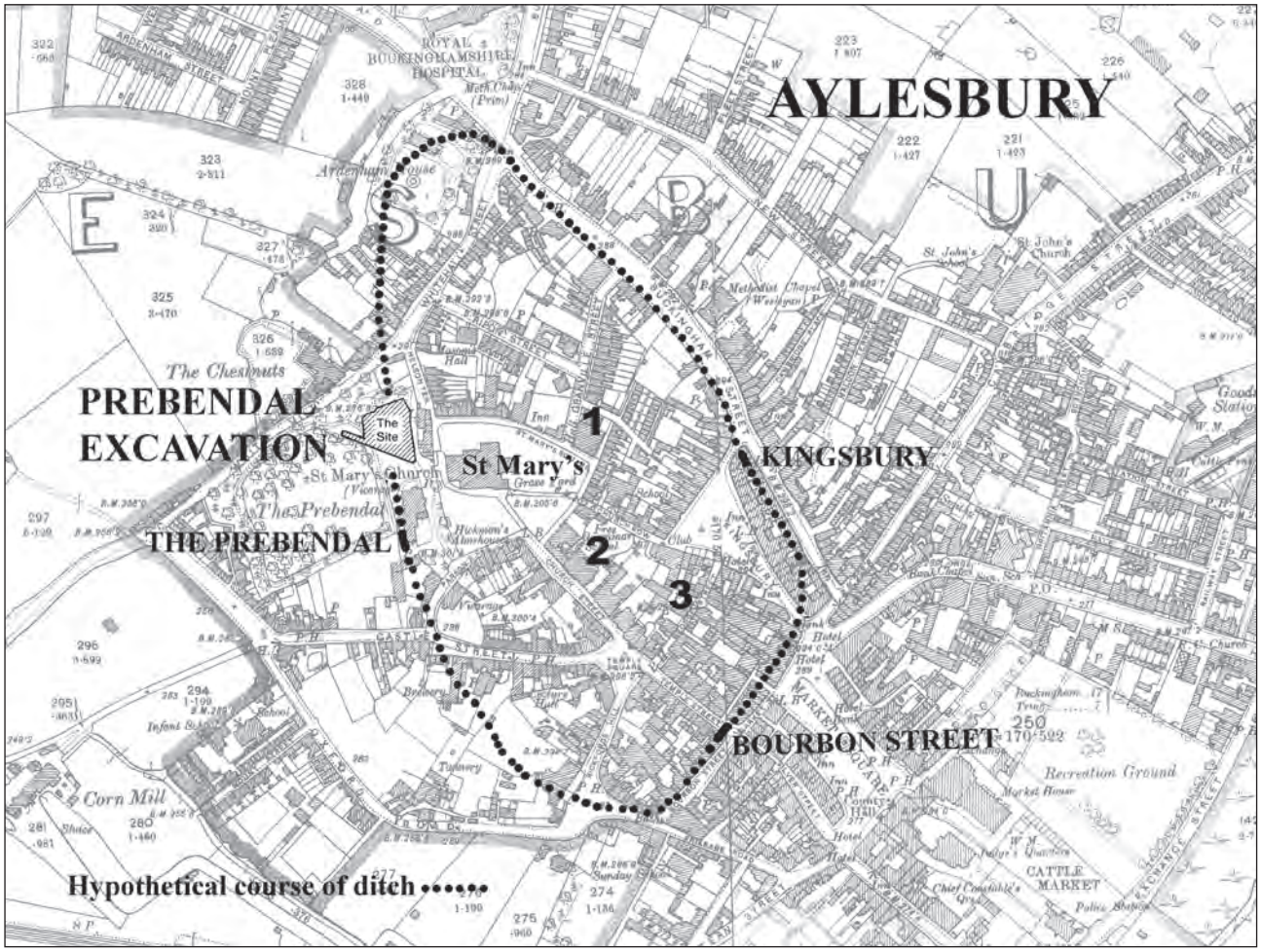


Figure 58. Projected course of the hillfort defences. Based on the excavation and recording at three other named places. The numbers refer to other locations which have produced information about its interior (see text): 1. St Mary's Square; 2. County Museum; 3. George Street. Based on Ordnance Survey 25" maps (28: 15 and 16) of 1899.

contour. The proposed circuit length, would be about 1200 metres and the enclosed area 7.9ha.

The hillfort interior

Direct evidence for the extent and character of everyday activity within the Aylesbury hillfort comes from material from the infill of the ditch (animal bone, pottery, loom weight, slingshot, *etc*.), from two small pits – possibly storage pits, from residual material on the site, and indirectly from the weaving comb and probable quern incorporated within the ritual deposit. There are three other sites in the town within the probable area of the hillfort enclosure which provide some additional evidence about the density and character of occupation, which are numbered on Figure 60.

1. Construction work at the Baptist Hall, Grenville Street, produced a number of sherds of earlier Iron Age pottery (Waugh 1974, 391).

2. An excavation at George Street in 1981 (Allen and Dalwood 1983) located a gulley, two pits, and hints of a circular post-hole-structure. Amongst the finds were 185 stratified Iron Age sherds and a similar number of sherds from residual contexts, also an early brooch of 'Late Hallstatt/earliest La Tène' date, residual in a Saxon grave. From one pit came large sherds of pottery and a piece of saddle quern said to be of 'millstone grit'; from the gully came two pieces of the cranium of a juvenile/sub-adult. Amongst the small amount of animal bone recovered (147 pieces), cattle, sheep, pig, horse, fowl and goose were represented.

   The brooch has recently been studied by Sophia A. Adams who describes it as follows:

   > A copper-alloy brooch, 35mm long. The form and size of this brooch places it within Hull and Hawkes' late Hallstatt to La Tène transitional Group L (1987, 54–67). These globular small brooches (max. 40mm long) are found with thick rounded bows and upturned or reverted feet, the latter being cast as one with the bow as seen

Figure 59. Hillfort ditch looking north-east; noted at the junction of Bourbon Street and Temple Street, Aylesbury, in 1973 during a development.

here. No two are identical but their squat appearance and rounded forms are consistent and all could have clasped only a slight piece of fabric. Few survive with the pin and hinge intact. Those with relatively complete heads contain a hole pierced through the lower part of the head to hold a narrow rod on which the pin would have pivoted. In some cases evidence for a small copper alloy or iron rod is still present in the hole (*e.g.* copper alloy rod in Hull and Hawkes 1987, 63, Hammersmith brooch 4284, pl. 21: British Museum 1898, 0618, or iron rod in Hull and Hawkes 1987, 64, Hillingdon brooch 4284, pl. 21). The pin itself may have been incorporated into a mock or skeuomorphic spring (*e.g.* Hull and Hawkes 1987, 64 Sussex brooch 4282 tris, pl. 21). Group L brooches have been found in limited numbers from west to east Britain with a southerly emphasis. Precise dating is not possible due to the lack of contextual evidence for this group. Their position within the existing typology places them within the sixth to fifth centuries BC, *c*. 550–450 BC (Haselgrove 1997, Hull and Hawkes 1987).

3. An excavation at the County Museum in Church Street (Bonner 1996), located four gullies and two small pits. From one gulley came the tip of a copper-alloy brooch pin, and from another a shale bead. There were about 124 Iron Age sherds from the site, most highly abraded, but including a highly-burnished decorated carinated (shouldered) bowl.

In addition there have been single finds of sherds from the King's Head (HER 6735) and Castle Street (HER 5724).

It will never be possible to get as full a picture of the interior of Aylesbury's hillfort as from those which can be fully investigated by excavation, geophysics or aerial photography. The Wessex hillforts project which was able to examine in detail many largely undisturbed hillforts has, however, demonstrated the highly variable use of their interiors. This ranges from the existence of a perimeter bank and ditch that apparently contained very little, such as Walbury and Martinsell (Payne *et al.* 2006) and which may be the case at one large Buckinghamshire fort, Bulstrode Camp, Gerrards Cross (Fox *et al.* 1923), in comparison with the structured complexities of Danebury, South Cadbury and Maiden Castle which were clearly utilised by a large number of people over a long period of time, albeit not necessarily continuously throughout the year.

On balance, the volume and number of cut features seen in the small areas that have been excavated within Aylesbury, together with the recutting of the hillfort ditch, suggest quite intensive use of the interior, but with no evidence for the massive grain-storage capacity of some of the Wessex forts. Most of the activities carried out within the fort at Aylesbury seem to be no different to those noted in a number of local settlements, although the presence of a shale bead, the haematite sherds, quern, and the late Hallstatt/early La Tène brooch (which may pre-date the fort) do suggest extensive regional contacts. That the largest assemblage of animal bone is from the ritual deposit clearly biases the sample of the livestock economy, but the presence of a considerable number of sheep within the deposit does imply a substantial local grazing economy, which of course in turn implies much open land.

The skull in the ditch, the date of construction of the fort and its period of use

Some pre-fort use of the area is indicated by the Beaker sherds which could have come from a burial on the ridge, perhaps even a barrow. A Beaker barrow burial has been recorded a little east along the ridge at Bierton (HER 01047). Just beyond the projected line of the fort's rampart in Market Square, Aylesbury, a bronze socketed axe was found in 1927 (HER 2066) and about a kilometre to the north-east along the same ridge towards Bierton, a Carps Tongue hoard (Farley 1979). However, there is no evidence for a defensive earthwork of any kind preceding the Aylesbury hillfort and the topography would not allow room for one of the 'large hilltop enclosures' seen in Wessex as precursor enclosures (Payne *et al.* 2006).

We cannot know the particular significance for the local community of the slight eminence on which the fort at

Figure 60. Hillforts in the Aylesbury region with acknowledgements to the HERs of Bedfordshire, Buckinghamshire, Milton Keynes, Hertfordshire, and Oxfordshire.

Aylesbury was sited, but in the absence of other evidence, the creation of the ritual deposit in the early fourth-century BC and the decision to construct a fort, probably very shortly afterwards, was presumably a response to some particular local circumstance. The decision, once made, would certainly have had considerable implications for the local population in terms of the amount of labour required for the fort's construction.

The two radiocarbon dates on the skull that had been deposited in a primary position on the ditch base (OxA-8066 and OxA-18629), the weighted mean of which is 2214 ± 21 BP, 380–195 cal BC, at 95% confidence, which Bayesian analysis (see Chapter Five) suggests can be refined to *390–290 cal BC (95% probability, see Table 14*), provide a relatively secure date for the construction of a fort. This is better than could generally be obtained, for example, from many dated rampart-sealed deposits which provide only a *terminus post quem*. One site for which an extraordinarily precise construction date has been recorded is Sutton Common, South Yorkshire whose entrance timbers provided a dendro felling date of 372 BC (Noort 2007). It is interesting that the date range for Aylesbury's construction roughly accords with this.

The presence of the young male's skull and vertebrae on the ditch base is of some interest. The probability that he was the victim of an execution contemporary with the fort's construction seems high, although no 'execution' cuts were noted on the surviving vertebrae. It may be significant

that the head had been placed in a length of ditch near to the ritual deposit.

Although there are several accounts of skulls being discovered in hillfort ditches, in contrast to the Aylesbury deposit they commonly occur in secondary contexts and rarely have vertebrae attached, suggesting that they were probably not fleshed when deposited. An exception to the latter are two skulls, both probably male, one apparently associated with vertebrae, which came from ditch fill near to an entrance of Sutton Common fort, although their precise location within the fill is not apparent from the report (Noort 2007). More typical is a detached skull from the upper fill of a recut ditch near an entrance to Harting Beacon fort, Sussex (Bedwin 1979, 23, 25).

Whole burials in hillfort ditches, like detached skulls, also seem to occur mainly in secondary fills, although one untypical burial, apparently complete and found 'lying on its face' in a primary deposit, is recorded as lying in 'the initial silting' of Wilbury hillfort, Herts (Applebaum 1949, 19, 45 and fig. 4). At Stonea Camp, Cambridgeshire, apparently also in a primary deposit, were the relatively complete, although disarticulated, remains of a child with sword cuts to the cranium, but dating to the second to the first century BC (Malim 2005, 69–72, pl. 11, fig. 32). Stonea also produced an entire male skeleton with flexed legs but from another (late context) ditch fill (69–70, figs 30, 34). Another late instance of a head with attached vertebrae, was found at Stanwick, North Yorkshire. Here the head had been detached below the fourth vertebra and was deposited in a ditch 'in the 'same layer' and about a yard from an iron sword in a scabbard (Wheeler 1954, 53). Finally, probably of late Iron Age date also and of a different order, are a group of bodies from the ditch by an entrance to Sutton Walls, Herefordshire (Kenyon 1954, 7–10, 66–79, fig. 3, pl. vi). Several showed weapon injuries and can best be seen as one of a series of 'war cemetery' burials recorded at or near gateways, such as at South Cadbury, Somerset (Barrett *et al.* 2000, 105–115).

Green (2001, 104), who has considered the occurrence of deposited skulls in Europe, notes that one reason for their presence within ditches may be their initial display on or around fort gates, the skull subsequently falling into the nearest ditch, but this situation does not apply to Aylesbury where the head was neither near a gate nor meant to be seen. Its deliberate concealment with stones is, moreover, contrary to the tradition of display graphically evidenced at some southern Gallic temples, such as Roquepertuse, Bouche du Rhône, with niches to hold heads, or Entremont, Aix-en-Provence, with heads carved in relief on a column, as well as a number of other Gallic sites either with head-deposits or sculptural displays of them, *e.g.*, Gournay-sur-Aronde (*e.g.*, Filip 1962; Piggott 1965; King 1990; Green 2001).

How far it is reasonable to compare 'British' ritual and ceremony with the frequently richer European evidence, whether 'Gallic' or 'Celtic', is the subject of continuing debate as noted previously. It is always tempting to allude to descriptions recorded by classical authors but there are well-recognised limitations in using such material, even within mainland Europe. For Britain, James has argued that: 'Projecting Celtic identity back onto past societies which would neither have recognised nor understood it, obscures the real complex history of the isles' (James 1999, 144) and Hill (1995) has also stressed the insular character of the British settlement evidence. The latter view has, however, been challenged by Karl (2008) who argues that it can be no coincidence that aspects of Iron Age society singled out by Hill as 'insular' are evident in later Irish and Welsh laws and hence very probably are related to a broader West European or 'Celtic' framework. Collis (2003) in reviewing the rise of the pan-European concept of 'Celticism', also warns that the term 'Celtic' would not have been recognised in the past in the sense that it is now. In the writer's view, however, as cross-channel links are so clearly evident from the Middle Iron Age onwards, including art styles, metalwork, the east Yorkshire burial tradition and ultimately the words of Caesar, over-emphasising insular development seems counterproductive. Although the evidence has to be handled with caution there is plenty of room for both insular divergence and cross-channel linkages and the striking rituals at Aylesbury provide one further opportunity for comparison.

Subsequent to the hillfort's construction, the ritual area would have lain just behind the first rampart and would have been marginal to the enclosed area as a whole. A hypothetical link between the activities at the ritual area and construction of the hillfort previously mentioned can neither be proved or disproved by the radiocarbon evidence. Although the ritual area may have been recognised for a time after the hillfort's construction, the deposit would certainly have had no significance by the time it was buried beneath the spoil of the enlarged rampart accompanying the recut ditch. Dating of the latter event is unfortunately imprecise since only the duration of the natural infilling of the first ditch and the presence of Middle Iron Age sherds in the recut ditch's infill and in the two interior pits (which may probably also have been sealed) provide any evidence. The considerable effort involved in fortifying such a large area for a second time does, however, emphasise the local, if not regional, significance of the fort.

There is an apparent absence of pottery of later Iron Age date from within the area defined by the fort's circuit, suggesting that it was no longer being utilised in an intensive manner by that period. The molluscan evidence indicates, however, that the interior remained clear of woodland being either under grassland or ploughed. On the basis of the very limited ceramic evidence available and taking into account the recutting of the ditch, the fort's active life could perhaps have been in the order of two hundred years. Perhaps of greater significance for the later Iron Age is the presence of an interesting site of the period only a kilometre further north-east along the ridge beneath the village of Bierton. Although its extent is unknown, finds from a limited excavation here included a small group of

Gallo-Belgic imports including *terra rubra*, suggesting the existence of a high-status settlement. Immediately adjacent a villa was later constructed (Allen 1986). It is possible that there may be a direct link between these two phases, but further work would be needed to confirm this.

Although no Roman features were present at the Prebendal site, eighty Roman sherds were noted. These can be related to other scattered evidence for Roman period activity within the town (see on), and as has been noted previously, the hillfort perimeter remained sufficiently distinct for it to be recut in the early-Middle Saxon period.

Aylesbury hillfort in its region: hillforts and settlements

Buckinghamshire lies towards the northern limit of the so-called 'hillfort dominated' zone of southern England. However, it will be apparent from Figure 60 that hillforts must have exercised considerable influence in the Buckinghamshire Chilterns and the Vale of Aylesbury to the north. The nearest fort to Aylesbury, Boddington Camp, is only eight kilometres distant with a commanding position on the Chiltern scarp; the two would potentially have been intervisible. Surface collections of ceramic from Boddington suggest that it may have been contemporary with, or possibly earlier than Aylesbury.

Including Boddington, six forts are known within a twenty-kilometre radius of Aylesbury. Bearing in mind that two of these, Aylesbury and Cheddington (Farley 1983), are relatively recent discoveries, with another possible example at Brill (Farley 1989), this may still not be the complete picture; the place-name Soulbury, for example, could hint at another in the Vale of Aylesbury. Just beyond the fifteen kilometre radius, in south Buckinghamshire, an impressive multiperiod fort has recently been discovered at Taplow, overlooking the Thames (Allen *et al.* 2009). This brings the number of recently discovered forts in the county to three over a thirty year period. Over the border into Northamptonshire the pattern has been repeated with three 'new' forts having also recently been discovered; the first just over the county boundary at Whittlebury (Jones and Page 2006, 46–9) and others at Irthlingborough and Guilsborough.[3]

Work on the interiors of hillforts in recent decades (for example that noted above in Payne *et al.* 2006), has called into question their perceived role as defended citadels. Some writers, taking this a step further and observing that evidence of the crafts *etc*., practised within them is little different from that found in settlements, have suggested that they 'complemented rather than dominated existing settlement systems' (Hill 1995, 45), implying a non-hierarchical society. Notwithstanding this debate, the concept of territory still has relevance in terms of community input to the construction of such labour-intensive structures. It is improbable that all Buckinghamshire forts were functioning at the same time, but if this were theoretically the case, each hillfort in the county would have had roughly 7,000 hectares of 'territory' from which to draw the necessary construction workforce. This simple calculation presumes each had a territory of equal size but the reality is that not all would have been in use at the same time and, as noted below, each had different requirements in terms of scale of manpower at the time of construction. (For discussion of more sophisticated methods of measuring 'territory' see for example Grant 1986).

For most Buckinghamshire hillforts it is possible to calculate the extent of their interiors. Ranking them by size gives some indication at least of the community effort required for their construction. In the accompanying table (Table 17), interior size has been calculated rather than total extent since the former would have remained constant and excludes subsequent expansion by, for example, the addition of extra ramparts. It will be seen that of the seventeen Buckinghamshire forts, five exceed six hectares in extent, including potentially Aylesbury, which, if its projected circuit is correct, would be second only to Bulstrode at Gerrards Cross. Unlike Aylesbury, however, Bulstrode appears to have had little internal occupation (Fox *et al.* 1923) and this may reflect its significance within the county. There are twelve smaller forts. From the limited evidence available (Table 17) there appears to be some correlation between the extent of interiors and the depth of the defining ditch. That this relationship is not, however, universally applicable can be seen from Danebury, Hampshire, which has a relatively modest internal area of 5.25ha but an inner ditch cut to about 7.5m below ground level, far more substantial than any of the Buckinghamshire forts (Cunliffe 1984a, fig. 3.3).

Cunliffe has proposed a possible sequence for hillfort construction (*e.g.* in Payne 2006), commencing with 'early hilltop enclosures' and small strongly defended settlements, which were succeeded by 'early hillforts' of middle Iron Age date, usually univallate contour forts of *c*. 3–7 hectares, commonly with two entrances. He suggests that the latter may be divided into an early group with revetted rampart, and a later group with glacis-style defences. These early hillforts appear to have been either abandoned or succeeded by the 'developed' multivallate forms with complex entrances, often with extensive evidence for internal utilisation and seen as 'successful polities'. Although probably a little larger, Aylesbury fits reasonably comfortably within the proposed 'early hillfort' sequence. Its first rampart form is unknown but its second was apparently glacis.

So far as determining the early history of forts from surviving earthwork evidence alone is concerned, there are of course considerable limitations as has recently been vividly demonstrated at Taplow in the south of the county (Allen *et al.* 2009). Here, the earthworks had been completely levelled but excavation exposed three phases of defence, commencing with a palisade and separate fence

3. I am grateful to Sandy Kidd for pointing this out.

Table 17. The approximate dimensions of Buckinghamshire hillforts. These figures are not entirely internally consistent due to their derivation from small scale maps. The ditch depths are excavated depths below ground: Bulstrode: Fox et al. *18923; Cholesbury: Kimball 1933; Danesborough: Berry 1924; Desborough: Saunders (HER 0018); Ivinghoe Beacon: Cotton and Frere 1968; Taplow: Allen 2009; Desborough: Saunders (HER 0018).*

Hillfort	***Int. hect.***	***HER No.***	***Inner circuit length m***	***Parish***	***Ditch depth m***	***Uni- or multi-vallate***
Bulstrode	8.4	1525	1210	Gerrards Cross	3.9	M
Prebendal	7.9*	2918	1200	Aylesbury	3.6	U
Boddington	6.3	1645	1170	Halton	-	U
Danes C (Bolbec)	6.3	1168	1050	Medmenham	-	U
Danesfield	6.0*	1734	1000*	Medmenham	-	M
Desborough (1)	3.8*	0018	800*	W. Wycombe	1.5	M?
Cholesbury	3.8	0016	800	Cholesbury	3.9	M
Cheddington	3.8	4039	800	Cheddington	-	M
Taplow	3.6*	1544/6321	700*	Taplow	2.6/2.8	M
Norbury	3.2*	0783	700*	Padbury	-	U
Ivinghoe Beacon	2.2	1245	520	Ivinghoe	2.8	U
Maids M/ Foxcote	2.2	0785	530	Foscot	-	U
Danesborough	1.7	1578	500*	Wavendon	2.7	U
West Wycombe	1.0	0019	420	W. Wycombe	-	U
Burnham 7 Ways	1.0	1558	420*	Burnham	-	U
Whelpley Hill	0.9	0022	400*	Ashley Green	-	U
Pulpit Hill	0.7	0017	380	Gt and Lt. Kimble	-	M

* = estimate

lines of Late Bronze Age date, later to be replaced by a 2.6m deep ditch and then in the sixth-fifth centuries BC by another ditch 2.8m deep accompanied by a timber-laced rampart. A further substantial ditch has yet to be attributed to a period. None of the first phase of defences could have been predicted even had the later earthworks survived.

Payne's study of Wessex hillforts (2006), showed that the ditches of some forts had been constructed in straight lengths, falling into two clusters around either *c*. 30–32m or *c*. 50m. The 20m length of ditch recorded in the excavated area at Aylesbury although insufficient to test this concept, did appear quite straight and as noted earlier its alignment would certainly need to have altered quite dramatically if it was to utilise the hill's contour to the north.

Finally, 'lesser' settlement sites in the county may be briefly mentioned. In Buckinghamshire, quite an extensive area of the county within the Vale of Aylesbury and to the north is clay that has been corrugated by medieval ridge and furrow. As a result occupation sites are only infrequently recorded by aerial photography. In recent years, however, structured searches have shown that there were numerous undefended sites of the period in these claylands. Local examples identified by evaluation trenching can be seen at the nearby site of Coldharbour Farm, Aylesbury (Fig. 2: Bonner and Parkhouse 1997), through work in advance of highway construction at Leighton/Linslade (Moore *et al.* 2007) and the Aston Clinton Bypass (Masefield 2008); by pipeline checking, *e.g*., at Woodham (Farley 1984), and in north Buckinghamshire through intensive fieldwork in the Milton Keynes new city area (Croft and Mynard 1993). The density of settlement in these claylands is proving to be similar to that known to exist in other areas of southern and central England where the evidence is relatively more accessible, although at present many of the clayland settlements of Buckinghamshire seem to commence in the middle Iron Age. For more recent discoveries see accounts in *Records of Buckinghamshire* volumes. The picture of settlement in the Chilterns south of the town where modern development is very restricted, is quite different. For a recent overview of early settlement in Buckinghamshire see Kidd (2009).

8. Roman Period Evidence

Introduction

Subsequent to the recutting of the hillfort ditch in the Iron Age, gradual infilling took place, bringing with it some Iron Age pottery. The transition to the Roman period is indicated by Roman sherds from two of the ditch sections AA and BB. In section AA, several joining sherds from one flagon came from layer 898. This is a thick layer and although the sherds came from upper levels they might still be from a missed intrusion. The layer above that (897) contained six sherds likely to date to the first-second centuries AD, including a piece of samian (Drag 27) and the layer above that (890) contained a cordoned jar. In section BB, three joining sherds were recorded from 325. No Roman sherds came from the third section CC. The whole probably indicates a first-second century date for this phase of infilling.

The molluscan evidence taken from section BB of the ditch (see earlier) indicates open conditions for the early phases of the Iron Age. As noted above, three Roman sherds occur in layer 325 of this section (molluscan sample zone 2041–3) and grazed grassland is indicated at this time. The subsequent three samples which probably covered the main period of Roman occupation, indicate ploughing in the vicinity, probably close to the low-level occupation noted below.

Several pieces of Roman tile were recovered from the site, some possibly being introduced during the Saxon period. No Roman coins were retrieved.

Pottery

There were 168 Roman sherds from the site but 81 of these were from a single flagon from the upper hillfort ditch. The remaining 87 sherds weighed 690g, a little less than 8g per sherd, and almost all came from medieval or later contexts. There were no purely Roman contexts. The majority are greywares but there is a probable Rhenish beaker sherd (second-third century), and a late Roman presence is indicated by three third-fourth century red colour-coat bases from the Oxfordshire kilns and a piece of parchment ware from the same source. None are illustrated.

Roman Building Material

Simon Smithson (with additions)

Eighty-four pieces of Roman building material were recovered. These included one imbrex, fourteen tegulae, and eleven flue tiles; fifty-eight pieces were unclassified. The distribution showed a significant concentration within, and in the area of, the Saxon ditch (513/614), with a less extensive concentration near the south-east corner of the site, around and within pits 400 and 665. This whole may indicate the importation of Roman building material for use at some stage in the building of the minster (see on).

Other finds

A single tiny piece of blue-green Roman glass probably from a first-second century square bottle, came from a medieval well (487: SF 2478). Identification by Jennifer Price.

Aylesbury and the surrounding area during the Roman period

The projected course of Akeman Street from Verulamium to Cirencester skirts the eastern margin of Aylesbury, although its precise line here has not been determined. Traces of a small ditched enclosure sited close to its presumed course were examined within the town in 1979 during a rescue recording operation (Allen 1982, 81–101). In 1980 during a watching brief close to the present Market Square (op cit.), a V- shaped ditch ‘of late Iron Age or Roman date’ was observed, which could hint at an early military presence and in this connection a metal-detector find of military metalwork including belt mounts and a harness hook, from Walton Court two kilometres south of the old town, may be noted (Farley *et al.* 1981).

Stray Roman period finds from the town were previously mapped by Allen (1982). To his list can be added a further 82 sherds from George Street (Allen 1983) and now the Prebendal material. The whole, apart from the slight hint of a military presence noted above, suggests fairly small-scale activity within the former hillfort, and, as has been noted above, there appears to have been grazed grassland within

its bounds. The former existence of the hillfort seems to have little direct influence on the landscape until it was perceived to be a suitable site for occupation in the early Saxon period. The main Roman settlement in the area seems to have been not at Aylesbury but at the small, apparently undefended, roadside small town of Fleet Marston about four kilometres north-west astride Akeman Street.

South-east of Aylesbury, at the foot of the Chiltern scarp, there were several villas. There is plentiful evidence for small-scale settlement around Aylesbury itself, but only one villa is known close to the town, at Bierton about 2.5km distant (Allen 1986). This building would have been the nearest source for the tile found at the Prebendal site. Bierton is of interest for other reasons. This villa seems to have been preceded by a high-status late Iron Age site noted previously.

9. Early Saxon Aylesbury and a Reference in the *Anglo-Saxon Chronicle*

Archaeology, place-names and documents

Although the defences of the hillfort had been substantially infilled by the late Roman period, their remains were significant enough in the early Saxon period to occasion the place-name Ayles*bury*, the 'bury' element recognising that it was or had been a defended place. Apart from the name 'Magiovinium', attributed to a small Roman town in the north of the county, the place-name is the earliest documented name that relates to the area which is now Buckinghamshire. It occurs in a well-known *Anglo-Saxon Chronicle* entry of which two versions are given below:

> 571. Here Cuthwulf fought against the Britons at Bedcanford and took 4 settlements. Limbury and Aylesbury, Benson and Eynsham; and in the same year he passed away. (Winchester ms (A))
>
> 571. Here Cutha fought against the Britons at Biedcanford and took four settlements: Limbury and Aylesbury and Benson and Eynsham; and in the same year he passed away. That Cutha was Ceawlin's brother. (Peterborough ms (E))
>
> (Translation from Swanton 2000)

There has been extensive discussion of the 571 entry. Prior to the 1970s the date was generally accepted at its face value; for example '… the place-names of the county at the foot of the Chilterns do not conflict in any conclusive manner with the much – discussed annal that implies that the region first passed into English possession in the year 571.' (Stenton 1940, 278).

In more recent years the *Chronicle's* account of the 'history' of the fifth and sixth centuries has been widely recognised by both historians and archaeologists to be defective both in terms of its omissions and of the pseudo-accuracy of its dates, which could not have been committed to parchment until several generations after the events described (Sims Williams 1983). Nevertheless, Yorke for example, in discussing these early entries concludes 'that the sources cannot be seen as completely fictional, perhaps factional would be a better way to describe them.' (Yorke 1993, 49). A particular problem relating to the Aylesbury entry is that several Cuthwulfs, Cuthas and Ceawlins figure in these decades.

The personal name *Aegil*, which is presumed to provide the prefix to the 'bury' of Aylesbury, appears in only a few documented English place-names, such as Aylescott and Aylesbeare in Devon, both recorded in Domesday (Williams and Martin 1992). In the form *Aigil* it has also been noted as a runic inscription on a buckle found in an Alemannic grave at Pforzen, Ostallgäu (http://en.wikipedia.org/wiki/Pforzen_buckle). Locally, late Saxon variants can be seen on the mint name of coins struck in Aylesbury in the late tenth and early eleventh centuries; their form is fairly consistent: *Aegls, Aeglsby, Aegel, Agl, Aegl, Eglsbr, Aeel, Egele* (Carroll and Parsons 2007).

The Aylesbury defence could then have been the personal 'bury' of a local 'Aegil'. However, Aegil is also a shadowy Germanic hero, an archer, whose name is recorded in runes (*Agili*) on the lid of the Franks Casket. In the accompanying image he is shown defending a fortified place against a number of warriors. Contained within the image is a building with a female figure inside who is proffering him an arrow. Adjacent to Aegil's side of the image, confirming his Germanic origins and status, are two crouched, beaked beasts. This representation is generally thought to be of Egil a legendary hunter and brother of Volundr (Weland) the Smith (Wilson 1984, Webster 1999, Dronke 1997). Aylesbury could then therefore, owe its name to the legendary hero in the same manner as numerous Danes' Camps, Caesar's Camp, and in Buckinghamshire – Grims Ditch, were in the past attributed to earthworks of unexplained origin.

Although the context and precise date of the *Chronicle* entry may be open to discussion, the documented existence of a settlement at Aylesbury in the sixth century that could be 'taken' seems not to be in doubt. In this connection it is also worth emphasising that although the AD 571 entry implies that it was Saxons taking British 'towns', all of the four towns 'taken', including 'Aylesbury', have Old English place-name elements, so it is not unreasonable to presume that other Saxons were already in occupation although some have suggested that the names arose from later re-naming (Nicolaisen *et al.* 1970, 43).

Although Aylesbury is described simply as a *tun* in the Chronicle entry, later accounts of the event, for example in *The Chronicle of Aethelweard* (Campbell 1962) and *The Chronicle of John of Worcester* (Darlington and McGurk 1995, 62–3), use *regiae villa*, and both Sims-Williams (1983) and Sawyer (1983) accept that this early status as a 'king's town' is likely. How long it subsequently continued in royal ownership will be discussed further on.

Despite the promising AD 571 reference, only one constructed feature recorded at the Prebendal, as will be noted further on, could even be as early as the seventh century: a palisade trench preceding a ditch that was becoming infilled in the early eighth century. It would be gratifying to suggest that the earlier palisade existed in the sixth century and thus complements the '571' *tun* reference, but sadly this seems structurally highly improbable and there is only one sherd from the site which may be of sixth century date. Other evidence, however, including local place-names, introduce a further strand of evidence which allows the reasonable inference that there was occupation within Aylesbury prior to construction of a minster here (which will be discussed further on).

The hamlet of Walton barely a kilometre distant to the south-east and on the other side of the Bearbrook (Figs 2 and 78), is sited, as is Aylesbury, on Portland limestone. Here, Saxon occupation included at least nine sunken-featured buildings as well as about fourteen post and post-in-trench structures (Farley 1976, Dalwood 1989, Ford et al. 2004). Ceramic and other evidence shows that this settlement was certainly in existence in the early Saxon period. Apart from the settlement there is also a poorly recorded early cemetery nearby (Fig. 78). The Walton settlement extended over a distance of at least 400m (Fig. 78) and was itself preceded by Romano-British occupation. This early settlement continued through to the Late Saxon period into the medieval period with no obvious break. Walton, together with Wolverton in the north of the county (another *tun* name), probably provide the best examples of continuity of occupation in the region (Farley 2010).

Both elements of the Walton place-name have been much debated. Although in some parts of England the *tun* element continued to be created long after the early Saxon settlement phase, in Buckinghamshire, on the basis of surface ceramic finds, etc,. *tuns* seem to be frequently associated with evidence for early Saxon settlement (Farley in Hunn *et al.* 1994, 146). In a study of the broader region, Baker has also noted that the 'tun' element 'so closely echoes that of the Germanic archaeology that some revision of its significance as a place-name-forming element may be necessary' (Baker 2006, 257). The prefix *wal* or more particularly, *wealh*, could indicate: the presence of Welsh/ British, literally a 'wall' or in Mercian areas, a well or stream (Faull 1975). The 'wall' interpretation was favoured for Aylesbury's Walton by Elvey (in Farley 1976, 155). However, although there certainly was Roman-period occupation at Walton, there has been sufficient excavation in the hamlet to demonstrate that its character was small-scale rural settlement, and the possibility of any kind of Roman wall which could have led to its name, surviving into the sixth century seems very unlikely in comparison with the survival of a mortared wall in a Roman urban setting. Its use to describe a stream also seems unlikely as the nearest stream, the Bearbrook in the valley to the north-west, divides the tun from Aylesbury being equidistant from both. So, the third interpretation, that the *wal* element described a settlement consisting of Welsh/ British inhabitants seems far more probable. The fact that these 'British' had by the late fifth to sixth century adopted a solely 'Saxon' material culture, of the kind uncovered during excavation, now seems unremarkable. Taking the argument one step further, it obviously required locally resident Saxons to define a *tun* as 'British' and the most likely people to have done so would surely be the occupants of Aylesbury itself.

Finally, the name of a village close to Aylesbury to the east, Bierton, may be noted (Fig. 2). Although not recorded until Domesday, its name, 'tun of the burgh', acknowledges the existence at Aylesbury of some kind of distinct enclosure or defence (EPNS 1955; Gelling 1989). Since finds from Bierton clearly indicate an early Saxon presence here (Allen 1986) the name is another indication that the Aylesbury 'burh' itself had long been recognised as significant. (I am grateful for an observation by John Blair, *pers. comm.*, that *burh-tun* names recurrently link important centres both monastic and secular). So, despite the fact that, as will be seen, the amount of identified material culture of the early Saxon period from Aylesbury itself is minimal, the *Chronicle*'s reference, together with the two neighbouring place-names, suggest that this absence may just be an archaeological problem and that Aylesbury existed as some kind of place in the sixth century.

Early Saxon finds

No features certainly datable to the early Saxon period were recorded during the excavation and only one stamped sherd, from a residual context, can with reasonable confidence be attributed to this period (Fig. 65, 8). Although other early Saxon pottery may be present, unfortunately the fabric types of the period are long-lived and lack decorative features. At nearby Walton it was possible to attempt a definition of early ceramic groups on account of association with stamped wares etc., but this information has not proved readily transferable to the Prebendal on account of the presence of Iron Age sherds of similar fabric. The same problem has been encountered at two other excavations within the town, George Street (Allen 1983) and the County Museum (Bonner 1996) at both of which sherds of 'Iron Age/Saxon' date were recorded. Vegetable-tempered wares were also present on both of these sites but although the fabric seems to commence in the Early Saxon period, it certainly continues into the Middle Saxon period (see on). Likewise, although there are undoubtedly changes in the typology of clay loomweights (present on all of the town sites) there is considerable chronological overlap between the forms (see for instance Goffin 2003) so they cannot be used alone to indicate an early Saxon presence.

10. A Minster Boundary and Middle Saxon Aylesbury

The principal find of the Middle Saxon period was a boundary (Fig. 61, 513). It is highly likely that this was the boundary of a minster in existence by the first quarter of the eighth century but which could have been founded earlier. The religious and political context of the Aylesbury area in the Middle Saxon period will be discussed below after the archaeological material has been described.

The middle Saxon boundary: structure and finds *(Figs 61–5)*

Palisade, post-holes and ditch

The rapid infilling of the hillfort ditch during the Roman period has already been noted. In the Saxon period a new

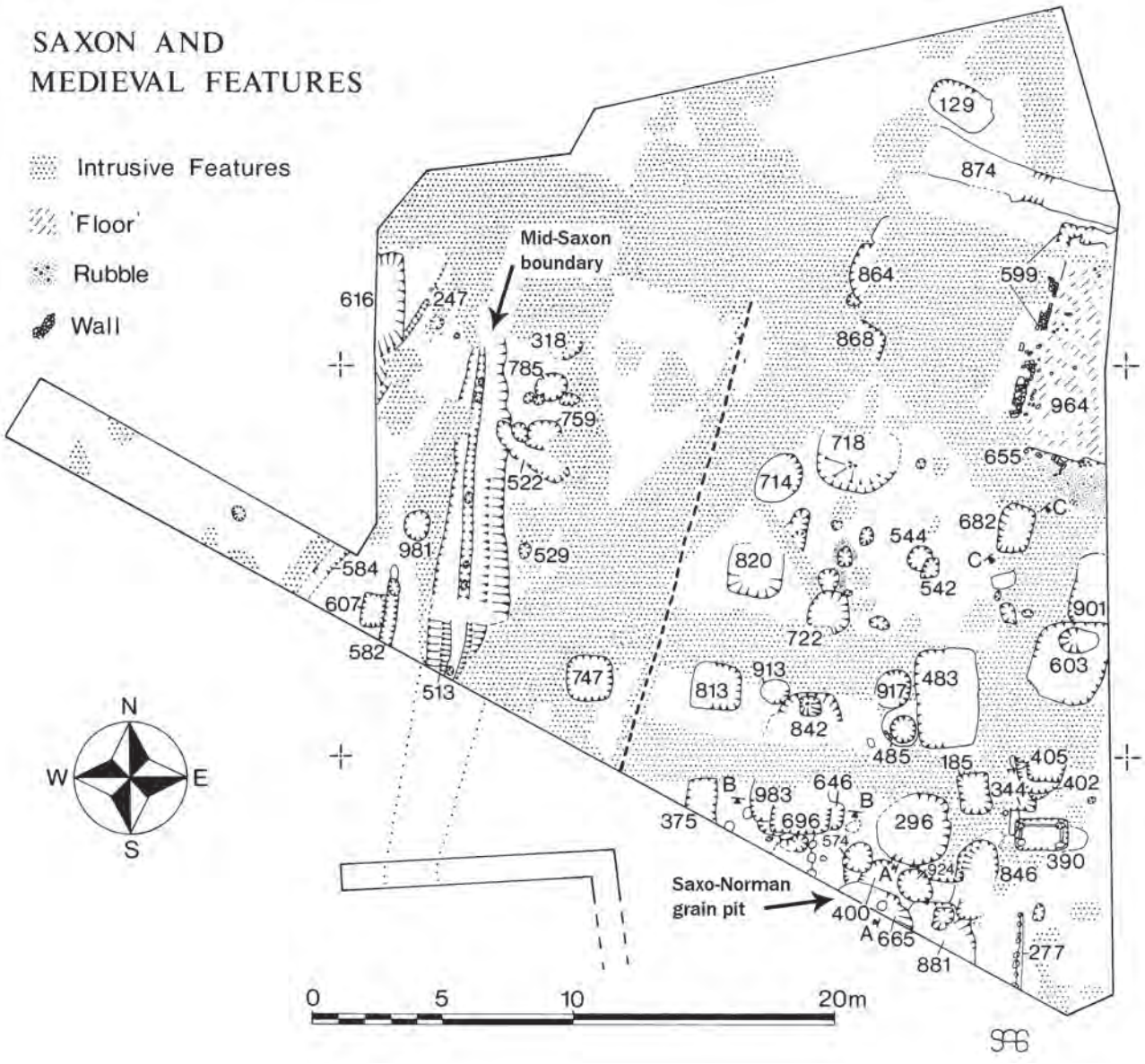


Figure 61. All excavated Middle-Saxon and Medieval features: stipple indicates other periods.

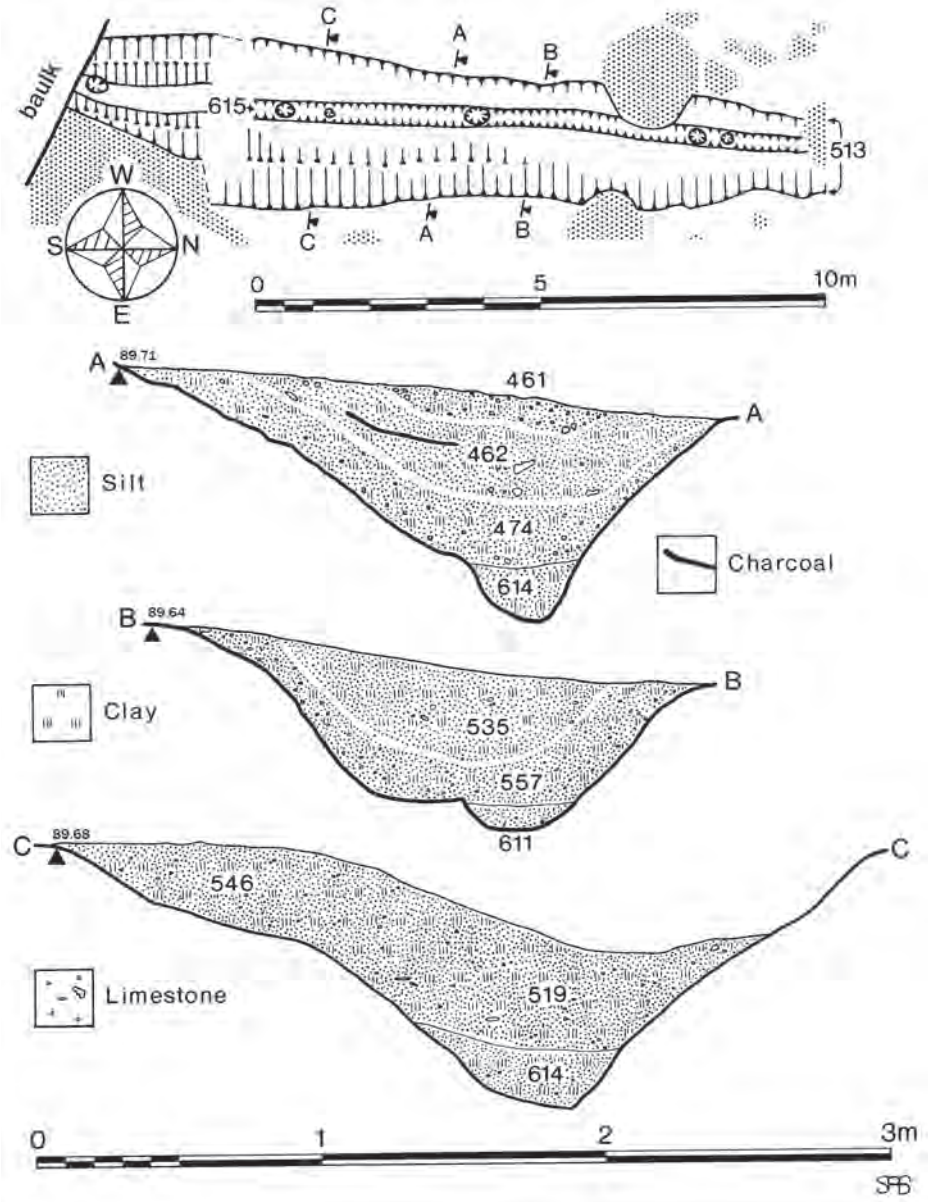


Figure 62. Top: plan of Middle-Saxon boundary ditch (513); bottom: sections A–C of ditch.

ditch (513) was cut into the hillfort's ditch fill, following the same north-south alignment as the earlier hillfort ditch (Figs 63–4). A thirteen-metre length was examined. It had been truncated at its north end by a well (213) and the large modern tree hole noted previously in the Iron Age section. The ditch was visible in the south-baulk section continuing beyond the excavation in that direction (Figs 12, 13, 61, and 64).

The plan of the excavated length is shown on Figure 62 together with sections. Figure 11 shows its relationship to the Iron Age ditch as a whole (768 and 758 in section) as does Figure 12 (535, 557, 611). The overall relationship can also be seen in the profile Figure 64. The ditch's excavated width was 2.20m, and depth 0.80m., but it had been truncated by later paths and terracing and the difficulty of determining contemporary ground level has been discussed in relation to the Iron Age ditch. Its original width would probably have been about 3m and depth *c*. 1.20m.

Along the base of the entire length of the ditch ran a shallow, slightly U-section slot about 0.40m wide (615; fills 611,614,784). Its base was remarkably level, varying only 0.08m along its length. Six irregularly-spaced post-holes were observed cut into the base of the slot, with diameters ranging from 0.2 to 0.38m (context numbers from the east: 879, 737, 739, 741, 743, 745). The post-holes were cut to between 0.10–0.30m deep below the slot's base. It seems likely that the slot probably formed the base trench of a palisade but that not all of the posts had penetrated into its bottom. A series G sceatta (see on) was found in the top fill of the slot (junction of 519/614).

Above the slot, the ditch's fill was divisible into an upper and lower layer; the upper had an organic character with some charcoal lenses; the lower was similar but with a firmer clayey fraction:

461, 462, 473, 535, 758 (Upper): soft silt, mid reddish-brown–greenish grey.
474, 519, 557, 768 (Lower): silt, firm clay-silt, mid grey–greenish grey.

The fills of the six post-holes in the base of the slot were similar to those of the ditch above. No post-pipes were noted in the fill above the slot and although it is possible that they were missed during excavation, the organic character of the ditch fill and the lenses within it, strongly suggest that the palisade could not have been standing in the slot when the fills were accumulating. Nevertheless, both palisade and ditch clearly march on the same alignment. The most satisfactory explanation is that the construction sequence commenced with palisade posts set in a narrow, deep, slot of which only a little of the base survives. When the time came to replace the posts, presumably because of decay, digging took place along the line of the rotting posts maintaining the alignment but clearing them roughly to the depth of the original slot. The posts, or what was left of them, were individually removed and the new ditch profile established as the diggers advanced. The palisade, therefore, formed the original boundary and the ditch was its replacement. The replacement ditch and its accompanying bank together would not have made a substantial barrier, so it is likely that the bank which would have been on the east (uphill) side, had some additional barrier on top, such as a fence or hedge. The finds from the post-holes, palisade slot, and the ditch and their dating are discussed below.

Finds from the boundary

From the post-holes

One post-hole only (741) contained a sherd, an Iron Age rim sherd (not illustrated, context 742).

From the palisade slot (615)

There were four sherds in the palisade slot, one Roman and three Saxon, also: a few small scraps of tile, one possibly Roman; a burnt flint pebble SF 2861 (784); a small curved piece of pale green glass of good quality, apparently from a narrow-bodied vessel with thick curved trail and perhaps from a cone or bag beaker, Saxon (identification by Dr J.

Figure 63. The Middle-Saxon boundary ditch looking north.

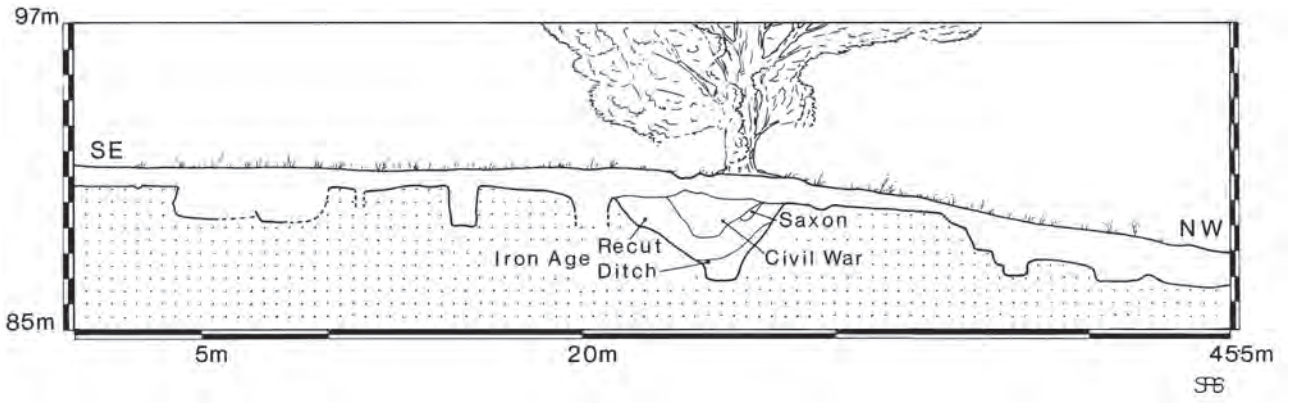


Figure 64. Section along south baulk of excavation showing position of hillfort ditch (section AA), set just back from slope of hill, and later recuts of Middle Saxon and Civil War date. Unmarked cuts are medieval and later.

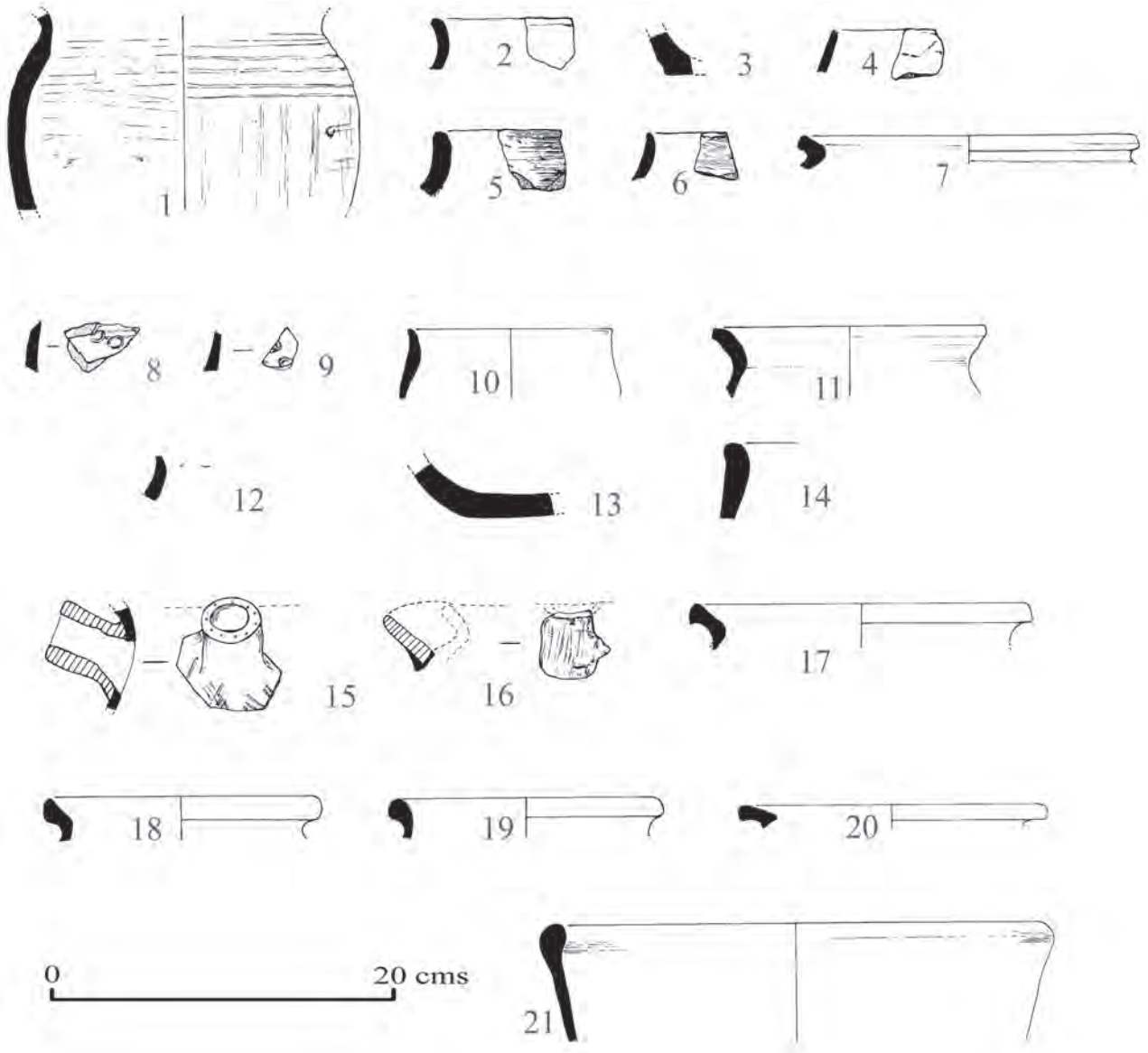


Figure 65. Saxon pottery: 1–7 from Middle-Saxon boundary ditch; 8 unstratified early Saxon; 9–14 unstratified early-mid Saxon; 15–21 unstratified Late Saxon (1/4).

Price) SF 2602 (784): and a *sceatta*, see below, SF 2410 (614). The site-plot of the latter places it over a post-hole (737).

From the ditch (474, 519 lower: 546 middle, 473, 535 upper)

The ditch was clearly a trap for discarded material. It contained modest amounts of pottery – including a large sherd of Ipswich ware, loomweight, Roman tile, animal bone, antler, iron, glass, charcoal, and coprolite.

A) The pottery

Barbara Hurman

The local Saxon pottery-fabric series established in the 1980s for use at nearby Walton has been utilised (see below). Gaps in the number series are fabrics not noted at the Prebendal. Forty-six sherds came from the ditch. The only diagnostic sherd is a large piece of Ipswich ware from the upper fill and a second piece from the same context – the only two stratified Ipswich sherds from the site although there are a number of others from residual contexts (see on). Paul Blinkhorn kindly confirmed the identification of Ipswich ware (Fabric S2 below).

S1. Fine quartz, some clear, can be large and rounded.
S2 Sandy, Ipswich type.
S4. Fine quartz and ?sandstone.
S7. St Neot's type.
S9. Fine quartz, large organic pieces and ?sandstones –red and fawn.
S11. Fine quartz with occasional voids, larger quartz and traces of organic material – 'vegetable tempered'.

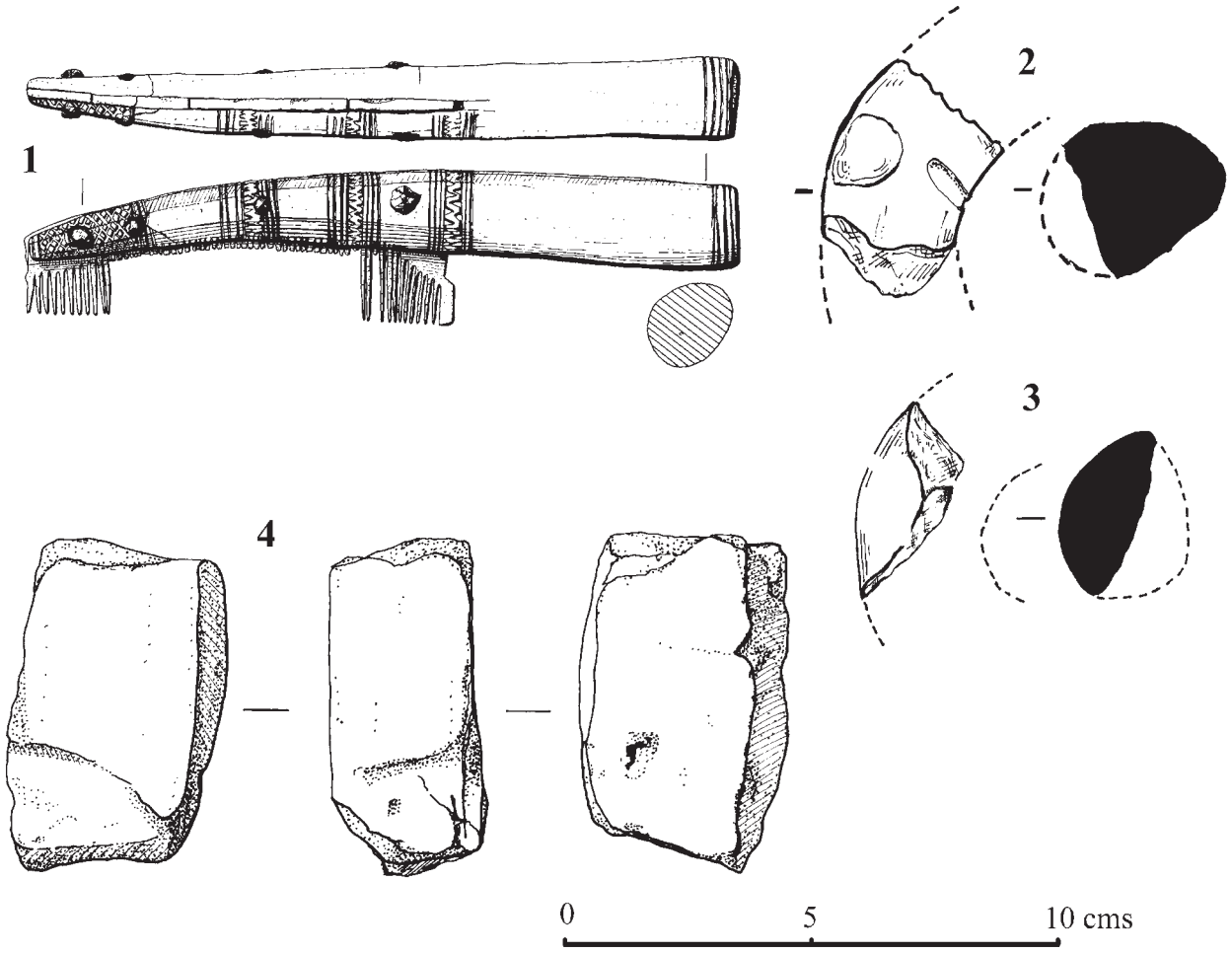


Figure 66. Finds from the Middle-Saxon boundary ditch; comb, loomweight, stone (2/3).

S13. Similar to S14 but larger white quartz grains; can have shell frags. and organic pieces.
S14. Fine quartz, mainly opaque, sparse shell and sandstone.
S20.Very hard, shell inclusions.
S21. Sparse quartz, rounded, clear and sparse flint, surfaces can be vesicular.
S22. Abundant quartz, hard fired.
S23. Abundant shell, similar to S7 but larger shell frags., probably Maxey ware.

Illustrated pottery from the ditch (Fig. 65, 1–7).
1. Large sherd, cooking pot, burnished vertical lines ext. reaching to grooves on shoulder. Fab S2. (473).
2. Rim, slightly everted surfaces black. Fab S11. (474).
3. Base, similar No. 5 above. Fab S9. (535).
4. Rim, upright inward sloping, grey. Fab S9. (535).
5. Rim, slightly everted, worn black surfaces showing oxidising (see 6 below). Fab S9. (535).
6. Rim, slightly everted, black surfaces, striations on ext. Fab S9. (535).
7. Rim, hard-fired surfaces pink-orange, slip-like finish. Fab S20. (557).

b) Tile
Seventeen pieces of Roman tile came from the ditch fill. Of these, four were from combed flue-tile (519: SF 2604, 2605, 2552, 2603) and one from uncombed flue tile (546 SF 2490).

c) Loomweights *(Fig. 66, 2–3)*
2. Part only: a small indentation on inner edge; hard fired, diam. uncertain. Fabric sandy with some white shell (?) inclusion: diam. of solid clay ring 28mm; middle fill of ditch (546 SF2489).
3. Part only: hard fired, too fragmentary to show perforation. Fabric sandy with some white inclusions, shell(?) and sparse small flint pebble. Diam. of solid clay ring 25mm; lower fill of ditch (519 SF2562).

In addition, two clay lumps lacking finished surfaces from 472.

d) The Handled Comb
Ian Riddler (Fig. 66, 1 and Fig. 67)

[Although this comb was recorded on site as from 'subsoil' (SF 2365: 125), its plotted position places it onto the centre

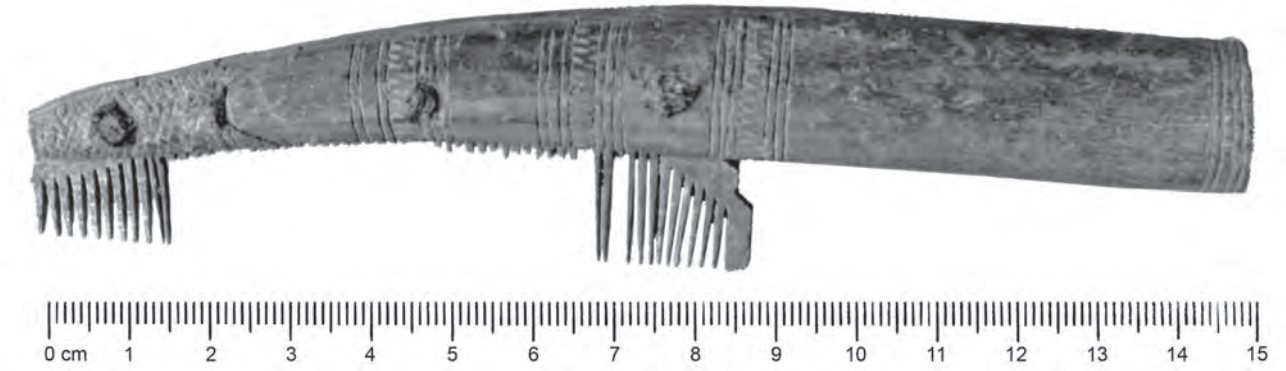


Figure 67. Antler comb from top fill of Middle-Saxon boundary ditch.

of the Saxon boundary feature and it is highly probable that it came from the ditch's upper fill].

An almost complete, handled, antler comb, length 146.5mm, width 30mm. It lacks part of the front end segment and all of the teeth of the two central segments are now missing. It is a fine example of a handled comb with the connecting plates decorated on one side only, which establishes its Middle Saxon date. The comb has a display side, which is emphasised by the presence of saw marks from the cutting of the teeth on that side but not on the reverse. Display sides occur on combs of eighth and ninth century date and are rarely seen outside of that period (Tempel 1972, 57; Elder and Riddler 1988, 142). The three widely-spaced bands of fret patterning are also indicative of an eighth century date. Similar patterns can be seen on handled combs from Bedford, Birka, Cottam, London and Wandsworth, all of which can be set into the eighth century (Riddler 1990a, 11–12; Richards 1999, fig. 51). With later examples of handled combs, extending into the ninth century, this decoration occurs as bands with vertical lines filling the spaces in between, as with combs from Canterbury and Haithabu, for example (Riddler 1990b, abb. 1.1; 1997, fig. 1). Locally, a small fragment of a handled comb from Walton belongs with this later group (Dalwood *et al.* 1989, fig. 16.37). The dense lattice mesh at the front end of the comb recalls similar decoration on a number of Middle Saxon double-sided composite combs, including an example from *Lundenwic* (Riddler 2004, 53 and fig. 38.2). Combs with dense mesh patterning occur in contexts of the first half of the eighth century, in a development from the looser meshes seen on seventh-century combs. The earliest handled combs were being made *c*. AD 700, both in England and on the Continent (Roes 1963, 22–3; Riddler 1990a, 11) and it is likely that this comb was produced *c.* AD 725–770. In general terms, the earliest Anglo-Saxon handled combs are sparsely decorated and the level and extent of their decoration increases from the first quarter of the eighth century to the late ninth-century, until almost all of the available space is occupied with linear patterns. On that basis, this comb should belong somewhere around the middle of the eighth century, or a little later.

The comb is a typical example of its type, but there are several unusual features. The back end segment is indented, a unique feature on a handled comb. A comb from North Elmham has two indentations on its back end segment but these occur over its lower section and not close to the handle (Wade Martins 1980, fig. 259.1). All other examples of handled combs have vertical edges to the back end segment. There are 7.5–8 teeth per centimetre on this segment, but only 6.5 per centimetre on the front end segment, where the teeth are less pointed and the segment is wider. It is very unusual for a Middle Saxon comb to show such variation in tooth fineness across just four segments. There are no signs of wear on any of the surviving teeth. The cutting of the comb teeth was one of the last stages in comb manufacture and it was not always a successful undertaking. It is possible that in this case a second front-end segment replaced the original, either during its manufacture or in the early stages of its use. It may have been cut by the same person, but not to the same fineness as the remainder of the comb. This is a well-made comb and a very good example of the type and if it had fractured in an early stage of use, as seems to be the case, it would undoubtedly have been repaired, rather than discarded.

e) The *Sceatta*

Michael Metcalf (Fig. 68)

(For the location of this coin see the discussion of the palisade slot, above).

Series G sceatta. Weight 1.09g (SF 2410).

Series G is from early in the secondary phase of sceattas, *c*. 715–725. Its place of origin has for a long time been controversial. In Metcalf (1993, 266–74) a continental origin was proposed. The numbers of English single finds that have accumulated since 1993 make an English origin more of a possibility. The type has a widespread distribution throughout England (Metcalf 1993, 267: map) but it is necessary to distinguish between 'official' specimens and imitations of varying quality. The Aylesbury find is probably imitative, but it is a delicate judgement. The

Figure 68. Obverse of sceatta from the Middle-Saxon boundary ditch.

diadem is curved and more nearly horizontal than on the best specimens. The hair below the diadem is represented by a row of small pellets, which is by no means an 'official' feature. On balance one would say a good-quality imitation, which means it could be a bit later in date.

f) Iron

Seven pieces of iron came from the boundary ditch. These were X-rayed but have not been cleaned and are not illustrated, as follows:

SF 2753 (519): length 48mm, 3mm squared section, slightly palmate end; could be a stylus.
SF 2754 (519): length 37mm, width 10mm, thick. 3mm, from X-ray, squared plate with rivet hole at either end.
SF 2755 (519): length 55mm, squared cross-section 3mm, ? heckle.
SF 2759 (546): length 35mm, width 20mm, thick. 2mm, blade?
SF 2770 (614): irregular oblong ferruginous concretion on? stone? diam. 28mm.
SF 2868 (461): four fragments, total length 56mm, diam. 3mm rod.
SF 2867 (462): two fragments total length 28mm, diam. 3mm rod.

There is insufficient information to identify these pieces; the two pieces of rod could be from *e.g.* heckles, or styli or awls.

g) Stone *(Fig. 66, 4)*

There was one piece of non-local stone from the boundary ditch:

4. Flat slab, broken: smooth on three intact sides, rounded on intact edge: possibly a sharpening stone? Light in colour dense, well cemented lime sand or dolomitic limestone, 69 × 48 × 32mm thick. (2860: 758)

Also present was a small, burnt, rounded pebble, not illustrated (2861.784).

h) Glass *(Fig. 74, 1)*

Three pieces of glass came from the ditch fill, one from the upper fill (473) and two from the lower (474). The writer is grateful to Professor J. Price for looking at these.

1. Slightly everted fire-rounded rim, pale green with black specks. From a beaker or baggy vessel. Diameter *c*. 80mm. Saxon. (SF 2473, 473).

Also two tiny fragments in yellow-green glass; late Roman or Saxon. (SF 2475, 474). Not illustrated.

i) Slag

A very small amount of smithing slag came from one of the sections across the ditch. Three pieces from the lower level (473) weighing 38g, one of which was from a hearth base, and from the upper level of fill (462) one other piece (146g).

(j) Worked flint

One worked flint (535, SF 2487).

The middle Saxon boundary: animal and environmental evidence

Animal bone

Gillian Jones

Introduction

Animal bones from the Middle Saxon ditch are summarised on Table 18. Nearly half the bones were from sheep. Pig bones were also numerous, at about a third of the total identified bones, and nearly as many as sheep by minimum number count. They were twice as common as cattle bones, which formed only 15%. Goat was present, but nearly all sheep/goat bones are probably from sheep. Other mammal bones were few, but bird bones were frequent, with 81 fowl bones, 22 goose and five wild species present.

A radiocarbon date was obtained from a pig skull bone from Context 474, the lower fill of the boundary ditch.

Method

The recording method is described in the Early Iron Age section. For Figure 71, mandibles with incomplete dentition were included if their stage was known to within three stages, *e.g.*, a sheep/goat mandible at Bt, C12 or C34 was allotted 1/3 to each of these stages (Jones 2006, especially fig. 15). The individual tooth wear stages are shown on Table 24.

Small mammals, birds and amphibians were identified using reference material at the Department of Archaeology, University of York.

Table 18. Summary of the Middle Saxon animal bone.

	BN (no. of bones)	***Percent (BN)***	***BNZ***	***Minimum no. of individuals***	***Early cut 615 (BN)***	***From wet-sieving***
Cattle	205	*15*	133	4	12	1
Sheep + sheep/goat	610	*45(s+g)*	410	17	33	5
Goat	2		2	1		
Pig	413	*30*	290	17	20	7
Other mammal		*1.3*				
horse	7			1		
dog	1			1		
cat	5			1		1
hare	4			2		
common shrew						1
black rat	1			1		
water vole						1
Fowl	81	*6.0*		7		2
Goose	22	*1.6*		4		2
Other bird		*0.7*				
duck	5			2	1	
woodcock	1			1		
wood pigeon	1			1		
rock/stock dove	1			1		
rook/crow	1			1		
Mammal + bird Identified	**1360**	***100***			**66**	**20**
Common frog	4				1	2
Common toad	3					
Unidentified Amphibian	**2**					
Unidentified		**sub-tot**	**vert.**	**rib**	**other**	**wet-sieved**
large mammal		361	27	205	129	314
medium mammal		1880	92	872	916	47
small mammal		2		2		8
bird		102	1	10	91	28
Unidentified Total	**2345**					**397**
Total Middle Saxon	3714					419

BNZ – bones with at least one zone present, *i.e.*, the more complete bones. Bone from the early cut, ditch cut 615, are included. The bones from wet-sieving are not included in the totals. The minimum number shows the most numerous bone element. Bird and amphibian bones were from duck, cf. *Anas platyrhynchos*; woodcock, *Scolopax rusticola*; wood pigeon, *Columba palumbus*; rock/stock dove, *Columba livia/oenas*; rook/crow, *Corvus frugilegus/corone*; common frog, *Rana temporaria*; and common toad, *Bufo bufo.*

General description

Bones were generally well-preserved, with 68% of the main species recorded on the 'more-complete' zone list and loose teeth forming 8% of the identified bone. The proportion of bone identified was 37%, or 52% if ribs are ignored. No bones were recorded on excavation as articulated, and only a few appeared to be related (*e.g.*, pairs or related tibia and hock). Several immature pig skulls (including the radiocarbon-dated specimen) survived in many pieces, and an immature cattle proximal humerus survived with both loose epiphyses, which demonstrates the good preservation in the ditch, and confirms that the bones are a primary deposit. The hand-collected bones were carefully collected, with many very small pieces retrieved, and fresh breaks rare. The sieved material added common shrew and water vole to the species identified.

The parts of the skeleton found – the combined result from deposition, preservation and recovery – varies between the different species, see Figures 69 and 70 and Table 23. Cattle and sheep show a similar pattern, but with the larger teeth and foot bones of cattle being relatively more common than for sheep. For sheep/goat, more than half of bones found were from the main long bones. Pig bones, as is often the case, show a different pattern, with bones from the head being much more common.

The head bones from pig included six partial skulls, each counted as one bone, and many other pieces of skull. There were at least 13 individuals from maxillae, five each from Contexts 519 and 474 (the lower levels of the boundary ditch), plus at least three others, and the other skull pieces and loose teeth found are probably from these same individuals. The minimum number of individuals calculated from the mandibles, called MNE (Minimum Number for this Element) on Table 23, was also 13, and this is much higher than for any of the long bones. It is possible, therefore, that on occasion, pig heads were brought to the site from elsewhere. Or perhaps the high proportion of bones from the head reflects food preparation, for example the taking off of head-meat for making brawn, the resulting skull bones being deposited nearby. The

Table 19. Ageing data from long bone maturity for cattle.

	Age of fusion	*% F+Y*	*U*	*Y*	*F*	*Lake End Rd M. Saxon %F+Y*	*W. Cotton E. Med. %F+Y*
scapula, pelvis	7–10 mos	*83*	1	1	4	*95*	*100*
d humerus, p radius, phalanges	12–24 mos	*64*	5		9	*99*	*97*
d tibia, d metapodia	24–30 mos	*50*	5		5	*77*	*78*
Late fusing elements	3–4 yrs	*31*	11		5	*58*	*52*
Total		***52***				***85***	***82***
Very immature bones (calf)			3				

% fused includes fused and fusing. U: unfused; Y: partially fused; F: fused.

Table 20. Identifications of sheep and goat bones.

	Sheep	*Pr. sheep*	*Goat*	*Pr. goat*
Horncore	3		0	
Mandible	7		1[1]	
Metapodial	3		1	
3rd phalanx	2		0	
Other bones		26[2]		
Total	**15**	**26**	**2**	**0**

Pr.: probably; 1: Goat identified from mandibular condyle shape and tooth eruption order, see text. 2: Other probable-sheep bones: mandibular condyle 9, scapula 3, distal humerus 1, proximal radius 1, tibia 1, calcaneum 4 and astragalus 7.

long bones, needing less intensive preparation, may have become more scattered.

For sheep/goat, there were also at least 13 individuals, from the mandibles, but the MNE figures for the long bones are much higher than for pig. There were three times as many long bones found for sheep/goat, as for pig (Table 23).

Very few bones were burnt (10 from the hand-collected and 10 from sieving, 17 of them cattle-sized unidentified fragments), so not much hearth material was finding its way into the ditch.

For each species, or species group, information about age at death, size and other observations are reported. Summary tables and charts are shown in the text, and more detailed tables at the end of the section. The archive is preserved at Buckinghamshire County Museum.

Cattle

Three cattle mandibles with teeth were found (Table 24), all of them from young animals, aged about one month old, 8–11 months and 10–14 months, respectively (age estimates from Jones and Sadler, in press). With so few mandibles preserved, ageing evidence from long bones is also useful (Table 19), although, again, numbers are small. They show a range of age at death, with some calves present, and further evidence of immature animals, with two-thirds of late fusing elements unfused. The proportion of immature animals is greater than at the Middle Saxon site at Lake End Road, Dorney, Bucks (Powell 2002, Table 7b) or at early medieval West Cotton, Northamptonshire (Albarella and Davis 1994, Table 12), see Table 19. The availability of beef from young animals may be consistent with the high status of the site.

One partial cattle skull could be described following Grigson (1976): frontal profile from above 'slight boss', intercornual ridge 'high double arch'. The cattle-size ribs survived to quite long lengths, often 100–170mm long, with a maximum of 210mm. Two bones showed signs of disease, a cattle thoracic vertebra with two cavities behind the cranial articular facets of the spine and bone destruction at the base of the spine, caudally (Context 462). A metatarsal, centrotarsal and tarsal 2/3 showed some alteration of the metatarsal medial facet and opposing tarsal with laying down of extra granular bone, and lipping around the three bones (Context 535).

Sheep and goat

Where sheep and goat bones could be specifically identified, most were sheep, with two identified as goat (one a metacarpal plus its 1st and 2nd phalanges, the other a mandible, described below), see Table 20. Of the mandibles with deciduous teeth, seven were identified as sheep using Payne's criteria (1985), (with an average 3.8 sheep-like characters; and no goat-like characters except that one had a very small interlobal pillar, 1.4mm high).

In addition, the shape of mandibular condyles was recorded: the facet on the medial/posterior corner is smaller in sheep, which are grazers, than goats, which are also browsers. This resulted in nine identifications as 'probably sheep' and one identification as goat. The latter mandible is interesting, because in addition to the larger facet of the condyle, the sequence of tooth eruption seen in this mandible provides evidence for the identification as goat. The third molar was only recently in wear (1st element in wear, Stage 2A), but the fourth premolar had been in

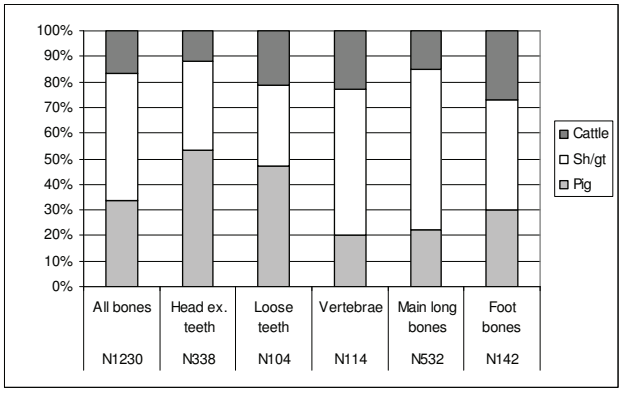


Figure 69. Proportions of the main three species for the Middle-Saxon bones. For the detailed anatomical analysis, see Table 23.

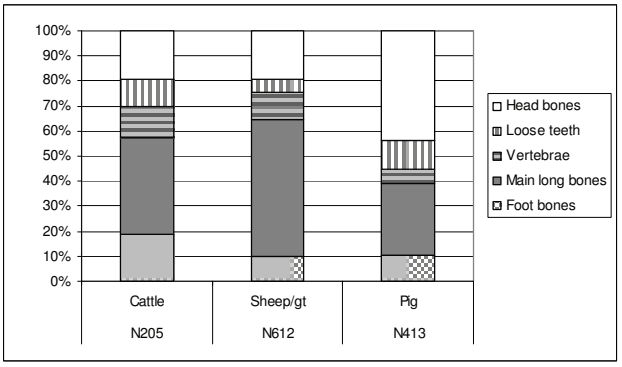


Figure 70. The proportions of bones from the head, main body and feet.

wear for some time (Payne stage 8A). For sheep where M3 is in recent wear, it is unusual for the permanent P4 to have already replaced the deciduous tooth (Jones 2006, 167, 176). However, in goats the deciduous teeth are lower crowned (Payne 1985), and as a result it is normal for P4 to come into wear before M3 (Deniz and Payne 1982, 180).

Ageing data based on the mandibles (Fig. 71 and Table 24), indicate a few lambs slaughtered at about 3 to 7 months, that is, in their first summer or autumn, and none apparently then available until the following spring. After this time, sheep were slaughtered at a variety of ages, only half the sample being older than about 23 months, and none kept to a great age. Evidence from the long bones is consistent, with only 30% of late-fusing long bones fused (Table 21). Of the bones of the pelvis found, more were male than female (nine and four respectively).

Numbers are too small to draw large conclusions, but the presence of so many young suggests a relatively unintensive use of the sheep flock, with many males not kept into adulthood for wool production. It may be that the high status of the site meant that lamb/mutton could be obtained of the quality required.

The frontal bone of a skull bore a well-preserved, small horn core (see Measurements, Table 25).

A large number of ribs presumed to be from sheep were found (872 of them). Many survived with their articulation, which often bore chop-marks, and many were long pieces, 100–130mm, suggesting that cooking took place in a pot of at least this size, or on the spit. Chop marks on long bones breaking through the bone indicated separation of the carcass at the glenoid of the scapula, the distal humerus and acetabulum of the pelvis. Several lighter marks were noted on the scapula blade and ilium of the pelvis, from the medial (inner) side, *i.e.*, after separation of the joint.

Three minor anomalies were observed:- a lamb mandible with dp_2 rotated (Context 535); a sheep (or goat) loose lower fourth premolar extremely worn on the posterior part, to below the cement-enamel border, perhaps indicating the ante mortem loss of the lower first molar tooth (Context 519); and a sheep(goat) deciduous incisor (Context 473, Sample 2004) which is very worn on both sides below the cement-enamel border by neighbouring teeth, to a depth of 2mm on the lateral side and *c.* 1mm on the medial; the tooth was probably retained between two permanent incisors, the more lateral of which caused the wear while not yet rotated into its normal position.

Pig

A radiocarbon date was obtained from a pig skull bone (the squamous temporal) from Context 474, see below.

Although, for pig, all parts of the skeleton were present, the proportion of bones from the head was high, as mentioned above. Ageing data are shown on Table 24 (individual mandible tooth wear stages) and 22 (long bone maturity). About a third were at each of Stages C (about 6–12 months old), D and E, with no definitely adult animals. The mandibles at D and E were nearly all early within the stage (M2 or M3, respectively, only just in wear), and can be given age estimates of about one year, and about 18 months, respectively (Payne 1982, Brown 1860, 1902, 1960). The evidence from long bones is consistent with this, with no late-fusing elements fused.

Lower canine teeth found were from five males (three in jaws and two loose teeth) and seven sows (six in jaws and one loose). Of these, one male and five female mandibles could be given an age at death estimate. The male was early within stage E. The third molar of this jaw was the largest from the Early Saxon group (see Measurements). Of the five females, two were early within stage D (M2 in early wear; both have second permanent incisors not yet in wear), and the other three were sub-adult or adult (no molars present; all incisors erupted and probably all in wear).

Measurements are listed on Table 25. The length and breadth of the lacrimal bone of the skull were recorded to study facial proportions. One mature skull

Table 21. Ageing data from long bone maturity for sheep/goat and pig.

	Sheep(goat)				***Pig***			
	% F	U	Y	F	*% F*	U	Y	F
p radius, d humerus, scapula, pelvis	*87*	11	2	69	*54*	11	3	10
Phalanges	*40*	6	0	4	*75*	2		6
d tibia, d metapodia	*69*	4	0	9	*29*	15	2	4
Late fusing elements	*30*	37	2	14	*0*	16	0	0
Total	***66***	**58**	**4**	**96**	***36***	**44**	**5**	**20**
Very immature bones		8				4+3s		

U: unfused; Y: partially fused; F: fused. % fused includes fused and fusing. The very immature – lamb/piglet: a simple bone count except that three piglet bones probably from one individual are counted as 1, with 3 more from wet-sieving.

Table 22. Proportions of the main species at some local sites.

		Phase	***C+S+P***	***Cattle***	***Sheep (goat)***	***Pig***	***Horse as % of C+S+P+H***
Aylesbury, Prebendal		M Sax	1230	*17*	*50*	*34*	*0.6*
Walton	Noddle 1976	Sax	1445	*42*	*35*	*23*	*3.1*
Walton 85–6	Sadler 1989	Sax	382	*37*	*46*	*17*	*2.6*
Walton Lodge Lane 94	Sadler n.d.	Sax	55	*67*	*20*	*13*	*1.8*
Ayl-Chalgrove pipeline	Hamilton-Dyer 2004	Sax	514	*38*	*42*	*20*	*1.0*
Chicheley	Jones 1980	M Sax	189	*37*	*56*	*7*	*0.5*
Pitstone	Hambleton 2005	E Sax	247	*43*	*42*	*16*	*3.1*
Eynsham 2b	Mulville 2001	E–M Sax	1768	*20*	*57*	*23*	*0.9*
Wolverton	Sykes 2007	M Sax	663	*32*	*51*	*18*	*11.1*
Lake End Rd	Powell and Clark 2002	M Sax	4100	*51*	*17*	*31*	*3.8*

E: Early; M: Middle Saxon. C+S+P: the total cattle, sheep/goat and pig bones. Horse is shown as a proportion of the total cattle, sheep/goat, pig and horse bones.

Table 23. Anatomical analysis of the Middle Saxon bones.

	Cattle			***Sheep/goat***			***Pig***		
	Total	***BNZ***	***MNE***	***Total***	***BNZ***	***MNE***	***Total***	***BNZ***	***MNE***
Skull	12	8	2	48	31	5	130	84	13
Horncore	8	4	1	4	2	4			
Mandible	20	3	2	55	19	13	50	23	13
loose teeth	22	18		33	30		49	39	
Vertebra	26	26	1	65	63	5	23	23	2
Scapula	17	5	2	46	28	15	30	15	8
Humerus	13	7	4	51	34	17	10	10	5
Radius	6	4	2	35	27	11	7	6	4
Ulna	5	4	3	25	11	8	3	3	3
Pelvis	9	6	3	40	39	12	9	8	4
Femur	15	10	3	81	37	11	30	17	7
Tibia	14	7	4	57	33	8	29	24	6
carpal/tarsal	15	8	2	23	18	6	7	2	1
Metacarpal	4	4	3	14	9	6	9	9	3
Metatarsal	4	4	3	9	6	4	7	7	4
Metapodial	4	4					9	9	
Phalanx	11	11	1	15	15	2	11	11	2
Subtotals – head	40	15		118	62		180	107	
loose teeth	22	18		33	30		49	39	
Vertebra	26	26		65	63		23	23	
main long bones	79	43		335	209		118	83	
Foot	38	31		61	48		43	38	
Total	**205**	**133**	**4**	**612**	**412**	**17**	**413**	**290**	**17**

MNE: the minimum number of individuals for that bone (the most frequent zone present).

Table 24. Tooth wear stages and Mandible Stage for the Middle Saxon cattle, sheep/goat and pig mandibles.

Context	*Species*	*(dp4)/ P4*	*molars*	*Mandible Stage*
474	cattle	(c)	nd	Bbc
519	cattle	(h)	d	Ccd
519	cattle	(j)	f C	Cf+
474	sheep	(11N)	H	Bt
519	sheep	(11L)	S	Bt, C12 or C34
535	sheep	(13L)	3A C	C34
462	sheep	(13L)	4C C	C34
474	sheep	(14L)	3C	C34
535	sheep	(18L)	9A 2A	D12
519	sheep	(16L)	9A 6A nd	D6+
614	sheep/goat	H	9A 6A nye	D6+
519	sheep/goat	(S)	9A S	D5, D6+ or E12
535	sheep/goat	2A	9A 8A 2A	E12
473	goat	8A	9A 9A 2A	E12
758	sheep/goat	1A	9A 7A nd	E12 or E34
461	sheep(gt)	8B	9A 9A 4A	E34
519	sheep/goat	7S	9A 9A 8G	F58
519	sheep/goat	S	9A 9A 9G	F9x
473	sheep/goat	8B	9A 9A 9G	F9x
473	sheep/goat	12S	9A 9A S	F58, F9x or Ga
473	sheep/goat	14S	10A 9A S	Gb
473	sheep(gt)	12S	11A 9A 11G	Gb
535	pig	(d)	a C	C
546	pig	(S)	a nd	C
473	pig	(S)	c E	C
462	pig	(f)	nd nd	C
519	pig F	a	c wr nd	D
519	pig F	a	g b V	D
535	pig	b	g b C	D
474	pig	a	f b E	D
473	pig	nd	nd b nd	D
535	pig	b	h nd nd	D/E
519	pig	nd	nd c a	E
758	pig	nd	k d b	E
474	pig	nd	nd e b	E
535	pig	b	h nd b	E
474	pig	e	h e bkn	E/F

For stage definitions, see Method; S: tooth socket present; nd: no data; nye: not yet erupted.

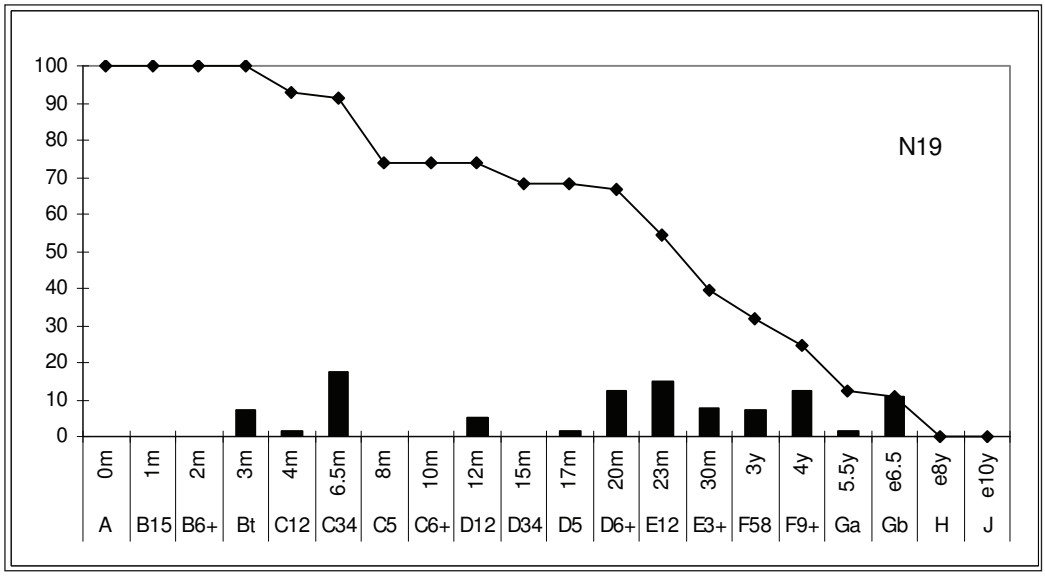


Figure 71. Age at death estimates for the Middle-Saxon sheep/goat mandibles. Note: ages given are the estimated average; variation increases with age (Jones 2006).

Table 25. Measurements of the Middle Saxon bones.

Cattle	Horncore	L outer curve/ max/min basal diam.	113/44.5/32
	Humerus	GLC/SD/BT/HTC	234/31.7/67.6/29.5
	Radius	GL/Bp/SD	250/73.6/37.1
	Metacarpal	GL/Bp/SD/BFd/Dim	181/57.4/32.5/60.5/28.4
	Metatarsal	GL/Bp/SD/BFd/Dim	204/46.2/29.0/54.0/25.5
	"	"	216/46/24.8/49.8/26.0
Sheep/goat	horncore	Loc/maxBD/minBD/sex	470/200/182/F
	scapula	SLC: N; mean; range	11; 200.27; 177–214
	"	GLP: N; mean; range	6; 239.50; 302–350
	"	ASG: N; mean; range	10; 198.90; 179–220
	humerus	GL/SD/BT/HTC	1312/149/286/143
	"	BT: N; mean; range	13; 280.77; 261–301
	"	HTC: N; mean; range	14; 143.86; 131–161
	radius	BFp: N; mean; range.	5; 282.60; 267–303
		Bp: N; mean; range	5; 310.00; 298–341
	metacarpal	BFd	236
	tibia	Bd: N; mean; range	6; 253.93; 242–273
	astragalus	GLl: N; mean; range	7; 277.29; 267–284
	"	Dl: N; mean; range	7; 153.86; 147–163
	"	Bd: N; mean; range	7; 183.29; 172–200
	calcaneum	GL: N4.	564, 566, 568, 592
Pig	Skull	lacrimal L(21)/Ht(22)/index	35/18.5/1.89
	"	" 3 immature; L/Ht	34/21; 26/17.4; 28/27
	Lower 3rd molar	GL/WA/sex if known	30.0/14.0; 32.8/-; 33.1/15.3/F; 33.2/16.0; 34.7/17.4/M
	Atlas	H/BFcr/BFcd	42.5/52.7/46.9
	Scapula	SLC/	22.2, 23.8, 25.0, 27.2, 28.1
		GLP	34.1, 35.5, – , 38.1, -
	Tibia	Bd/	28.1, 29.1, 32.8
		Dd	24.6, 26.8, 29.5
	Metacarpal III	GL/Bd	70.8/16.2
	Metatarsal IV	GL/Bd	81.9/16.3; 82.1/15.5
Horse	Phalanx 3	BF/GB/GL	52/78/66
Fowl	Coracoid	GL	48.0, 49.1, 49.8, 51.6, 52.8, 57.7
	Humerus	GL/Bp/SD/Bd	65.0/17.6/6.2/13.8
			62.6/17.6/6.6/13.3
		Bd (others)	12.9, 13.6, 15.2, 16.0, 16.0
	Radius	GL	62.1, 64.9
	Femur	GL/Bp/SD/Bd	69.9/14.3/6.2/13.7
			70.4/14.9/5.8/13.7
			81.8/16.8/7.0/16.2
	Tibia	GL/Bd	98.6/9.9
Goose	Coracoid	GL	79.0
	Humerus	Bd	23.3, 25.3
	Ulna	GL	157.5
Duck	Coracoid	GL	50.6

Measurements follow von den Driesch 1976 and Davis 1996 and are in mm, accurate to 0.1 mm, or to 1 mm if no tenths shown. Other measurements are preserved in the archive, including further measurements of pig teeth. Of the sheep/goat bones, 27 of the 49 measured bones were identified as sheep or probably sheep, with no identifications of goat (1, 7, 7, 1, 1, 0, 6, 4 for each bone respectively).

gave a lacrimal index (Length/Height) of 1.89, which is similar to that of a wild sow from Whipsnade in the writer's collection, although it is much smaller (Length 35 compared to 56mm). Lacrimal indices for three specimens with unfused or partially fused sutures were 1.62, 1.49 and 1.04, *i.e.*, indicating a relatively shorter facial region, but this may simply be because of their immaturity (Clutton-Brock 1981; Legge 2009). Long bone measurements (Table 25) are similar to those from late Saxon Hamwih (Bourdillon and Coy 1980).

Only one pig mandible was definitely chopped through, but all the canine teeth in jaws were broken (N12). Chop or knife marks were uncommon on other bones, with only three chop marks recorded. However, the majority

of long bones are immature and without epiphyses, *i.e.*, the articulations where butchery occurs, are missing.

Overcrowding of the teeth was observed in one upper jaw, where P^2 was at an angle of about 25°. No overcrowding was seen in the lower jaws.

Other species

Just seven horse bones were found, from four different contexts. No butchery marks were observed, and only one measurement was made (Table 25). Dog was represented by a single bone. In addition, two sheep bones bore erosion suggestive of having passed through the digestive system of a dog, three cattle bones were gnawed, and a coprolite found was probably from dog.

The five cat bones came from three contexts. One was immature and three mature. They were of domestic cat size (none measurable). It is interesting to find cat at this period. Its main function was probably for protecting stores and for use of the skin.

The four bones from hare (from 535 and 557) are from at least two and probably three, individuals. They represent the only evidence for any hunting of animals, there being no remains of deer.

Other mammal bones were from Black Rat (*Rattus rattus*, a humerus); and single bones from common shrew (*Sorex araneus*, a mandible) and water vole (*Arvicola terrestris*, a lower molar), recovered from sieved contexts.

The majority of the fowl bones were from two contexts (462: 28 bones from at least five individuals and 473: 44 bones from at least five), with four other contexts containing fowl bones. Other bird species found indicate some use of wild resources, with identifications of domestic duck or mallard (cf. *Anas platyrhynchos*), woodcock (*Scolopax rusticola*), wood pigeon (*Columba palumbus*), rock/stock dove (*Columba livia/oenas*), and rook/crow (*Corvus frugilegus/corone*).

Most fowl bones found were mature (85%, N67) and all other bird bones were mature. The bones bore no chop or knife marks except for one goose distal humerus. One bird bone, an ulna from fowl, was pathological, with an irregular surface over most of the central two-thirds of the shaft. Measurements are shown on Table 25.

The presence of common frog (*Rana temporaria*) and common toad (*Bufo bufo*) are consistent with wet conditions in the ditch.

Discussion

The bone sample from the Prebendal is striking for the low proportion of cattle bones. Powell compares a large number of Anglo-Saxon sites with the Middle Saxon site at Lake End Road, Dorney (Powell 2002, fig. 4.13). Only one site, Eynsham Phase 2b, which is also a minster site, has less than 20% cattle bones, most sites having more than 40%. The Prebendal is, however, similar to many sites in having more sheep than pig bones, although only seven of the 23 sites compared have 30% or more pig, as at the Prebendal.

Proportions of species at some local sites are shown on Table 22. The Prebendal sample again has the lowest proportion of cattle bones. It is comparable with some other Middle Saxon sites at Pitstone, Eynsham and Wolverton in the high proportion of sheep(goat), but none of these have so many pig bones. The only site with a similar high proportion of pig, usually associated with high status sites, is Lake End Road, also of seventh to ninth century date. However, the Lake End Road collection was dominated by cattle bones, and the proportion of horse bones was higher. Perhaps the variability of proportions of bones at different sites suggests different management and settlement patterns, with, for example, the possibility of horse breeding at Wolverton Turn (Sykes 2007).

There is some evidence from the bone collection that the Prebendal site was of fairly high status, in the proportion of pig bones, the high proportion of young animals, the frequency of fowl and goose, and the presence of wild birds. At several sites, a high number of bones from the head is noted for pigs, viz. the Prebendal, Walton (Noddle 1976), Pitstone (Hambleton 2005), and it is suggested above that this may be associated with producing brawn.

Tables 23 to 25, show the anatomical analysis, dental and measurements data for the Saxon animal bones.

Fish bones

Andrew K. G. Jones

Three contexts produced fish bones from wet-sieved samples of the Mid-Saxon ditch fill (462.2015; 473.2009: 519.2014). All were from medium-sized eels *Anguilla anguilla*. Most were vertebrae but 2009 produced a single cleithrum, a large bone that separates the head from the rest of the body. Eel are very abundant native fishes which are readily caught in traps during their migration up and downstream in rivers.

Coprolites

Coprolites were recovered in the field from one lower ditch fill (474) and two upper ditch fills (473, 533). These have not been further studied, but Andrew Jones advises that such material commonly proves to be from dogs.

The charred plant remains

Lisa Moffett

Three samples were examined (2013–5). Botanical material from the early and Middle Saxon periods in this region is sparse and of interest especially when uncontaminated by residual Romano-British material.

The samples were floated by field staff using a Siraf-

Table 26. Middle Saxon plant remains. Taxonomy follows Stace (1997).

Sample number	2014	2014	2015	
Soil sample volume (litres)	1.3	17	17	
Total flot volume (mls)	2	20	25	
% of flot analysed	100	100	100	
Items per litre	2	2	4	
Context description	ditch fill	ditch fill	ditch fill	
Date	7th/early 8th C	7th/early 8th C	7th/early 8th C	
Species				**Common name**
(i) Crops/food plants				
Triticum spp free-threshing grains	-	14	12	free-threshing wheat
Triticum sp grains	1	15	12	wheat
Triticum/Secale grains	-	-	1	wheat/rye
Hordeum vulgare L. indet. grains	1	5	8	barley
Avena sp grains	-	3	2	oat
Avena/large Poaceae	-	-	4	oat/large-seeded grass
Cereal indeterminate grains	1	10	17	cereal
Vicia/Pisum	-	1	-	vetch/pea
Legume pod fragments	-	1	-	legume pod
Prunus sp fragments	-	1	-	sloe/bullace/plum/cherry
(ii) Wild Plants				
Chenopodiaceae	-	1	4	goosefoot family
cf. *Fallopia convolvulus*	-	-	1	black bindweed
Rumex sp	-	-	1	dock
Medicago/Large *Trifolium*	-	1	1	medick/clover
Vicia/Lathyrus	-	1	4	vetch/vetchling
Anthemis cotula L.	-	1	-	stinking mayweed
Bolboschoenus maritimus (Asch.) Palla	-	1	-	sea club-rush
Poaceae	-	1	2	grass
Unidentified	-	-	3	
Total items	***3***	***42***	***60***	

type flotation machine (French 1971). Sample sizes, the volume of flot recovered and the percentage of flot analysed are given in the table of charred plant remains. The approximate number of items per litre is also given in Table 26 to facilitate comparison of the relative richness of the samples.

The three samples from the ditch fills produced mainly wheat grains, with a few grains of barley and oat, a pea or bean, a fragment of legume pod, a fragment of sloe/bullace or cherry (*Prunus* sp) and a few weed seeds. There are no chaff fragments and the assemblages appear to be a mixture of prime grains with other crop and food waste. The species present are similar to those identified by Monk at Walton, Aylesbury (Farley 1977). The wheat appeared to be a free-threshing type and there is no indication from these samples that spelt, the main crop of the Romano-British period, survived into the Saxon period here as it is thought to have done at West Stow (Murphy 1985) and Gloucester (Green 1979). One of the upper ditch fills (462, sample 2013) produced very little material, possibly because the sample taken was small. The other two samples, taken from the upper (462, sample 2015) and lower (519, sample 2014) fills produced most of the material just described and appeared very similar to each other.

Mollusca

Diane FitzMaurice (adapted)

Molluscan information from the boundary ditch was obtained by a measured vertical interval sample (see Iron Age ditch discussion). A sample from the lower ditch fill (2047) indicated predominantly open country. A sample from the upper fill contained only one example, a burrowing species. If any other shells were present these will probably have been dissolved as a result of the decay of refuse.

Wood charcoal samples

Phil Austin

Introduction

The methodology employed for analysis of the three samples from the Middle Saxon ditch follows that described previously for Iron Age samples. The aims of this investigation are also as described.

Table 27. Summary of wood-charcoal macro remains: all Middle Saxon samples.

Genus/Species	***Common Name***	***Frag. count***	***Wt (g)***
Acer campestre	Field Maple	1	0.706
Corylus avellana	Hazel	1	0.031
Fagus sylvatica	Beech	70	94.686
Ilex aquifolium	Holly	1	0.044
Prunus sp.	Blackthorn; Cherries	3	0.134
Quercus sp.	Oak	26	80.064
	Total	***102***	***175.665***

Table 28. Results: wood-charcoal macro remains; all Middle Saxon samples.

Feature/Context Description: Middle Saxon recut of IA hillfort ditch				
Context No.	Sample No.	ID (Qty)	Wt (g)	Comments
474	-	*Acer campestre* (1)	0.706	-
		Fagus sylvatica (1)	0.270	
473	2002	*Corylus avellana* (1)	0.031	High levels of thermal degradation.
		Fagus sylvatica (45)	7.043	
		Ilex aquifolium (1)	0.044	
		Prunus sp. (3)	0.134	
535	-	*Quercus* sp. (26)	80.064	Mostly large (>50mm) fragments.
		Fagus sylvatica (24)	87.373	

Results

The results of the analysis of the Saxon samples are summarised in Table 27. A total of 102 fragments were examined resulting in the identification of 6 taxa. Table 28 details the results for individual samples. As with the Iron Age samples all the woods identified are native hardwoods. No softwoods (Gymnosperms) or alien taxa were identified. The two native Oaks, *Q. petraea* (Sessile Oak) and *Q. robur* (Pendunculate Oak), cannot be differentiated anatomically. *Prunus* fragments could not be determined beyond genus. It is not known which species are represented here.

Taphonomy and fragment condition

Fragment preservation in all 3 samples was good. However, charcoals from context 535 in particular were notable for their large size and pristine condition. Charcoal is vulnerable to mechanical damage when physically disturbed and the condition of the charcoal from this context almost certainly indicates that these fragments had remained relatively undisturbed since deposition.

Thermal degradation in samples from the Middle Saxon recut was more or less typical of charcoal generated in 'average' fire conditions (*e.g.* a domestic hearth). Whilst evidence of extreme degradation was noted in some fragments, most did not exhibit high levels of thermal degradation. In common with the Iron Age charcoal described above, biological degradation was also in evidence in some, though certainly not all, fragments.

Wood use and resource management

Woodland management is known from written records to have been employed in the Saxon period (Rackham, 2006) and it seems highly likely that the wood represented in the Saxon samples includes some that derived from managed woodland. Unusually for charcoal remains, some of the Beech fragments from context 535 were large enough to retain much of their pre-charred form. Some appeared to have been woodchips whilst another fragment appeared to have derived from wood that had been radially split. A cut mark, forming a single facet, was clearly visible on at least one other fragment, whilst a possible cut mark was evident on yet another fragment. The preservation of these features provide compelling evidence of on-site woodworking activity. Unfortunately what these woodworking activities were is not known. However, it is thought that the activities occurred on-site because it seems improbable that woodchips would have been gathered up and transported to the site from elsewhere. It is more likely that woodworking debris would have been simply left to decay where it fell or, alternatively, burnt close by. Consequently, whilst it is believed that the charcoal from Iron Age deposits represents wood gathered specifically for fuel it is less clear if this was so for the Saxon charcoal deposits. The inclusion of debris from woodworking activities may indicate that the fire events represented reflect a convenient means of rubbish disposal rather than, for example, a hearth constructed for domestic activities.

The contemporary vegetation

Unlike the Iron Age samples in which Oak was the most ubiquitous taxon, in the Saxon samples Beech is clearly the most abundant wood, measured in terms of fragment numbers and weight, and it was the only taxon present in

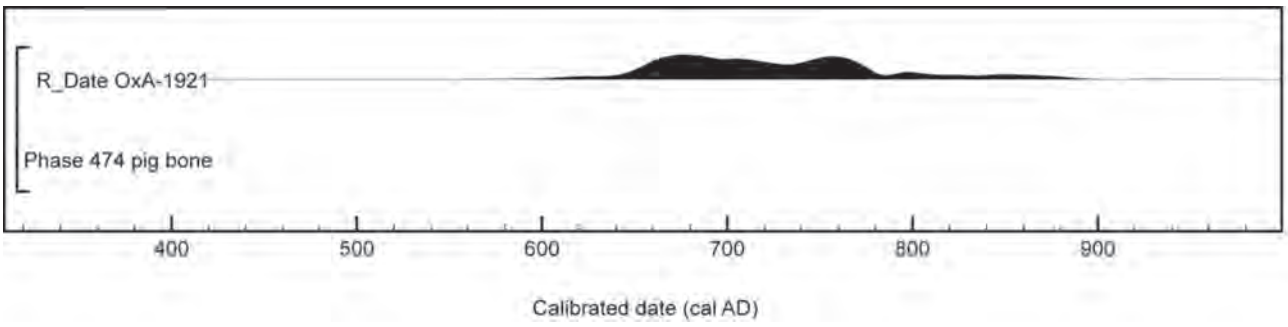


Figure 72. Calibration by the probability method of the Middle-Saxon radiocarbon results.

all three samples. Oak is present but in only one sample. It is not clear if the apparent preference for Beech over Oak reflects an actual preference, a lack of Oak, or has arisen by chance through differential preservation. Whatever the circumstances much the same taxa were present in both the Iron Age and Saxon periods. Just as Ash is represented only in the Iron Age samples, Holly and Field Maple are only recorded in the Saxon samples. However, it should not be presumed that taxa represented in one period but apparently absent in another were actually physically absent, given that there is no evidence supporting a significant shift in local ecological conditions.

Field Maple is the only tree or shrub positively identified that requires open conditions for it to flourish, such as those found at the woodland edge, in woodland clearances or hedgerows. This taxon was represented only in the Middle Saxon sample. Whilst it is tempting to suggest that the landscape had become more open in this period the evidence from the charcoal remains is insufficient to infer that this was so. Oak, Beech, *Prunus* sp. and Hazel also remained available in this period suggesting some continuity of woodland cover, though it is unlikely that the Saxon landscape remained the same in character or composition as its Iron Age progenitor.

The date of the boundary

It has been argued above that the boundary was of two periods; initially a palisade which was then removed and replaced by a ditch which would presumably have been accompanied by an internal bank, possibly with fence or hedge on top. Although there is no direct dating evidence for construction of the initial palisade, its timbers, set into limestone or sand, would seem unlikely to have had a useful life of much more than thirty years.

A critical piece of dating evidence for the sequence is the presence of a sceatta of *c.* AD 715–725, from the top fill of the palisade slot. It provides a *terminus post quem* either for removal of the early palisade or for the subsequent cutting of the ditch, both of which episodes it has been argued, were roughly contemporary events.

Three additional pieces of evidence provide further assistance with dating the sequence. First, the single radiocarbon date taken on an immature pig skull from the lower fill of the boundary ditch, previously noted, (fill 474, cut 513), gave the following:

> OxA-1921 1310 ± 60 BP cal AD 630–880 at 95% confidence (Fig. 72 and Table 14).

Secondly, quite a large piece of Ipswich ware came from the upper fill of the ditch. Blinkhorn (1999 and 2009) argues that this ware was not traded outside East Anglia until 'somewhere between *c.* AD 725 and 740'.[4] Finally, from the top surface of the infilling ditch came a handled comb, considered to date to AD 725–750. As it is in reasonable condition it would probably not have had a long period of use before it was discarded, perhaps a decade at the most.

Taking all of these factors into account, the whole suggests that construction of the palisade took place at the end of the seventh century or beginning of the eighth. It was succeeded by construction of the ditch by *c.* AD 725 at the latest. The ditch began to infill, perhaps over a period of twenty-five years, and the process was certainly well advanced by *c.* AD 750. The uppermost fills of the ditch are missing so the date of its final disuse is not known.

It would be very satisfactory to link this sequence to the AD 571 *Chronicle* entry and the early history of the town previously discussed, but unfortunately the whole is adrift by at least a hundred years.

4. Although this dating is accepted here, it may be noted that a radiocarbon date on emmer wheat glume from the lower fill of a pit which contained a sherd of Ipswich ware from Lake End Road, Dorney, Bucks, produced an date of Cal AD 430–660 (at 2 sigma) (NZA-9206, from CD accompanying Foreman *et al*. 2002).

11. Other Middle Saxon Finds from the Site, apart from those from the Boundary Ditch

Pottery *(Fig. 65, 8–14)*

As mentioned previously, intense multiperiod activity on the site meant much redeposition of earlier material. This residual material is noted here prior to fuller discussion of the boundary as it is relevant to consideration of the economy of the presumed minster which it accompanied.

Only thirty-three sherds were identified as Early-Middle Saxon on grounds of form, fabric or decoration. The local Saxon pottery fabric, series has been described above but owing to the fact that Iron Age pottery was present on site of similar fabric and that the boundary ditch was the only certain Middle Saxon feature, identification of such material has not been straightforward. The most distinctive fabrics are Ipswich ware and vegetable-tempered ware, the latter being common at nearby Walton and thought to commence in the sixth century. Although the end-use date of this fabric has not satisfactorily been determined, it is not thought to extend beyond the Middle Saxon period in Buckinghamshire since it rarely occurs with St Neot's type ware.[5] Maxey ware is common in north Buckinghamshire but only occurs occasionally in central Buckinghamshire, although at least one probable example has been identified here.

Although knowledge of Middle Saxon ceramic is constantly advancing, there remains an impression, voiced by, for example Hodges (1981, 53), Hamerow (1993, 57) and Blinkhorn (2004, 269), that the quantity of Middle Saxon ceramic retrieved during excavations is small in comparison with other historic periods. Vince (1997) considered the ratio of animal bones to ceramic finds of the period on several sites with results which seemed to support this idea. At the Prebendal, 46 sherds were retrieved from the ditch (no minimum vessel number was counted). In comparison with the minimum number of farmyard animals (42), represented by bones also from the ditch, this suggests that the hypothesis is reasonable. Absence of ceramic could imply a widespread use of treen or leather utensils for storage *etc*. On a dissenting note, however, Mellor (1994) has previously suggested that 'the Early Saxon traditions continued until the Late Saxon traditions were introduced'.

The residual sherds illustrated on Fig. 65, 8–14 include for convenience the probable early-Saxon stamped-sherd (Fig. 65, 8).

Illustrated sherds (Fig. 65, 8–14)

8. Sherd, trace of three stamped, penanular, ovals; fine, burnished. Fab S21. (125). Early Saxon.
9. Sherd, ext. impressed or incised circles dec., surfaces grey good smooth finished. Fab S2. (478). Similar in style to Ipswich ware but not from this source.
10. Rim, ext. black, int. reddish-brown, smooth finish. Fab S2. (467).
11. Rim, purpley-brown surfaces ?slip finish. Fab S21. (564).
12. Rim, black ext. burnished. Fab S11 (252).
13. Base, grey surfaces, ext. worn burnish. Ipswich ware. Fab S2. (608).
14. Rim, ext. black, int. pinky-brown, diam. uncertain. Possibly Maxey ware. Fab S23. (783)

Antler *(Fig. 73, 1–4)*

Ian Riddler

The following pieces from Medieval or later contexts may be Middle Saxon in date

1. Awl (SF *2548 and 2459*) An antler implement-handle has a shaft of circular section and includes a suspension hole at one end. The handle shaft widens gradually towards the rounded butt end and is extensively decorated, with a band of fret pattern and strips of mesh patterning, as well as a widely spaced lattice-design at the centre, formed of paired crossing lines. Handles of bone or antler occur during the early Anglo-Saxon period, where most examples, including those from Harnham Hill and Pakenham, are undecorated (Brown *et al.* 1954, Fig. 30d; MacGregor 1985, 169). In contrast, Middle Saxon handles are frequently embellished with bands of decoration. Most of them served as whittle-tang handles for iron awls and they include examples from Ipswich, *Lundenwic*, Ribe and Whitby, as well as Frisia (Riddler, Trzaska-Nartowski and Hatton forthcoming; Blackmore 2003, 308 and fig. 173; Ambrosiani 1981, 135 and fig. 84; Peers and Radford 1943, fig. 21.117–8; Roes 1963, pl. LX.1–5). One of the Whitby handles has a suspension hole, whilst the other includes lattice decoration and a fret pattern, and they form good parallels for this particular example. This series of highly-decorated handles, all with tapering shafts, belongs to the eighth and ninth centuries and can be distinguished from late Saxon examples, which differ in both shape and decoration. Length 99 mm.
2. Antler, split section of tine, sawn at both ends, 'chatter lines' indicating deliberate smoothing. Length 91mm. SF 2494 (565).

5. This observation seems to accord with finds from Middle Saxon London where this pottery fabric is the commonest in Period 3 (600–75) (Blackmore 2003, 225–241).

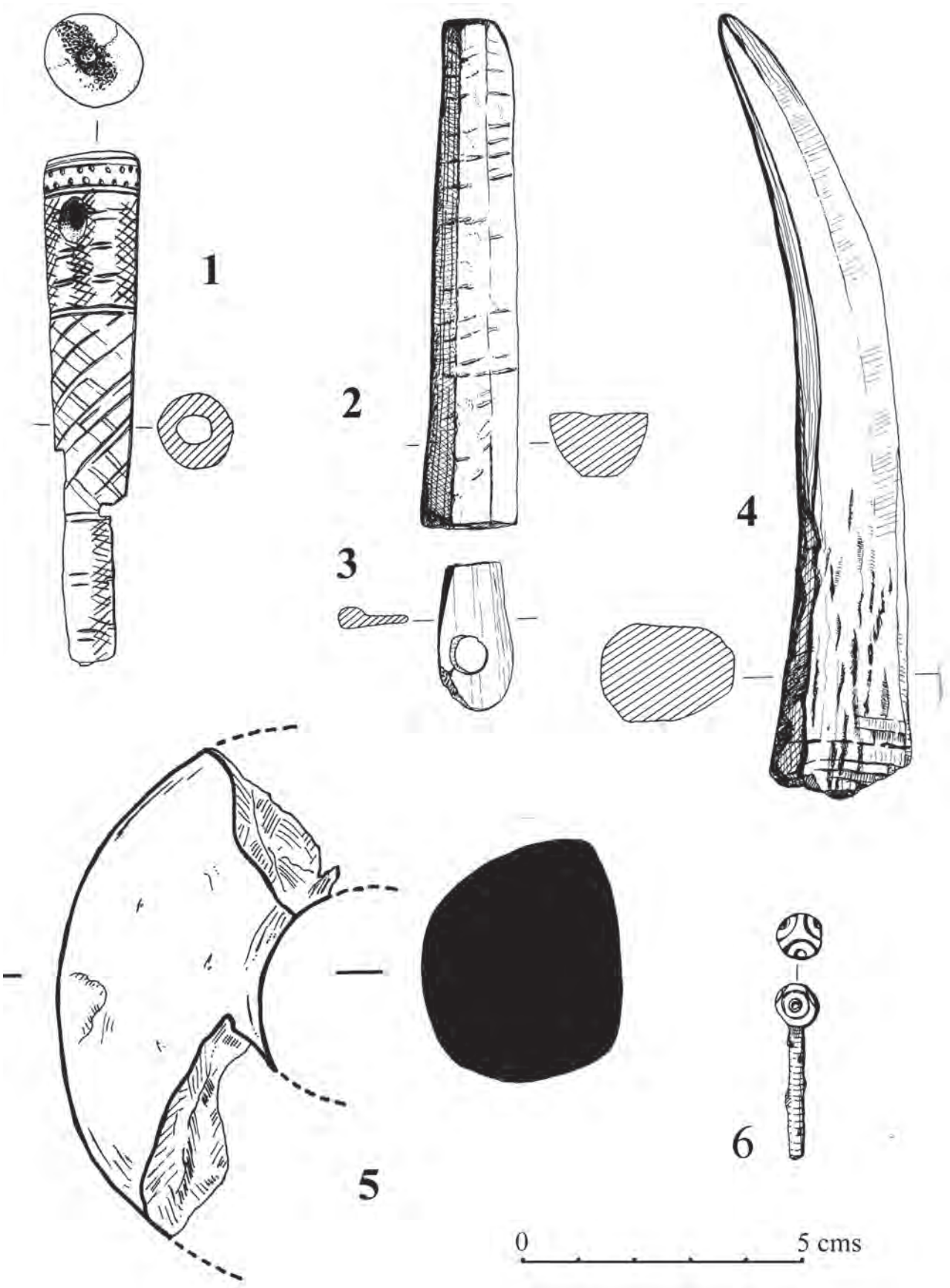


Figure 73. Unstratified Saxon finds: 1–4 antler; 5. clay loomweight; 6. iron pin with lead head (1/1).

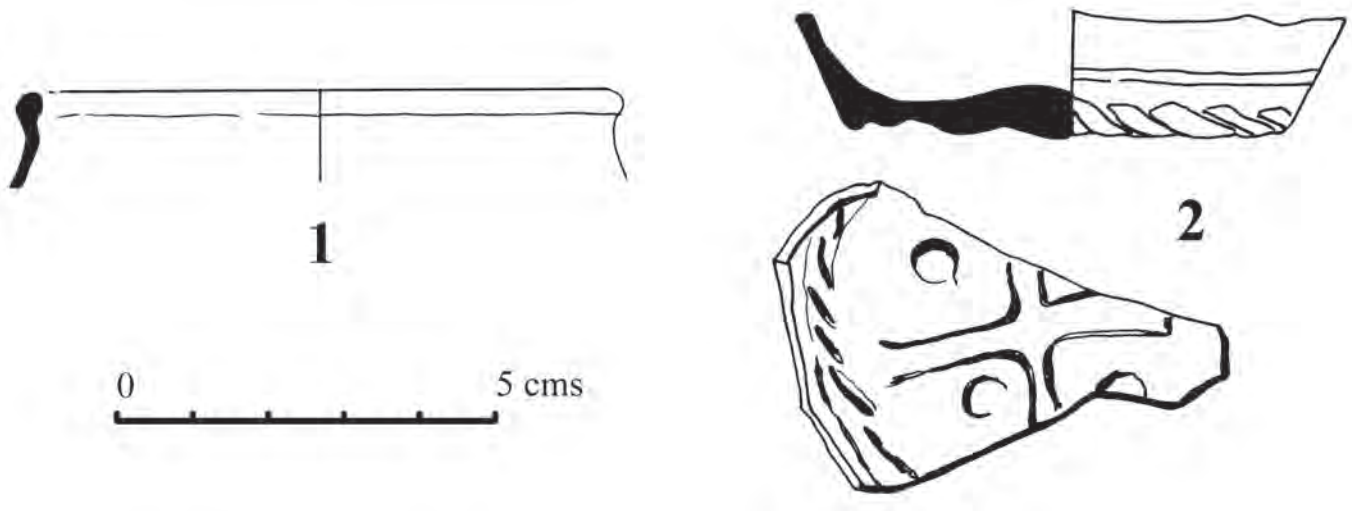


Figure 74. Glass: 1; from Middle-Saxon boundary ditch. 2; unstratified (1/1).

3. Head of needle. Perforated split pig fibula, rounded head cut from proximal end, broken other end. Length 27mm, width 14mm, thickness 4mm. SF 2584 (849).
4. Tip of deer antler tine with longitudinal knife-cut facets and several transverse cut marks where it has been snapped, presumably to convert it to a tool. Length 140mm, max width 25mm. SF 2594 (912).

Also one pin SF 2404 (506) not illustrated:
The upper part of a bone or antler pin with a globular head and a shaft of circular section. The head has a flattened apex. Small pins of this type occur in Middle Saxon contexts and recur in the Anglo-Norman period. The Middle Saxon series includes several pins from Walton with heads of various shapes, including one globular example (Farley 1976, Figs 18.7–8 and 19.11; Dalwood *et al.* 1989, fig. 16.49). Bone or antler pins with flattened globular heads form the most common type at Brandon and occur also at Dover, Pennyland and Ramsgate, in contexts extending from the mid seventh to mid eighth-century (Riddler forthcoming). This pin is likely to be of Middle Saxon date, although it should be noted that small bone pins returned to fashion in the twelfth century and several, including an example from Castle Acre, have flattened globular heads (Margeson 1982, fig. 47.26). Length: 22 mm

Loomweight *(Fig. 73, 5)*

5. Annular 'intermediate' type, Middle Saxon. Fine sandy fabric with some calcareous inclusions up to 3mm and rare flint small pebble. Diameter of solid clay ring 37mm (SF2400:252). From 16–17 century feature.

Iron and lead *(Fig. 73, 6)*

6. Globular-headed pin. Iron shaft with globular head of lead decorated with three ring and dot motifs. Length 31mm, diam. of head 7mm. (SF 2687; 164). From a medieval pit.

A pin in the same materials also with ring and dot, is described (but not illustrated) from Hamwic (Hinton 1996, 19 no. 31). I am grateful to Nicky Rogers of the York Archaeological Trust for observing that there are a few iron pins with non-ferrous heads from Coppergate (Ottway 1992), Fishergate (Rogers 1993, fig. 666), and several from Flixborough (Rogers 2009, 32–79). Their association appears to be mid ninth-tenth century.

The Glass *(Figs 74, 2 and 75)*

Jennifer Price

This striking piece of glass came from a thirteenth-century pit (833, SF2590). Since its discovery, Dr D. B. Harden, Professor V. I. Evison and Leslie Webster have commented on its dating and source, and their information has been very helpful in drafting this note.

Description

Lower body and slightly convex base fragment of an open vessel, probably a bowl, made in unweathered blue-green glass with many small bubbles. Blown into a two-piece mould with decoration in relief. Mould seam on body and across base. Equal-arm cross with expanded terminals and a pellet between each arm at centre of base, surrounded by a ring of Z-twist cable or herringbone and a slight outer cordon on the body/base angle. A vestige of further decoration survives on the top edge of the fragment but the lower body immediately above the base is undecorated. Pontil mark on cross at base centre. Base diameter *c*.50mm, wall thickness 2mm.

Discussion

The profile of the lower body and base suggests that the vessel was an open form with a well-defined angle between

the side and base, probably a cup or bowl. The presence of a pontil mark indicates that the rim edge was hot-finished, probably fire-rounded or folded, and the colour and quality of the glass link the fragment to vessels from Anglo-Saxon England and Merovingian Gaul. It is, however, very unusual in being blown into a two-part mould.

About 25–30 mould-blown bowls, cups, beakers and small bottles with various kinds of cruciform motifs and/ or pellets on their bases have been recorded in Kent and elsewhere in south-east England in later fifth to seventh century burials but they were all formed by blowing into single-piece open moulds. Two of them, shallow convex bowls from Westbere and Darenth (Jessup 1946; Webster *et al.* 1980; Stephens 2006, 88–9, no. 65) had horizontal bands of decoration in low relief on the lower body and a chi-rho symbol inside a ring on the base. The other vessels have vertical ribs on the body, and in many cases the basal cross is formed as an extension of these ribs, though some have separate basal designs. A shallow bowl (Evison 2000, 66, 75 Group 42, pl. 3.1; 2008, 10, no. 15, fig. 2; Stephens 2006, 174–5 no. 214) and some palm cups (Evison 2000, 75–6, Groups 54–55; 2008, 15–16, nos 86, 88–92, fig. 18; Stephens 2006, 96 no. 75, 160–1, nos 186–8, 194–7 no. 246–8), globular beakers (Evison 2000, 77, Group 65; 2008, 16–19, nos 153–4, fig. 27; Stephens 2006, 114–7 nos 107–8, 172–3 nos 172–3) and pouch bottles (Evison 2000, 77, Group 70; 2008, 19, nos 159–60, fig. 28; Stephens 2006, 142–3 nos 150–1), were decorated in this manner.

Similarly made mould-blown bowls, cups and beakers with a wide range of cruciform motifs and/or pellets on their bases have been found in very large numbers in burials in the Netherlands, Belgium, northern France and the Rhineland (*e.g.* Périn 1972; Cabart and Feyeux 1995, 100–4, Zèle-Riou 2008). Another group of fragments with cruciform decorative motifs on their bases is known in late fifth and early sixth-century settlement contexts at Marseilles, the mouth of the Rhone and elsewhere in southern France (Foy 1993, 207–224; 1995, 202–4, pl. 2). Some of these also have features in common with the Aylesbury piece, although the colour of the glass, colourless or pale greenish, is rather different.

On the whole, it is likely that the Aylesbury fragment, together with the majority of the English finds, came from Merovingian Gaul, although vessels of this period blown into two-part moulds have rarely been recorded in western Europe.

Figure 75. Base of a Middle-Saxon glass vessel with raised cross. Upper: interior view. Lower: exterior view. Scale in mm.

Stone

Twenty-two pieces of ferruginous sandstone, some certainly from quern, came from medieval and later deposits on the site. At nearby Walton (Farley 1976 and Ford *et al.* 2004), several pieces of rotary quern made in similar material came from early-Mid Saxon contexts and it likely that a large proportion of the Aylesbury quern fragments are also of mid-Saxon date. The stone originates from local Lower Greensands which occur in places along the Chiltern scarp but most accessibly about eight miles to the north-east of Aylesbury in the Linslade/ Leighton Buzzard area, and it seems likely that there was a production source here during the early-mid Saxon period.

Thirteen pieces of lava quern also came from medieval and later contexts. Pieces also occurred locally at Walton, although not in securely dated contexts. Although lava querns were in use in the Roman period such querns are common in Middle Saxon contexts, for example locally at Dorney where there is little or no problem of residuality. There, lava quern fragments were found in 45 of the pits of this date, together with quern fragments of stone from at least three other sources (Foreman *et al.* 2002). Evidence from London likewise points to frequent usage of this import in the mid and late Saxon period (Goffin 2003).

It is possible that some of the whetstones as well as some of the spindlewhorls found in later contexts at the Prebendal may also belong to this period.

12. Aylesbury and other Minsters

The minster and its boundary

The early history of Aylesbury has been discussed previously and evidence presented that the main boundary ditch, whose construction and use has been dated to the early eighth century, was preceded by a palisade. The excavation site immediately adjoins the present churchyard of St Mary's, the town's principal church, and it is not unreasonable to presume that the ditch, and probably its preceding palisade formed the boundary for an early church and associated structures.

Although nothing of Saxon date survives above ground in Aylesbury (but see discussion of the church's fabric further on), there is little doubt that the present church of St Mary's, or a predecessor on the same site, was the church recorded in Domesday Book to have been held by the Bishop of Dorchester. The church appears not under Aylesbury but under the entry for a nearby village, Stoke Mandeville:

> This manor [Stoke Mandeville] lies with the (lands of) Aylesbury Church … Bishop Wulfwy held this manor with the church before 1066. From the eight hundreds which lie in the circuit of Aylesbury, each Freeman who has 1 hide or more pays one load of corn to this church. Furthermore from each Freeman 1 acre of corn or 4d was paid over to this church before 1066, but after the coming of King William it was not paid.' (Morris, J. ed. 1978)

This payment of corn to churches, 'churchscot', is referred to as early as the laws of Ine King of Wessex (688–726) and predates the payment of tithe in England that did not appear until the early tenth century (Blair 2005, 435–5). The church at Aylesbury has an association with St Osyth, which is discussed further on.

At the time of the Domesday survey, there were eighteen hundreds in Buckinghamshire (VCH Bucks 2, 245). Which of these comprised the eight hundreds of the 'circuit of Aylesbury' is a problem briefly discussed below, but the suggestion that 'viii' was a scribal error for 'iii' should be noted (Morley Davies 1950, 248).

One indication of 'old minsters' are dependent chapels. Aylesbury had four; Bierton, Buckland, Stoke Mandeville (noted above) and Quarrendon, all villages close to the town (VCH Bucks 1, 286 and Foster 1931, 3). In a manuscript note, Browne Willis, the county's eighteenth century historian also records that Aylesbury parish originally included 'Ellisborough Parish in the Chilterne' but unfortunately does not give his source (Browne Willis mss, Vol. 48, f100. Bodleian Library).

Of these churches, Bierton has a Norman font; the earliest datable features at Buckland are thirteenth century and Stoke Mandeville, now completely demolished, is reported to have had a 'doorway of the Norman period' (VCH Bucks 1, 286). Quarrendon, also demolished apart from a few lengths of wall, appears from earlier illustrations to have been of largely thirteenth-century fabric. Ellesborough has nothing surviving earlier than the fourteenth century.

Despite the proximity of Quarrendon to Aylesbury and its legendary link through St Osyth (see on), it is of interest that at Domesday, Quarrendon was in the hundred of Waddesdon, so it is likely that Waddesdon could have been the second of the 'eight' hundreds. The mid-thirteenth-century Hundred Rolls show groupings of Buckinghamshire hundreds into triple hundreds (Morley Davies 1950). At that time Aylesbury was grouped with Risborough and Stone hundreds, which might indicate a previous link. The addition of Waddesdon hundred to these would bring the total of potential hundreds to four. Others which could have made up the eight – based speculatively on proximity, might be Cottesloe, Yardley, Ixhill and Ashendon. Geographically, this would account for about a third of the later county. However, Bailey (2003, 17) has warned that the 'eight hundreds' could literally equal 800 hides, which would reduce the total number of hundreds owing dues to Aylesbury to six rather than eight. Whatever the actual extent of its primary territory, Aylesbury church was nonetheless clearly both influential and wealthy.

Some of the church's extensive assets were still in evidence when in 1072 it was transferred to the newly created diocese of Lincoln, to become the endowment of a prebend. Hanley (2005) has recently described the extent of these endowments. The name of the church's manor, the Prebendal manor, known *inter alia* as Parsons Fee or Rectory Manor, and the surviving 'Prebendal House', previously the rectory and adjacent to both the present church and to the excavated site, demonstrate the physical link (Hanley 1986). The bounds of the Prebendal manor survived into the nineteenth century and 'comprised a compact area surrounding the church on all sides bounded

by Kingsbury on the south, Ardenham Lane on the north and part of Buckingham Street on the east' (Hanley 2005). As Hanley points out, this coincides quite closely with the probable northern extent of the Iron Age hillfort defence and it can also be presumed to reflect part of the original minster landholding within the town. That the church's holding within the town was initially much more extensive than this seems probable in view of the adjoining cemetery (discussed further on), which extends beneath much of the core of the old town and towards the southern boundary of the hillfort.

Although it seems likely that the ditch recorded in the excavation (and presumably the earlier palisade) defined the limits of the minster's land on the west, no other contemporary features survived within the excavated area, although the bank accompanying the ditch would have taken up much of the space examined during the excavation. Unexpectedly, there were no intact graves on the site that could be linked to the period of minster use, although there are plenty elsewhere in the town (see below). Disarticulated human bone was present in some quantity but the single radiocarbon date on a random piece gave an Iron Age date (see earlier section). It may be that the limited area of land available for investigation immediately adjacent to the boundary (much of the area in the Middle Saxon period would have been covered either by the hillfort bank or that of the minster itself), either contained ephemeral buildings associated with the minster or had been cultivated land. However, as the ditch was a relatively rich source of finds, in particular of animal bone, it seems probable that this material was detritus that had been casually thrown over the boundary from domestic quarters close to the minster.

Presuming that the boundary ditch was that of the minster, it may be compared with others in the region. A boundary adjacent to Wing church, although probably of slightly later date, provides the nearest example (Holmes and Chapman 2008). Here, a substantial curving ditch 1.8 m wide × 1.2 deep had a V-shaped profile with rounded base. It encompassed several rows of burials, the earliest being of Middle Saxon date. The nearest excavated point of the ditch to the church was *c.* 30 metres. It was only recorded in two places, but the projected trajectory of its curve, albeit rather extended, would not certainly enclose the present Saxon church. Allowing for some irregularity, presuming that the ditch had an internal bank it would at best place the apse of the church directly abutting the bank. One of the questions this raises is whether the existing well-known church was the first (or only) church on the site, or whether the excavated ditch enclosed, for instance, only the cemetery. Although there is no direct reference to Wing as a minster and the church itself is not closely dated , the presence of an ambulatory crypt , a form commonly associated with relics of saints or royalty, plus the fact that Wing was held with other substantial land assets in Buckinghamshire by Aelfgifu in AD 967–8 (Sawyer 1968, no. 1484; Hart 1992, 455–65), makes its role as a minster almost certain. Richard Gem (2002) has suggested a date in the late seventh or early eighth century for its foundation and attributes the final phase of the crypt to the eighth century. Although there is some doubt as to the identity of Aelfgifu, Hart (1992, 464) tentatively suggests that she was the ex-wife of King Eadwig.

Wing is likely to have had some direct association with nearby Linslade, formerly in Buckinghamshire, on the west side of the Ousel which was also held by Aelfgifu (see above). In AD 966 Linslade's bounds were recorded in a charter (Reed 1979). Although there is no mention of an early church here, its ownership and the possession of a holy well (recorded later, see VCH Bucks 3, 387; also shown on OS 1:25,000 map 1947 edit) makes this a possibility.

Just across the Ousel on the east side, not far from both Wing and Linslade, is Leighton Buzzard which like Aylesbury was a royal manor with a recorded church in the Late Saxon period. Nothing survives of its early structure.

The nearest minster to Aylesbury on the west is Haddenham, also noted to possess a church in Domesday; no physical remains of the period have been identified here either.

Further west along Akeman Street, at Bicester just into Oxfordshire, recent investigations have produced indirect evidence for an undocumented minster here (Blair 2002). An undated cemetery of aligned burials, probably part of a more extensive cemetery, has been recorded *c.* 70m north of the present church. To the east of the church, a slight curving ditch appears to have had the church as its focus, the ditch's infill being dated to the eleventh/twelfth centuries. Interestingly, the church is dedicated to St Eadburh, who could be the Eadburh of the Osyth tradition noted at Aylesbury.

There was a minster at Oxford itself but no information is available about its structure (Dodd 2003, 17–19). About ten miles to the west of Oxford is Bampton, the location of a well-documented minster. Topographical features here suggest that a sub-rectangular enclosure encompassed the present church and a later manor house. Two trenches confirmed the existence of a U-shaped ditch with an infill of late eleventh-twelfth century date, but the picture here is complicated by its utilisation in part for a medieval defence. It is of interest that the prebendaries of the manor occupied an adjacent building as at the Prebendal, Aylesbury (Blair 1986, 1998; Chambers and Blair 1987; Blair 2010).

The first certain minster boundary to be recorded in the region was at Brixworth, Northants. Found some 100m west of the church, this had a roughly V-shaped profile and was about 3.4m wide by 2m deep, but was only partly excavated. Its primary fill was described as 'highly organic, full of animal bone' (Everson 1977). In terms of dimensions and fill, the whole bears comparison with Aylesbury's boundary.

Much further afield a boundary associated with, but not defining, St Hilda's monastery precinct on Hartlepool headland, is of interest in that like Aylesbury it utilised a palisade at one stage. The palisade trench, about 0.9m wide by 0.6m deep and about 60m north of St Hilda's church, had been backfilled in the late seventh-early eighth

century, presumably subsequent to removal or decay of its posts. A section drawing (Fig. 8) shows a post pipe *c*. 0.2m diameter. However, the palisade boundary was not the principal minster boundary feature here as it formed a division between two areas of buildings (Daniels 2007).

In conclusion, it is not yet possible regionally to define the precise character of minster boundaries except to note that on the available evidence they never appear to have been very substantial. In the case of Aylesbury and other early sites elsewhere, the pre-existence of a defence, however residual, was probably an attraction.

Life at the Aylesbury minster

The only find which clearly relates to religious activities at the site, is the piece of northern French glass with a cross on its base that came from the fill of a later pit, described previously. Although this particularly distinctive piece is apparently unique in England, the presence of imported glass whether on ecclesiastical sites (both vessel and window glass in the case of Monkwearmouth/Jarrow: Cramp 2005) or in earlier Saxon graves (locally, for example, at Dinton and Taplow) is not of course unusual. Apart from its intrinsic interest however, this piece is of significance for Buckinghamshire as apart from a chi-rho on a recently discovered Roman coin of Magnentius (information from Brett Thorn, County Museum) it is the earliest recorded Christian symbol from the county.

The objects from the boundary ditch and the unstratified Middle Saxon finds from later redeposited contexts are likely to relate to life among the community of priests associated with the minster. Apart from a few pottery vessels the finds include other evidence for food processing (pieces of quern), for weaving, some antler working, and ironworking – a very small amount of slag. There were a few iron objects including a decorated pin, and a single coin. Apart from the glass base there is nothing amongst the artefacts to distinguish them from any other Middle Saxon settlement of the period.

The molluscan record from the ditch indicated almost entirely open land with a very small proportion of the retrieved molluscan remains requiring a shady environment – 'possibly … some form of field boundary'. This would be consistent with a nearby occupied, perhaps cultivated area with, say, a hedge along the bank accompanying the ditch. Among the wood charcoal remains only hardwoods were identified. In terms of fragment numbers, beech and oak were predominant with the former outnumbering the latter. Very small quantities of four other species were recorded. There was evidence for some kind of on-site woodworking amongst the beech.

During excavation the silting of the ditch was observed to have a greenish hue which might indicate a soluble organic residue such as cess, together with food waste, being emptied into the perimeter ditch over the adjacent boundary. A similar fill, as noted previously, occurred in the boundary ditch at Brixworth (Everson 1977). Coprolites were noted in the fill at the Prebendal but have not been further studied. Elsewhere they have commonly been found to be from dogs.

The animal bone from the ditch included bones from at least eighteen sheep/goat, seventeen pig and four cattle (minimum numbers). The low proportion of cattle bones is notable for the period, as is a higher than usual proportion of pig bones, the latter including skull fragments which could have been used, for instance, for making brawn. Amongst the sheep bones were many young animals, perhaps indicating a dietary preference for lamb or maybe a surplus in local flocks. Bones from horse, dog and cat were present in small numbers. Birds both domestic and wild were reasonably well represented including at least seven fowl, four geese and other species. Some eel, presumably from the Thame or one of its tributaries, was eaten. No deer bones were recorded, which is of interest in view of the proximity of Bernwood Forest not far to the west and later recorded to have been used extensively for hunting. However, the presence of hare does indicate some hunting, presumably with dogs. This might not have been approved by Rome. A letter written by the Pope in AD 751 to St Boniface in Germany, shows that hare was not considered a suitable food:

> …In the petition presented by them were the following items about which you enquired of us, which were to be accepted and which rejected.
>
> First as to birds – jackdaws, crows and storks: these are absolutely forbidden as food for Christians. Beavers, hares and wild horses are still more strictly prohibited. However, most holy brother, you are well versed in all the sacred writings.
>
> LXXI [87]. Pope Zacharias replies to the enquiries of Boniface. Nov. 4, 751 (Emerton 2000, 139).

Wet sieving of sediment from the ditch produced principally grains of wheat, with a few of barley and oats, *etc*. This had presumably been prepared elsewhere as there was no evidence among the preserved material for on-site threshing. Pieces of quern made from relatively local stone as well as lava quern imported from Germany that can probably be attributed to this period, indicate that some cereals were being ground on site.

The whole suggests a fairly unspecialised but not particularly wealthy community, whose communal activities were typical of any rural Middle Saxon settlement, apart from their diet, which, as indicated by the animal remains, was more distinct. The same absence of distinguishing artefactual material was noted during quite an extensive investigation close to the site of Eynsham's minster in Oxfordshire (Hardy *et al.* 2003, 145). For a discussion on life within minsters see Foot 2006.

Apart from the excavation at the Prebendal, only two other sites within the old town have been investigated on any scale, as previously noted: George Street (Allen 1983) and the County Museum (Bonner 1996) (Fig. 60). Both may be presumed to have lain within the minster holding and

both, as the Prebendal, were multiperiod with considerable disturbance of earlier contexts by medieval pitting, *etc*. The George Street site produced six vegetable-tempered sherds indicative of occupation at around the same period as the minster, but another three-hundred and thirty nine classified as Iron Age/Saxon, reflecting local difficulties in dating of pottery referred to previously. The George Street finds included a piece from a Saxon loomweight. The County Museum site produced two sherds of Ipswich ware, but the same problem was encountered with defining pottery of the Iron Age/ Saxon period among residual material.

Much disarticulated human bone occurred at the Prebendal in medieval pits *etc*. This has previously been discussed in the Iron Age section, but no human bones were found in the fill of the boundary ditch, nor were any articulated inhumations of Saxon date discovered on site. That the minster did, however, possess an extensive cemetery, is noted further on.

The structure of an early Aylesbury church

The presence of 84 pieces of Roman tile on the site, some from the minster boundary ditch, can be compared with the 168 Roman sherds that were found (many from the same vessel). The disproportionately high ratio of tile to pottery probably indicates that the tile had a secondary function and was brought in from elsewhere for re-use in the post-Roman period. An obvious candidate for re-use would be in the structure of Aylesbury's minster. The nearest known source of such tile would have been the villa at Bierton only 1.5 miles to the north-east. Churches of the period (most notably Brixworth in Northamptonshire) went to considerable lengths to acquire Roman tile. At Brixworth, for example, it was used in the construction of quoins, arches, apertures and string courses. Small amounts of Roman tile have been recorded in churches with Saxon fabric elsewhere in Buckinghamshire, at Wing, and in the south of the county at Iver. To set against this suggestion, however, no architectural worked stone was identified on site.

The present St Mary's church, certainly known as St Mary's by the early twelfth century (Foster 1931, xx and 53), has been described as a large cruciform structure with north and south aisles and transepts that 'appears to have been entirely rebuilt in the first half of the thirteenth century' (RCHM 1912, 22–27; Pevsner *et al.* 1994, 150–153). Many years ago, however, J.T. Smith then of the Royal Commission on Historical Monuments (England), in correspondence with the writer, pointed out that: 'St Mary's has NW and SE salient angles and an incredibly irregular plan that cries out for more complicated assumptions than RCHM made about its earlier history'. To this may be added the fact that the nave and chancel are not in alignment. Smith notes that the same irregularity occurs, at Sherborne Abbey and Wimborne Minster.

Apart from irregularities in the plan, only a fine twelfth-century font, one of the well-known Aylesbury-series fonts, is now evident above ground to hint at any earlier structure although prior to an extensive restoration in the nineteenth century by Gilbert Scott, Gibbs (1885) describes a number of Early English details. Scott found the church in poor condition and noted that 'though the church is in one sense founded upon a rock, there intervenes between the rock and the walls a stratum of perfectly loose and moveable material …' (Scott 1854).

In 1978 Brian Durham carried out a watching brief inside St Mary's during extensive re-ordering. He recorded walls of 'good stone blocks', thought to have had footings of 'clay and weathered rock' between the columns of the north and south aisles near the western end: that is to say structures that pre-dated construction of the aisles. The southern of these walls, he recorded as having a weathered (*i.e.*, external) south face. Taking into account other fragmentary remains, he deduced an earlier stone structure that fitted within the present nave but was shorter at the west end. He also deduced a possible tower, post-dating the first phase but subsequently removed. One short wall length leading off the tower he suggested could be evidence for a cloister. The walls were apparently sitting on a loam and did not reach bedrock, which accords with Scott's general description. Unfortunately there was no dating evidence for any of the building phases that Durham recorded and finds were sparse. He did however note that in the earlier levels 'there were clay tiles/bricks, some possibly Roman' (Durham 1978). Although there is no evidence of quarrying within the town itself, a short distance to the south-west is the eponymous village of 'Stone' whose resources could have been used in this period and certainly were at a later date.

One other feature once thought to be pre-Norman, but which now must be dismissed, is a crypt that was also recorded by Gibbs (1885). He noted … 'In excavating for the new buttresses and plinth foundations of this building [the Lady Chapel] the workmen came across some old arches of a very rude type, which led to further excavations within the chapel, *and thus the remains of an ancient crypt were revealed, probably of an old Saxon church, which may have existed as early as the ninth or tenth century*.' He goes on to say 'There is one prominent arch in it, which was bricked up when found, which those competent to decide have unhesitatingly pronounced to be Saxon … Two of the arches form, in point of fact, the support of the Lady Chapel …'. This crypt still survives beneath the Lady Chapel. It is a rectangular structure of undressed limestone, and was formerly entered from its west end by steps (now disused). It extends as far as the east wall of the chapel as described by Gibbs. There are four openings at the eastern end, two in the east wall and one in the north and south walls. Each has a rounded arch of undressed limestone. Dr Richard Gem kindly visited the crypt but found no evidence of Saxon work and the structure is probably to be associated with construction of the early fourteenth-century Lady Chapel above.

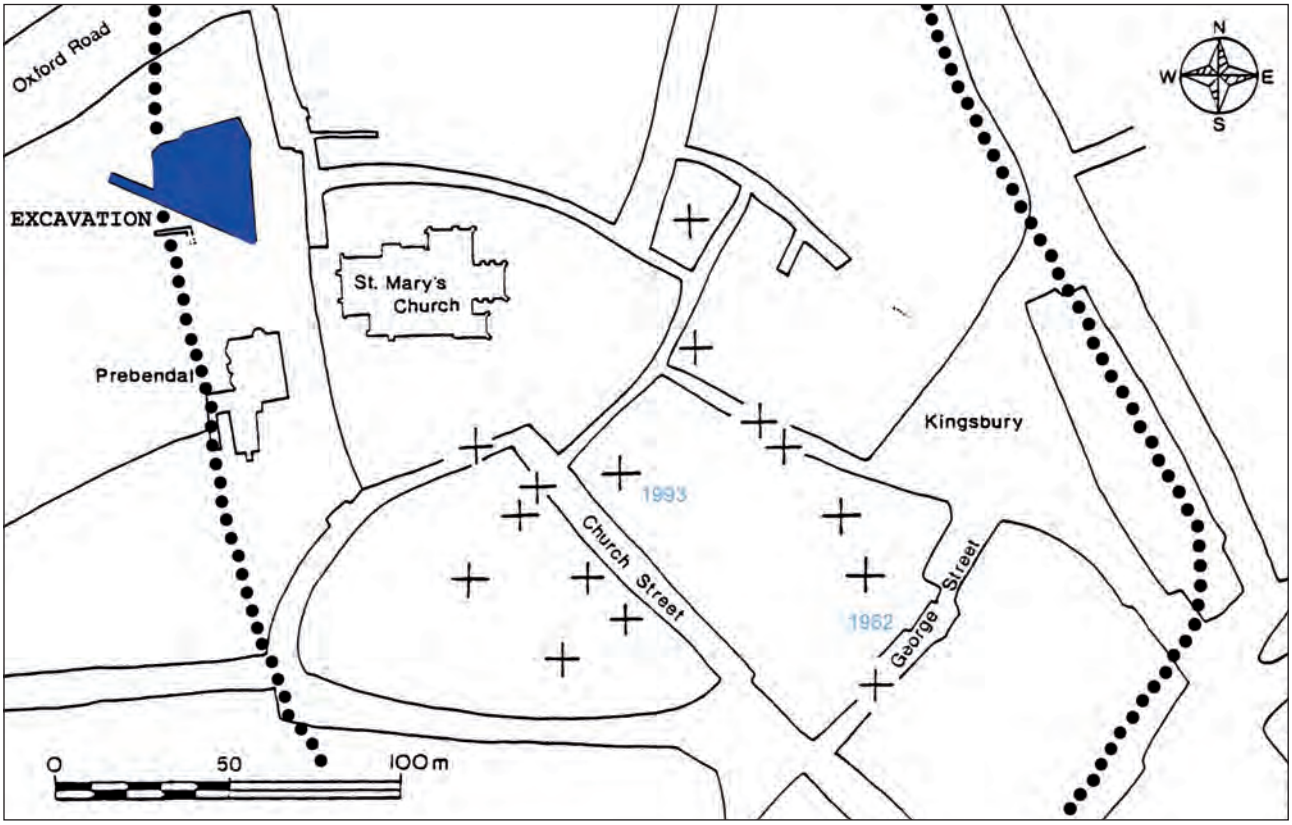


Figure 76. Plan showing sites of burials recorded beneath Aylesbury. 1982 = George Street excavation, and 1993 = County Museum excavations; burials were recovered from both sites. Hypothetical course of hillfort defence indicated.

It is possible, particularly as there is little good building stone immediately available at Aylesbury, that the earliest church structure would have been of timber. Although the character of Middle-Saxon stone churches is reasonably well understood, archaeological evidence for timber churches is rare. On occasion, as at Yeavering, Northumberland, excavated structures which were certainly churches look very similar in plan to domestic timber halls. A notable exception is a church site at Cowage Farm, Foxley, Wiltshire (Hinchcliffe 1986) where an undoubted early church (Structure A) that was sited within a small enclosure, appears to have an apse. Limited excavation showed that the walls were of vertical, rectangular timbers set in a trench, a technique also seen in the construction of the walls of timber halls of the period. Although the present St Mary's is likely to be on the site of one earlier church, it was not uncommon for a minster complex to include more than one small church building, often aligned (Pestell 2004, 50; Blair 2005, fig. 24) as well as a complex of associated buildings providing living quarters for priests, *etc*. If the relatively plentiful Roman tile fragments can be associated with an early church in Aylesbury, they could come from a second phase of building.

Lacking documentation, there are only rare instances where a clear distinction can be drawn at this period between communities that were living an essentially isolated 'monastic' life and those which were providing wider pastoral care; many early churches are likely to have combined both functions (Pestell 2004).

The minster cemetery

Prior to the Prebendal excavations, it had been noted that undated burials frequently turned up within the present town. A plot of these burials led the writer to suggest some years ago, that they could be part of a minster cemetery (Fig. 76 and Farley 1979). Subsequently, an excavation at George Street within the town, some distance from the present church, located eighteen inhumation graves, many cut by later features (Fig. 77), aligned roughly east-west and in rows (Allen 1983). The excavator estimated that the whole site could have accommodated up to a hundred burials. Four of these burials were radiocarbon dated and produced calibrated dates in the late eighth to ninth centuries (Har-4938 to 4941). Presuming that these burials were part of the minster cemetery it was certainly extensive and by inference in view of their distance from the church, they may be late in the sequence of burials. In the future it may be worthwhile radiocarbon dating other so-far undated burials from the town. An additional complexity should be noted, however, the presence of a

brotherhood house, now partly incorporated within the County Museum building which may account for some of the burials (Chenevix Trench 1991). Just outside the hillfort defence there was also a Friarage which would have had a cemetery. Nevertheless, the overall picture of an extensive cemetery would be typical of an 'old minster', drawing burials from a large area including areas covered by dependent chapels that had yet to acquire their own burial rights.

The process of reclaiming the cemetery for urban use is likely to have been a considered calculation between various factors such as: how recently the burial had been made, closeness to the church (and hence popularity), and the pressure of other forces such as development of a market and the construction of related buildings. The absence of permanent above-ground memorials would have made this process rather easier than such a process would be today.

Figure 77. A Middle-Saxon burial from George Street, Aylesbury, cut by medieval pits.

The establishment of the minster: early politics, St Birinus, St Osyth and Quarrendon

The conversion of Buckinghamshire

Buckinghamshire as a county has clear physical divisions within it. The most obvious are the slight uplands of the Chilterns in the south which drain into the Thames Valley, and the predominantly clay-based lands of the north, draining also partly into the Thames but principally into the Ouse and its tributaries and on towards East Anglia. Different parts of the county are likely to have experienced different histories both in terms of settlement character and conversion, or more specifically re-conversion. Aylesbury and its immediate hinterland lie just north of the Chiltern scarp and entirely within the Middle Thames catchment area. Influences on the town would have come partly from the west, the Oxford region and the mid-Thames including the small Roman town of Dorchester-on-Thames where the Thame joins the Thames, and ultimately to Wessex: partly north towards Northamptonshire, the southern midlands and ultimately Mercia, and partly east, towards for example, St Albans and Dunstable.

Although St Albans has no attributed role in central Buckinghamshire in the early conversion period and its abbey is said to have been founded only in 793 by Offa, its previously well-established Christian base may well have survived in some form or another and it is hard to believe that it was completely without influence in the sixth and seventh centuries as the largest of the former Roman towns in the region (for a recent discussion of sub-Roman and later St Albans, see Niblett and Thompson 2005). However, perhaps a more likely conversion (or conceivably re-conversion) route, was through Wessex's missionary bishop, Birinus, who established a see at Dorchester-on Thames *c*. 635 and there 'built and dedicated several churches' (*HE*, 153), or more graphically, according to a hagiography, 'builds churches, sets up altars, scatters effigies, overturns heathen temples' (Love, R. ed. 1996). Birinus died in about *c*. 650 (for a recent discussion of his connection with Dorchester see Rodwell, 2009). As has already been noted, Aylesbury probably was a king's property in the sixth century, and, presuming its continuing status in the seventh century, would have been a natural focus for any conversion efforts. Birinus' see of Dorchester was fairly short-lived as it was apparently superseded by the establishment of a see at Winchester in AD 662. At about that time the Dorchester see ceased to exist, possibly as a result of Mercian expansion (Yorke 1995, 58). In 737 a new see was created for the Mid Angles at Leicester (Dumville 1989, 130). In the later ninth century the Dorchester see was revived to become a Mercian bishopric (VCH 1962, 53) and at the Conquest, Aylesbury belonged to its bishop, Wulfwy (Wulfwig). His successor Remigius, transferred his see to Lincoln in 1072. Churches that were transferred to Lincoln in its foundation charter, that were noted as formerly belonging to the ancient see of Dorchester, included Aylesbury, Buckingham, Leighton and Bedford

(VCH Bedford I, 311 and Foster 1931); this might also indicate part of the extent of the first Dorchester see.

Possible early activity by Birinus apart, Aylesbury, its church and the nearby village of Quarrendon north of Aylesbury (now deserted), are most strongly linked with St Osyth who was Mercian. There are obvious difficulties in interpreting accounts of saints' lives, but in summary St Osyth was said to have been born at Quarrendon and to have been 'brought up by a maternal aunt Edith, who had founded a *monasterium* at Aylesbury. A second maternal aunt involved in her upbringing was Edburga.' Osyth's father was Frithuwold and her mother Wilburga, daughter of Penda of Mercia (Hagerty 1987 and see Bailey 2003). Frithuwold can probably be identified with the Mercian *subregulus* of Surrey who is recorded as making a grant to Chertsey in 672–674 (Whitelock 1955, 440–441; Sawyer 1968, no. 1165). Penda, who reigned approximately between *c*. 632 and 654, was said to have been quite old at his accession, which gave him plenty of time to father Wilburga, Osyth's mother. Probably all that can reasonably be said about the legend is that the foundation of the *monasterium* by Osyth's aunt could have taken place in the second half of the seventh century, either under Penda's successor, Peada, king of the Middle Angles and later of the South Mercians, or under Wulfhere or Ethelred, at a time of subsequent Mercian expansion (see on).

It should be noted that there are two rival places that lay claim to St Osyth: Aylesbury and Chich in Essex. The solution favoured by some (*e.g.*, Farmer 1992) is that 'it seems likely, if not certain, that in reality there were two Osiths, of Chich and of Aylesbury represented by the feasts of 7 October and 3 June in the liturgical traditions of London and Hereford.' Hagerty (1987) on the other hand, argues convincingly that there was only one Osyth, but accepts that her remains may have been translated between centres.

St Osyth's alleged birth at Quarrendon is a bit of a curiosity. The site of the deserted (and unexcavated) village is well known on account of the excellent preservation of its associated earthworks (Everson 2001). At the time of Domesday it was held by 'Swein, Asgar the Constable's man'. Nothing else is certainly known of its early history. The alleged birth of Osyth here has led to Quarrendon being interpreted as a royal palace site, but there is no firm evidence for this. Her association with the town, and presumably its minster, is a little stronger as she was regarded as a significant saint in the thirteenth century when a fair known as 'the old fair', was held on the feast of St Osyth (3 June: VCH Bucks 3, 6). It is possible that she could have been an abbess here.

Blair (1988, 41–2) has noted the possible relationship between Aylesbury and Quarrendon in connection with a discussion of a close association between royal sites and minsters, but this has to be set against the probability, previously noted, that Aylesbury itself could have been a royal site. The fact that the former hillfort could certainly still be identified on the ground is likely to have influenced the location. Blair (2005, 191–204) has examined in detail the apparent criteria for selecting locations for minsters that would enable them to be '… *in* the world but not quite *of* it.' Clear boundaries were required whether of elevation, water or artificially constructed. There are several instances where hillforts were considered appropriate as sites for a minster and it may be noted that in Buckinghamshire lesser-status, and presumably later, churches such as Cholesbury and West Wycombe were also sited within them (Kidd 2004). The church at Taplow was sited immediately adjacent to the defences of another.

Tribes and Clans

Buckinghamshire did not have a distinct territorial identity until the tenth century when it was created as a unit – probably in response to the Danish wars and the fortification of Buckingham (Baines 1984). Geographically, about half of the county is occupied by the Chilterns and the *Cilternsaete* appear in the Tribal Hidage that is generally dated to the later seventh-century. In AD 767 the name *Ciltinne(?)* is noted in connection with an exchange of land (EHD 1955: 461); other early occurrences are noted by Morley Davies (1950, 242–4). Although many writers consider that the term does imply a named people (see below), in a recent discussion of *saete* names Lewis (2007) has cautioned that the suffix can simply refer to 'the common occupation of a tract of land' and does not necessarily have a tribal connotation.

The Chiltern scarp certainly marks a significant geological transition that is still reflected in both settlement pattern and land use. The division can be first clearly seen in the Roman period when Chiltern occupation appears to have been valley-centred and dominated by a villa economy, in contrast to the Vale of Aylesbury to the north where occupation seems to be less formally structured and certainly more ubiquitous. That this distinction should not be over-emphasised, however, is immediately obvious from the well-known linear character of many Chiltern-edge parishes which cross the division between vale and scarp and can be up to six miles long (Morley Davies 1950, 244–5). This suggests a long-standing territorial arrangement reflecting a fine balance between the arable, pasture, and woodland needs of adjoining communities who clearly embraced both environments.

However, along the Chiltern scarp runs the well-known Icknield Way, whose course has been taken by some to be a political boundary. The significance of this route, and hence possibly its significance as a boundary, has been undermined on a number of fronts in recent years. For instance, an excavation in Buckinghamshire on the so-called Lower Icknield Way, failed to find any trace of the route here but instead demonstrated that an early routeway crossed its theoretical course and followed a linear parish boundary like those noted above (Mansfield 2008). Further east, numerous other ancient boundaries have also been shown to cross the 'Icknield Way' and a study by Harrison

(2003) has also played down its integrity as a long distance route, concluding that: 'It is very likely that but for the creative minds of a few medieval chroniclers, it, like the Ridgeway, would have been to all intents and purposes, forgotten.' The continuing relevance of the route in the Saxon period has, however, recently been supported by Cole (2010) who records a number of Old English landmark place-names along its course, and Icknield-related names certainly occur both in field names and a charter in Buckinghamshire. It could be that its significance as a route was fading in the Early Saxon period. If this was the case it might also of course, take with it one possible natural northern limit of the *Cilternsaete*.

Many writers have nevertheless presumed (*contra* Lewis 2007) that the *Cilternsaete* did constitute a distinct political or tribal grouping. The group has also frequently, and probably erroneously, been linked to 'The British', following a proposal originating from Wheeler (1935) that an indigenous 'sub-Roman triangle' based on the Roman towns in the east, extended into the Chilterns. The idea was further expanded by Rutherford Davis who proposed the existence of a British realm: 'Clearly the native population of the Chiltern region, however wracked by disease and civil dissension, survived until 571' (Davis 1982, 113). Another writer has confidently stated that Aylesbury was 'the capital of the *Cilternsaete*' (Baines 1984, 11). If there was such a British region, then St Albans (following Wheeler) should have been an important focus. However, in a recent review of evidence relating to the city (Niblett and Thompson 2005, 167–8) it is observed of the St Alban's area that 'evidence for occupation here between the 5th and 8th centuries remains pitifully sparse'. This is an important point as earlier writers seem to be happy to deduce the presence of the British from an *absence* of 'Saxon' artefacts; in other words from a negative.

If the place-name interpretation for Walton (discussed above) is accepted, then it is likely that the artefactual evidence from any 'British' settlements in the region will look much the same as that found on nominally 'Saxon' settlements. There is relatively little 'Saxon' evidence from the Buckinghamshire Chilterns which may partly be explained by a lack of large-scale development here, but there is also a restricted range of early place-names. These absences may imply lower population levels here rather than an exclusive 'British' domain. The broader question of the process of integration of the British into the world of the Anglo-Saxons has been recently discussed in a series of papers in Higham (2007) and locally by Baker (2006).

The 'Chiltern dwellers' have no documented rulers or sub-rulers but overlooking the Thames on the southern margin of the Buckinghamshire Chilterns is the well-known Taplow barrow and if one were looking for a likely seventh-century Chiltern ruler then the eponymous 'Taeppa' would surely be a strong candidate.

Having suggested above that the Icknield Way may not itself have been a meaningful boundary to the Chiltern dwellers on the northern side, the presence of other clan groups in the southern part of the Vale of Aylesbury may indicate some kind of limit. They are indicated by *ingas* names such as Halling in Stoke Mandeville near Aylesbury and Oving (EPNS 1969, 156–7). The presence of the poorly-located group comprising the Hwicce perhaps to the north-east and the Hendrica to the north-west, both included in the Tribal Hidage, are also relevant to the tribal affinities of the occupants of Aylesbury (Bailey 1992 and 1994).

Whatever the affinities of the occupants of Aylesbury, these early underlying clan or tribal groupings were certainly to be overridden in the seventh century by tussles between rather better-recorded dynasties, although the political history of the seventh century is notoriously difficult to reconstruct. Parts of the area which was later to become Buckinghamshire may have at different times been under the influence of Wessex (through Dorchester), Mercia, and for a period, the Middle Angles. Dumville (1989) has discussed the limited available evidence for this last relatively short-lived kingdom and concludes 'very provisionally' that it was bounded by Wessex, Essex, East Anglia, Lindsey, Mercia and the Hwicce, which would place Buckinghamshire within its territory during the seventh century. Hines (1999) in considering the significance of the Cambridge region has made a similar case for the Middle Angles based on a significant cluster of artefactual material, mainly sixth-century brooch types that suggest 'a special network of connexions' which extends from Cambridge into the central and south Midlands (including the Aylesbury area). He likewise suggests that on this evidence their kingdom 'may have extended to the Thames in Oxfordshire in the sixth century'. Whether this suggestion is accepted or not, latterly it was Mercian influence which was to become most significant. Hart (1977, 53) distinguishes between the core area of Mercia and the surrounding territories 'over which the Mercian kings exercised a quasi-imperial hegemony'. The charter of AD 672–4 which records Frithuwold, as ruler of part of Surrey but described him as a sub-king of Wulfhere, king of the Mercians, hints at this control (Whitelock 1955, 440–1; Sawyer 1968, 1165). In discussing this charter Blair (1989, 106–7) notes that in the Osyth legend she is described as a daughter of a Frithuwold and on this basis he makes the suggestion that in the early Mercian period Frithuwold's Surrey realm could have extended across the Thames and 'included a swathe of the Thames valley and Chilterns extending up into northern Buckinghamshire'. Such an arrangement would post-date the occupant of the Taplow barrow which it has been suggested above may have been of significance for the *Ciltensaeta*.

Finally another shadowy group who should be noted are the Middle Saxons. This group, possibly more than a clan but for whom there are no recorded rulers, were responsible for establishing the Colne as their western boundary, a boundary which ultimately was to define the limit of south-east Buckinghamshire (Bailey 1989). The extent of their influence, if any, within the later county is unknown.

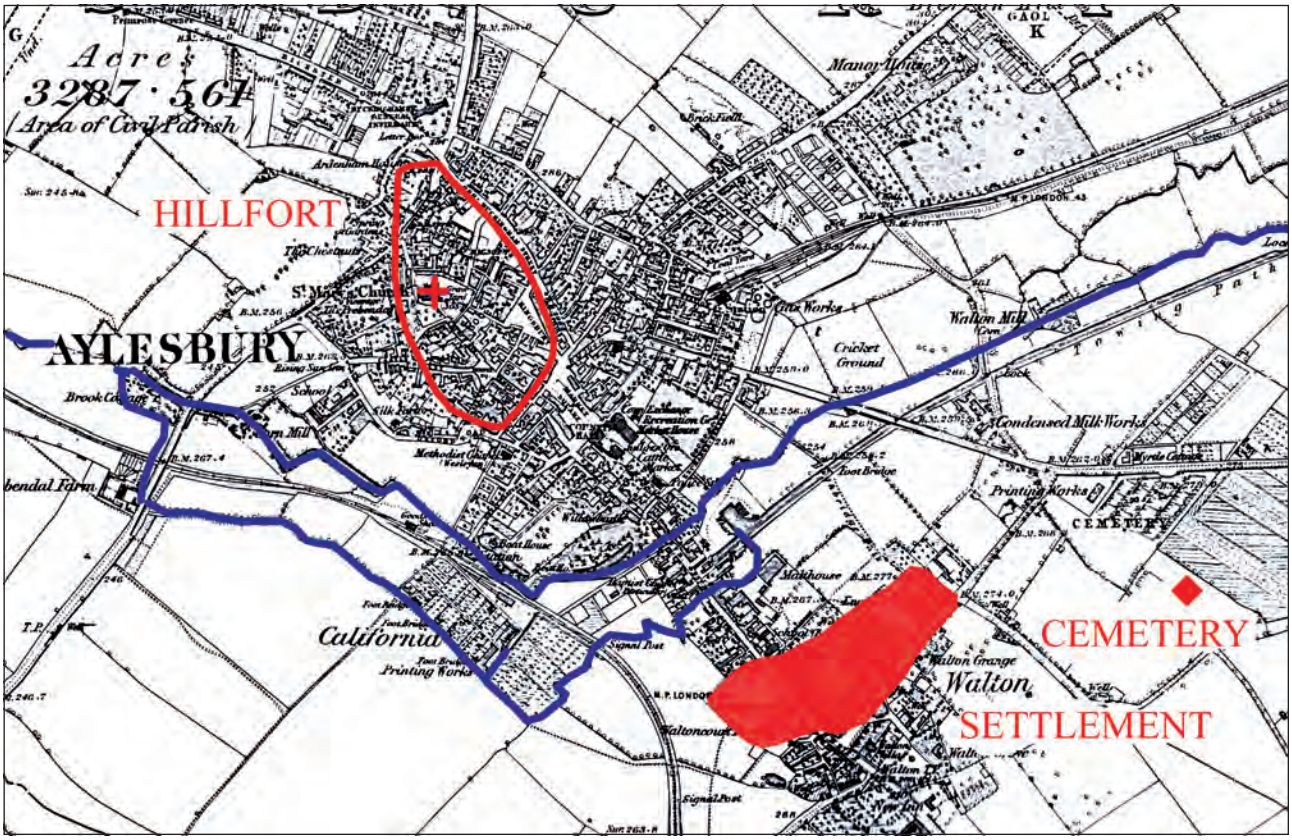


Figure 78. Hypothetical hillfort outline, St Mary's church and probable extent of early-middle Saxon Walton, with adjacent early Saxon cemetery indicated. Both Aylesbury and the adjacent settlement of Walton are on Portland limestone. They are separated by the Bearbrook whose course is indicated. Based on Ordnance Survey 6" map, sheet 28, 1884 edition.

Other early churches in Buckinghamshire

Buckinghamshire is a little unusual in that only six churches, at a maximum, contain certain evidence of Saxon work in their fabrics, Wing, Hardwick, Iver, Lavendon and possibly Clifton Reynes and Little Missenden (Taylor 1978–80). There are four direct Domesday references to churches, Aylesbury, Buckingham, Haddenham and North Crawley but, unfortunately, there is no overlap between the Domesday list and those with surviving Saxon structure. There is one Domesday period church place-name, 'Whitchurch', and a small group of landholding priests who may or may not have had churches within the county. The position in Buckinghamshire can be contrasted with neighbouring Berkshire where fifty-seven pre-Conquest churches are recorded in Domesday.

About forty Buckinghamshire churches have some Norman features and it is quite possible that a number of these are on earlier sites. Bailey (2003) has recently reviewed the total number of churches which could have existed in the Late Saxon period by considering their distribution in relation to the bounds of hundreds and to the later wealth of churches as recorded in the 1291 *Taxatio*.

It is quite likely that Aylesbury was the first substantial church to be founded in what was later to become Buckinghamshire. Its remit may have spread both north and southwards into the Chilterns where records of early churches are minimal. However, its influence would fairly soon have been constrained by the foundation of other significant churches some of which (Wing, Leighton Buzzard, Haddenham, Bicester) have been mentioned above in a discussion of the minster and its boundary. Other churches in Buckinghamshire probably founded in the mid-late Saxon period include Oakley – a later king's residence at Brill had a chapel dependent on Oakley, and Buckingham. Just over the border into Oxfordshire, Wulfhere had a residence at Thame and an early church is possible here. The Chilterns to the south remain something of an enigma but a number of towns with a long history such as Chesham, Amersham, and Wycombe are possible candidates for second-phase minsters.

13. The Late Saxon Period

Saxo-Norman finds from the site

Only two features at the Prebendal date to the Saxo-Norman period, a shallow feature that contained an animal burial (Pit 318, not further discussed) and a pit containing carbonised material which is described below (672, SF 2597).

In the absence of coin evidence, ceramic finds are obviously of importance for dating. Eighty-three sherds of St Neot's ware were identified (for example Fig. 65, 15–21) but no one feature contained only St Neot's sherds and the ware was dispersed through forty-seven contexts. St Neot's ware was the dominant pottery in Oxford by the second half of the tenth century, a date which has been corroborated there by both coin and dendrochronological evidence (Mellor in Dodd 2003, 295). Around Aylesbury, St Neot's ware is quite common, being the only fabric present in some presumed tenth-century contexts at nearby Walton (Farley 1976) after which it was largely superseded in the eleventh century by a fabric with a lumpy calcareous filler.

On the south edge of the excavated site adjacent to the baulk, was a large disturbance which proved to be a series of intercutting pits spreading over a distance of seven metres (Figs 61 and 79). Circumstances did not permit a detailed investigation of their relationship but in the early stages of investigation within what was initially interpreted as a single feature (400), a substantial deposit of charred material was recorded, roughly 1.2 × 0.7m in extent and between 0.05 and 0.18m thick, which, as subsequently emerged, spread across the partly subsiding infill of pits

Figure 79. Saxo-Norman grain deposit looking north-east. 30 cm scale.

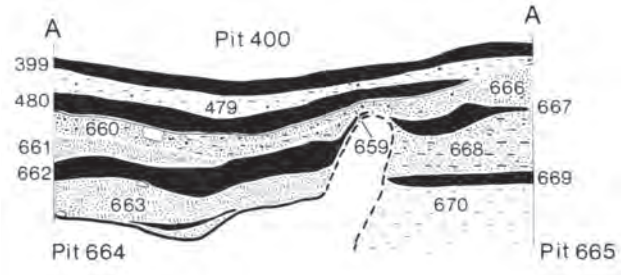


Figure 80. Section of Saxo-Norman pit 400 containing grain spread. Layer 480 was sampled (see text). For location of pit see Fig. 61.

up to a metre deep, including 574, 664, 665 and 881 (Fig. 80). The deposit is described below.

The charred material over the pits sealed only nine sherds, although one of these had a distinctive impressed stamp. Radiocarbon dating carried out on grains from this deposit, described in the Middle Saxon section above (and see Fig. 82), showed that it was of Saxo-Norman date. As the deposit is in the grounds of the later 'Prebendal' house, on whose site the capital messuage of the Prebendal Manor stood (Hanley 1986), it is possible that the deposit was directly associated with the render of 'churchscot' noted previously in connection with the church's Domesday entry.

Lacking firmly dated contexts, dating other artefacts to the Late Saxon period presents a particular problem on a multiperiod site and resources have not permitted as full a study as might have been wished. One group of finds that is likely to include material of this date are whetstones. Thirteen pieces were recovered, of which four were of schist and three had perforated suspension holes. Schist hones, almost exclusively imported and including those with perforations, are common from the tenth-century onwards at Winchester and York (Ellis 1990; Rogers 1993; Ottway 2002). The remaining whetstones were mainly of sandstone whose use appears to have had a longer period and are rarely perforated for suspension. Another group of finds some of which might be attributable to this period are spindlewhorls of which five came from medieval contexts.

The Pottery *(Fig. 65, 15–21)*

All the illustrated ceramic is residual.

15. Pitcher spout, some incised dec. at base, purpley-black surfaces. Fab. 21. (921).
16. Part of spout. Very hard fired-harsh fabric showing pitted surfaces where inclusions burnt out, surfaces buff-grey smoothed ext. Fab. 21. (252).
17. Rim, cooking pot. Fab. S7. (229).
18–20. Rims, cooking pot. Fab. S7. (783)
21. Rim, bowl. Fab. S7. (487).

A Saxo-Norman Grain Spread

Lisa Moffett

Nearly four litres of grain were recovered from a Saxo-Norman grain spread (sample 2006, context 480, cut 400; Figs 79–81; Table 29). The amount of grain in the total sample was too much to analyse with the resources available, so a subsample was taken for analysis. This amounted to less than 3% of the whole sample. The sample proved to be fairly diverse, with 44 taxa identified out of 3398 items analysed. It is possible that the full range of weed species was not recovered in this subsample, as small samples of diverse assemblages often miss rare items (Orton, 1980) and individual weed taxa were often represented by few or single seeds. Cereals, however, were abundant in the sample and it is likely that the subsample is reasonably representative of the cereal taxa.

The charred assemblage consisted of chaff and grains primarily of wheat, with some rye, barley, oats, beans and vetch. There was also a substantial flora of arable weeds. Since the context in which the grain originally became charred is unknown, *i.e*. hearth, oven, storage structure *etc*., the interpretations offered below are necessarily based entirely on the internal composition of the assemblage.

Crop plants

Two species of wheat were present, identified by their rachis remains; a small number of rivet/macaroni wheat (*Triticum turgidum/durum*) rachises, and a much larger number of bread wheat type rachises (*Triticum aestivum s.l.* – intended to include all free-threshing hexaploid wheat but not *Triticum spelta*).

Rivet/macaroni wheat has been found at a number of medieval sites in England (Moffett 1991) and has also been found in a pre-Norman conquest context at Higham Ferrers dated by radiocarbon to AD 770–1000 (OxA-10126) (Hardy 2007). Other possible early finds include West Cotton (Campbell and Robinson 2010) but these have not been confirmed by radiocarbon dating. A radiocarbon date on grain from the Prebendal assemblage (see below) is unfortunately not precise enough to determine whether it is pre- or post-Conquest. Rivet wheat and macaroni wheat are genetically closely related wheats which have a different gluten content from bread wheat and are less suited for making bread. Unfortunately they are not usually distinguishable on the basis of their rachis remains.

Macaroni wheat is, as its name implies, used today largely for pasta. Rivet wheat is less widely grown today though it can be used for unleavened flatbreads and biscuits. Both types of wheat need hot summers to ripen well. Rivet wheat, however, is more suited to the British climate as it is not frost sensitive and can tolerate cool wet conditions better. The wheat found at the Prebendal is therefore more likely to be rivet wheat than macaroni wheat. Rivet wheat generally requires a long growing season and is therefore generally sown in the autumn to overwinter, during which

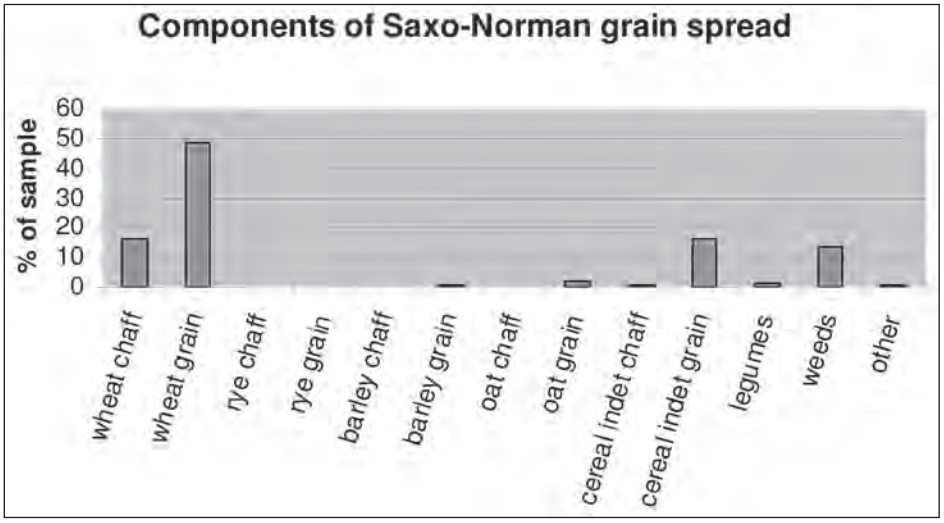


Figure 81. Components of Saxo-Norman grain spread.

Table 29. Saxo-Norman plant remains. Taxonomy follows Stace (1997).

Sample number	2006	
Soil sample volume (litres)	12	
Total flot volume (mls)	3800	
% of flot analysed	2.6	
Items per litre	286	
Context description	Grain spread	
Date	890–1210 AD	
Species		**Common name**
(i) Crops/food plants		
Triticum dicoccum/turgidum/durum rachises	2	emmer/rivet/macaroni wheat
Triticum turgidum/durum rachises	7	rivet/macaroni wheat
Triticum spelta type rachises	13	spelt type
Triticum aestivo-compactum type rachises	6	club wheat type
Triticum aestivum s.l. *rachises*	159	bread wheat (in the broad sense)
Triticum spp free-threshing rachises	323	free-threshing wheat
Triticum sp rachises	16	wheat
Triticum sp rachises basal or sub basal	13	wheat
Triticum sp free-threshing glume bases	1	wheat
Triticum spp free-threshing grains	1086	free-threshing wheat
Triticum sp grains	572	wheat
Triticum/Secale grains	24	wheat/rye
Secale cereale rachises	5	rye
Secale cereale grains	4	rye
Secale/Hordeum rachises	6	rye/barley
Hordeum vulgare 6-row rachises	1	6–row barley
Hordeum vulgare indeterminate rachises	6	barley
Hordeum vulgare hulled grains (germinated)	2	hulled barley
H. vulgare indet. grains	12	barley
Avena sativa pedicels	1	common oat
Avena sp grains	16	oat
Avena/Large Poaceae	46	oat/large grass
Avenae panicle nodes	2	oat tribe stem parts
Cereal indeterminate grains	544	cereal
Cereal coleoptiles	4	sprouts
Cereal culm nodes	25	stem nodes
Mineralised indeterminate awn fragments in clumps	not countable	cereal awns
Vicia faba L. var *minuta*	1	Celtic bean
Vicia sativa L. ssp *sativa*	1	cultivated vetch
Vicia/Pisum/Lathyrus	17	vetch/pea
Legume pod fragments	28	legume pod
Legume tendril fragments	1	legume tendril

Table 29. Saxo-Norman plant remains continued.

(ii) Wild Plants (cf = identification uncertain)		
Chenopodiaceae 133	37	
cf. *Stellaria holostea* 162	1	
Agrostemma githago L. 174	2	
Agrostemma githago calyx tips	3	
Silene sp 174	3	campion/catchfly
Polygonum aviculare agg 185	4	
Rumex sp 188	101	
cf. *Brassica* sp 243	1	cabbage/turnip/mustard (probably wild)
cf. *Brassica* sp (mineralised)	1	cabbage/turnip/mustard (probably wild)
cf. *Sinapis arvensis 276*	1	charlock
Raphanus raphanistrum L *280*	1	wild radish
Rubus cf. *caesius 340*	1	dewberry
Vicia/Lathyrus 409	48	vetch/vetchling
Lathyrus nissolia 415	2	grass vetchling
Lathyrus aphaca 415	4	yellow vetchling
Medicago/ Large *Trifolium 419*	1	medick/large-seeded clover
Small *Trifolium 423*	1	small-seeded clover
Genista cf *tinctoria* 435	1	dyer's greenweed
Scandix pecten-veneris L. 501	1	shepherd's needle
cf *Berula erecta 504*	1	lesser water-parsnip
Conium maculatum L. 507	5	hemlock
Conium maculatum (mineralised)	1	hemlock
Torilis japonica (Houtt) DC 517	4	upright hedge-parsley
Apiaceae	3	carrot family
Lithospermum arvense L. 542	1	field gromwell
Plantago lanceolata type 584	2	ribwort plantain
Euphrasia/Odontites 609	21	eyebright/bartsia
Valerianella dentata (L.) Pollich 659	1	narrow-fruited cornsalad
Anthemis cotula L. 733	132	stinking mayweed
Tripleurospermum inodorum (L.) Sch Bip 736	8	scentless mayweed
Carduus/Cirsium	1	thistle
Asteraceae mayweed type	1	daisy family
Asteraceae mayweed type (mineralised)	2	daisy family
? Asteraceae	1	daisy family
Lolium sp rachises 851	1	ryegrass
Lolium sp glume bases	2	ryegrass
Cynosurus cristatus L. 854	1	crested dog's tail
Poa annua L. 858	1	annual meadow-grass
Poa sp (not *annua*)	1	meadow-grass
Avena fatua/ludoviciana pedicel 865	1	wild oat
Anthoxanthum odoratum L. 871	1	sweet vernal-grass
Bromus hordeaceus/secalinus 885	8	brome
Poaceae	42	grass family
Poaceae culm nodes	2	grass family stem nodes
Flower base (not Poaceae)	1	flower base (not grass)
Unidentified	28	unidentified

time it develops a substantial root system allowing it to grow vigorously the following spring and summer.

Rivet wheat may have been more widely grown in the past, partly for thatch. It has a long strong straw which is better suited than most bread wheats for thatching. Rivet wheat also has long awns (the 'beard' on bearded wheats) which are stronger than those of bread wheats and therefore more effective at discouraging birds. It may also, therefore, have been grown as a protective border around other crop fields as it was in the post-medieval period (Plot 1705).

It is possible that more than one variety of bread wheat was present. Six short rachis internodes might represent a club wheat type (*Triticum aestivo-compactum*) and there were four medium-length internodes which were too long to be club wheat but which were also shorter than many lax-eared bread wheats. A couple of lax bread-wheat type rachis internodes were found but these were sub-basal (from near the base of the ear). The sub-basal internodes are usually lax on both compact and lax eared types of bread wheat, so these could only be assigned to *T. aestivum s.l.* It is not certain that two varieties were present, however, as there are forms of bread wheat with lax internodes from the base to the middle of the ear and short internodes towards the top (*e.g.* Percival 1921, figs 184 and 189). These twelve

were the only whole rachis internodes, and the rest of the hexaploid rachis remains were the nodes only and are identified as *T. aestivum s.l.*

Rye, barley, and oats were present only in small numbers. A single rachis of six-row barley established the presence of this variety, and there was one pedicel (spikelet fork) of common oat (*Avena sativa*). Many of the grains identified in Table 29 as *Avena*/large Poaceae are likely to be oat and have been included as such in Figure 81. However, some wild large grass seeds were also present in the assemblage so it is possible that this is a slight over-representation of oat. Rye, barley and oat were all well established as crops by the Saxon period in Britain. Although present in small amounts in this single assemblage it does not follow that this reflects their importance in the local agrarian economy.

Wild plants

Seed of wild species accounted for about 14% of the total number of items in the sample. Some of these, such as corn cockle (*Agrostemma githago*), shepherd's needle (*Scandix pecten-veneris*), stinking mayweed (*Anthemis cotula*) and scentless mayweed (*Tripleurospermum inodorum*) are arable weeds often found in late Saxon and medieval grain assemblages. Some of the vetches and clovers, which are more likely to be grassland plants today may also have been cereal weeds in the past. Yellow vetching (*Lathyrus aphaca*) is a grassland species which Druce (1926) reports as rare from Buckinghamshire. It may have been an introduced plant brought in with imported seed corn. Upright hedge parsley (*Torilis japonica*) is another grassland species which was probably a cereal weed. Grasses are often quite successful weeds of cereal crops as they are difficult to distinguish from the crop and therefore more likely to be overlooked. Grasses were among the most abundant weed seeds, including ryegrass (*Lolium* sp), crested dog's tail (*Cynosurus cristatus*), sweet vernal-grass (*Anthoxanthum odoratum*), annual meadow-grass (*Poa annua*), and brome (*Bromus hordeaceus/secalinus*).

Other plants which seem less likely as cornfield weeds may still have been growing in close enough proximity to be harvested with the crop. Greater stitchwort (*Stellaria holostea*) is a perennial plant of woods and hedgerows. Dyer's greenweed (*Genista* cf. *tinctoria*) is a shrub which usually grows in rough grassland, especially on damp and heavy soils, and dewberry (*Rubus* cf. *caesius*) grows in dry grassland or scrub and also on fen carr, and might have been collected for food. *Berula erecta*, the narrow-leaved water parsnip, is a wet ground perennial plant found in ponds, ditches and marshes. Hemlock (*Conium maculatum*) is a biennial species of damp disturbed ground often found on riverbanks. None of these plants is very likely to have been primarily a cornfield weed, but they may have grown at the field margins or on the sides of wet boundary ditches.

Discussion

Although grains of wheat are the largest single component of the assemblage, there are also a large number of chaff fragments and weed seeds. Assuming that the unidentified cereal grains were wheat, which most of them probably were, then the ratio of wheat rachises (the stem segments to which the floral parts are attached) to wheat grains is roughly 1:4. A well-developed crop of free-threshing wheat would normally produce an average of three grains per spikelet (with terminal and basal spikelets producing one or two, and some middle spikelets normally producing four) although a poorly developed crop might develop only two fertile florets per spikelet. This means that the ratio of rachis nodes to grains in the sample is not too far from what one would expect from a crop of free-threshing wheat before the grains and chaff were separated (*i.e*. about 1:3). If there were no preservation biases against any particular element in the assemblage it would be possible to interpret this assemblage as primarily a wheat crop which had not yet been threshed and winnowed to separate the grains from the chaff. If this were the case, however, one might expect to find more culm nodes (the joints on the stem) from the straw. Culm nodes would not be present if the crop were harvested by cutting just below the ears (Hillman 1981), but some culm nodes *are* present so it seems unlikely that the crop was harvested in this way.

Certain types of items survive charring better than others. Experiments have shown that grains, for example, survive much better than chaff (Boardman and Jones 1990). Hillman states that because free-threshing rachises are tough and tend to remain joined together even after threshing, they are therefore more likely to get caught in the upper, aerobic part of a fire where they will be completely consumed, while other denser items such as grains and dense weed seeds will sink to the bottom of the fire and become charred in the reducing conditions prevailing there (Hillman 1978).

The probability of a bias in preservation affects the possible interpretations of the charred assemblage. Theoretically, if the bias against chaff fragments were fairly extreme, then it is possible that the original assemblage was primarily crop waste rather than crop product and the grains might represent an accumulation of a relatively small percentage of accidental inclusions resulting from inevitably imperfect crop processing. Alternatively, if the bias in preservation were small then the assemblage could be the remains of an unwinnowed crop, accidentally burned, perhaps, while being stored in the ear. The assemblage could also represent a mixing of crop product with crop waste, the result perhaps of an accident in grain drying or parching, with chaff being used for fuel or tinder.

The use of chaff to light fires was probably widespread among societies where paper was unknown or expensive. Straw or chaff was also the preferred fuel for malting kilns in the post-medieval period, according to contemporary writers. Tusser, in his late sixteenth century verse treatise

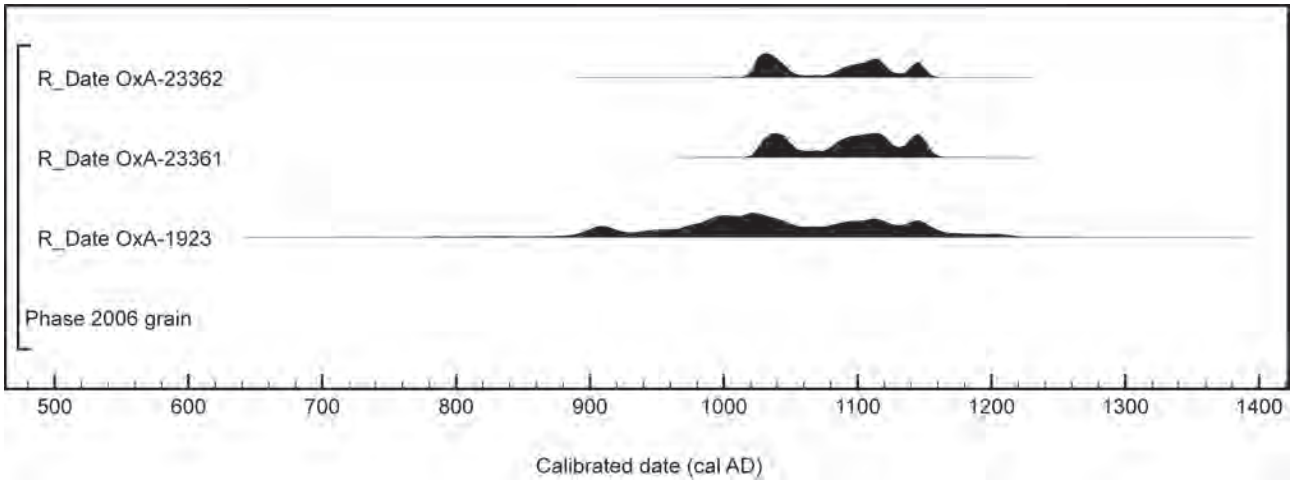


Figure 82. Calibration by the probability method of the Saxo-Norman radiocarbon results.

Five Hundred Points of Good Husbandry says of fuel for drying malt, 'Som drieth with strawe, and some drieth with wood, wood asketh more change, and nothing so good' (Grigson 1984). In the late seventeenth century Gervase Markham wrote that a variety of fuels could be used for drying malt but cereal straw was best because other fuels imparted a taste to the ale (Markham 1675). There is no indication however, that any of the grains in this assemblage had germinated and thus no particular reason to suppose that the chaff had been burned to fuel the process of malt-drying.

Chaff may also have been used as a fuel for small-scale drying or roasting of grain. Hand milling of grain is easier if the grain is lightly roasted beforehand, and this is said to also impart a better taste to the grain (Curwen and Hatt 1953). Grain can also be roasted in the ear, which protects it slightly and makes it very easy to winnow and clean. Grain roasting would only be done on a small domestic scale, as it is not necessary for storage or milling with a wind or water mill.

Few abundant late Saxon assemblages have been recovered from Buckinghamshire (Farley 2009). The assemblage studied by John Giorgi at Walton was primarily barley grain with small amounts of wheat, rye, bean and a few weed seeds (Dalwood *et al.* 1989). The medieval and late Saxon assemblages at Loughton studied by John Letts were somewhat more similar to the Prebendal grain in being primarily free-threshing wheat, but with little chaff (Pine 2003). It is not possible to give any significance to differences or similarities between local assemblages until more have them have been studied.

Note by M. Farley. Although not advancing the discussion of the deposit above, an extent of the manor of Aylesbury dated 1154–1157 gives some clues to the normal local output of cereal at about this period (Fowler 1926). It describes first livestock and then cereals, as follows:

> 'There should be a barn, 60ft. long, 30ft.wide with the aisles, and 24 ft. in height to the ridge, the whole filled with wheat. There should be another barn, 50 feet long, 28 ft. wide with the aisles, and 20 ft. in height to the ridge, the whole filled with oats. Outside the barn there [should be] a stack of oats of twelve cart-loads thrice lashed above the rails. There [should be] another stack of wheat, 16 ft. in length, 12 ft. in breadth, and 16ft. high to the thatch. And there should be a heap of [thrashed] oats.'

Radiocarbon dating of grain from a Saxo-Norman deposit

John Meadows, Michael Farley, Christopher Bronk Ramsey, and Gordon Cook

A sample of carbonised grain from the burnt deposit 2006, which was tentatively dated on ceramic grounds to the eleventh-twelfth century cal AD, was dated in the original dating programme, but calibration of this result (OxA-1923) produces a broader date range (Fig. 82). As the grain deposit, which contains chaff from rivet wheat, appeared to be potentially as early as the tenth century, two single grains were submitted in 2010 (OxA-23361-2). The three results from this deposit are statistically consistent with a single date ($T' = 0.7$, $T'(5\%) = 6.0$, $\nu = 2$; Ward and Wilson 1978). If we assume that the grains are all of the same date, the weighted mean of their radiocarbon results (962 ±16BP) may be calibrated to obtain a more precise date for the deposit. This would be cal AD 1020–1155 (95% confidence, following Stuiver and Reimer (1986), or cal AD 1020–1055 (36.5% probability) or cal AD 1080–1155 (58.9% probability), according to Stuiver and Reimer (1993). It appears more likely that the grain deposit dates to the first century of the Norman period, but an early eleventh-century date is certainly possible.

The later minster

There was a general decline in the fortunes of many minsters in the Late Saxon period, occasioned in part at least by the Viking incursions. However, in discussing this issue Blair (2005, 292–300) notes that 'whilst most minsters drastically reduced in wealth and status by the time of Domesday Book …' overall the facts '… cannot sustain a generalised model of pillage followed by long years of abandonment.'

Prior to Domesday the church of Aylesbury was briefly held by Wulfwig, Bishop of Dorchester;[6] and the dues it then attracted from 'eight hundreds' around have already been noted. Wulfwig also held both Buckingham and Leighton Buzzard. At Domesday all three churches passed to Remigius, who succeeded Wulfwig at Dorchester, but shortly after in 1072, the see was transferred to Lincoln where subsequently the Aylesbury estate was grouped to form a prebend (supporting a prebendary, a canon or member of the chapter of the cathedral). Aylesbury certainly never developed into a major ecclesiastical centre; however, despite the development of subsidiary churches and chapels it nonetheless retained considerable wealth into the Norman era (Hanley 2005).

The town

It is likely that Aylesbury remained in royal hands for a period subsequent to '571', but it is not until four hundred years later that it is again recorded as a landholding, in a will of 968–71 when Aelfheah, Ealdorman, bequeaths to King Edgar an estate at Aylesbury (presumably including the town), together with one at Wendover, a village about eight kilometres to the south, as well as land in several other shires (Sawyer 1968, no. 1485, and Whitelock 1930, 23–25). In the intervening years there is only one other reference, a *Chronicle* entry for AD 921 recording that the Viking army took 'considerable spoil both in captives and cattle between Bernwood [Forest] and Aylesbury'. Aylesbury is not recorded as part of the system of burghal fortification established by King Alfred and his children in the late ninth and early tenth centuries although the strategically better-sited Buckingham was. The writer retracts, incidentally, an earlier suggestion (Farley 1974) that the town might have been defended at this time.

Early in the 990s a mint was established under Aelthred II (two moneyers) and coins were subsequently produced here under Cnut (four moneyers) and Edward the Confessor (two moneyers). The mint record is discontinuous and no coins were produced subsequent to the Conquest (Carroll and Parsons 2007). In a well-known law of King Aethelstan (924–939) it is required that '..there is to be one coinage over all the king's dominion and no one is to mint money except in a town' (EHD I, 384). The preference for a nominally 'defended' location for mints can be seen at a number of places, some quite unexpected, for example South Cadbury, Somerset, a hillfort with a rudimentary re-defence but apparently no urban character, which acquired a mint between *c.* AD 1010 and 1017 (Alcock 1995). In Aylesbury's case, the mint's establishment indicates either folk memory of the fort's former status (there is no evidence that the ramparts of the hillfort were in any way restructured at this time), or more likely the existence of a thriving market and royal ownership. Blair (2005, 338) has noted that although many minsters did decline and lose their influence in the tenth century, others more closely associated with a marketing function, and particularly those which 'stood at nodal points or on through routes, may have been more resilient ...'. This is likely to have been the case at Aylesbury. The name 'Silver Lane' which occurs in an ordinance on town administration of *c.*1600, might indicate the approximate location of the mint. The Lane ran parallel to the course of the hillfort's rampart on the southern side of the defence, but just outside. The street's buildings, some certainly medieval, were demolished during 'improvement' in the 1960s.

That the line of the defence continued to have influence on the town's topography can be seen from the position of its most impressive surviving medieval building, the fifteenth-century Kings Head, which fronts the course of the bank on the south-east side (Fig. 83).

Subsequent to the bequest by Aelfheah in 968–71, Aylesbury presumably remained a king's manor until it was recorded as such in Domesday, producing '£25 by face value' from its lands. After the Conquest this increased substantially: 'In total it pays £56 assayed and weighed from tolls £10 at face value' (Morris 1978). This was more than twice the value recorded for Buckingham which had 26 burgesses and multiple ownership. Buckingham was a burghal hidage fort and its 'post-Viking' significance may have been affected by its diminished strategic importance. Despite, or perhaps because of, its relative wealth, Aylesbury had no burgesses.

It may be that it was during the late tenth-century if not earlier, that an area a short distance from the church called 'Kingsbury', acquired its name. Today, Kingsbury is an open triangle of land that has the hypothetical hillfort defence-line on its east (Figs 3, 76 and 78). Nothing is known archaeologically of any early structure here but it is possible that it was in the same place that in AD 1100 and 1117, Henry 1 and Queen Maud stayed in Aylesbury (VCH Bucks 3, 1, fn.3). The local historian Gibbs (1885, 427) clearly states that 'The ancient manor house was situate on the upper or north east part of Kingsbury, and extended almost the known range of it…', but does not unfortunately give his source. The principal site of the main Aylesbury manor was to become The Bull's Head in Kingsbury, 'the lord's hospice', which in the mid fifteenth-century was substantially rebuilt (Elvey 1965). Prior to that date, Hanley

6. Dorchester had been re-founded as a cathedral, probably in the early tenth century (Blair 1994, 11).

Figure 83. Watercolour of c.*1810–30 by Amelia Long looking east along an alleyway which runs along the course of the former hillfort bank. The medieval King's Head on the left, would have been constructed on the site of its bank. It is possible that the entrance into its courtyard (visible on the left) could be on the site of one of the hillfort's entrances. (Reproduced courtesy Buckinghamshire County Museum ref AYBCM 1968.126.3).*

(2009) records that manorial land here was already being disposed of.

The original market is likely to have been within the former hillfort's circuit but at some point, perhaps shortly after the Conquest, a new market area was developed outside the old defences on the south-east side, the site of the present Market Square (Hanley 2009, 11). The road leading south from this area towards Walton, a hamlet discussed previously, can at the Walton end be demonstrated to have been in existence in the tenth–eleventh centuries, so the road would originally have passed through the new market which grew up along its course outside the original defence. The importance of Walton Street for the town is indicated by the offer of an indulgence in exchange for its repair in 1292 (Hill 1954, 198); its subsequent disrepair and flooding is the cause of an indictment in 1389 (Boatwright 1994, 271). The King's Head (noted above), whose frontage would have lain adjacent to the site of the hillfort bank, stands astride an access way that may have reflected the continuing course of Walton Street into the town, and could perhaps indicate an earlier entrance into the hillfort (Fig. 83).

Apart from Walton Street, which connects the town to the Chilterns, Aylesbury lies at the hub of at least five other significant roads that were probably in existence in the Late Saxon period, including routes heading towards Bicester, Buckingham, Leighton Buzzard and Oxford. The antiquity of the road heading west towards Haddenham, Thame and Oxford can for example be demonstrated by its name 'Port Way' on a map of 1767 (BRO D/X 1045/1); the name occurring also in adjacent field names *e.g*. 'Portway Piece' (BRO. D-LE/1/728). In the tenth century 'port' and 'burh' were 'practically equivalent' to town (Tait 1936, 25). It is probably this road which Strange (2007, 39) records was in the Haddenham area known as 'the Fyrdway'; the *fierd* element *(OE* army) giving this route particular significance. Leaving Aylesbury initially in the same direction but subsequently forking north through Stone, the road, passing an early windmill at Dinton, is recorded *c*. AD 1180 as the '.. hy wei whiche strecchith fro Oxenford toward Alisbury' (Clark 1905, 63–4).

Finally, to set the late Saxon town in its regional context, a few brief notes on other significant centres in the locality may be given.

Thame, to the west was in royal hands in the early 670s and from later sources is thought to have had a minster, being a mother church of three others and 'a centre of a group of episcopal estates belonging to the Bishops of Dorchester' (VCH Oxon 1962, 178). Its original centre was to become 'Old Thame' following development of the new town which had been established by the mid-thirteenth century (Blair 1994, 49; Spavold and Gilman 2002).

Brill, also to the west, was another king's manor and rendered £18 at the time of Edward the Confessor who is said to have had a 'royal palace' (more likely a hunting lodge) here (Barlow 1962). Brill lay at the heart of Bernwood and became popular with kings during the twelfth and thirteenth centuries when there are references to the construction and maintenance of buildings here.

Buckingham to the north, previously mentioned and referred to in the Anglo-Saxon Chronicle in 916 when forts were being constructed here, was another of King Edward's manors with twenty-six burgesses. Its render was recorded as £10 in Domesday, much less than Aylesbury. Its church was also held by Wulfwig. The only other Buckinghamshire town to have recorded burgesses was Newport Pagnell.

Leighton Buzzard to the east was another of Edward the Confessor's manors; its church also belonged to Bishop Wulfwig. Its market rendered £7, relatively modest in comparison with Aylesbury but there were other dues also. Lincoln's foundation charter recorded that the church formerly belonged to the ancient see of Dorchester (VCH Bedford I, 399–417).

Berkhamsted in Hertfordshire, like Aylesbury sited on Akeman Street, lies about thirteen miles south-east of Aylesbury and was probably the most significant town in the direction of London. Post-conquest, after the construction of its castle, Domesday records fifty-two burgesses here, although it has been suggested that this was a scribal error and the true number was twelve (Sherwood 2008, 227).

14. Medieval and Post-Medieval use of the Site and an Overview of the Excavation

The results of archaeological investigation are rarely predictable and the excavation at the Prebendal, Aylesbury, was no exception. The fortuitous observation of an undated ditch in a contractor's trench by Peter Yeoman triggered the largest open-area investigation so far undertaken within the town. There is no doubt that the relatively thin capping of Portland limestone on the hill had early made the area a favoured location. The excavation revealed multiperiod use amongst which by good fortune, a complex Iron Age ritual deposit survived relatively unscathed.

If the dating sequence is correct, this unusual ritual deposit was soon to be encompassed within a substantial univallate hillfort whose influence over the surrounding region may have been considerable. Iron Age occupation within the fort appears to have been quite dense and extended over sufficient time for the ditch to be recut. Its

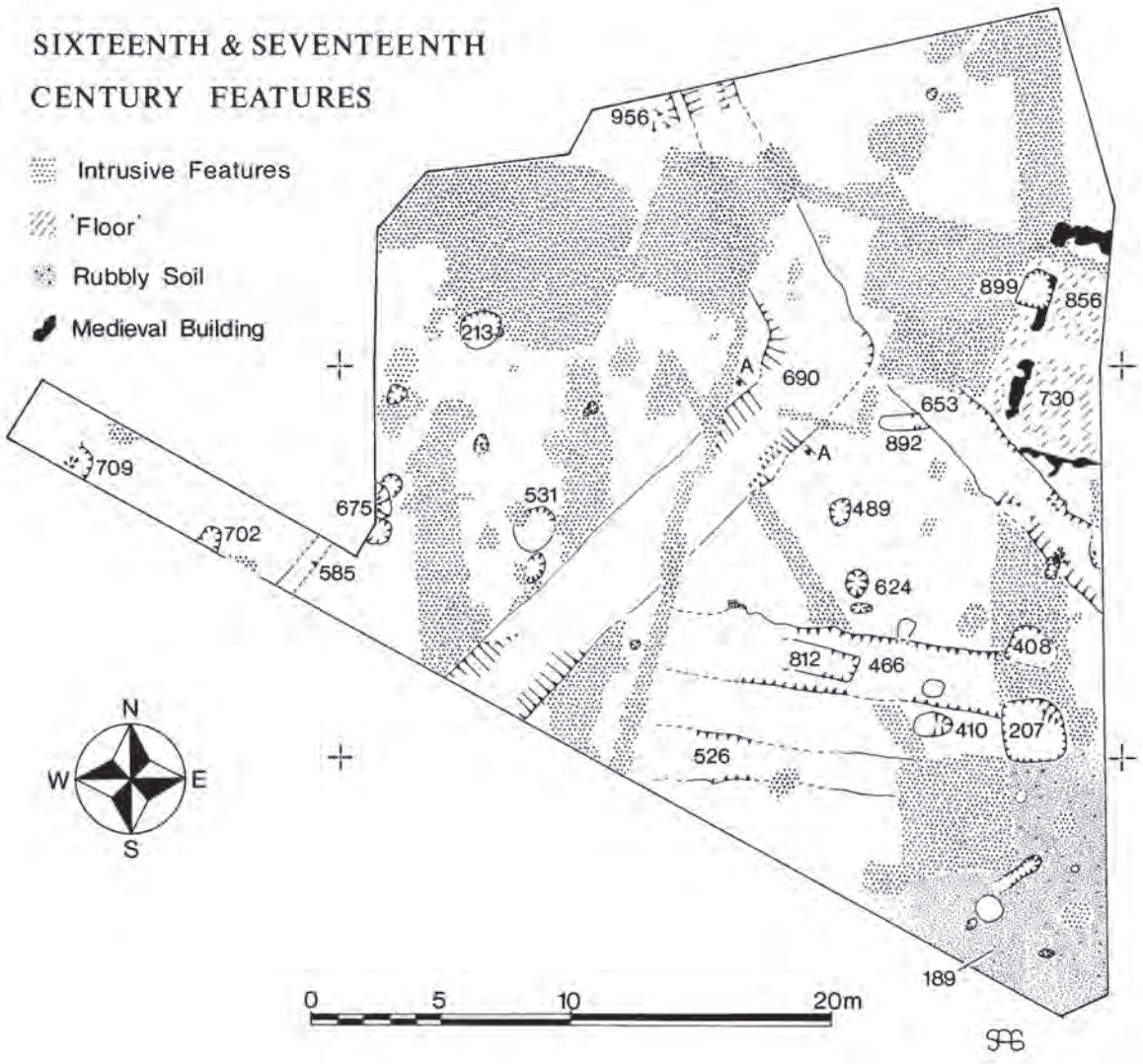


Figure 84. Sixteenth and seventeenth-century features. Civil War ditch is 690.

overall period of use cannot yet be reliably established on the evidence available, but towards the end of the Iron Age there seems to have been something of a hiatus and evidence for Roman utilisation in the town is limited although there were significant contemporary developments nearby.

Evidence is presented to suggest that the reference to a settlement here in 'AD 571' has credibility, even if the actual '571' date is suspect and direct archaeological evidence for this period of occupation at present slender; the issue of 'Saxons versus British' occupation is reconsidered. The hillfort's earthworks remained sufficiently visible for them to be utilised, at least in part, as the basis for a new perimeter work datable to the late seventh – early eighth century which encompassed a minster and possibly its adjacent buildings and cemetery. This minster is likely to have had a considerable influence in the conversion of central Buckinghamshire. With one exception, a substantial deposit of carbonised grain, there was little undisturbed evidence for Saxo-Norman activity on the site although the town was by then clearly becoming wealthy as the Domesday evidence indicates.

Circumstances have not enabled completion of a report on later centuries of land use at the site but as phase plans had been previously prepared it has been thought useful to include them here with brief comment.

All of the features shown on Figure 61 are medieval in date with the exception of the Middle Saxon ditch (513) and the Saxo-Norman pit (400) which contained grain, discussed above. Medieval features include traces of a late-medieval building with walls of lightly-founded limestone blocks (964), a number of pits, presumed to be latrine pits, and three wells, one of which had footholds cut into its side. These may have been associated with the building noted above, but perhaps more likely with a predecessor to the present Prebendal House which lies adjacent to the site on the south and would have been an important building. The presence of the church and churchyard would preclude the existence of other properties to the east of the site. A considerable amount of ceramic, animal bone and some

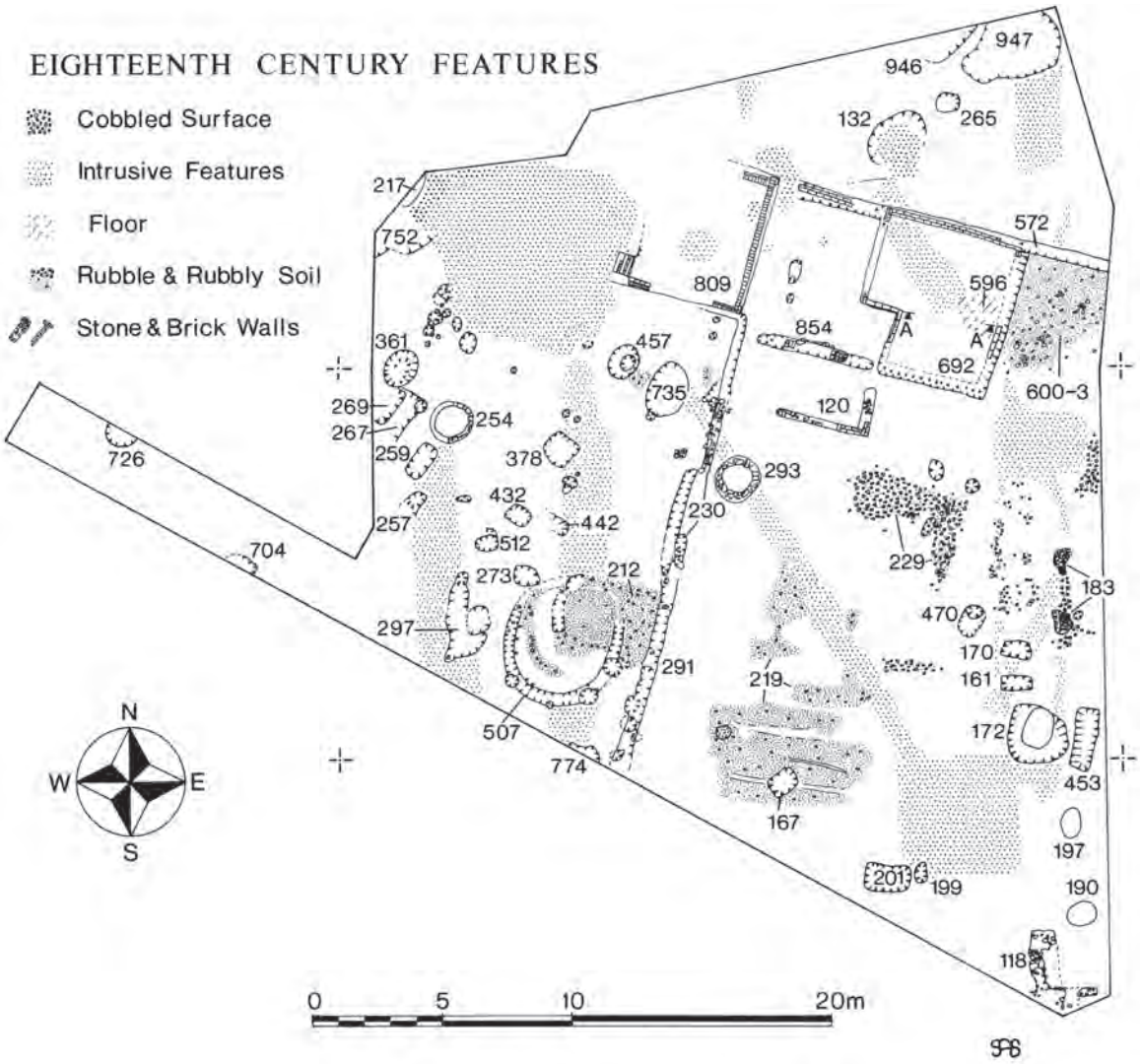


Figure 85. Eighteenth-century features.

fish bone came from the pits and wells. Amongst other significant finds were stone roof tiles, uncommon in the county and probably also deriving from an early prebendal building, and fifty-eight pieces of ceramic floor tile most very worn, of which seventeen pieces were decorated. The latter could have come either from the Prebendal or St Mary's church.

There was limited evidence for utilisation of the site in the sixteenth century although the late medieval building may have continued in use. In the seventeenth century a substantial ditch (690) about 2.4m deep was cut across previous alignments and the corner of the medieval building (Fig. 84). A section of the ditch can be seen on Figure 11 where it cuts the hillfort ditch. A shallower ditch (653) may relate to it. There was little dating evidence from the backfill of either apart from a few clay pipe stems and some ceramic not closely datable. However, there is little doubt that the ditches formed part of Aylesbury's Parliamentarian Civil War defence. The history of the period around Aylesbury has been discussed by Lamb (2001).

During the eighteenth century when the Civil War ditch had been infilled, the site again became heavily utilised (Fig. 85). A brick boundary wall was constructed and a cellared building erected at the north end of the site, which was later burnt. A substantial (?cess) pit contained much early-mid eighteenth century ceramic as did the cellar which also contained pieces of wine bottle, some with graffiti. Land on the west, on the line of the hillfort ditch, was terraced and a circular structure, possibly a grotto (507) was constructed. Much of this activity may be attributed to occupation of the Prebendal by John Wilkes who extended the land belonging to the house and carried out modifications to both house and garden (Hanley 1986). A rectangular clay-lined pond (103) possibly constructed in the Wilkesian period, was infilled in the late eighteenth or early nineteenth century; its fill contained many pieces of wine bottle. Further minor nineteenth and twentieth century features are shown on Figure 86.

Finally, the authors wish to again thank the numerous individuals who after such a long interval have contributed towards bringing to publication a substantial part of the discoveries made during the 1985 excavation.

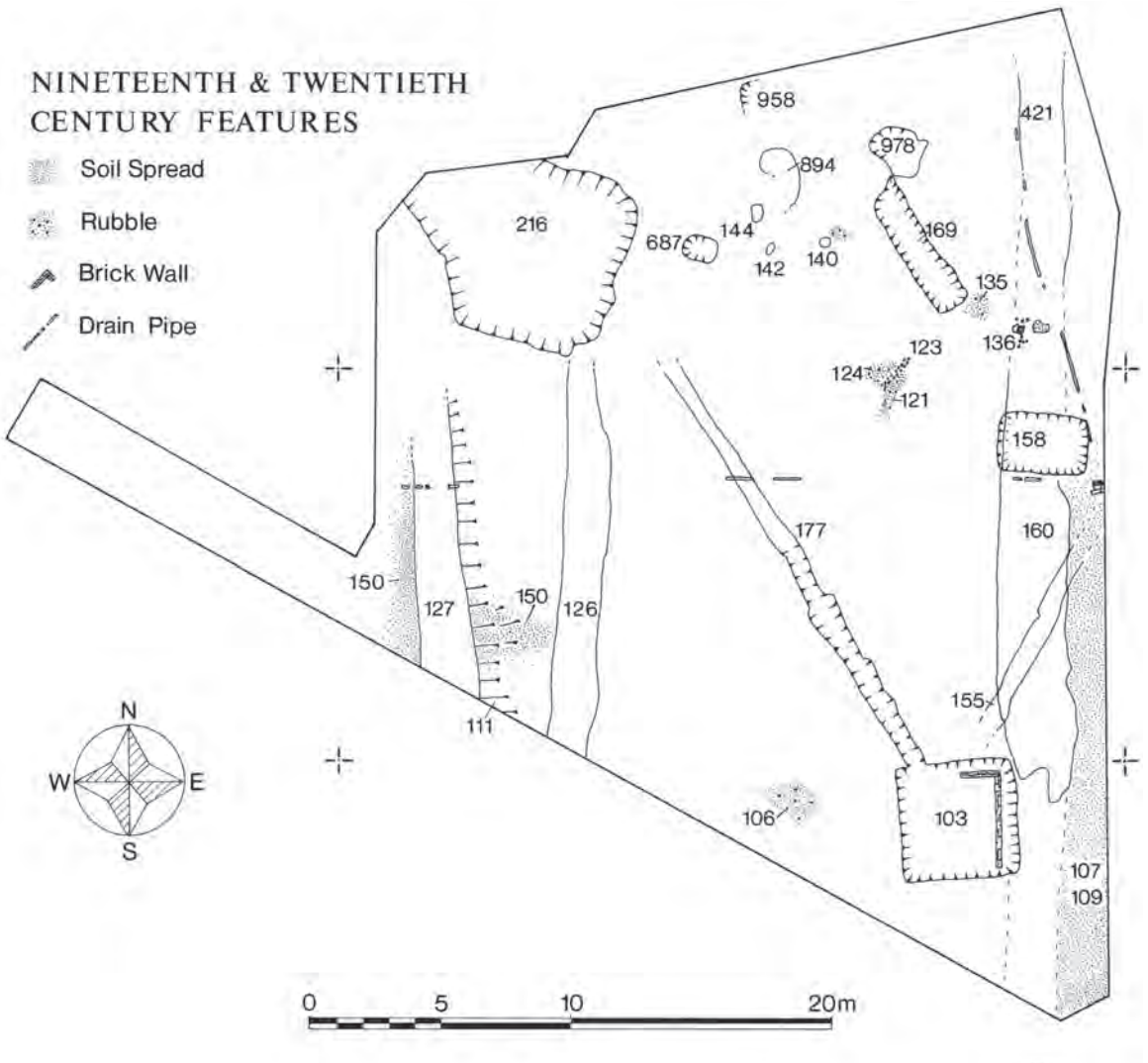


Figure 86. Nineteenth and twentieth-century features.

Appendices

Appendix 1

Catalogue of the human bones from the ritual deposit

Christine Osborne with amendments by Gillian Jones

This catalogue follows closely the original report of Christine Osborne. Subsequent amendments largely based on photographs taken on site are shown in square brackets. It has not been possible to re-examine the bone.

Burials 1 to 5

Burial 1

See Figures 24, 26. The following bones were recorded from Context 3040:

4 lumbar vertebrae plus fragments; 2 sacral segments;
right radius including proximal and distal epiphyses; right ulna;
bones from the hand: 4 [right] carpals, 5 [right] metacarpals; 10 hand phalanges;
both innominates;
both femora including the distal right epiphysis and one proximal epiphysis;
1 patella [side?]
1 fragment of [right] proximal tibia and the epiphysis;
1 fragment of [right] fibula and some fragments of rib.
A radiocarbon date was obtained from the left femur (3040) (see main text).

A fragment of left maxilla from 3107 may belong to this skeleton. The following teeth were present: I^1, I^2 and dc^1 tooth missing, socket present; dm^1, dm^2 and M^1 present; M^2 not yet erupted. The age was estimated from the dentition as 8 years ± 24 months (Brothwell 1972, 59).

Also possibly belonging to this individual are an immature proximal humerus fragment from pit 624 (625) and the following from pit 800 (801), which are of similar immaturity: a left talus, 1 other tarsal, a right 3rd metatarsal and 1 fragment of fibula.

Burial 2

See Figures 25, 27, 28. Contexts: 721, 822?, 3000, 3002, 3006, 3007, 3010, 3011, 3019, 3022?, 3023?, 3026?

Bones found, with contexts:
Both humeri + R proximal and distal epiphyses (R humerus and proximal epiphysis 3007, L humerus and R distal epiphysis 3011).
Both radii + proximal epiphyses (R radius 3010, L radius 3011, proximal epiphyses 3011 and 3006).
Both femora + distal epiphyses (L femur 3000, R proximal end 721 from intrusive pit 720 which fits perfectly onto shaft 3002, R distal epiphysis 3019, L distal epiphysis 3000).
Left patella (3000); 1 fragment of proximal tibial epiphysis (3019)
1 first foot phalanx (3000)

Also possibly from Burial 2:

both clavicles, 1 sacral segment (3022); 1 fragment of right innominate (3023); 1 fragment of proximal left ulna (3026); right scapula (822, intrusive pit 823)

Pits 720 and 722 cut the area and some remains from this skeleton have certainly ended up in them, see right proximal femur from pit 720, above.

Burial 3

See Figures 25, 27, 28. Contexts: 721, 3003, 3004, 3006, 3017, 3020, 3021, 3024, 3026.

Bones found, with contexts:

1 fragment of scapula (3026); left humerus (3020)
Both radii (L = 3020, R = 3021); Left ulna (3020)
Left lesser multangular (3020); both lunates (3020); right hamate, capitate, triquetral, pisiform (3020)
Left 1st, 2nd and 3rd metacarpals (3020); right 4th and 5th metacarpals (3020); 7 hand phalanges (3020)
2 thoracic vertebrae (3017); 5 lumbar vertebrae (3017); 4 sacral segments (3017)
2 right ribs + fragments (3017, 3020)
Both innominates (3017)
Left patella (3026); distal right tibia (721); distal left tibia (3024); and broken fragments of tibia from 3003 which can be fitted together in a jigsaw-like manner onto the tibial shafts [side not specified by CO, but presumably right]; fragments of fibula found next to 3003 (3004); 1 fragment of fibula shaft (3024)
7 left tarsals (3024); 7 right tarsals (3006 except 1st cuneiform which = 3026);
4 left metatarsals (3024); 5 right metatarsals (3006); 6 foot phalanges (3006, 3024)

Pathology
Vertebrae – Schmorl's nodes run from thoracic 12 – lumbar 2. These are lesions on the surface of the body caused by a herniation of the nucleus pulposus (soft centre) of the intervertebral disc into the adjacent body surface. This, together with a failure of the cartilagenous end-plate, causes the characteristic smooth lesion or node. There is lipping and a slight breakdown of the apophyseal rings on the superior left side of lumbar 5, the inferior right side of lumbar 5 and on the right side of the sacral body.

Burial 4

See Figure 29. Contexts: 3009, 3100, 3104?
Bones found, with contexts:
Both tibiae (R = 3099, L = 3100); both fibulae (R = 3099, L = 3100); both calcaneii (R = 3099, L = 3100); left talus (3100).
Also possibly this individual (3104) 7 metatarsals.

Burial 5

See Figures 25, 28, Contexts: 721, 824, 3026, 3033, 3035, 3124, 3125, 3156
Bones found, with contexts:
Right scapula (3026); right humerus (824) + proximal epiphysis (3026)
Right ulna (proximal half = 721, distal half = 824); both radii (R = 721, L = 824)
4 cervical vertebrae (3026); 4 thoracic vertebrae (3026); 1 lumbar vertebra (3124) + fragments (3035); first sacral segment (3035)
Fragments of rib (3026, 3035)
Fragments of pelvis (3156)
Right distal femoral epiphysis (3026); 2 proximal femoral epiphyses (3026, 3033)
1 fragment of fibula (3026); 1 fragment of tibia + distal epiphysis (824)
2 right and 1 left tarsal (3026); 3 hand phalanges (3026, 3125)

Other human bone from the Ritual Deposit

The other human bones found in the ritual area are listed below, beginning with the bones found near the above burials, and then working from the north of the deposit to the south, and following the order shown on Table 3 in the main text.

Near Burials 2, 3 and 5

3012 – 2 fragments of immature cervical vertebra
3016 – 1 cervical centrum, fragments of rib, 1 fragment of innominate, 1 left capitate, 1 immature left 3rd metatarsal
3026 – 1 left 3rd metatarsal
3036 – 1 fragment of immature long bone
3075 – 1 1st proximal foot phalanx, with a small osteophyte on the edge of the proximal articulation

Near Burial 5 and east of intrusive pit 720

3032 – 1 left calcaneus, 1 left talus, 1 left cuboid, 1 fragment of femur, 1 immature, right innominate. No pairs to these bones were found.
3033 – 1 right rib, 1 left 5th metatarsal.
3080 – 1 right cuboid. This may relate to the above metatarsal.

Northwest area, near Burial 4

3098B – 1 left 2nd cuneiform, 1 left 5th metatarsal, 2 foot phalanges; found with the articulated remains of the pig (Animal 1) and close to the remains of the human infant, Burial 4, but otherwise relatively isolated.
3127 – 1 fragment of innominate, fragments of fibula, 1 immature hand phalanx; found to the west of intrusive pit 718.
3045 – 1 immature hand phalanx, 1 fragment of scapula, fragments of rib; relatively isolated human bones, found with articulated sheep bones (A4 and A5).

Central northern area, E of Burial 4

3047 and 3109 – 2 complete right humeri. Neither have a pair. These were isolated, in the northern part of the deposit and found amongst disarticulated animal bone. The humerus from 3109 was from a deeper layer than 3047 (see Photo A10.17.7; A10.14.36A).
3057 – 1 right talus, 1 immature right innominate.
3067 – 1 broken mandible – all teeth lost post-mortem.
3132 – 1 broken fragment of vertebral transverse process.

Central area, east of sheep/goats A6, 7, 8 and 9

3068 – 1 fragment of skull
3103 – 1 left rib, shaft of left tibia; relatively isolated, found amongst disarticulated animal bone.
3106 – left 2nd, 3rd and 4th metatarsals
3107 – 1 1st left metatarsal, 2 foot phalanges, 1 fragment of rib
3137 – 1 left 1st cuneiform
3151 – 1 left cuboid, 1 left navicular

It is likely that the bones from the left foot (3106, 3107, 3137 and 3151) are from one individual. A maxilla from 3107 is described above, as it is thought it may be from Burial 1. With the exception of the radius from 3096, found at a low level of the main mass of animal bones near intrusive pit 544 [visible on Photo A10.18.10A], the bones from this central area were found amongst disarticulated animal bone, but to the west of the main mass of animal bone.

Isolated human bone NE of intrusive pit 544

3089 – 1 fragment of immature foot phalanx; found amongst disarticulated animal bone, some distance from any other human bones.

Central southern area, east of intrusive pit 624, NE of Burial 2/3/5 and SE of Burial 1

3028 – 1 immature right humerus
3034 – 1 immature left 3rd metatarsal
3049 – 1 immature right tibia.
The above three bones may come from the same individual, as their relative sizes seem compatible.
3081 – 1 fragment of left calcaneus, 1 fragment of rib, immature skull fragments.
3082 – 1 left ulna; found on the outskirts of a group of animal bone. There seems to be no pair.
3085 – 1 fragment of skull, a small isolated fragment.
3086 – 1 foot phalanx, 1 hand phalanx.
3118 – 1 1st left metatarsal, 1 1st proximal foot phalanx. These, and 3086 above, may relate to metatarsals from 3107, just to the north.

3122 – 1 left fibula; no matching pair or matching tibia; found amongst groups of immature human bone. It is on the base of the deposit (Photo A10.17.15).
3123 – 1 left calcaneus, 1 left talus, l left cuboid, 1 left 3rd, 4th and 5th metatarsals. No matching pairs or matching tibia (for the talus) were found.
All these human bones are to the west of the main mass of animal bones (see Plan 117).

Within the eastern mass of animal bones

3096 – 1 right radius; no matching pair or matching ulna.

Pathology

Two pathological bones were described, see above, Burial 3, and 3075 in the first section of Other Human Bones.

Archive

The bones are preserved by Buckinghamshire County Museum. The primary record, which would be expected to list measurements in addition to those quoted here, has not been seen.

Appendix 2

Catalogue of the animal bones from the ritual deposit

Gillian Jones

The catalogue describes first the animal deposits associated with the human burials, numbered A1 to A14 (Figs 30 to 35 and Table 5). For each animal, information on the deposition is given first and this is followed by zoological data. Orientation is expressed from the head along the spine, following the position of the thoracic vertebrae where this is different from other parts of the spine. Secondly, the catalogue describes other articulated bone groups, in the eastern part of the ritual deposit (Fig. 22). This is followed by tables showing the anatomical analysis and measurements of the cattle, and the individual and summary measurements from the sheep and goat. Further photographs are preserved in the archive, and their references are given.

The articulated animal remains associated with the Human Groups 1 to 5

A1 Context 3098 Pig skeleton (skull, upper rib cage, fore limbs including feet) (Photo 16 28A). The skeleton is cut by a later pit and was probably an entire burial originally. There was certainly no use of the meat, *e.g.*, the intact shoulder blades were in place on either side of the rib cage. Survival of, for example, most of the immature foot bones including epiphyses of abaxial phalanges, suggests that the skeleton was covered moderately quickly and was not disturbed (other than by the later pit). Orientation was roughly E/W; the skeleton lay on its right side.

The pig died at about six months old (M_1 shows enamel wear only, age estimate from Simonds 1855, Brown 1860, Sisson and Grossman 1953; '6 months' is taken as 5½ to 6½ months for the age estimate, as these authors rounded to the nearest month; epiphyses were unfused, including the tuber scapulae, distal humerus and proximal radius). In European wild pigs, the majority of births are in late March and early April, although young may be born at any time of the year, and in favourable conditions sows may farrow twice (Grigson 1982). Assuming a similar breeding pattern for the Early Iron Age domestic pig, the pig was probably slaughtered in September or October, see Table 6. (The length and anterior width of dp_4 were 19.0 and 8.4mm).

A2 3104 Sheep skull (skull, left mandible, two cervical vertebrae); an isolated fragmentary skull of a lamb, likely to be three months old (Jones 2006, Fig. 3; M_1 half up, dp_4 missing) (angle of horn buds characteristic of sheep, not goat).

A3 3128, 3078 Sheep skeleton (rib cage, fore and hind limbs, extremities – hind more complete than fore) (Photo 17, 17). The area of the skull is cut into by a later pit. The skeleton lies on its right side with the left hind leg bent up to lie close to the pelvis. It appears to have been buried whole, with no use of the carcase. In theory the skin could have been removed but no marks were observed on the bones and the feet were left attached. Orientation was NW/SE.

Lack of fusion of the proximal radius suggests an age at death of less than 1.5–4 months (see Method). Fusion of the body and arch had not begun for most of the thoracic vertebrae, and was incomplete for the lumbar. Immature bone lengths, without epiphyses, are (in mm): humerus 82, radius 87, femur 104, tibia 132, metacarpal 84, metatarsal 91. The size and form of the bones are immature but not neonatal. Its age is estimated as 1–3 months. The shape of the pelvis suggests a ram lamb.
Pathology. One rib was fractured and nearly completely healed.

A4 3045 Sheep skeleton (rib cage, fore limbs and (?) lower hind legs) (Photo 15 12, 15 8). The skull is missing. The pelvic region and upper part of the hind legs are missing; remains of a pair of hind extremities were found, in correct anatomical position, and there is little doubt they are part of the skeleton. The pelvic region was disturbed by the later pit. The right, upper side of the rib-cage was rather broken. There was no apparent use of the meat. Orientation was E/W, and the skeleton lay on its left side.

The animal died at about two to four months old (distal humerus fusing, line of fusion visible and not filled with bone at the epicondyles; proximal radius fused, line obliterated).

A5 3045 Sheep articulated remains (right lower fore leg, right hind leg) (Photo 15.8). In addition to the above skeleton, remains of at least one further individual were found, apparently deposited with the skeleton, and of similar maturity. Preservation and recovery were good, with carpal and tarsal bones and phalangeal epiphyses surviving.

A6 3144, 3143 Sheep skeleton (neck, rib cage, fore limbs) (Fig. 34, centre left). The skull and atlas vertebrae are missing. The lower part of the skeleton is truncated by a later pit. The thoracic vertebrae, ribs and both scapulae and humeri are in their anatomical position, suggesting that no meat was removed. The skeleton lies SE/NW, on its left side with the fore legs bent up to the rib cage. All the loose metacarpal and phalangeal epiphyses of the left fore leg survived.

The sheep may have died at two to four months (tuber scapulae unfused; distal humerus partly fused, line of fusion very open at condyles; proximal radius fused but line visible).

A7 3143 Sheep(goat) articulated remains (neck vertebrae) (Fig. 34, centre left). As with the preceding skeleton, A6, there was no skull, and no butchery marks. The set of vertebrae were from an adult, and lay close to the cervical vertebrae belonging to A6, and appear to have been deposited at the same time. Orientation was S/N. The shape of the vertebrae (all fused) suggests sheep not goat (Boessneck *et al.* 1964).

The skulls from these two sheep appear to have been absent at

the time of burial, or at least by the time the deposit was covered. The bones are well preserved.

A8 3142, 3126 Sheep(goat) skeleton (neck, rib cage and upper fore limbs) (Fig. 34, centre right). The fore limbs are cut by a later pit. The neck is bent back (context 3126, lying above 3141) and although the atlas (first) vertebra is present, no skull was found. It seems probable that the skull was removed before deposition, though this is an area where there has been some disturbance (cf. the absence of the pelvis from the goat 3053). The posterior part of the body is missing. Orientation was NW/SE and the skeleton lay on its left side.

The animal was more mature than most of the sheep/goat skeletons, *e.g.* A3 or A6, and may have been 29 to 42 months old (see Method), (distal radius and olecranon fused, proximal humerus partly fused, fusion of cervical and thoracic vertebral epiphyses incomplete). Morphology of the distal humerus, proximal radius and proximal ulna indicates sheep not goat.

A9 3053, 3059, 3141 Goat skeleton (head, neck, rib cage, lumbar vertebrae, sacrum, fore legs, (?) lower hind legs (3141)) (Figs 24 and 31; Photos 15.3, 14.19A, 17.37). The skeleton lay on its left side with the neck bent back and the proximal humerus a few centimetres from the spread out right knee of the child skeleton, Human 1. When deposited, the knee of Burial 1 appears to have been resting on top of the front of the animal (the sterno-cephalicus muscles) (Fig. 24). The lower front legs (radii and extremities) ran under the young sheep skeleton (A10, also context 3059, see below) and the left phalanges are curled back, against a large stone (photo 15, 17). All three appear to be contemporary. The burial may have been done very soon after slaughter, while the neck was still easily flexed. The area where the neck was bent was examined with care but no marks were observed on the bones. Orientation (of the thoracic vertebrae) was W/E.

The hind limbs were not recognized and excavated as part of the skeleton. Scattered upper hind limb bones in the area of burial (*e.g.* pieces of pelvis and tibia visible on photo 15 3) may belong. More certainly belonging are a pair of goat lower hind limbs in context 3141. They lie in such a position – the right leg lying ventral-side uppermost and the left one on its left side (see Figure 34, lower right) – that it could be predicted that if they were part of a more complete burial, the rest would lie to the south, as does 3053/3059. The measurements of the metatarsals would be consistent with their being from the same individual as 3053/3059, as would their maturity: they are fused, and slight pathology of the hock joint is likely to be age-related, which is consistent with the estimate of 4½–6½ years based on the teeth. (The right centrotarsal and tarsal 3+4 show degeneration of their common facet and lipping of the surrounding bone).

A significant aspect of the evidence that these lower limbs 3141 belong to the goat A9 (3053) is that it links the animals buried with Human Burial 1 with the sheep(goats) A8, A7 and A6, and makes it likely that all these skeletons are closely contemporary. The goat lower legs 3141 lie underneath the neck of sheep(goat) A8 (see Photo A10.17.22), indicating that A8 was deposited after the goat A9.

Identification as goat was obvious from the skull, horncores, metacarpal and third phalanges. (Mandible shape, atlas, axis, sacrum and long bones were all characteristic of goat, which was of interest in attempting identifications of the less complete material). The size and shape of the horncore indicates a female. The goat was adult and may have died at about 4½–6½ years old (based on M_1 and I_4, Deniz and Payne 1982, 180). Upper molars were all at the mature-wear stage (dentine continuous, infundibula not erased). Lower teeth were as follows:

Right: incisors: w3/4, w2/3, -, -; premolars: in wear, in wear, 14S; molars: 12A, 9A, 10H;
Left: incisors: -, w3/4, -, w½; premolars: in wear, in wear, 14S; molars: 10A, 9A, 10H.

Wear stages as Deniz and Payne 1982, 160–2 for incisors and Payne 1973 and 1987 for other teeth. Using Grant's Tooth Wear Stages, the series P4 to M3 for the right side were: j, k, g and f (Grant 1982). Late-fusing epiphyses were fused (proximal humerus and olecranon); lumbar vertebrae were fused but not all the thoracic epiphyses were fused.

A10 3059 Sheep skeleton (rib cage, lumbar vertebrae, left upper fore limb, nearly complete hind limbs) (Photos 15.10, 15.17; and 15.3 bottom right of photograph). The upper part and rib cage were disturbed and the ribs were much broken (old breaks), but the vertebrae and left hind leg were articulated. It is uncertain whether the skull was missing when the skeleton was deposited: it may have been disturbed by a later pit. The skeleton lay on its left side, and is on top of both lower front legs of the goat (above). Orientation was SW/NE.

Long bone fusion suggests an age at death of about one to three months (glenoid, acetabulum, distal humerus unfused; vertebral bodies recently fused). Morphology of the pelvis suggests a ram lamb.

A11 3039 Sheep skeleton (very probably sheep not goat) (last two cervical vertebrae, rib cage, lumbar vertebrae, seven caudal vertebrae, upper limb bones, incomplete extremities) (Figure 24; Photo 14.37A). The skeleton lay on its right side facing the child Human Burial 1, with the anterior rib-cage and right fore leg underneath the sacral and pelvic region of the child. The right metacarpal is visible within the pelvic region of the child, on archive Photo 14 37A. The sheep's left radius and ulna lay under the child's left femur. The neck and skull, and most of the lower leg bones, were missing, due to disturbance by medieval pits 624 and 800. The pelvis and upper hind legs lay awkwardly (photo A10/14 12A), bent up and above the spine – above both in the sense of being at a higher level and also on the dorsal, 'wrong' side of the lumbar vertebrae. The way the spine is twisted so that the lumbar vertebrae have their ventral (underneath) side uppermost can be seen on Figure 24. (The relationship of the pelvis and hind limbs to the rest of the skeleton is established beyond reasonable doubt by field notes, photographs and plans, although the former were lifted before the main part of the skeleton was found). Orientation was NE/SW.

The animal is identified as sheep (from the scapula, humerus, radius and ulna) but the pelvis was too broken to suggest its sex. It was more mature than lamb 3059 (buried on the other side of the child 3040), probably 3 to 5 months. The tuber scapulae was fused; the distal humerus and acetabulum were partially fused, *i.e.*, the bones were joined but the line of fusion was still partly open; and the proximal radius was fused and the line of fusion obliterated.

The two sheep, A10 and A11, are at different stages of maturity, with age estimates of one to three, and three to five months. The evidence from the positions in which the skeletons were found – the two lambs, the goat and the child – is that their burial occurred as one event and that all are contemporary. The overlap in the age estimate, at three months, is exactly the the same as the estimated age for the majority of the young mandibles found.

A12 3038 Sheep skeleton (ventral part of rib cage, sternal vertebrae, right fore leg, two lumbar vertebrae, pelvis and upper hind legs) (Photo 14.12A). The dorsal part of the skeleton is missing, cut by a later feature. The last two vertebrae and the sacrum are missing, but there is little doubt that the hind limbs belong. The skeleton lay on its left side, oriented N/S. The lower fore leg is level with and 7cm away from the tibia of sheep(goat) 3039. This sheep was very small, see Figure 40 and text.

Morphology of the pelvis and the stage of epiphysial fusion indicate a ewe in early adulthood, perhaps 26 to 36 months old (see Method) (distal radius, olecranon, both ends of the femur fused, proximal tibia partially fused, lumbar vertebrae unfused, ulna not fused to radius).

A13 3008, 3010, 3012 Sheep skeleton (3012: skull fragments, first four cervical vertebrae, Photo 13.34; 3008: most of rib-cage, right scapula fragments, Photo 13.15; 3010: incomplete left fore limb, Photo 13.34). The fragmented and partly disarticulated rib-cage lay to the west of the Human Group 2 right humerus (3007), and was recorded as partly resting on top of the human bone. The left fore limb was rather more clearly articulated, and lay underneath the rib-cage, and close to the Human Group 2 left radius (3011). The skull fragments and neck vertebrae lay beneath the foot bones of Human Group 3 (3006). They are thought to be part of the skeleton, but articulation with the thoracic vertebrae was not clear. They were of similar maturity to the thoracic vertebrae in 3008 and to the skull fragments, which included the lacrimal bone which was identified as sheep not goat. Photo 13.32 shows the relationship of the human radius (3011) with the rib-cage, which clarifies Photo 13.34. The degree of disarticulation of this bone group is considerable. Note that the neck of the sheep was under the human foot 3006, but the rib-cage was partly on top of the human humerus 3007.

The bones were immature in quality, and fusion suggests an age of death at about 3 to 5 months (glenoid of scapula fused but the line of fusion not completely filled with bone, proximal radius fused, dorsal fusion of atlas vertebra incomplete).

A14 3018 Sheep skull (nearly complete, without lower jaws) (Figure 25, Photo 13.44, 13.15). The skull was carefully placed at right angles to and facing the right pelvis of Human 3 3017, the front of the skull lying somewhat underneath 3017. The absence of the mandibles and any cervical vertebrae seems to be intentional. They would certainly have been recovered had they been present, and they would not have decayed given the preservation of the fragile maxillae. There were no signs of butchery on the squamous temporal bones (where the mandible is hinged to the skull) or on the occipital bone (where the neck joins). These bones were, however, fragmentary. If the skull was deposited when fresh, some careful dismemberment seems to have occurred. The alternative explanation is that the skull was buried after decay of the soft tissue. Also missing were the premaxillae and nasal bones (the fragile bones at the front of the skull) and, again, given the care with which this area was excavated they are unlikely to have been lost on excavation. Their absence strengthens the second explanation, that the skull was decayed before deposition. (Eleven, of twelve, upper teeth are preserved, one anterior premolar being missing).

Horncore shape and wear on the upper teeth indicate a fully adult, but not old, ewe. (Dentine was continuous on molar teeth, recently so for M^3; sutures were fused but not obliterated: frontals, palatine, frontal/parietal, parietal/occipital). Judging from the wear on the upper M3, the lower M3 is expected to be recently at stage 11G, indicating an age of about 4 to 5 years (Jones 2006, 177, 163).

A radiocarbon date was obtained from the horncore and parietal of 3018 (OxA-1919, 513–236 cal BC 68.2%; 747–211 cal BC 95.4%).

Other articulated animal bone groups from the Ritual Deposit

Most of the rest of the bone is from the eastern part of the area, see Figure 22 and 36. This catalogue comments on the main contexts containing bone, in order starting at the northern end and working from lower, earlier levels upwards. For the relationships of each Plan see Figure 41. General comments on the assemblage are made and articulated groups are described. No articulated remains in this area were complete enough to be described as skeletons. The bone groups were classed as 'articulated' on the basis of at least two sources of information: (1) the bones themselves and (2) the excavation notes, plans and/or photographs. Articulated groups with measurable long bones were given further Animal numbers, A15 to A18, which are used on the Measurements tables. There were further groups of bones which are probably from single individuals, but the bones were not found articulated (or there was insufficient evidence that they were articulated). Where measurements were made of these, they were numbered 'sk?1', 'sk?2', *etc*.

Context 3133 Plan 127 Sheep(goat) (pair of first phalanges and a second phalanx); probably from one individual.

3115 120 Sheep/goat articulated remains (five lumbar vertebrae).

3054 117 Sheep(goat) articulated remains (vertebrae and (?) pelvis). The row of vertebrae (the last two thoracic and the first three lumbar) are from one individual (threaded onto string during excavation; shown on photograph 14 36A) (oriented NE/SW) (epiphyses all fused). The pelvis is in roughly the correct place though rotated, and probably belongs to the vertebrae. Good preservation of the pelvis was useful in indicating species, sex and maturity: an adult or old ewe (pubic symphysis fused).

There are other mature bones in the area of 3054, which could belong to this individual. Seven further thoracic vertebrae and some ribs are of similar maturity but, though bagged with the set, they are described in field notes as 'stray'. That is, even if they do belong to the same sheep as the set of vertebrae, disarticulation has occurred. Other, scattered bones which may belong (all mature and of similar colour and quality of preservation) were: a right humerus, right radius/ulna, left femur, right tibia, a right metatarsal (pathological – see section on Pathology and Anomalies) and a set of phalanges. The bones were well-preserved, but are darker and more stained than, *e.g.*, 3128/3078, which would be consistent with greater decay before being covered up. Other bones in this area do not belong, and there are two sheep/goat axis vertebrae.

3158 132 Sheep(goat) miscellaneous remains (bones from all parts of the skeleton, at least three individuals) (Photo A10/18 21A) (useful photo). The bones from this layer were in a similar state of preservation and completeness to the skeletons in the

western area, but very few were certainly articulated: only three metapodials plus carpals/tarsals and/or phalanges, and two groups of vertebrae. Most of the bones were certainly not articulated (see photo). They seem, though, to be from just three individuals. For example, a right and left humerus are of similar size and maturity (distal end fusing) and are probably from one animal; and four immature metatarsals found consisted of a right and a left both 102mm long and a right and a left 111 and 112mm long (all measured without the loose epiphysis), *i.e*., they are from two individuals. A further metatarsal was fused, giving a third individual. A fused calcaneum, found near the latter may belong, but was not articulated. (It is visible on photograph 21A). (A scapula and humerus on Photograph A10/18 21A appear to be articulated, but in fact the humerus is the wrong way up. And two lower legs lying parallel to each other are one fore leg and one back leg, one lying ventral-side down and one the other way up). (These are more visible on archive photo 18, 27A). Marks observed on one astragalus appear to be modern. Otherwise no marks were seen.

Animal A15 3114 120 Sheep articulated remains (a pair of lower fore limbs) (Photo A10/17 7).

3148 129 Sheep/goat (two small groups of vertebrae: fourth, sixth and seventh cervical; final three thoracic and two lumbar; epiphyses all fused) (photo A10/18 8A); disturbed; not classed as articulated remains, but worth noting. The vertebrae are complete and undamaged suggesting that decay occurred in a protected environment, without scavenging, erosion or butchery. Disturbance must have occurred to cause the disarticulation and the loss of other bones. The possibility that they have been boiled and dumped after the meat has been eaten might still be borne in mind.

3132 127 Sheep(goat) skull Several immature skull bones, presumed to be from one individual, include a lacrimal bone identified as sheep.
3132 127 Sheep(goat) (incisor teeth) (visible on photograph A10/17 26). The group of teeth are from a four-tooth or possibly a six-tooth, animal, probably 2 to 3 years old (Jones 2006, Fig. 8). It is probably a sheep (based on Payne's morphological distinctions on the first incisor, 1985). There was no sign of the rest of the mandible, and the teeth are from an older animal than the skull pieces, above.
3132 127 Sheep/goat (two thoracic vertebrae and six ribs with articulations).

In interpreting the likely origin of this part of the bone deposit, the groups from 3132 are typical: a few related bones, not partial skeletons but well preserved. They are not disturbed to the point where no related elements could be recognized, but they appear to have been already disarticulated when buried.

Animal A16 3173 133 Sheep articulated remains (right fore limb, left lower fore) (archive photo 18 33A). From the photograph it can be seen that the right humerus and radius were articulated; and the carpals, metacarpal and phalanges were articulated, but displaced relative to the humerus plus radius. The probably-matching left metacarpal was at an angle, under the right limb.

3161 132 Photo A10/18 23A and field notes show a general spread of bones, mostly fairly complete, but few of them articulated. The sheep/goat bones from 3161 are probably all from two individuals, one immature (cervical vertebrae and distal humerus unfused) and one mature (vertebrae fused). They do not match the individuals from the layer above (3149) or below (3173).

3149 129 Sheep/goat articulated remains (row of five lumbar vertebrae) (Photo 18.8A), from which a radiocarbon date was obtained (OxA-1920, see main text).
3149 129 Sheep/goat (row of four cervical vertebrae).
3149 129 Sheep/goat (right scapula, humerus, radius and ulna); probably one individual, although not recorded as articulated on excavation (labelled Sk?1 on Measurements table); epiphyses fused; not a pair with the left fore limb in context 3131 (above 3149) nor that in 3094 (also above).

Other bones in this area are scattered, *e.g*. two mandibles from two individuals, and scattered ribs (Photo 18 8A).

3131 127 Goat(sheep) (left humerus, radius and ulna); probably one individual (labelled on Measurements Sk?2). As with the right limb from 3149, the bones were not recorded as articulated nor are they visible as such on the photograph (Photo 17, 23). They are very well preserved, complete and without butchery marks. The bones were mature and the ulna was fused to the radius.

Twenty-seven vertebrae from this area may be from two individuals. The bones are well scattered. This is true also of the ribs. There were 73 sheep-size rib pieces (13 with the articulation) but they were scattered over the area, and must have been so separated when the deposit was formed. There were three left tibiae.

The finding of seven caudal (tail) vertebrae is of note.

Animal A17 3094 120 Sheep(goat) articulated remains (left humerus, radius and ulna) (Photo 16 25A). The bones are from a mature or old animal (radius fused to ulna). They probably belong to the vertebrae in 3093 and may be in articulation with these. The bones show pathological alteration, perhaps the result of trauma and/or infection rather than degeneration of the joint.

3093 120 Sheep/goat articulated remains (final two thoracic and six lumbar vertebrae) (Photo 16 25A); epiphyses fused.

3174 133 As with context 3158 and other layers at the base of the deposits (*i.e*. Plans 132–137), 3174 is significant. Later disturbance is less likely and the layout of the bones may be most revealing of the circumstances of their burial. Photo 18 34A shows the disintegrated remains of two sheep/goat skulls, a few bones probably related (vertebrae, a pair of phalanges), a scatter mostly of complete sheep(goat) bones and a small number of broken cattle bones.The bones were well-preserved, uneroded and without observed butchery marks. They could have been discarded after consumption of the meat, for example after roasting on a spit until tender and the meat removed without damage to the bones. Or are they the remains of burials similar to those on the western side, which have been moved after partial decay?

3174 133 Cattle (22 skull fragments); all probably from one, very immature skull. Three of them bear chop-marks.

3164 132 (Photo 18.18A) This context is directly above 3174 and is of similar character in the spread of bones, disarticulation, plus the likelihood of the bones being from a limited number of individuals. The two contexts were not distinct stratigraphically except in the sense that bones from 3164 were above those from 3174. A right femur, tibia, astragalus, calcaneum, centrotarsal and metatarsal of sheep from 3164 fit together and are thought to be from one individual, although not found articulated. Left hind limb

bones from 3174 match these extremely well in size, and more particularly in detailed morphology, so that it is considered certain that both are from one sheep (see Measurements, labelled Sk?3). Also, a rather small left radius from 3174 fits well a similarly small ulna and humerus in 3164. (In the Measurements, these relationships are shown but it is made clear that the bones were not found articulated). It is argued therefore that the two contexts originate from a single event, occurring over hours or days.

3137 127 Sheep/goat (two femora, a patella, two tibiae, matching right calcaneum and astragalus, probable pair of sheep metatarsals); not articulated but could be from one individual (labelled Sk?4). Photo 17 27 relates the eastern mass of bone to the skeleton 3126/3142 in the western group of skeletons. It shows that 3126/3142 is later, at a higher level stratigraphically.

3066 Sheep/goat (pair of matching mandibles) (archive photo 17.4).

3145 129 Sheep/goat (four lumbar vertebrae, fused) (and see Pathology).

3180 136 Sheep/goat articulated remains (row of six lumbar vertebrae, sacrum and one caudal vertebra, fused).

3182 137 Sheep/goat (26 vertebrae including 32 loose epiphyses, 99 pieces of rib, 26 of them with the articulation, and miscellaneous bones); not found articulated.

3179 136 Sheep/goat (25 vertebrae all but two unfused and possibly from one individual, 65 rib pieces including 17 with the articulation, miscellaneous long bones) (archive photo 4 2A); perhaps from just two individuals, but not found articulated.

3155 129 Eight sheep/goat bones from this context were burnt. Four of them were astragali.

Table. 30 Anatomical analysis of the cattle bones from the ritual deposit.

		Total	***BNZ***	***MNE***
Skull		32	10	
Horncore		2	1	2
Mandible		15	0	1
loose teeth		8	5	
Vertebra		50	47	
Scapula		6	4	2
Humerus		11	9	5
Radius		1	1	1
Ulna		0	0	0
Pelvis		9	7	3
Femur		12	6	3
Tibia		21	17	5
carpal/tarsal		12	2	2
metacarpal		3	3	2
Metatarsal		3	2	1
metapodial		1	1	
Phalanx		21	21	2
Subtotal	Head	57	16	
	Body	110	91	
	Foot	40	29	
Total		207	136	

BNZ: see Method; MNE: minimum number of individuals for this element.

3081, 3083 (Archive photos 16.17A, 16.18A). Photographs and finds from several small contexts such as these show a scatter of a few bones, not related, and sometimes more fragmentary than the majority of bones.

3087 120 Sheep/goat (humerus, radius and ulna). The bones fit together, but the excavation record states that they were not found articulated.

3089 120 Sheep/goat (group of six phalanges all probably from one foot).

3091 120 Sheep/goat (calcaneum, astragalus, two other tarsals and proximal metatarsal); the bones fit together.

These three bone groups are typical examples of disarticulated remains, but with some bones of the skeleton remaining close together. Photo 16.22A shows this well.

A18 3120 127 Sheep articulated remains (right fore limb, and likely matching left distal radius and ulna) (photo 17.13).

3152 129 Sheep (immature metacarpal with both epiphyses preserved plus likely matching 1st phalanges).

3060/3070 117 Cattle articulated remains (3060: calf skull, mandibles, neck, right scapula; 3070: four thoracic vertebrae and 31 rib pieces) (Photo 15.6). Tooth eruption and wear was as follows:- dp_2 to dp_4 at stages a, c and c/d (*i.e.*, more worn than c, less worn than d), M_1 at 3E (erupting through bone, probably not visible in the live animal); dp^3 and dp^4 light wear, dentine joins incomplete, accessory pillar of dp^4 unworn, M^1 at 2V (Grant 1982, Jones and Sadler forthcoming). The age at death of the calf is estimated at 2 to 3 months old (Jones and Sadler in press).

3070 117 Sheep skull; an immature skull with both maxillae (M^1 at E), and one mandible (dp_4 at 13L, M_1 at 2A; stage C2, Jones 2006).

3090 120 Cattle (six caudal vertebrae).

The anatomical analysis of the cattle bones is shown on Table 30. The number of cattle measurements were few, and included the following (in mm): tibia Bd 58.7, 58.7; calcaneum GL 117.6; metatarsal GL 196, Bp 42.8, SD 24.1, BFd 49.3, Dim 24.4.

The individual tooth wear stages of the sheep and goat are shown on Table 31, and the individual and summary sheep/goat measurements on Table 32.

Table 31. Tooth wear stages of the sheep and goats from the ritual area.

Context	***Species***	***(dp4)/P4***	***molars***	***Stage***
3074	sheep	(12M)	H	Bt
3104 A2	sh/gt	nd	H	Bt
3175	sh/gt	(13L)	H	Bt
3136	sheep	(13L)	2A nd	C12
3070	sheep	(13L)	2A C	C12
3097	sh/gt	(S)	2A nd	C12
3112	sheep	(14L)	2A C	C12
3140	sh/gt	(S)	2A C	C12
3149	sheep	(13L)	2A C	C12
3150	sheep	(13L)	2A C	C12
3158	sheep	(13L)	2A C	C12
3174	sheep	(12M)	2A C	C12
3174	sheep	(13L)	2A C	C12
3089	sheep	(17L)	8A 4B C	D34
3149	goat(?)	(S)	9A 6A H	D6+
3048	sh/gt	(S)	9A 6A nd	D6+
3066	sh/gt	J	9A 6A 2A	E12
3103	sh/gt	S	9A 9A 5A	E3+
3053 A9	goat	14S	12A 9A 10H	F9+
3150	sh/gt	14S	15A 9A 11G	Gb
3131	goat	12S	12A 9A 11G	Gb
3140	sh/gt	12S	15A S nd	G/H

Tooth wear stages: C: perforation in the crypt, H: half up, J: just in wear, enamel only (Ewbank *et al.* 1964); other wear stages follow Payne (1987); S: tooth socket present; nd: no data.

*Table 32. Measurements of the sheep and goat bones from the ritual deposit. Measurements are defined in von den Driesch 1976, with additional measurements defined in Davis (1996, fig. 1); tibia SDmin is taken in the anterior/posterior plane. Numerical summaries (mean, standard deviation and sample size) include sheep, pr sheep (probably sheep) and sheep/goat (*i.e.*, they exclude goat and probably goat).*

Horncore

Collection Group Number	***Animal***	***Species***	***Min. basal diam.***	***Max. bas. diam.***	***Length outer curve***
3053	A9	gt	19.5	28.1	132
3018		sh	21.5	36.2	110

Scapula

			GLP	SLC	ASG
3053	A9	gt	29.0	19.3	24.4
3120		pr sh	28.9	17.0	19.0
3142	A8	sh(gt)	28.0	17.5	17.5
3089		pr sh	30.6	18.0	19.2
3103		pr sh	30.0	19.1	20.1
3149	Sk?1	pr sh	29.8	17.6	20.3
3150		pr sh	27.8	17.5	17.8
3155		pr sh	27.7	17.2	16.0
3065		sh/gt	29.9	18.5	19.6
3142		sh/gt	27.2	17.2	
3164		sh/gt	27.7	16.9	17.4
3162		sh/gt	26.2	15.7	17.6
		Mean	28.49	17.52	18.39
		SD	1.465	0.919	1.464
		N	10	10	9

Humerus

			GLC	SD	BT	HT	HTC
3053	A9	gt	136.5	14.8	26.9	17.2	12.0
3103		pr sh			26.8	16.4	12.9
3107		pr sh			28.9	18.1	13.5
3038	A12	sh		11.8	22.1	14.9	11.5
3094	Sk?6	sh	119.6	13.6	26.8		13.3
3120	A18	sh	115.0	13.2	23.9	15.8	11.4
3142	A8	sh(gt)	114.4	12.8	24.0	15.1	11.6
3149	Sk?1	sh	119.3	13.7	24.8	15.6	12.5
3164		sh	110.1	12.4	24.2	15.2	12.3
3026		pr sh				18.5	13.8
3031		pr sh		13.0	25.0	15.5	12.3
3137		pr sh	121.3	14.2	25.7	16.6	12.5
3150		pr sh	121.2	14.0	25.8	16.3	12.5
3164		pr sh			25.6	17.5	13.4
3131	Sk?2	sh/gt	114.0	13.7	23.9	16.3	12.5
		Mean	116.86	13.24	24.71	16.12	12.47
		SD	4.060	0.752	1.277	1.095	0.752
		N	8	10	11	11	12

Notes: 1 proximal end unfused; 2 GLC accurate to 2mm; 3 proximal end nearly fused; 4 SD measurement is correct.

Table 32. continued.

Radius

			GL	Bp	BFp	SD	
3059	A9	gt	149.0	28.3	26.7	15.5	
3038	A12	sh	127.0	24.2	22.8	13.9	
3054		sh	140.5	27.5	24.4	12.9	4
3081		sh		26.3	24.0		
3094	Sk?6	sh	149.0			14.8	
3120	A18	sh	138.3	26.1	23.7	14.4	
3142	A8	sh(gt)	137.5	26.9	24.7	15.1	
3149	Sk?1	sh	142.8	27.9	25.2	14.6	
3151	Sk?5	sh	146.0	29.7	25.8	14.7	
3164		sh		30.5	27.1		
3174		sh	132.3	26.3	24.4	14.0	
3091		sh/gt		28.0	25.8		
3131	Sk?2	sh/gt	141.0	28.1	24.6	13.0	
		Mean	139.38	27.13	25.05	14.16	
		SD	6.709	1.969	1.417	0.780	
		N	9	11	11	9	

Femur

			GLC	SC	
3038	A12	sh	141	11.7	
3137	Sk?4	pr sh	148.5	12.5	
3151	Sk?5	pr sh	154	13.1	
3164	Sk?3	pr sh	169	14.2	
3054		sh/gt	155	13.8	
3089		sh/gt	167	14.8	
3131		sh/gt	154	12.7	
3131		sh/gt	160	15.0	2
3137		sh/gt	156	12.8	
3150		sh/gt	149	12.5	
3150		sh/gt	162	14.8	
		Mean	155.95	13.4	
		SD	8.254	1.127	
		N	11	11	

Metacarpal

			GL	BFp	SD	BFd	Dem	Dvm	Dim
3059	A9	gt	98.9	23.3	15.3	25.5	9.6	15.3	12.9
3038	A12	sh	104.4	18.4	11.5	21.6	9.7	13.3	11.4
3103		sh	120.3	19.8	12.7	22.9	9.9	14.2	12.6
3014		sh	114.0	19.0	10.6	21.3	10.0	14.4	12.7
3120	A18	sh	113.8	18.9	11.6	21.0	10.0	14.4	12.2
3151	Sk?5	sh	122.7	19.3	12.3	21.8	10.3	14.5	12.9
3150		sh	122.4	19.7	12.3	21.9	10.6	14.7	12.4
3152		sh				23.0	10.4	15.3	12.9
3039		sh/gt				21.4	10.0	13.5	11.6
3161		sh/gt		20.4					
		Mean	116.27	19.36	11.83	21.86	10.11	14.29	12.34
		SD	7.033	0.665	0.758	0.729	0.295	0.64	0.571
		N	6	7	6	8	8	8	8

Tibia

			GL	SDmin	Bd	Dd
3038	A12	sh	172.0	8.7	21.6	
3137	Sk?4	pr sh	181.0	9.6	22.3	16.8
3151	Sk?5	pr sh	186.0	9.2	22.6	17.1
3164	Sk?3	pr sh	198.0	10.3	23.3	18.6
3036		sh/gt		9.8	23.2	17.4
3054		sh/gt		9.9	22.4	17.6
3107		sh/gt		10.7	22.2	16.6
3118		sh/gt	198.0	10.0	22.6	18.2
3131		sh/gt	198.5	11.0	21.9	17.0
3131		sh/gt			23.7	17.9
3036		sh/gt			21.2	16.0
3150		sh/gt	198.5	10.1	23.2	18.5
3150		sh/gt			23.0	17.8
3174		sh/gt	198.0	10.4	23.4	18.6
		Mean	191.25	9.97	22.61	17.55
		SD	10.316	0.654	0.732	0.822
		N	8	11	14	13

Astragalus

			GLl	Dl	Bd
3141	A9	gt	25.1	13.6	16.6
3026		sh	24.5	13.9	15.3
3151	Sk?5	sh	24.3	14.1	16.2
3151		sh	25.4	14.1	15.6
3164	Sk?3	sh	24.6	13.6	15.8
3164		sh	24.4	13.6	15.6
3164		sh	23.3	13.2	14.9
3174		sh	25.1	13.9	16.1
3061		pr sh	24.9	14.1	16.2
3137	Sk?4	pr sh	25.4	14.0	15.5
3091		sh/gt	27.1	14.7	16.7
3158		sh/gt	24.6	14.1	16.6
3158		sh/gt	24.5	13.4	16.1
3158		sh/gt	25.0	13.4	16.0
		Ave	24.85	13.85	15.89
		SD	0.868	0.403	0.509
		N	13	13	13

Table 32. continued.

Calcaneum

			GL
3141	Sk9	gt	53.5
3151	Sk?5	sh	48.0
3151		sh	48.4
3164	Sk?3	sh	49.8
3150		sh	45.4
3164		sh	52.3
3164		sh	49.5
3137	Sk?4	pr sh	45.3
3171		pr sh	55.2
3174		pr sh	49.3
3061		sh/gt	48.0
3091		sh/gt	53.6
3105		sh/gt	50.4
3158		sh/gt	50.4
		Ave	49.66
		SD	2.868
		N	13

Metatarsal

			GL	BFp	SD	BFd	Dim
3141	A9	gt	103.5	18.7	12.4	22.6	12.6
3061		sh				22.7	12.8
3105		sh	135.8	18.0	10.5	21.6	12.1
3137	Sk?4	sh	120.8	17.3	10.2	20.4	11.6
3150		sh	131.0	18.6	10.5	21.9	12.4
3164		sh	133.1	17.6	10.7	21.3	12.0
3158		sh	142.3	17.5	9.0	20.9	12.6
3170		sh				19.8	11.3
3174		sh	133.9	17.4	10.8	21.2	12.1
3176		sh	131.0		10.7	22.1	12.2
3058		sh/gt				20.0	11.9
3091		sh/gt		19.4			
		Ave	132.56	17.97	10.34	21.19	12.1
		SD	6.463	0.772	0.624	0.934	0.445
		N	7	7	7	10	10

Appendix 3

Catalogue of the re-deposited human bone from the site, apart from the ritual deposit

Christine Osborne

This catalogue largely follows the original report of Christine Osborne.

SF 4002 (skull from base of the hillfort ditch)

Fragmented skull
Mandible
Atlas
Axis

[Context 4002]

																	n	
R	8	7	6	5	4	3	2	1	|	1	2	3	4	5	6	7	8	L
	8	7	6	5	4	3	2	1	|	1	2	3	4	5	6	7	8	

n: not yet erupted.
Method is Brothwell 1972.

The upper right 7 has four roots (the norm being three for upper molars). Between the junction of the two buccal roots is an enamel pearl (an extension of the crown enamel causing a cluster of enamel between the roots). These two toots are widely divergent from each other, and from the two lingual roots which are very close together. This wide divergence may be obstructing the unerupted upper right 8. However, the latter is still not fully developed, the root being only partially formed.
Age: 17–25 years (based on attrition rates M1=3, M2=2+, M3=1)
Sex: male
Pathology: There is some porosity of the bone, centrally along the parietals, frontal and occipital. This pitting is thought to be indicative iron deficiency anaemia during childhood. This is also evident in the presence of cribra orbitalia, a pitting of the bone within the eye orbits.

It was originally suggested that this was a decapitated skull. Although fragmented, the calvarium can be pieced together and there is nothing on the bone to suggest decapitation. Also the atlas and axis are both intact. However, there could have been a decapitation at the level of the missing cervical 4 or 5, especially as this is a common site for the cut.

429 (Iron Age ditch)

1 fragment of longbone
1 fragment of metacarpal or metatarsal

Immature
2 phalanges

482 Iron Age pit

Fragments of skull
1 rib fragment
[1 animal bone]

Immature

1 metatarsal
A fragment of distal humerus

502 (Iron Age pit)

1 thoracic vertebra

534 (Iron Age ditch)
1 fragment of skull
1 femoral head

841 (Iron Age pit)

Immature
1 fragment of vertebra

909 (Iron Age ditch)

1 fragment of tibia

931 (Iron Age ditch)

A fragment of the left side of a mandible with molars 7 and 8 in situ.

Human bone from non-Iron Age features: the great majority from Medieval or later contexts

The remainder of the bones were severely mixed and broken and fragmented. There are the remains of at least eight adults and four immature individuals (based on a count of individual bones).

100

Fragments of calvarium
1 right rib head
3 hand phalanges
Fragments of longbone, probably fibula
2 lower molars
1 fragment of mandible

100

SF4001: Fragmented skull, adult

[Ctx 4001]

R	—	—	—	—	—	4	3	2	1	|	1	2	3	4	5	6	7	8	L

/:lost post mortem
X: lost ante mortem
— : area of jaw missing

105

1 fragment of the right side of a mandible

111

1 hand phalanx

125

3 hand phalanges
2 thoracic vertebrae
The proximal end of a right ulna

Immature

1 fragment of calcaneus

[Fragments of animal bone and 2 teeth]

126

1 fragment of left calcaneus

163

1 sternum
1 fragment of right rib
1 cervical vertebra
1 5th metacarpal
The acromion process of a right scapula

164

3 right ulnae + the distal shaft of one other
3 right + 1 left radial head + fragments
2 left clavicles
1 lumbar vertebra
10 thoracic vertebrae (mainly just centra)
2 cervical vertebrae
7 metacarpals
2 carpals
2 hand phalanges
1 tarsal
4 metatarsals
Fragments of the right side of a mandible with the three molars *in situ*. The third molar is just erupting.
1 loose premolar tooth
1 loose incisor tooth
The central shaft of a right tibia
Fragments of humeral and femoral shaft

Immature

1 right ulna
1 right clavicle
2 metacarpals
1 hand phalanx

176

The distal shaft of a right 5th metatarsal

178

1 hand phalanx
1 fragment of radius or ulna

191

1 1st metacarpal

206

The shaft of a right humerus
1 hand phalanx
1 fragment of right rib

219

1 right 5th metatarsal

225

1 fragment of left tibia

226

The proximal half of a left ulna
1 lumbar vertebra

Immature

The fragments of a longbone

229

The distal half of a right humerus
1 fragment of radius or ulna

252

The proximal half of a right ulna
2 left and 1 right radius
1 thoracic vertebra
1 lumbar vertebra
1 fragment of pelvis
1 right patella
The distal shafts of 2 left tibiae
1 fragment of scapula
A proximal fragment of a left fibula
1 right and 2 left clavicles
1 left and 2 right rib heads + fragments
2 tarsals
4 metatarsals
5 metacarpals
7 hand phalanges
1 foot phalanx
1 canine tooth
Other fragments of humerus, radius, ulna, femur, tibia and fibula.

Immature

The distal shaft of a right radius
The distal shaft of a right ulna
The proximal end of a right femur

258

1 incisor tooth

270

1 fragment of femoral shaft

295

The distal half of a right humerus
1 fragment of right clavicle
1 fragment of rib
1 thoracic vertebra

Immature

1 right rib

306

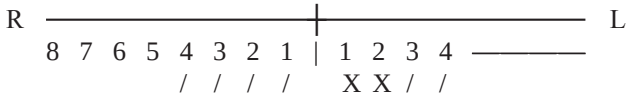
1 fragment of right humerus
1 fragment of right ulna
Fragments of rib
Fragments of sternum and xiphoid
2 tarsals
4 foot phalanges
1 carpal
1 fragment of acromion from a scapula
1 fragment of a vertebral transverse process

314

1 fragment of femoral head and neck
1 fragment of right scapula
1 thoracic vertebra
Fragments of rib

321

1 fragment of left radius
1 left calcaneus
1 metacarpal
1 hand phalanx
1 left rib head + fragment
1 broken mandible with the following dentition



/ : lost post mortem
X: lost ante mortem
- : area of jaw missing

323

[1 canine tooth]

345

1 fragment of fibula shaft

352

1 fragment of vertebra

376

Fragments of radius
[1 fragment of possible animal bone]

377

1 fragment of femur
Fragments of rib
2 foot phalanges
1 fragment of tibia
Fragments of fibula

Immature

Fragments of tibia
1 femoral head epiphysis
1 thoracic vertebra

392

2 foot phalanges
1 1st metatarsal

393

1 fragment of left ulna

398

2 thoracic vertebra
Fragments of rib
[Fragments of animal bone]

399

7 lumbar vertebrae
2 thoracic vertebrae
2 left femora
The proximal halves of 1 right and 1 left humerus
The proximal half of a left tibia
1 left patella
The proximal end of a left radius
The distal shaft of a right radius
5 left and 3 right rib heads + fragments
Fragments of scapula
Fragments of pelvis
Fragments of sacrum
7 metatarsals
2 tarsals
5 metacarpals
1 carpal
4 foot phalanges
[2 fragments of animal bone]

Immature

1 lumbar vertebrae
1 thoracic vertebra
The proximal shafts of 2 left femora
The distal shaft of another femur
The proximal epiphysis of a tibia
1 left ulna
The proximal end of a left radius

412

1 fragment of longbone, possibly humerus

427

1 fragment of foot phalanx
1 fragment of skull

448

The distal head of a metatarsal

467

1 right rib + fragments
2 metatarsals
1 foot phalanx
1 fragment of longbone
1 other fragment

479

The distal ends of 2 right humeri
The proximal end of another right humerus
The distal shaft of a left radius
The proximal shaft of a left radius
The distal shaft of a right ulna
The proximal shaft of a right ulna
The distal shaft of a left ulna
The distal shaft of a right tibia
3 thoracic vertebrae
1 5th sacral segment
1 incisor tooth
3 metatarsals
1 foot phalanx
3 metacarpals
8 hand phalanges
4 left and 3 right rib heads + fragments

Immature

3 thoracic vertebrae
Fragments of pelvis
2 metatarsals
2 phalanges
1 right clavicle
1 right rib head

480

1 broken metatarsal

488

[1 animal bone]

Immature

1 fragment of scapula

490

The proximal shaft of a left femur
1 left patella
Fragments of skull
Fragments of rib
Other longbone fragments

Immature

The distal shaft of a left femur
Another immature left femur

497

1 fragment of left scapula
1 thoracic vertebra
1 right rib head + fragments
1 fragment of right clavicle
1 tarsal
1 metacarpal
1 carpal
1 hand phalanx
The distal shaft of a left ulna
Other longbone fragments

518

1 premolar tooth

545

1 fragment of skull

548

The shafts of 2 left tibiae

Immature

1 fragment of proximal tibial epiphysis

564

1 fragment of femoral head and neck

565

1 fragment of skull
1 fragment of distal left humerus
1 fragment of humerus shaft
1 right and 2 left rib heads + fragments
4 tarsals
1 metatarsal
1 hand phalanx
1 fragment of thoracic vertebra
2 other thoracic vertebrae

Immature

The distal shaft of a right humerus
2 thoracic vertebra

568

The distal shaft of a left humerus
The shaft of a right femur
1 right patella
The distal shaft of a right fibula
The shaft of a right tibia
The head of a 1st metatarsal
1 foot phalanx
1 cervical vertebra

Immature

1 fragment of distal left tibia
1 1st metatarsal

569

Immature

Fragments of skull
1 deciduous molar
1 partly developed permanent molar

575

1 right femur
1 fragment of right innominate
The distal halves of 2 left and 1 right humerus
1 right clavicle
1 sternum
The proximal half of a left ulna
The proximal end of a right fibula
The proximal half of a left radius
3 lumbar vertebrae
2 thoracic vertebrae
1 manubrium
5 tarsals
7 metatarsals
3 metacarpals
4 hand phalanges
1 left and 3 right rib heads + fragments

Immature

2 thoracic vertebrae
1 metatarsal

597

The proximal shaft of a right femur
1 right rib head

621

1 fragment of radius

623

Immature

1 1st metatarsal

625

1 left calcaneus

Immature

1 fragment of proximal humerus

629

1 fragment of skull
1 carpal
1 metacarpal
2 hand phalanges
Fragments of vertebra
The distal shaft of a right humerus
1 fragment of distal radius
3 right rib heads + fragments
Fragments of radius and ulna

Immature

1 vertebral centrum

630

The proximal shaft of a right ulna
1 fragment of vertebra

631

1 metatarsal

Immature

The proximal end of a right radius
1 vertebral centrum
The distal end of a left humerus

643

Fragments of skull and mandible
1 metacarpal
1 hand phalanx

645

1 fragment of skull

652

1 right calcaneus
1 metacarpal
1 hand phalanx

654

1 fragment of rib

658

1 fragment of radius

660

1 lumbar vertebra
1 fragment of fibula shaft
1 tarsal

Immature

1 fragment of pelvis

661

1 right talus
A proximal fragment of fibula
The acromion of a left scapula

Immature

The ilium of a right innominate

670

Immature

The coracoid of a right scapula

672

The acromion of a right scapula
1 fragment of right clavicle

1 right rib head
2 hand phalanges
1 fragment of radius or ulna
[1 animal bone]

Immature

The coracoid and glenoid of a right scapula

691

1 fragment of metacarpal

698

1 fragment of longbone

706

1 fragment of skull
1 fragment of scapula
1 rib fragment
1 fragment of tibia

712

1 fragment of ulna
1 fragment of a right clavicle
2 other fragments

719

1 hand phalanx

721

Fragments of rib
The distal shaft of a right tibia

Immature

The proximal end of a right femur
The proximal end of a right ulna
The proximal end of a right radius
Fragments of mandible

723

The proximal end of a left radius

724

1 fragment of metatarsal

728

1 fragment of pelvis

801

2 tarsals

Immature

1 metacarpal
1 fragment of fibula

806

Immature

1 femoral head epiphysis

811

2 metacarpals
1 fragment of hand phalanx

815

The distal shaft of a left fibula
1 fragment of skull
1 fragment of rib

822

The proximal half of a left femur
Fragments of ilium of a left innominate
Fragments of rib
1 fragment of right femur

Immature

1 fragment of scapula
1 metatarsal
1 hand phalanx

824

1 sternum
Fragments of vertebra
1 left rib head + fragments
4 metatarsals
1 tarsal
3 foot phalanges
[Animal bone]

Immature

1 fragment of left scapula
1 fragment of pelvis
1 left humerus
1 right radius
1 fibula
3 right and 2 left rib heads + fragments
2 metacarpals
Fragments of vertebra
The distal epiphysis of a tibia
1 phalanx

838

1 hand phalanx

847

The shaft of a right radius

848

1 fragment of calcaneus
1 metacarpal

849

1 fragment of skull

850

1 fragment of tarsal

852

The distal shaft of a right tibia
The distal shaft of a right radius
1 fragment of humerus
Fragments of vertebra
1 right rib head
1 metacarpal

Immature

1 hand phalanx

876

1 left talus
1 fragment of rib

882

1 fragment of radius
1 fragment of pelvis
1 fragment of lumbar vertebra
1 metatarsal
2 fragments of radius or ulna

884

The proximal end of a right ulna
1 right talus
The distal end of a right radius

912

The proximal shaft of a right femur
1 hand phalanx
1 left cuboid

915

Immature

1 metacarpal

916

The shaft of a right radius
1 fragment of hand phalanx

919

1 upper molar

921

[2 fragments of animal bone]

925

1 left talus
1 fragment of left innominate
1 fragment of rib

926

1 fragment of foot phalanx
Immature

1 lumbar vertebra

927

1 left patella

929

1 fragment of fibula

930

The distal end of a right fibula
2 left rib heads + fragments
1 fragment of scapula

Immature

1 right calcaneus

939

The distal end of a right humerus

949

1 fragment of innominate
3 lumbar vertebrae
[1 animal bone]

953

Fragments of radius

966

Fragments of humerus and ulna

Immature

1 fragment of proximal tibial epiphysis
1 fragment of rib
1 fragment of maxilla – right permanent 3, 4 and 5 are unerupted and partly developed, and the right deciduos 2nd molar is present.

957

(Fragments of animal bone)

Immature

1 fragment of humerus

Appendix 4

The subfossil molluscan fauna from a ditch section

Diane FitzMaurice

Acknowledgements

Many thanks to Dr M. Robinson who guided me throughout the preparation of this report and to Mrs J. Freeman.

The Report

A sequence of 1.0kg samples was taken for molluscan analysis from section BB of the hillfort ditch at the Prebendal, Aylesbury. Each sample was water-sieved in order to facilitate the collection of shells; a sieve with a mesh size of 0.5mm was used. After identifications had been confirmed by Dr M Robinson, a count of the shells was made. So that the minimum number of individuals could be assessed only the shell apices were counted; where shell apertures were more abundant than apices a count was made of the number of apertural fragments present. The results of the count were tabulated in absolute and percentage frequencies (Tables 33 and 34 respectively) and a molluscan diagram based on the percentage representation of the different species was drawn (Fig. 19). The occurrence of the burrowing species *Cecilioides acicula* was recorded in Table 33, but it was not included in Table 34, nor was it included in the molluscan diagram.

The Primary Ditch (Samples 2029 to 2032)

What is suggested by the nature of the fill of the primary ditch and the numbers of mollusca recovered therefrom is a rapid rate of sediment deposition. Limestone rubble or fragments are recorded at each level sampled and the minimum number of individuals recovered from each sample was low (Table 33). The mollusca recovered from the primary ditch were predominantly open-country species reflecting open and dry conditions. It is necessary to look to the construction of the primary ditch in order to explain its molluscan fauna. This would have caused local disturbance exposing bare ground within and adjacent to the ditch. In the lowest sample drawn from the primary ditch (2029) *Pupilla muscorum* was the most abundant species, this being a species commonly found where there are areas of bare earth (J. G. Evans 1972). The other open-country species occurring in the primary ditch were *Helicella itala* (samples 2029, 2030 and 2032) and *Vallonia costata* (samples 2029 to 2032). The only shade-loving species recovered from the primary ditch was *Oxychilus cellarius* (samples 2030 to 2032). The necessary conditions for this species' survival were most likely provided by limestone rubble present within the ditch and tumbling back down into the ditch from material excavated during the ditch's construction. That conditions in the ditch were inhospitable to molluscan life is suggested by the molluscan fauna, which cannot be described as rich.

The Secondary Ditch (Samples 2033 to 2046)

The interpretation of the secondary ditch is corroborated by both the sedimentary and molluscan evidence. The four deepest samples taken from the secondary ditch (samples 2033 to 2036) indicate that accumulation of sediment was occurring fairly quickly. Limestone fragments and rubble were included within the buff silt-fill and again minimum numbers of individuals recovered were low. In these deepest secondary ditch samples, shade-loving species constituted what was not an insignificant proportion of the molluscan fauna. Generally, the woodland species present were those which are able to exist within an open country habitat provided that suitable shaded conditions occur within that habitat on a small scale, such as *Carychium tridentatum* and *Oxychilus cellarius.* The molluscan fauna from this deepest part of the secondary ditch appears to indicate that the ditch was supporting lush vegetation which was providing local shaded conditions. As before, limestone rubble within the ditch will probably have provided shelter for the fairly well represented *Oxychilus cellarius.* The proposed conditions within the ditch appear to have been favourable to the open-country species *Vallonia costata,* one of the most abundant species in these earliest samples of the secondary ditch (and a species able to survive in a variety of habitats). The other open-country species recovered from these deepest samples of the secondary ditch were *Pupilla muscorum, Vallonia excentrica* and *Helicella itala,* but these occurred in very low numbers.

Following this initial period in which the deposition of ditch fill was fast, the rate of sediment deposition appears to have slowed down somewhat, this suggested by the larger numbers of shells being included within the deposit. However, that limestone fragments were included within the fill indicates that deposition was still relatively fast. The molluscan fauna from samples 2037 to 2039 indicate that grazing was occurring locally and perhaps the limestone fragments within the ditch fill were brought down by sheep getting into the ditch to graze. It is interesting to note that a deposit of Early Iron Age date on the site was found to contain sheep bones and a fragment

Table 33. Molluscan samples taken during excavations at the Prebendal, Aylesbury, 1985.

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
	-198	-180	-165	-142	-130	-122	-115	-105	-93	-83	-73	-67	-58	-51	-45	-28	-14	5	-12	-3
CM	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to
	-205	-190	-175	-152	-135	-130	-122	-112	-103	-93	-83	-71	-65	-58	-51	-38	-24	15	-20	5
Carychium tridentatum (Risso 1826)	–	–	–	–	7	3	6	7	21	5	–	–	1	3	9	–	1	–	1	–
Carychium spp	–	–	–	–	12	2	3	2	14	5	1	1	–	2	6	1	1	2	–	–
Anisus leucostoma (Millet)	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–
Azeca goodalli (Ferussac 1821)	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
Cochlicopa spp	–	1	–	–	2	5	13	11	24	8	4	5	15	9	13	10	7	12	–	–
Vertigo pygmaea (Draparnaud 1801)	–	–	–	–	–	–	–	–	–	–	–	1	2	2	4	3	1	–	–	–
Pupilla muscorum (Linne 1758)	6	4	3	–	6	1	4	4	9	16	47	46	98	82	44	41	36	4	9	–
Vallonia costata (Muller 1774)	2	4	6	4	34	20	30	28	150	64	24	25	13	30	58	55	21	3	9	–
Vallonia excentrica (Sterki 1892)	–	–	–	–	–	–	3	–	13	14	9	16	17	29	43	13	14	–	3	–
Vallonia (c.f.) *excentrica*	–	1	3	1	–	–	2	–	13	8	7	–	–	2	–	10	15	9	7	–
Vallonia spp	2	2	4	–	12	4	16	9	57	22	15	24	39	60	89	80	27	18	6	–
Punctum pymaeum (Draparnaud 1801)	–	–	–	–	–	–	6	2	15	17	4	1	5	15	34	21	15	6	3	–
Discus rotundatus (Muller 1774)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Arion spp	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Vitrina pellucida (Muller 1774)	–	–	–	–	–	2	2	4	12	1	1	–	–	–	1	–	–	–	–	–
Vitrea spp	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–
Nesovitrea hammonis (Strom 1765)	–	–	–	–	–	–	–	–	1	–	–	–	–	5	3	2	1	–	–	–
Aegopinella nitidula (Draparnaud 1805)	–	–	–	–	–	–	1	–	10	1	1	1	–	1	4	1	–	3	–	–
Oxychilus cellarius (Muller 1774)	–	4	6	1	36	14	22	9	34	5	2	–	–	–	1	3	2	–	–	–
Oxychilus alliarius (Muller 1822)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–
Cecilioides acicula (Muller 1774)	2	–	–	–	4	1	4	2	3	3	3	12	5	12	17	28	31	14	9	1
Clausilia bidentata (Strom 1765)	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
Helicella itala (Linne 1758)	3	2	–	8	1	2	3	–	4	7	9	4	13	20	12	27	16	7	5	–
Trichia hispida (Linne 1758)	3	1	4	–	10	8	8	6	51	61	59	71	25	88	104	26	24	16	5	–
Cepaea spp	–	2	–	–	–	–	–	–	1	1	–	1	–	–	–	–	–	1	1	–
Total (excluding *Cecilioides acicula*)	16	21	26	14	120	61	119	82	430	237	183	196	228	349	426	294	181	81	50	0

Table 34. Percentage of mollusca recovered from the Prebendal, Aylesbury, 1985.

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
	-198	-180	-165	-142	-130	-122	-115	-105	-93	-83	-73	-67	-58	-51	-45	-28	-14	5	-12	-3
CM	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to
	-205	-190	-175	-152	-135	-130	-122	-112	-103	-93	-83	-71	-65	-58	-51	-38	-24	15	-20	5
Carychium tridentatum (Risso 1826)	–	–	–	–	5.8	4.9	5.0	8.5	4.9	2.1	–	–	0.4	0.9	2.1	–	0.6	–	2.0	–
Carychium spp	–	–	–	–	10.0	3.3	2.5	2.4	3.3	2.1	0.5	0.5	–	0.6	1.4	0.3	0.6	2.5	–	–
Anisus leucostoma (Millet)	–	–	–	–	–	–	–	–	0.2	0.4	–	–	–	–	–	–	–	–	–	–
Azeca goodalli (Ferussac 1821)	–	–	–	–	–	–	–	–	–	–	–	–	–	0.3	–	–	–	–	–	–
Cochlicopa spp	–	4.8	–	–	1.7	8.2	10.9	13.4	5.6	3.4	2.2	2.5	6.6	2.6	3.1	3.4	3.9	14.8	–	–
Vertigo pygmaea (Draparnaud 1801)	–	–	–	–	–	–	–	–	–	–	–	0.5	0.9	0.6	0.9	1.0	0.6	–	–	–
Pupilla muscorum (Linne 1758)	37.5	19.0	11.5	–	5.0	1.6	3.4	4.9	2.1	6.8	25.7	23.5	43.0	23.5	10.3	13.9	19.9	4.9	18.0	–
Vallonia costata (Muller 1774)	12.5	19.0	23.1	28.6	28.3	32.8	25.2	34.1	34.9	27.0	13.1	12.8	5.7	8.6	13.6	18.7	11.6	3.7	18.0	–
Vallonia excentrica (Sterki 1892)	–	–	–	–	–	–	2.5	–	3.0	5.9	4.9	8.2	7.5	8.3	10.1	4.4	7.7	–	6.0	–
Vallonia (c.f.) *excentrica*	–	4.8	11.5	7.1	–	–	1.7	–	3.0	3.4	3.8	–	–	0.6	–	3.4	8.3	11.1	14.0	–
Vallonia spp	12.5	9.5	15.4	–	10.0	6.6	13.4	11.0	13.3	9.3	8.2	12.2	17.1	17.2	20.9	27.2	14.9	22.2	12.0	–
Punctum pymaeum (Draparnaud 1801)	–	–	–	–	–	–	5.0	2.4	3.5	7.2	2.2	0.5	2.2	4.3	8.0	7.1	8.3	7.4	6.0	–
Discus rotundatus (Muller 1774)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2.0	–
Arion spp	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Vitrina pellucida (Muller 1774)	–	–	–	–	–	3.3	1.7	4.9	2.8	0.4	0.5	–	–	–	0.2	–	–	–	–	–
Vitrea spp	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.2	–	–	–	–	–
Nesovitrea hammonis (Strom 1765)	–	–	–	–	–	–	–	–	0.2	–	–	–	–	1.4	0.7	0.7	0.6	–	–	–
Aegopinella nitidula (Draparnaud 1805)	–	–	–	–	–	–	0.8	–	2.3	0.4	0.5	0.5	–	0.3	0.9	0.3	–	3.7	–	–
Oxychilus cellarius (Muller 1774)	–	19.0	23.1	7.1	30.0	23.0	18.5	11.0	7.9	2.1	1.1	–	–	–	0.2	1.0	1.1	–	–	–
Oxychilus alliarius (Muller 1822)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.3	–	–	–	–
Clausilia bidentata (Strom 1765)	–	–	–	–	–	–	–	–	–	0.4	–	–	–	–	–	–	–	–	–	–
Helicella itala (Linne 1758)	18.8	9.5	–	57.1	0.8	3.3	2.5	–	0.9	3.0	4.9	2.0	5.7	5.1	2.8	9.2	8.8	8.6	10.0	–
Trichia hispida (Linne 1758)	18.8	4.8	15.4	–	8.3	13.1	6.7	7.3	11.9	25.7	32.2	36.2	11.0	25.2	24.4	8.8	13.3	19.8	10.0	–
Cepaea spp	–	9.5	–	–	–	–	–	–	0.2	0.4	–	0.5	–	–	–	–	–	1.2	2.0	–

of a bone weaving-comb. Throughout this proposed period of grazed grassland, *Vallonia costata, Vallonia excentrica* and *Vallonia spp.* considered together, constitute a large proportion of the total number of individuals identified. In sample 2037, the single most abundant species was *Vallonia costata* which commonly occurs in abundance on trim grassland grazed by sheep; *Vallonia excentrica* is usually present in grassland whatever its type (Evans 1972).

Pupilla muscorum increases its percentage representation over this suggested phase of grazing, occurring at just 2.1% of the total in sample 2037, it increases to 25.7% in sample 2039. Pupilla is commonly found in habitats providing areas of broken ground such as might be brought about by sheep grazing in grassland. *Helicella itala* also becomes more abundant – in sample 2037 it occurs at 0.9% and in sample 2039, 4.9%. Evans (1972) has described *Helicella itala as* a grassland species and he writes that in modern times it is commonly found on grassland kept trim by grazing.

Evans has noted that *Punctum pygmaeum, Vitrina pellucida* and *Nesovitrea hammonis* are, 'particularly characteristic of short-turfed grassland and of open habitats where there is much bare ground' (1972, 196). The first two species of this trio occur in all three samples whilst *Nesovitrea hammonis* was present only in sample 2037.

That the ditch continued to provide conditions suitable for shade-loving species is attested by the presence of *Carychium, Aegopinella nitidula* and *Qxychilus cellarius,* each occurring in all three of the samples being considered here. However, there is a decline in the occurrence of these species in absolute as well as relative terms over the three samples being considered here. One possible explanation might be that over time, grazing in the ditch became heavier, vegetation being stripped and bare earth being exposed so that shelter was reduced; this might also explain the increase in *Pupilla muscorum* already described, this species often occurring on such exposed ground.

The appearance of an amphibious snail, *Anisus leucostoma,* in samples 2037 and 2038 is anomalous; it is possible that this species' presence might be due to puddles, subject to drying out, occurring within the ditch.

The evidence suggests that this proposed period of grazing was followed by an episode of ploughing or other disturbance in the locality, although not necessarily in the ditch itself. Limestone rubble is recorded in sample 2040 and the minimum number of individuals is 196. A fairly fast rate of deposition is indicated as might be caused by ploughing activity.

Pupilla muscorum is unexpectedly abundant in this sample (23.5%) considering that an episode of ploughing is being argued for. In modern times it is not usually found on arable land at all. However, Evans records that this situation has not always obtained and in the past *Pupilla muscorum* sometimes occurred in abundance on sites where intensive agriculture was being practised. He also writes that the same applies in the cases of *Vallonia costata* (here occurring at 12.8%) and *Helicella itala* (2%) (Evans 1972, 21*)*. Of the other open-country species recovered from this sample, individuals identified as just *Vallonia spp.* account for 12.2% of the total and *Vallonia excentrica 8.2%*; *Vallonia excentrica* is not uncommon in arable land (Evans 1972, 162). *Vertigo pygmaea,* an open-country species not particularly characteristic of arable land, makes its first appearance in this sample, seen at 0.5%.

That ploughing might have been carried out only to the edge of the ditch and not actually within it, is suggested by the continued presence of shade-loving species. *Carychium* and *Aegopinella nitidula* occur, but in very low abundance, each representing just 0.5% of the total. Whilst the ditch was still able to provide a refuge for these shade-loving species, the nature of its fill suggests that the ditch was not unaffected by the proposed local ploughing.

Subsequent to this episode of disturbance reflected in the molluscan diagram, it would appear that a period of stability was reached within the ditch, with the rate of deposition slowing down substantially. From samples 2041 to 2043, the ditch fill did not yield any limestone rubble or fragments, but only a pale-brown or buff silt. The minimum number of individuals recovered from these samples (excluding *Cecilioides acicula*) ranged between 228 to 426. It seems most likely from the molluscan evidence, that during this period of stability, the local landscape was once again supporting grassland which was being grazed by sheep. In sample 2041 *Pupilla muscorum* occurs in great abundance (43%) and this is consistent with the re-establishment of grazed grassland. Today, *Pupilla muscorum* commonly occurs in comparable abundance in grassland (Evans 1972, 147). The numbers of *Pupilla muscorum* recovered from the subsequent two samples are reduced, but still substantial (in sample 2042 occurring at 23.5% and in sample 2043 at 10.3%).

Vallonia costata and *Vallonia excentrica* are present in all three of the samples under consideration (2041 to 2043) in moderate abundance. Again, one would expect these species to be abundant in a grassland habitat.

The numbers of *Helicella itala* occurring in sample 2041 are increased over those of the previous sample. As noted earlier, today this species is often found in grassland kept trim by grazing. Grazed grassland is often inhabited by *Vertigo pygmaea* and this species was present in all three samples; it does not occur in abundance but it would be exceptional if it did (Evans 1972, 143).

Punctum pygmaeum occurred in all three samples being discussed here, *Nesovitrea hammonis* in samples 2042 and 2043, and *Vitrina pellucida* in sample 2043. As pointed out earlier, these species are common in short-turfed grassland and in open habitats in which bare ground has been exposed, such as might result from close grazing by sheep.

Between samples 2041 and 2043 there is an increase in the shade-loving component of the molluscan diagram and there is also an increase in the number of different species occurring. The only shade-loving species recovered from

2041 was *Carychium – a* species which can inhabit grassland (Thomas, 1985, 141). In sample 2042, one individual of the species *Azeca goodalli* was identified; unlike the other shade-loving species recovered from this series of samples *A. goodalli* is a species restricted to woodland. However, it occurs in very low abundance and its presence cannot be explained by proposing the emergence of local woodland. *Carychium* and *A. nitidula* also occur in this level. In sample 2043 examples of *Aegopinella nitidula* and *Oxychilus cellarius* were identified in addition to an example of *Vitrea* spp**.** It appears the vegetation growing in the ditch was continuing to provide adequate shelter for these shade-loving animals. Perhaps the proposed stable conditions allowed time for these species to colonise the ditch.

After this period of stability, with local grazed grassland, a return to nearby disturbance, possibly ploughing, is indicated by the evidence. The ditch fill from which the three final secondary ditch samples were drawn (samples 2044 to 2046) comprises silt-clay and contains limestone rubble and/or fragments – a fast rate of infill is suggested. The minimum number of individuals recovered (excluding *Cecilioides acicula*) ranges from just 81 (sample 2046) to 294 (sample 2044). With sample 2044, an increase in the relative abundance of both *Vallonia costata* and *Helicella itala* is seen, and this suggests that the environment experienced a drying out. Evans and Jones write of these two species that they are, '... typical of prehistoric and Roman cultivation horizons' (1979, 203). Roman material occurs in context 325 of Section BB this underlying the context from which these final three secondary ditch samples were drawn, thus indicating that this episode of ploughing began in the Roman period at the earliest.

It is probable that at this point, as well as earlier in its development, the ditch itself was not being ploughed. It is not impossible that it acted as a boundary between fields (and these not even necessarily put to the same use) and may**,** at least in its later stages, have supported a boundary marker such as a hedge. Sample 2044 sees a marked increase in the open-country component of the molluscan diagram with a concomitant decline in intermediate and shade-loving species. However, with sample 2046 the open-country group of species declines whilst the numbers of intermediate and shade-loving species increase, hinting that there was perhaps some local improvement in the provision of shelter, although it should be noted that only two shade-loving species are recorded in this sample (totalling a minimum number of individuals of five).

The shade-loving species which are seen in these three samples include *Carychium* (samples 2044 to 2046) and *Aegopinella nitidula* 2044 and 2046). *Punctum pygmaeum* is present in all three samples at between 7.1% (2044) and 8.3% (2045). That these three species are present indicates that a refuge existed for them in which there was an absence of disturbance which supports the idea that it was the area around the ditch and not the ditch itself which was being ploughed.

The occurrence of *Cecilioldes acicula* is seen to increase in the upper samples of the secondary ditch (this species was absent from a number of the earliest samples of the sequence); this supports the claim that this burrowing species is a fairly recent introduction.

The Saxon Re-Cut (Samples 2047 and 2048).

Two samples were taken from the Saxon re-cut of the secondary ditch (see Fig. 18). The deepest, sample 2047, yielded a MNI of 50. The ditch fill from which this sample was taken comprises silt and limestone fragments. The molluscan fauna is one predominantly of open-country. The important elements of this fauna are *Vallonia costata* (18%), *Vallonia excentrica / Vallonia* cf. *excentrica (*20%), *Vallonia spp* (12%) and *Pupilla muscorum* (18%). *Helicella itala* is also present at 10%. Of the shade-loving species, *Carychium* and *Discus rotundatus* occur, each at 2%. Present also is *Punctum pygmaeum* (6%).

It appears from the nature of its fill and the numbers of mollusca recovered, that the rate of sediment accumulation in the re-cut was fairly rapid. It is proposed that this was precipitated by nearby ploughing. Again, it appears that in the immediate area shelter was still being provided, possibly by some form of field boundary, and that ploughing was occurring adjacent to this.

Only a single shell, of the burrowing species *Cecilioides acicula,* was recovered from the uppermost sample of the Saxon re-cut, sample 2048. The fill at this point is composed of a grey-brown loam with charcoal and occupation debris. If any other shells were once present these will probably have been dissolved as a result of the decay of refuse. It seems likely that by this point in time there was human occupation in the locality, in view of the nature of the ditch-fill.

Conclusion

In the light of the foregoing study of the sub-fossil Mollusca from the hillfort ditch of the Prebendal, Aylesbury, the following sequence is proposed:

The Primary Pitch

Phase One: Open and dry; inhospitable conditions in the ditch.

The Secondary Ditch

Phase Two: Lush vegetation in the ditch.
Phase Three: Grazed grassland.
Phase Four: Disturbance, possibly ploughing in the vicinity of the ditch.
Phase Five: Grazed grassland.
Phase Six: Disturbance, possibly ploughing in the vicinity of the ditch.

The Saxon Re-Cut

Phase Six (continued)
Phase Seven: Probable local human occupation.

Appendix 5

Report on the examination of some red-finished pottery from Aylesbury

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Introduction

In a study of red-finished ('haematite-coated') pottery of the Late Bronze Age/Early Iron Age date from southern England, Middleton (1987) showed that in many cases the red finish was achieved by the use of oxidising firing conditions, at least towards the end of the firing, combined with the application of a clay slip or sometimes by simply burnishing a ferruginous clay body; in other instances, crushed haematite (or ochre) was applied to the surface of the pots.

The aim of the investigation described here was to characterise the red finishes on six sherds from the ritual area at the Prebendal, Aylesbury (Table 35). Small fragments of sherds (to include body and red-finished surface) were removed and prepared as polished sections for examination in a scanning electron microscope (SEM), equipped with an energy-dispersive X-ray analyser (EDX). Very small samples of the red-finished surfaces of the sherds were removed for analysis for the presence of haematite by X-ray diffraction (XRD). In addition, thin sections were made from all but one sherd (3167, which was too small to permit the removal of a suitable sample). These were examined using a petrographic microscope, allowing observation of the ceramic fabrics.

Observations

In hand specimen the sherds are all seen to be in a sandy, unoxidised fabric. They have more or less burnished surfaces which are bright red on sherds 3160, 3167 and 3171; on sherd 3174, there is some slight reddening of the surface whilst on 3155 and 3177 any redness is very diffuse.

Haematite was positively identified from the XRD patterns of four of the samples analysed (3160, 3167, 3171 and 3174) but not from samples 3155 and 3177. Observation of the polished cross-sections in the SEM revealed the presence of thin (typically 10–20µm, but up to *c.* 50 µm thick) coatings, rich in fine particles (mostly <10µm dia.) of iron oxide (Fig. 87) in all six specimens. The boundary of the coating with the underlying clay was seen to be irregular in all cases, with particles of iron oxide appearing to penetrate into the clay body.

All five of the sherds examined as thin sections in the petrographic microscope have similar sandy, glauconitic fabrics. The glauconite pellets, which are sparse to common, range in diameter from *c.* 0.02 to 0.25mm, fine to medium (rarely coarse) grade, sub-rounded sand (mainly quartz but with some feldspar and subangular flint) is common, and finer (very fine sand-silt grade) sub-angular quartz (plus feldspar and flint) is common to abundant. Flakes of muscovite mica are rare to sparse and often exhibit preferred orientation, which is also reflected in the birefringent properties of the clay matrix. Rare fragments of charred organic material and occasional rounded, fine grained calcite 'pellets' (*c.* 0.1mm dia.) were observed in some sections.

Discussion of red-finished pottery

This small group of sherds is quite homogeneous in respect of both the clay fabrics and the nature of the coatings. The sandy, glauconitic clay used to produce the pottery could have been obtained fairly locally – the glauconitic character suggests derivation from the Cretaceous Greensand formations, deposits of which occur in the vicinity of Aylesbury.

Table 35. Summary of red-finished pottery samples examined.

Identification No.	***Laboratory No.***	***Techniques Applied***		
		XRD (± hematite)	*SEM*	*Petrography*
3155	30287 V	-	+	+
3160	30288 I	+	+	+
3167	30289 R	+	+	
3171	30290 U	+	+	+
3174	30291 S	+	+	+
3177	30292 Q	-	+	+

The coatings appear to have been produced by the application (and subsequent burnishing) of a well prepared slurry of fine particles of crushed haematite, or perhaps an ochre. The birefringent character of the clay fabrics suggests that the firing was carried out at a relatively low temperature (say less than about 800°C) in an open firing. However, examination of sherd 3155 in the SEM revealed that the clay fabric was, in part, vitrified, with the development of a continuous vitrification texture, exhibiting fine bloating pores (see Maniatis and Tite (1981) for discussion of vitrification textures in ceramics). The vitrification appeared to be developed mainly near the coated surface. Comparison with the firing properties of similar, low refractory clays suggests that the sherd was probably exposed to a temperature in the region of 900°C. The development of the fine bloating texture is particularly characteristic of firing in a reducing atmosphere with fairly rapid heating (to be expected in an open firing). Thus, it seems probable that the vitrification may have developed during firing, as a result of (localised) exposure to a high temperature in a reducing environment. A final oxidising phase would have been necessary to ensure that the iron in the coating was present as red ferric oxide, Fe_2O_3 (haematite).

The diffuseness of the red colouration on sherd 3174, and more especially on sherds 3155 and 3177 (and the failure to detect haematite by XRD on these sherds), may be a result of the inadequacy of this oxidising stage in the firing process and perhaps also of exposure to reducing conditions during firing.

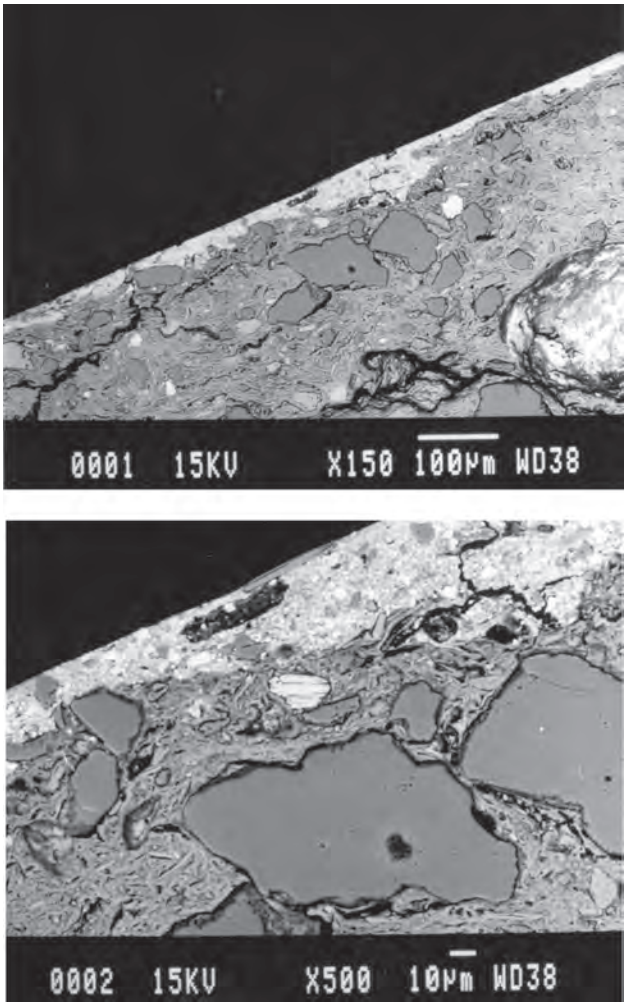

Figure 87. Scanning electron microscope images of polished thin-section of sherds showing iron oxide coatings.

Conclusions

The evidence suggests that this red-finished pottery may have been produced locally to Aylesbury in a sandy glauconitic fabric derived from nearby Greensand deposits. The pots were coated with a carefully prepared slip or slurry, rich in fine-grained iron oxide; the coated surfaces were thoroughly burnished. The pots were fired at a relatively low temperature (<800°C) in an open firing apart from sherd 3155 appears to have been exposed to a higher temperature, in the region of 900°C. A final oxidising phase would have been necessary to ensure that the iron in the coating was present as haematite, to give a fine, red coating on an unoxidised body. It appears that the final oxidising stage was inadequate in the case of sherds 3174, 3155 and 3177, but the presence of coatings rich in iron oxide (observed in the SEM) clearly shows that these vessels too were intended to be red-finished.

Red-finished wares of Late Bronze Age/Early Iron Age date have been found mainly in southern England, particularly south of the Thames but also in Wessex and in Kent (Middleton 1995). Their occurrence in Aylesbury thus represents one of the more northerly find spots, apparently on the edge of the distribution for such wares. However, since the original drafting of this report, a few examples of red-finished pottery have been reported from excavations in East Yorkshire (Leslie *et al*. 2004).

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