

# APPLEFORD'S EARLIEST FARMERS ARCHAEOLOGICAL WORK AT APPLEFORD SIDINGS OXFORDSHIRE

By Paul Booth and Andrew Simmonds



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Oxford Archaeology  
Occasional Paper Number 17



**Appleford's earliest farmers:  
Archaeological work at Appleford Sidings,  
Oxfordshire, 1993-2000**

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Oxford Archaeology  
Occasional Paper Number xx

2008

Appleford's earliest farmers: Archaeological work at Appleford Sidings, Oxfordshire, 1993-2000

Designed by Oxford Archaeology Graphics Office

Cover design by ??

The publication of this volume has been funded by Mount Anvil.

*Edited by Ian Scott*

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Typeset by ???

Printed by ???

ISBN XXX-X-XXXXXXX-XX-X

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## Summary

Oxford Archaeology (OA) undertook evaluations of Hanson Aggregates' Sutton Courtenay Pit in 1993 and 1997 ahead of mineral extraction, and carried out a programme of more extensive work between 1997 and 2000, monitoring topsoil stripping and recording the archaeological remains exposed by this process. The earliest feature examined was a Neolithic pit but the main result of the fieldwork was to reveal extensive Bronze Age and early Roman period landscapes. The Bronze Age features, most of which were of middle Bronze Age date, were concentrated in the western and central areas of the site, and comprised rectilinear systems of trackways and field enclosures. Large pits or waterholes were associated with these systems, which were probably related to stock control. A small group of cremation burials to the south

may have been contemporary with these features. There was no significant evidence for late Bronze Age or Iron Age activity but at about the middle of the 1st century AD a high-status double-ditched enclosure was established. This had an entrance to the south and contained slight traces of one or more timber structures. This settlement was associated with rectilinear field systems, further enclosures and trackways and two cremation burials. These features were on a similar alignment to that of the principal Bronze Age layout of the site. The early Roman settlement ceased to be occupied after c AD 120 and although trackways and possibly some other boundaries remained in use later Roman and subsequent activity was entirely agricultural in nature. This pattern of land use continued into modern times.

## **Acknowledgements**

The project was initially funded by ARC, later Hanson plc, now part of Heidelberg Cement. The support of these successive organisations is gratefully acknowledged, with particular thanks to Brian Grosvenor for all his help during the fieldwork phases of the project, and subsequently to Phillip Duncan. Mr Pat Gale and Mr Paul Caudwell kindly allowed access to their land for the original phase of evaluation work in 1993. The project was monitored by Hugh Coddington of Oxfordshire County Council and the Oxfordshire Sites and Monuments Record (now Historic Environment Record) Officer, Susan Lisk, provided background information. George Lambrick and Tim Allen offered helpful discussion of aspects of the site at various times.

All the site staff and internal and external specialists are thanked for their contributions. Fieldwork was supervised by Alan Hardy, Chris Bell, Granville Laws and Bryan Matthews, and much work on the post-excavation assessment was done by Edward Biddulph. Other contributions at that stage came from Leigh Allen, Bethan Charles, Elizabeth Huckerby, Ruth Pelling and Ruth Shaffrey. Roger Featherstone of English Heritage kindly provided copies of aerial photographs taken during the excavation of 1997 and the use of English Heritage national mapping project data from the Upper Thames Valley survey is also gratefully acknowledged.

Ian Scott completed the editorial work for the report and illustrations were produced by Sarah Lucas and Lucy Martin. Paul Backhouse oversaw the production process.

*Archaeological work at Appleford Sidings*

# Chapter 1: Introduction and Project Background

## LOCATION AND SCOPE OF WORK

Hanson Aggregates' Sutton Courtenay gravel pit, formerly owned by Amey Roadstone Corporation and originally established by Messrs Amey in the early 1940s, has been a significant feature of the landscape of the Sutton Courtenay and Appleford area for many years. The archaeological importance of such sites has been realised for almost as long, and the Sutton Courtenay area saw pioneering work in the 1920s by scholars such as E T Leeds, just west of the village (eg Leeds 1923; 1927; 1947). There are relatively few records of archaeological discoveries immediately east of Sutton Courtenay village in the early stages of the life of the pit, though Roman features and finds and Anglo-Saxon burials were noted in 1944 (Leeds and Atkinson 1944, 200-202). The pit gradually expanded south and south-eastwards to incorporate a large tract of land between Sutton Courtenay and Appleford, extending as far south as the northern boundary of another well-known local landmark, Didcot Power Station. During this expansion, significant but far from comprehensive salvage recording and excavation was carried out between 1967 and 1974 some 500 m north of the present site in advance of gravel extraction in Appleford Field (Hinchliffe and Thomas 1980). The present report deals with a programme of archaeological fieldwork undertaken between 1993 and 2000 in connection with a further south-eastward extension of the Sutton Courtenay Pit in an area known as Appleford Sidings or Appleford Crossing (centred at NGR SU 522 925) (Fig. 1). The area examined, covering roughly 20 hectares, is situated *c* 2 km north of Didcot, east of Sutton Courtenay and south of Appleford village, lying immediately south-west of the Appleford Crossing on the Didcot/Oxford railway line, which forms the eastern boundary of the site.

The archaeological potential of much of the area around Appleford has been well-known from aerial evidence for some considerable time. For example, significant areas of cropmarks were recorded in Long Wittenham before the Second World War by Major G W G Allen (Allen 1940; Gray 1977, 1) and cropmarks in Appleford Field, just north of the present site, were first recorded by Arnold Baker in 1961 (Miles 1980, 12). In contrast, the specific area of proposed gravel extraction at Appleford Sidings was relatively poorly understood until quite shortly before the first phase of work and no cropmarks were recorded in this area by Benson and Miles (1974). In 1990, however, aerial photographs revealed for the first time the presence of significant enclosures and other archaeological features in the fields forming the north-eastern part

of the proposed extraction area. These features included a double-ditched enclosure with a well defined entrance in its southern side, lying in the field west and south of the main quarry road (finally excavated in 2000, see below). Features in the field east of this appeared to form part of a larger complex bisected by the Oxford to Didcot railway line (Fig. 2).

In 1993 an archaeological evaluation was carried out over some 11 ha in the northern and central parts of the area of proposed extraction (Booth and Hardy 1993). Work was confined to the west of the lane, which ran south from Appleford Crossing past Hill Farm to Didcot, and which at that time formed the quarry access from the south. The evidence of the aerial photographs helped to inform the strategy for the evaluation of the northern part of the site, but provided no information on the southern part of the area, in particular the field west of the lane immediately to the west of Hartwright House. This area was fieldwalked after ploughing, but that work produced no significant archaeological material. Subsequent trenches in this area (Trenches 1-16) were distributed regularly but only comprised a 1% sample of the area (Fig. 3). Trenching of the northern field (Trenches 17-35), a 2% sample, was based principally on the aerial evidence, a magnetometer survey of the field having failed to identify either the features shown in the aerial photographs or any others. The principal outcome of the trenching was the location of the double-ditched enclosure seen from the air and its dating to the early Roman period. A number of generally insubstantial linear features were located in the southern fields, but these were either undated or demonstrably medieval (furrows from ridge and furrow fields) and later in date. This work was carried out prior to the determination of an application to extend the gravel quarry into this area. In the light of the results of the evaluation planning permission for quarrying and subsequent use of the site for waste disposal was granted with the condition that a programme of appropriate archaeological works was carried out in conjunction with the development.

Implementation of the condition began in 1997, when a further area of some 7 ha, lying south and west of that examined in 1993, was evaluated by trenching (Bell and Cook 1997). Twenty-six trenches were opened. These were numbered Trenches 19-44; Trenches 1-18, projected for the eastern end of the site, were not excavated. Fairly close to Hartwright House evidence of cremation burials, thought to be of Bronze Age date, was recovered in Trenches 21 and

Archaeological work at Appleford Sidings

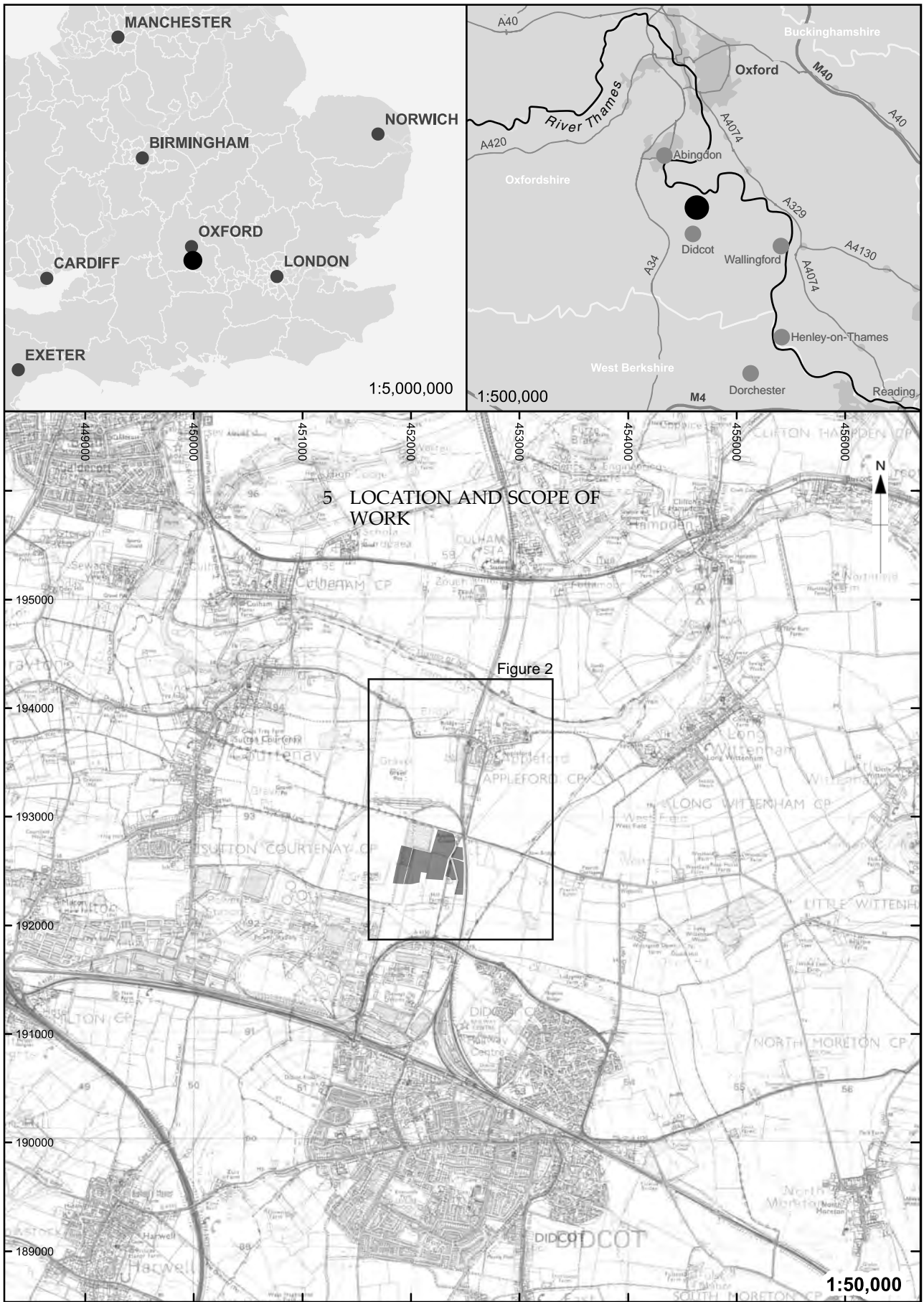


Figure 1 Site location.

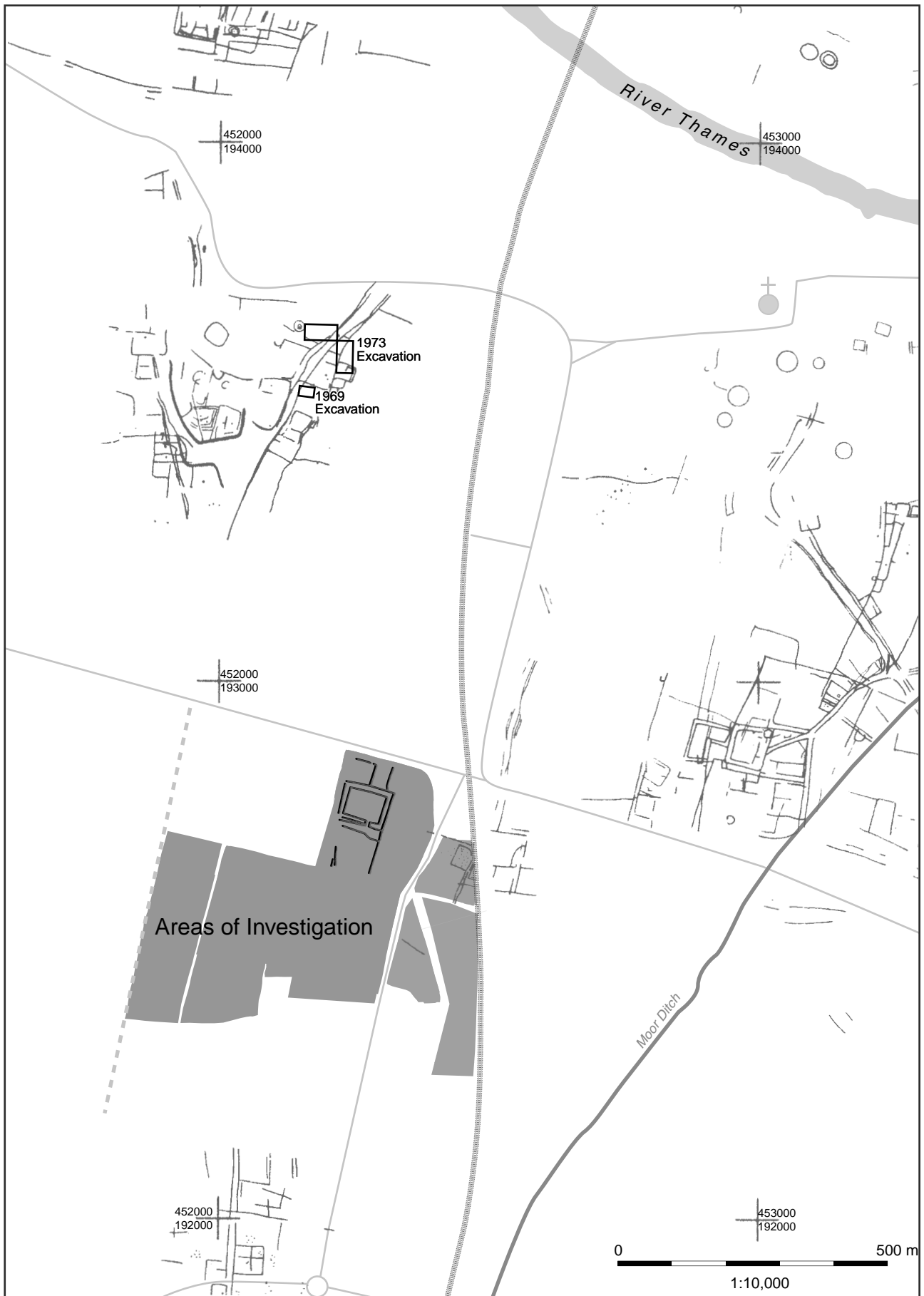


Figure 2 Cropmark evidence - showing Appleford Sidings and sites in the immediate vicinity (based on the RCHME/NMR air photograph plot Sheet SU59SW)



*Archaeological work at Appleford Sidings*

*Plate 1 Cropmarks in the eastern part of the Appleford Sidings site, photographed in 1990, looking north, also showing features east of the Didcot-Oxford railway line (NMR 4619/06). ©Crown Copyright, NMR*



*Plate 2 Cropmarks of the main enclosure examined in 2000, photographed in 1990, looking north-east (NMR 4619/04). ©Crown Copyright, NMR*

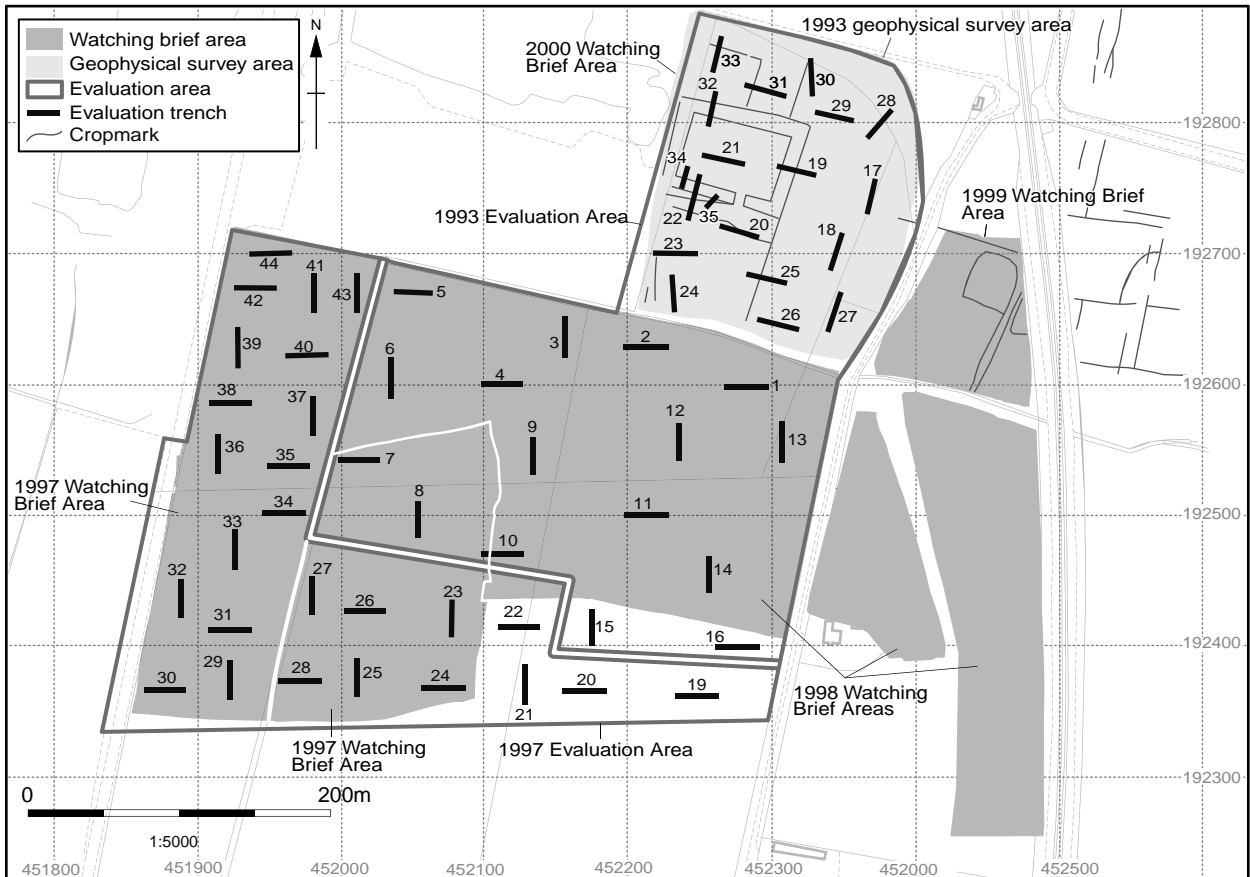


Figure 3 Overall site plan showing excavation areas and evaluation trenches.

(principally) 20. Elsewhere the majority of the features encountered were linear in character, aligned either north-south or east-west, but occasional pits were also present. Dating evidence was scarce but included an assemblage of middle Bronze Age pottery, recovered particularly from features in the north-west part of the area examined.

These unexpected and important discoveries had two consequences. First, the area of probable Bronze Age burials, where it was now apparent that gravel deposits were less deep than had been anticipated, was excluded from the proposed extraction programme and the burials, which had not been excavated, were thus preserved in situ. Secondly, the remainder of the area of the 1997 evaluation was subject to a recording action, involving planning and sample excavation of features subsequent to topsoil stripping by the ARC (later Hanson) contractors, revealing part of a Bronze Age landscape. This procedure was then followed, without further prior evaluation, in subsequent years as the extraction area expanded, working in an anti-clockwise direction. The bulk of the operation was carried out in 1997 and 1998. By the time of the 1997 work the main southern access to the quarry had been re-routed from its position in 1993, and now passed to the east of Hartwright House. The result was that the area between the former quarry access

(the former Appleford to Didcot road) and the railway line, which was excavated in 1998, was already bisected by the new road, the line of which had not been examined archaeologically. North of this a small block next to the railway was stripped in 1999 and the operation was concluded in 2000 at the northern end of the site with the stripping and examination of the field containing the double-ditched enclosure first trenched in 1993 (Fig. 4).

#### FIELDWORK METHODOLOGY

The various stages of fieldwork were carried out in accordance with the conditions of a series of Briefs for work provided by the County Archaeological Service of Oxfordshire County Council. The methodologies used during the 1993 and 1997 evaluations have been mentioned above and are detailed in the respective reports of that work (Booth and Hardy 1993; Bell and Cook 1997). They are therefore not described here. From 1997 onwards the removal of topsoil from the site was carried out under archaeological supervision with a 360° excavator fitted with a toothless

*See overleaf: Figure 4 Overall site plan showing excavated features of all periods*



--- Site boundary



ditching bucket. The principal emphasis of the work was on the recovery of the overall plan. The stripped surface was therefore planned (the scale of the operation precluded extensive cleaning by hand) and relatively limited excavation was undertaken, principally to characterise features and to elucidate important relationships. Soil samples were collected from the fills of selected features that had potential to contain waterlogged or carbonised plant remains and the fills of cremation burials were treated in the same way, the samples being wet-sieved for recovery of finds and ecofactual material as well as for human bone.

## **GEOLOGY AND TOPOGRAPHY**

The site lies on flat land at approximately 50 m OD. The underlying geology is Gault Clay, overlain by calcareous gravels of the First Terrace of the River Thames (BGS 1981). The latter decrease considerably in depth at the southern margin of the site and carry loamy brown earth soils of the Sutton Series (SSEW 1971). On site these soils were generally characterised as silty loams, though many of the archaeological features cut into the gravel were filled with silty clay soils.

## **ARCHAEOLOGICAL AND HISTORICAL BACKGROUND**

As already indicated the archaeological importance of the Sutton Courtenay and Appleford area has been well-known for a considerable time. Finds of Bronze Age and Roman date were made in Appleford Field as early as the mid 19th century (Hinchliffe and Thomas 1980, 16) but these finds, and a Neolithic polished stone axe found later (*ibid.*, 17) were essentially stray finds. In 1954 a substantial hoard of 5752 Roman coins contained in two pots and with a terminal date in the 340s was found in Appleford Field about 50 yards south of the Sutton Courtenay-Appleford road (Brown 1973, 204-206; Robertson 2000, 303-5 with references). Subsequent finds in this area, made in the period from 1967 to 1974 in the course of gravel extraction have been summarised by Hinchliffe and Thomas (1980, 17-32) alongside the more detailed account of their excavations of 1973 (*ibid.*, 32-106). The latter were carried out under the auspices of the Upper Thames Archaeological Committee and the then Oxfordshire Archaeological Unit, while the other work in the same area included an excavation undertaken by Reading Museum in 1969 and salvage work carried out by the Abingdon Excavation committee in 1973.

Together this work examined features covering a date range of some 1200 years, from the late Bronze Age to the end of the Roman period. A few pits isolated within Iron Age and Roman-period landscapes were assigned to the late Bronze Age. The principal features included an Iron Age enclosure later incorporated into a more wide ranging system of bound-

aries (*ibid.*, 34-62), as well as a slighter, polygonal enclosure and gullies indicating further probable Iron Age house locations. Elements of a major system of Roman trackways, three of which formed a Y-shaped plan with a substantial open space at the junction, may have had antecedents in the Iron Age, but the Roman features suggested organisation of the landscape on a larger scale, and covered a wider area. Enclosures and water-holes were associated with the trackways and a number of burials were also located. Some of these were probably Roman but a group of west-east inhumations lying in one of the trackways, and dated by inference to the very late Roman period (*ibid.*, 66-68) has been plausibly suggested to be of middle Saxon date (Blair 1994, 73).

Two groups of finds of considerable intrinsic significance were salvaged in the southern part of the Appleford Field extraction area. The first of these was a hoard of perhaps 6-12 'currency bars' of Iron Age date, probably from a location close to the Iron Age house gullies mentioned above (Brown 1971; Hinchliffe and Thomas 1980, 18-19) found in 1967. The second, found in 1968, was a hoard of 24 pieces of late Roman pewter, associated with ironwork and other objects, clearly derived from a well located in the south-west part of the extraction area (Brown 1973).

With the exception of the probable middle Saxon burials, there was no other evidence of post-Roman activity, although a major early Saxon settlement lay a little to the west at Sutton Courtenay itself (Leeds 1923; 1927; 1947) and features seen from the air at Long Wittenham, some 2 km to the east of the present site, have been interpreted as possible sunken featured buildings (Benson and Miles 1974, 66 Map 35). Anglo-Saxon cemeteries or smaller groups of burials are known from a number of locations within a 1-3 km radius of the site (Boyle *et al* 1995, 202-204). The nearest of these, for which little information survives, lies just north of Appleford village (Peake 1931, 134, 174).

The village of Appleford lies at the east end of the parish of Sutton Courtenay, which throughout the medieval period was a royal manor, although Abingdon Abbey had considerable holdings within the parish, including a grange at Appleford (Page and Ditchfield 1924, 369-371). The village may have been established by the 10th century, but a charter of 901 defining its boundaries is regarded as 'doubtful' (*ibid.*, 369). The church, which belonged to Abingdon Abbey in 1291 and subsequently became a chapel of ease to Sutton Courtenay (*ibid.*, 377), was certainly in existence in the 12th century. The present site lay within the open fields of the village, which were enclosed subsequent to an award of 1838, a generation later than the enclosure of the rest of Sutton Courtenay parish (*ibid.*, 370). The extent of the fields, and the principally north-south alignment of the ridge and furrow, demonstrated archaeologically, are evident on Rocque's 1761 map of Berkshire. Two farms were established in the area subsequent to inclosure. Hill Farm lies just to the south of the site on the Appleford-Didcot road, while Radcot Farm

was situated at the north-western corner of the site. It was demolished in the 1980s. Ephemeral features relating to this farm, and disturbance probably associated with its demolition, were located in the north-west corner of the 2000 excavation area, but are not discussed further here. Continued agricultural use, principally arable cultivation, kept the site free of development until the extension of the quarry across the area.

## STRUCTURE OF REPORT

This report presents a summary of the results of the fieldwork from 1993-2000. The project archive contains much detailed information that cannot be presented here, although it is of moderate size (including, for example, just over 2200 context records and 500 section drawings) compared with some recent Thames Valley projects. A post-excavation assessment, completed in May 2003 (Biddulph 2003), considered the whole range of types of evidence available from the project and established a framework for further work which commenced later that year, culminating in the present account.

The post-excavation assessment report identified a series of revised aims for the further work. These fairly broad aims (a series of more specific questions attached to them is not reproduced here) informed approaches to all aspects of the archaeological record:

- 1 To refine site chronology and phasing
- 2 To investigate changes in settlement pattern
- 3 To examine the economic basis of the site
- 4 To reconstruct the environmental context of the archaeological remains
- 5 To develop understanding of site status and social organisation
- 6 To investigate ritual and other activities
- 7 To place Appleford Sidings within its local, regional and (if appropriate) national context

Most if not all of these aims depended upon the establishment of a reliable stratigraphic sequence. The lack of dating material and the rather denuded nature of many of the features made this a problematic exercise in many parts of the site. Many discrete features, and some linear ones, could not be assigned with confidence even to major periods, much less to phases within these periods. It is only partly because of this, however, that description of features is presented at a fairly generalised level, the aim being to characterise these features broadly rather than describe each in detail. In order to facilitate this, the individual cuts across some linear features have been combined under groups. The Group numbers, only assigned in the post-excavation stage of the project, are frequently the principal means of reference to an individual feature in the text. Finds, however, are related to

specific contexts and thence to individual cuts before being defined in terms of group numbers, since the precise location of particular objects or assemblages can be very important for interpreting the development of the site.

## ARCHIVE

The project archive has been deposited with Oxfordshire County Museums Service under the accession number OXCMS: 1997.38.

*Archaeological work at Appleford Sidings*

## Chapter 2: The Site Sequence

### PERIOD 1: NEOLITHIC (FIGS 5-6)

Scattered flints of Mesolithic date were encountered across the site, but no contemporary features were present. The earliest feature was an isolated shallow pit (5576) (Fig. 5) located in the northern part of the excavation and dated to the Neolithic period, based on its assemblages of pottery and worked flint. The pit was circular in plan and 1.0 m in diameter, with concave sides which sloped gradually to a flattish base at a depth of 0.15 m. This shape suggests that the pit as excavated was the base of what had been a much more substantial feature, the upper part of which had been destroyed by plough-truncation. The pit had a single fill of dark brown silty loam (5577), possibly resulting from deliberate back-filling, from which 126 fragments of worked flint (Chapter 3, 'Worked flint') and 41 sherds of pottery (Chapter 3: 'Prehistoric pottery') were recovered.

### PERIOD 2: MIDDLE BRONZE AGE (FIG. 6)

Middle Bronze Age activity was represented by a rectilinear pattern of field boundary ditches in the south-western part of the excavation, separated by a major WNW-ESE linear boundary from the more isolated enclosures and boundaries to the north and east. Some seventeen waterholes were interspersed among these features, along with a smaller number of other pits. A single inhumation burial was also

dated to this period and a group of cremation burials at the southern margin of the site may also have been of this date.

### Linear boundary ditches

#### WNW - ENE boundary ditches 6044 and 6045

A major linear boundary defined by ditch 6045 extended across most of the length of the excavation on a WNW-ESE orientation. The complex of field enclosures appeared to be confined to the south side of this boundary, which extended beyond the eastern limit of the field system. Ditch 6045 was represented by a series of ditch segments varying in length from 25 m to 135 m. Although this could be the result of partial truncation by recent ploughing, the use of such discontinuous ditches during the Middle Bronze Age has been recorded elsewhere. The ditch extended across most of the area of the 1998 excavation, and it is likely that ditch 6072 to the east represented a further segment of it, giving it a total length of at least 400 m. Its western extent proved difficult to define, as a number of ditches in the north-western part of the excavation could not be assigned a date on either stratigraphic or artefactual grounds, and any one of them could either represent a continuation of ditch 6045 or belong to a later phase of activity. At its east end ditch 6045 appeared to be aligned on the north side of enclosure 6113.

Excavation revealed the ditch to be between 0.8 m and 1.2 m in width, with a typical depth of 0.25 m (Fig. 7, section 249). In profile it generally had a flat or slightly concave base. The ditch contained a single fill of orangey brown silty clay resulting from natural silting processes, from which a small quantity of Bronze Age pottery was retrieved. Towards the western end of the area of the excavation the ditch was realigned *c* 27 m to the north, before resuming its previous WNW-ESE alignment.

Ditch 6044 had a similar profile to ditch 6045 and was of similar proportions. It also had the segmented form of 6045 and ran parallel to it on its north side, the two ditches being consistently 7 m apart, suggesting that they represent the ditches of a track or driveway. Ditch 6044 did not appear in the eastern half of the excavated area, but it is uncertain whether this is because the ditch terminated or because it had been destroyed in this part of the site by later truncation.

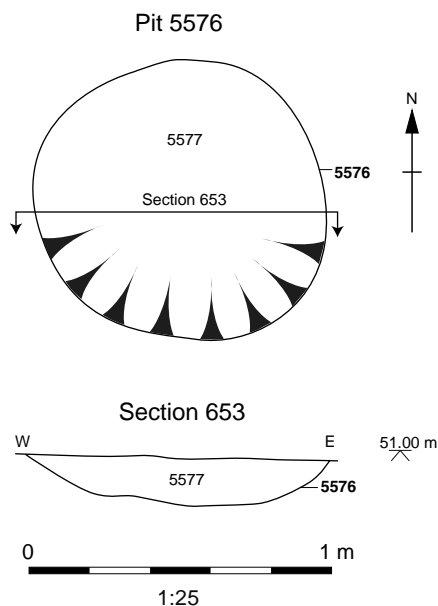
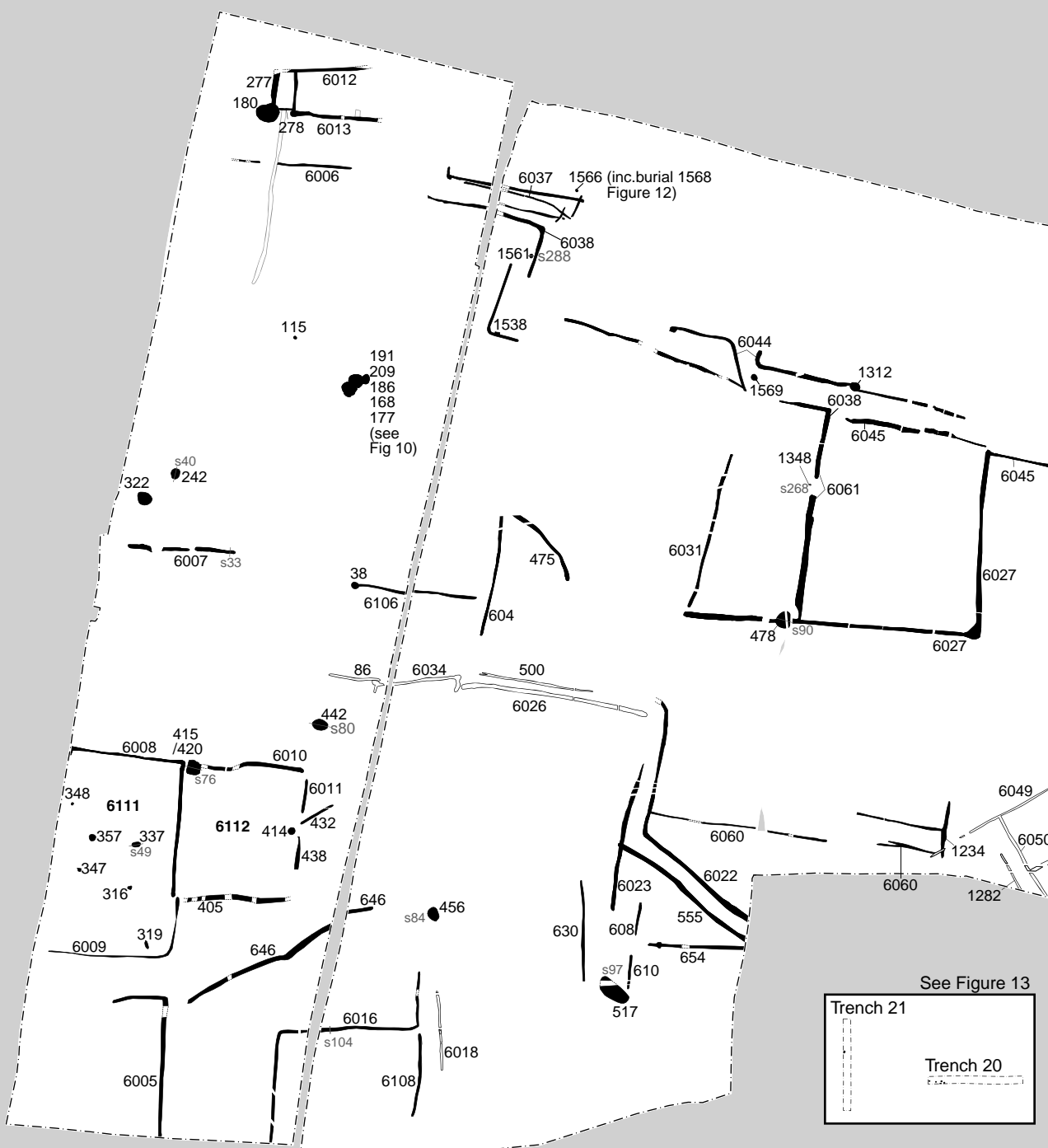


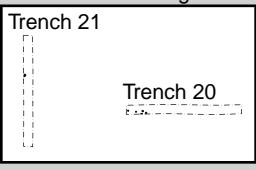
Figure 5 Period 1: Neolithic pit 5576

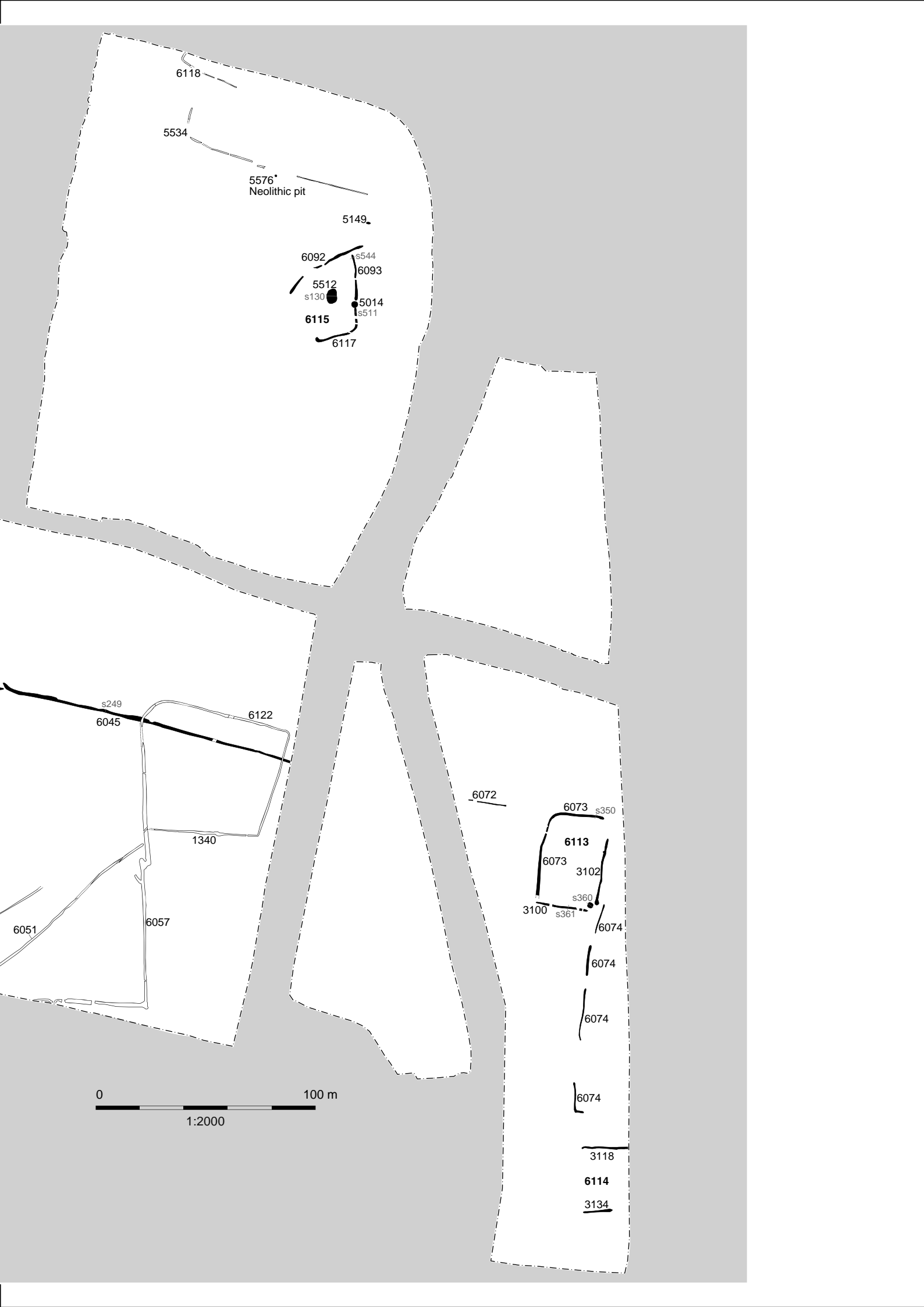
See overleaf: Figure 6 Overall plan of features of Periods 1 and 2, and selected unphased features.





See Figure 13





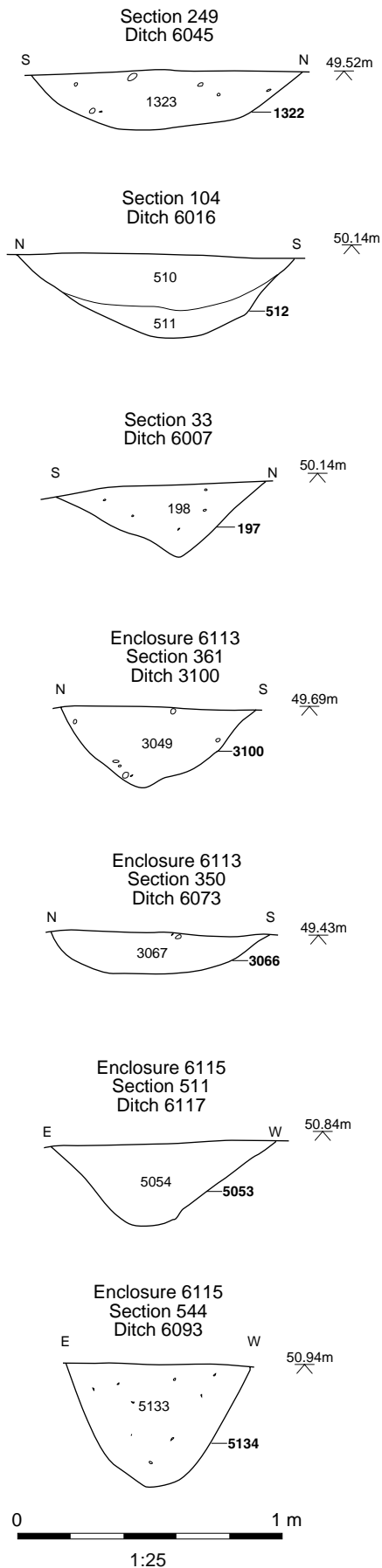


Figure 7 Period 2: sections through field boundaries

**Ditches 6022, 6023 and 555**

To the south was a further trackway 5 m wide defined by ditches 6022 and 6023 with ditch 555. The trackway was dated to this period by pottery retrieved from a fill (573) of ditch 6022. It extended for c 50 m on a north-south alignment, turning at its southern end to continue south-eastward beyond the area of the excavation. Ditch 6023 ran on south, but at some later date a ditch 555 was cut branching off to the SE from 6023 and parallel to 6022.

**South-west rectilinear field system (Fig. 6)**

The field system was best preserved in the south-western area of the excavation, investigated in 1997, where it was represented by a patchwork of rectilinear field enclosures aligned north-south and east-west. These enclosures were very regular in shape with straight sides and right-angled corners. The ditches defining these enclosures had similar dimensions, with widths varying between 0.55 m and 1.15 m and depths of 0.2-0.6 m. They were all filled by single deposits of reddish brown silty clay derived from the surrounding alluvium. A small number of these enclosures survived in their entirety.

**Enclosure 6111 (Fig.6)**

A single-phase ditch (6008, 6009) defined an enclosure measuring 65 m from north to south and at least 45 m wide east-west, its western side lying beyond the limit of the excavation. A single entrance through the ditch was identified, located in the eastern side of the enclosure, c 20 m from its south-east corner. The terminals forming this entrance were slightly off-set from each other, and defined an entrance gap 0.80 m wide. Three pits (319, 337, 357) lay within the enclosure, along with a small number of features (316, 347, 348) which were interpreted as tree-throw holes on the basis of their fills, irregular shapes, and the absence of artefacts. Of the pits, 319 was notable for containing a large but poorly preserved block of oak with two small square sockets cut in it towards one end (Plate 3). The function of this object is unknown.

**Enclosure 6112 (Fig.6)**

The eastern side of enclosure 6111 was shared with a smaller neighbouring enclosure (6112) which was almost square in shape, measuring 40 m north-south by 38 m east-west. The north and south sides of this enclosure were formed by ditches 6010 and 405 respectively while two segments of ditch (438 and 6011) defined the east side, leaving openings at the north-east and south-east corners as well as a centrally placed entrance between the two ditch segments. The central opening was 8.5 m wide, while the north-east and south-east entrances were 2.5 m and 6.5 m wide respectively. A short stretch of ditch 12 m long (432) was located outside the central opening and seems to have been deliberately aligned on it, approaching it obliquely on a north-east to south-west alignment. This feature may have been intended to funnel livestock into the entrance. Waterhole 414

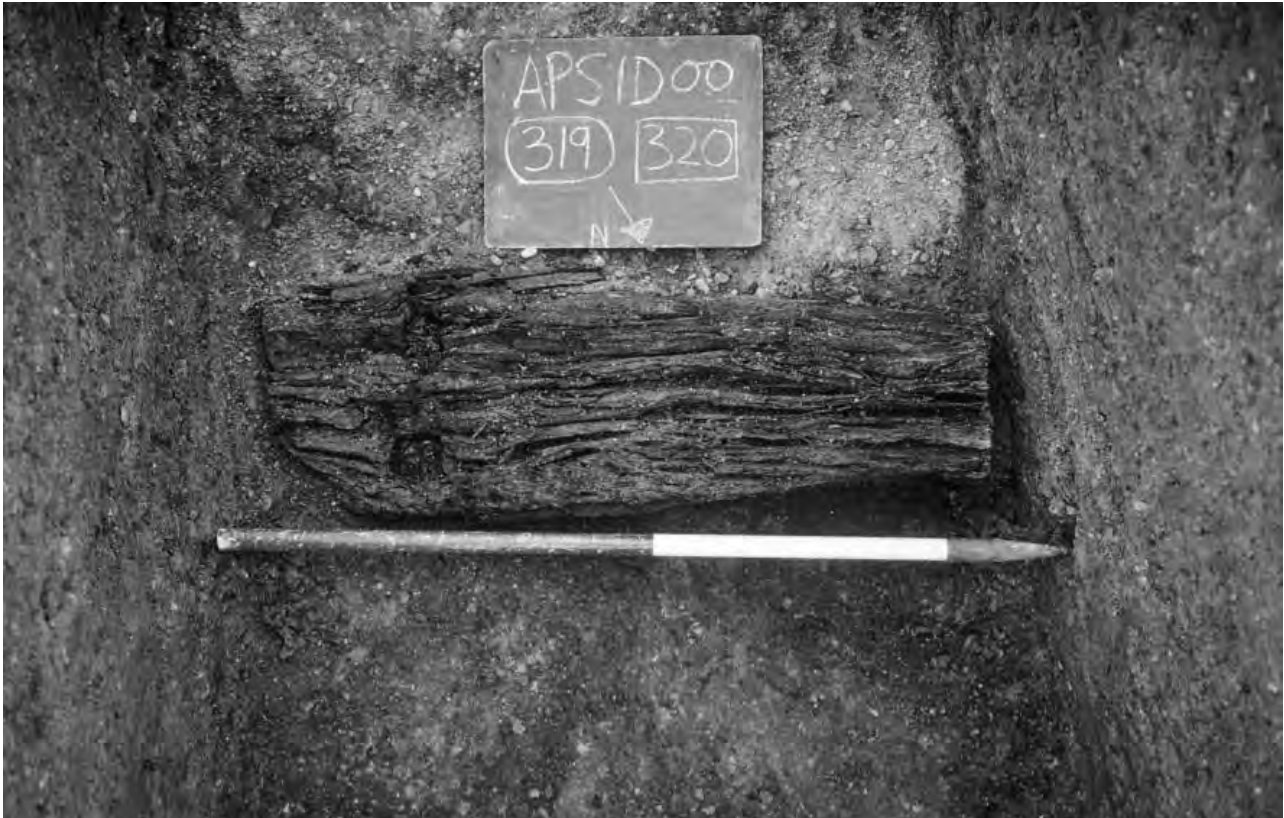


Plate 3 Worked timber 319 in Period 2 pit 320. 1 m scale.

lay immediately inside this entrance into the enclosure, while a pair of intercutting waterholes (415 and 420) were located at the north-west corner of the enclosure. The relationship between these waterholes and the enclosure ditch could not be established as this area had been truncated by Romano-British trackway ditch 6002.

#### Enclosure 6016/6108 (Fig. 6)

To the east of these enclosures, ditches 6016 and 6108 enclosed another rectilinear field on the same alignment, measuring 45 m from east to west and at least 38 m north-south, its south side lying beyond the limit of the excavated area. Ditch 6016 (Fig. 7, section 104) was recorded in the excavation as post-dating a Romano-British field boundary ditch 686, but this must be an error because the character of its fill and the quantity and condition of the middle Bronze Age pottery recovered from it indicates that it should be dated to this period. Similar material was retrieved from ditch 6108. At its eastern end ditch 6016 turned to the north, suggesting that it served as a boundary dividing further fields in this area. Between ditch 6108 and ditches 6022 and 6023 are lengths of east-west (654) and north-south aligned ditches (608, 610 and 630) which may have formed further field boundaries. It is possible that the line of 6022 was continued further north by ditch 6031 (see below).

#### Enclosure 6005

South of Enclosures 6111 and 6112 is another possible enclosure defined by ditch 6005. This en-

closure appears to have extended to the south and west beyond the excavated area. The ditch was not investigated during the excavation, but is interpreted as forming part of the middle Bronze Age field system as it shares the same north-south alignment as the demonstrably middle Bronze Age features and is similarly cut by the Romano-British trackway ditch 6002. A westward return at the north end of this ditch may form the southern side of a trackway 12 m wide between it and ditch 6009 of enclosure 6111.

#### Associated ditches (Fig. 6)

The field system was less well preserved to the north of these enclosures, although ditches 6007 (Fig. 7, section 33) and 6106 are likely to be elements of it as they both contained middle Bronze Age pottery and lie on the same east-west orientation. At its eastern end ditch 6106 joined contemporary a ditch (604) aligned NNE-SSW. A curving length of ditch (475) to the east of this feature also yielded middle Bronze Age pottery.

A group of ditches in the north-western part of the excavation (277, 278, 6012, 6013, 6006, 6037 and 6038) which did not produce any dating evidence could be a northern continuation of the middle Bronze Age field system. Ditches 277 and 278 were both cut by a middle Bronze Age waterhole 180, indicating that they are probably of Bronze Age date, but the rest of these features, including ditch 6013 which cut ditch 278, could not be dated with any degree of confidence.



*Plate 4 Period 2 pit 1348 (left) and related features including ditch 6061, looking north*



*Plate 5 Period 2 field boundary ditch 6027, looking south*

**Central enclosures** (Fig. 6)

Attached to the south side of the linear boundary 6045 is a large trapezoid enclosure defined by ditches 6027 on the east and south sides and 6031 on the west side. Ditch 6031 contained pottery of middle Bronze Age date. The enclosure appears to have been sub-divided by a further north-south ditch 6061, which branched off the south side of linear boundary 6045. Ditch 6061 was broken by a single entrance 5.5 m wide, which had subsequently been made narrower by the digging of an additional ditch segment 4 m long, extending the northern terminus of the opening. A single pit (1348) was located mid-way between the terminals of the original opening, and may have held a post associated with the entranceway (Fig. 11, section 268). The pit was sub-circular in plan with a diameter of approximately 0.55 m. The sides were vertical and the base flat, with a depth of 0.18 m. Its only fill was a deposit of greyish brown clay loam (1349) which yielded ten sherds of middle Bronze Age pottery and a single flint flake.

The line of the western ditch 6031 appears to have been continued to the south by the alignment of the trackway between ditches 6022 and 6023. Similarly the north-south alignment of the east ditch (6027) of the trapezoid enclosure was continued further south by ditch 1234. Between ditches 6022 and 1234 was a discontinuous east-west ditch 6060 approximately parallel to the east-west aligned section of 6027 and some 65 m and 70 m south of it.

Ditches 1234 and 6027 seem to have formed a north-south boundary, which appears to define the eastern extent of the field system. To the east of it, the only features that demonstrably date to this period were the linear land boundaries and two associated enclosures 6113 and 6114. To the north-east was irregular enclosure 6115.

**Eastern and northern enclosures and ditches****Ditch 6074** (Fig. 6)

At the east end of the excavation ditch 6074 formed a linear boundary extending north-south, its north end apparently being aligned on the south-east corner of enclosure 6113. It had a total length of *c* 95 m, and like ditches 6044 and 6045 was dug in a series of segments, varying in this case from 14 m to 24 m in length. At its southern end, the ditch turned eastward for 4 m before terminating. Where excavated, the ditch was found to have a V-shaped profile with a width of between 0.7 m and 0.9 m and a depth of up to 0.4 m, and to be filled by reddish brown re-deposited natural material indicative of gradual silting.

**Enclosure 6113** (Fig. 6)

Enclosure 6113 was a rectilinear enclosure located toward the eastern end of the excavation. It measured 40 m north-south by 27 m east-west. The north and west sides were formed by a single continuous ditch (6073) (Fig. 7, section 350), while

two separate lengths of ditch (3100 and 3102) marked the south and east sides, leaving openings at the north-east, south-east and south-west corners. The ditches were V-shaped or U-shaped in profile, varying in depth from 0.4 m on the west side to as little as 0.1 m on the east side (Fig. 7, section 361). A single phase was recorded in each of the excavated ditch segments. The only feature associated with the enclosure was waterhole 3080 (see below), which was located in the opening at its south-east corner.

**Enclose 6114** (Fig. 6)

The evidence for this possible enclosure at the south end of boundary ditch 6074 comprises two ditches, 3118 which may have formed the north side of the enclosure, and ditch 3134 some 30 m to the south. Ditches 3118 and 3134 were more or less parallel. The south end of 6074 appears to have turned eastwards some 15 m short of enclosure 6114, suggesting that there may have been a trackway here running east.

**Enclosure 6115** (Fig. 6)

Enclosure 6115 was located in the northern part of the excavated area and had an irregular, trapezoidal shape. Ditches 6093 and 6117, which formed the south and east sides of the enclosure, were relatively straight, linear features with a right angle corner in the south-east, while the north-western part was defined by the curving, segmented ditch 6092. A possible entrance was located on the east side where a 3.5 m-wide break in the enclosure ditch was identified, although waterhole 5014 (see below) was positioned so as to effectively block this opening. An opening through the ditch directly opposite this may also represent an original entrance. At the north-east corner a third entrance was formed where the eastern side of the enclosure, represented by ditch 6093, terminated 1.6 m short of the northern ditch 6092, thus leaving an opening wide enough to accommodate pedestrian traffic. The enclosing ditch was consistently V-shaped in profile where excavated, and survived up to a maximum of 1.25 m wide and 0.58 m deep (Fig. 7, sections 511 & 544). It was recorded as having a maximum of two fills, excluding material derived from the slumping of the sides and yielded Bronze Age pottery. A large oval pit (5512) that may have been a waterhole lay near the centre of the enclosure.

**Waterholes** (Figs 8-10)

A total of eighteen features were interpreted as Bronze Age waterholes (Table 1). Eleven of these features (168, 180, 191, 209, 242, 322, 414, 420, 442, 517 and 5014) were dated to the Bronze Age by virtue of the pottery retrieved from their fills, while those lacking pottery were typologically similar to the examples which could be dated in this way. In addition, waterhole 177 formed part of an inter-cutting complex of waterholes with the securely dated Bronze Age features 168 and 209 (Fig. 10), and waterhole 415 predated waterhole 420. Finally waterholes 38 and 3080 produced no datable finds but had spatial

*Archaeological work at Appleford Sidings*

*Table 1 Summary of Bronze Age waterholes*

Cut	EBA/MBA pottery	Shape in plan	Sides*	Base	Dimensions/ diameter (m)	Depth (m)
38		Circular	Moderate	Concave	2.10	1.00
168	Y	Circular	Moderate	Concave	3.30	1.90
177	Inter cutting waterholes	Circular	Steep	Flat	5.00	1.50
191		Y	Circular	Moderate	Flat	3.40
209	Y	Circular	Steep	Concave	3.10	1.55
180	Y	Circular	Steep	Flat	6.50	1.70
242	Y	Oval	Steep	Flat	3.75 x 3.0	1.40
322	Y	Circular	Steep	Flat	4.35	1.60
414	Y	Circular	Steep	Concave	2.50	1.40
415	Inter cutting waterholes	Circular	Moderate	Concave	3.00	1.30
420		Y	Circular	Steep	Concave	2.25
442	Y	Oval	Moderate	Flat	5.05 x 3.50	1.55
456		Sub-circular	Moderate	Concave	3.00	1.50
478		Circular	Steep	Flat	5.00	1.80
517	Y	Oval	Steep	Flat	11.00 x 4.80	1.50
3080		Sub-circular	Steep	Flat	2.88	1.14
5014	Y	Circular	Moderate	Concave	2.60	1.40
5512		Oval	Steep	Flat	6.75 x 4.50	1.30

\* Moderate = 45° - 60°, Steep = >60°



*Plate 6 Period 2 waterhole 442 sectioned, looking north*

associations with ditches 6106 and enclosure 6113 respectively, both of which were dated to the Bronze Age on ceramic grounds.

The waterholes were generally circular or occasionally oval in plan, ranging from 2.0 m to 6.75 m across and between 1.3 m and 1.9 m deep, with the exception of the unusually large waterhole 517 which measured 11 m x 4.8 m in plan (Fig. 8, section 630), and waterholes 38 and 3080 (Fig. 9, section 360), which were only 1.0 m and 1.14 m deep. In profile, the sides of the waterholes generally sloped at 45°-60°, with the smaller examples having concave bases while the wider ones had steeper sides and were more commonly flat-based.

Most of the waterholes (168, 177, 180, 191, 209, 242, 322, 442, 456, 478 and 517) (waterholes 168, 177, 191 & 209: Fig. 10; waterhole 242: Fig. 8, section 40; waterhole 442: Fig. 9, section 82; waterhole 478: Fig. 9, section 90; waterhole 517: Fig. 8, section 630) had basal fills composed of tenacious grey or bluish grey clays and silty clays, often containing flecks and fragments of waterlogged wood and other preserved organic matter.

The nature of these deposits is consistent with formation in standing water, as one would expect from an open waterhole. In the case of waterholes 180, 242

and 456 (Fig. 8, section 84) this layer was preceded by a primary fill of re-deposited natural material. Two wooden stakes (SFs 19, 20) were found driven into the base of waterhole 209 (Fig. 10), and a further three (SF 32) occurred at the base of waterhole 242 (Fig. 8, section 40). These are likely to represent the remains of wattle linings that served to stabilise the sides of the pits. It may be significant that they were found in waterholes which contained water-lain lower fills, as it may have been the presence of a lining that enabled these pits to remain open for long enough for such layers to accumulate, while the sides of waterholes which lacked linings collapsed before this layer could form. It seems probable that similar linings existed in the majority of these features, but the evidence has not usually survived. The subsequent fills generally consisted of a series of up to eleven layers of yellow and brown silty clays containing varying quantities of gravel and resulting from the collapse of the sides of the pits and the washing in of soil from the surface, culminating in a final deposit of darker, greyer clay representing tertiary in-filling.

Four waterholes (168, 322, 414 and 517) were identified as having been deliberately back-filled, on account of the nature of their fill material. In each of these features an initial phase of natural silting similar to the lower fills seen in the other waterholes was followed by the deposition of a main fill of dark grey soil which completely filled the rest of the pit. The back-filling deposits of pits 414 (Fig. 8, section 80, context 84) and 517 (Fig. 8, section 630, contexts 509, 527) also contained large quantities of pottery, with more than 350 sherds being retrieved from each feature, as well as a similar number of pieces of bone and much worked flint and burnt stone from waterhole 414.

Two instances of complexes of inter-cutting waterholes were identified. The larger of the two complexes comprised four waterholes (168, 177, 191 and 209) and a pit (186) (Fig. 10). The earliest of these features was waterhole 191, which had fallen into disuse and silted up only to be replaced in the same location by waterhole 209. After this feature had also filled in, waterhole 177 was dug on its south-west side, slightly intersecting with its predecessor. Finally, after waterhole 177 had been allowed to fill up naturally, waterhole 168 was dug in almost the same location. Interestingly, this last feature was apparently the only one in this sequence to be deliberately back-filled. Pit 186 was dug on the north-east side of the complex, partially truncating the side of waterhole 191. Pit 186 was a circular, bowl-shaped feature 2.7 m in diameter and 0.9 m deep. There was no evidence to indicate the purpose of this pit, but it is unlikely to have been another waterhole as it was considerably less deep than the other such features, and lacked the water-deposited lower fill. It contained a primary fill of clean yellowish silty clay (214) overlain by two back-filling layers of grey soil (187, 188) containing Bronze Age pottery.

The second complex comprising two intercutting waterholes (415 and 420) (Fig. 9, section 76) was



Plate 7 Period 2 waterhole 478 sectioned, looking north



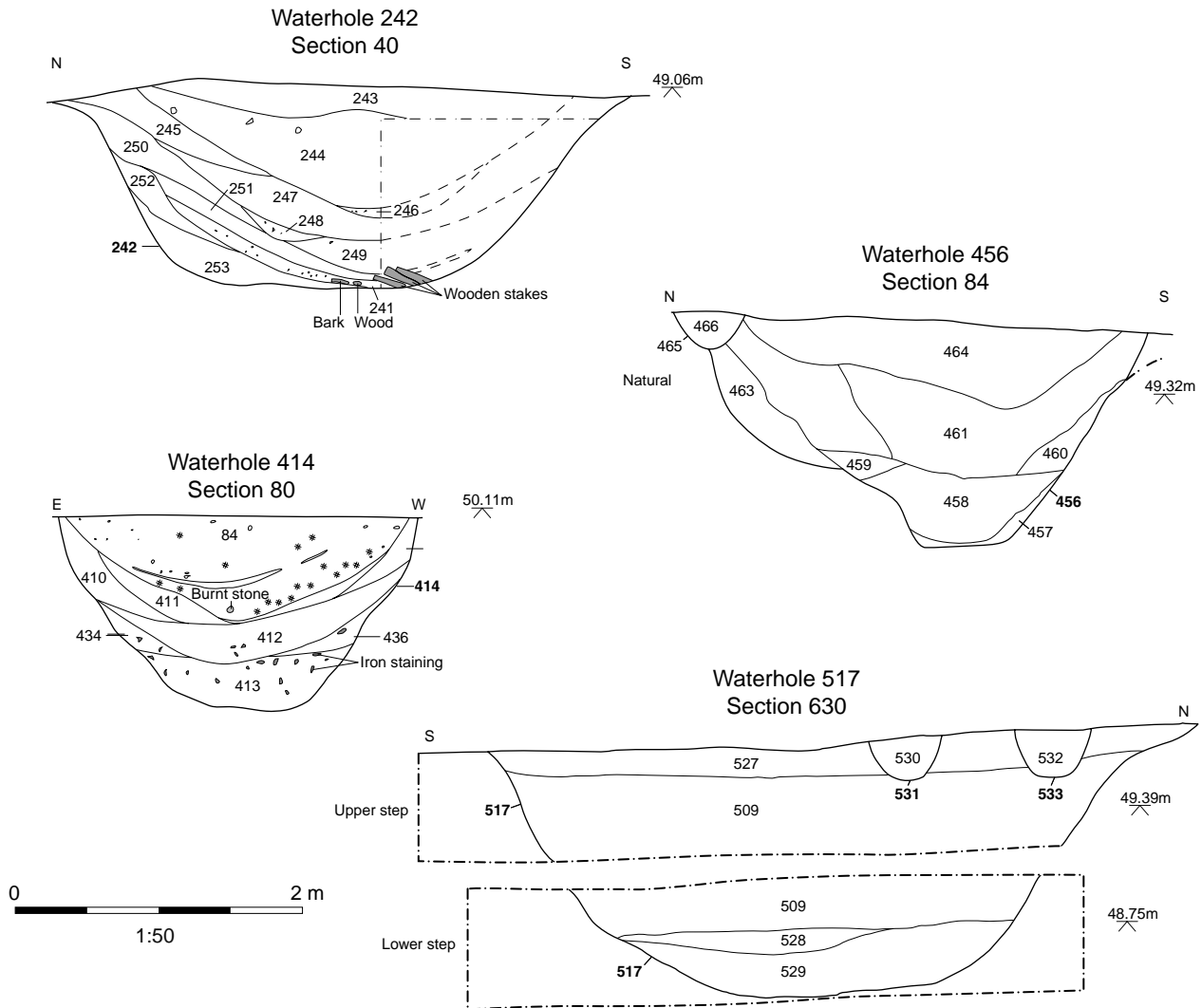


Figure 8 Period 2: sections of selected waterholes

located at the north-west corner of enclosure 6112. The earlier of these was waterhole 415, a circular feature with steep sides and a concave base, which contained four fills (416-9) consistent with natural in-filling. With a diameter of 3.0 m and a depth of 1.3 m this was toward the smaller end of the size range for waterholes on this site. After it had become completely filled in, waterhole 420 was dug, cutting the south side of the earlier feature. Waterhole 420 was a similar size and shape to its predecessor, and similarly contained four fills (421-4) indicative of natural silting. Its penultimate fill (423) yielded fourteen sherds of Bronze Age pottery. As with the other complex of intercutting waterholes, this pair of features was adjacent to a pit (398). This pit was circular and flat-based with gradually sloping sides, and measured 2.0 m in diameter and 0.35 m deep. No finds were recovered from this feature.

Waterhole 517 was abnormally large, with dimensions of 11 m x 5 m (Fig. 8, section 630). It was only partially excavated and may in fact have been another complex of two or more intercutting features.

#### *Relationship between waterholes and boundary ditches*

A number of waterholes had spatial associations with enclosures or field boundary ditches. Waterholes 3080 and 5014 were located at the entrances to enclosures 6113 and 6115 respectively, while waterhole 5512 (Fig. 9, section 130) was situated almost centrally within the latter enclosure. Similarly, waterhole 414 (Fig. 9, section 80) was placed at the entrance to one of the field enclosures at the west end of the site and waterholes 415 and 420 were located at the north-west corner of the same enclosure. The latter two waterholes probably cut the ditch (6010) enclosing the field, and relationships were recorded for waterhole 38, which cut the west end of ditch 6106, and waterhole 180, which cut ditches 277 and 278 where they converged at a right angle. Waterhole 478 cut ditch 6027 adjacent to the southern terminus of ditch 6061. These relationships indicate that at least some of the waterholes were later than the establishment of the field system. The repeated spatial associations

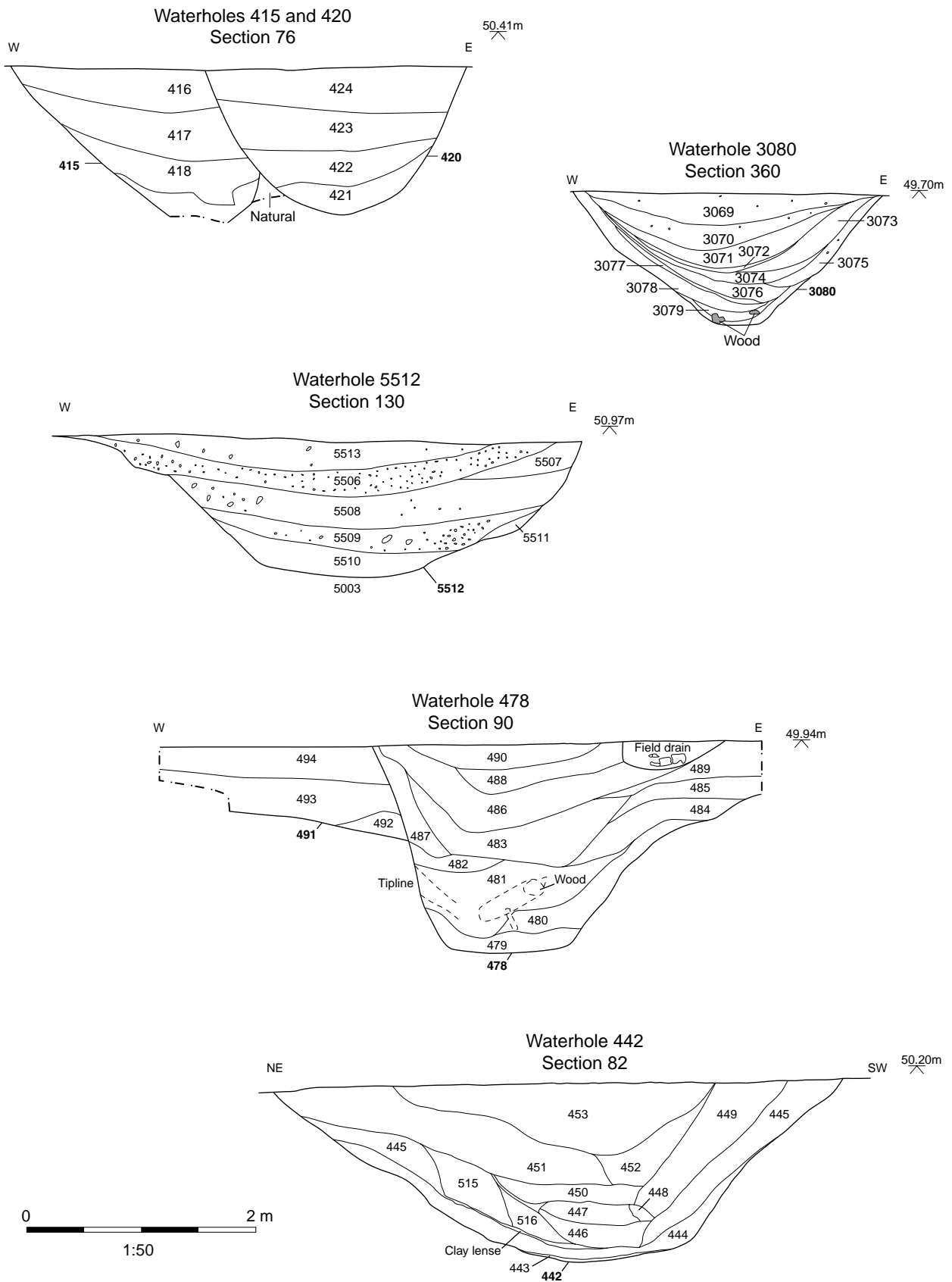


Figure 9 Period 2: sections of selected waterholes

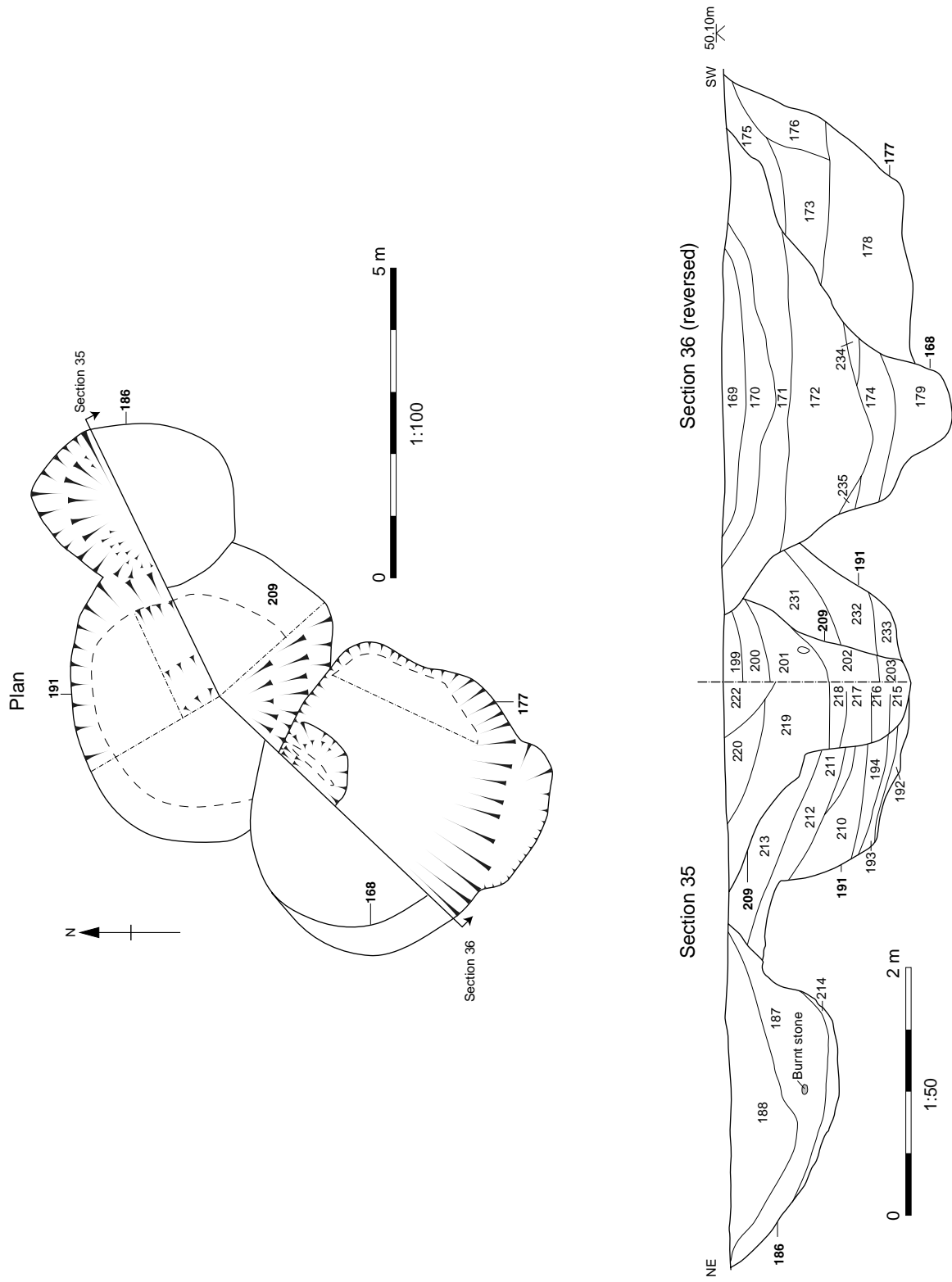


Figure 10 Period 2: plan and section of waterhole complex (contexts 168, 177, 191 and 209)

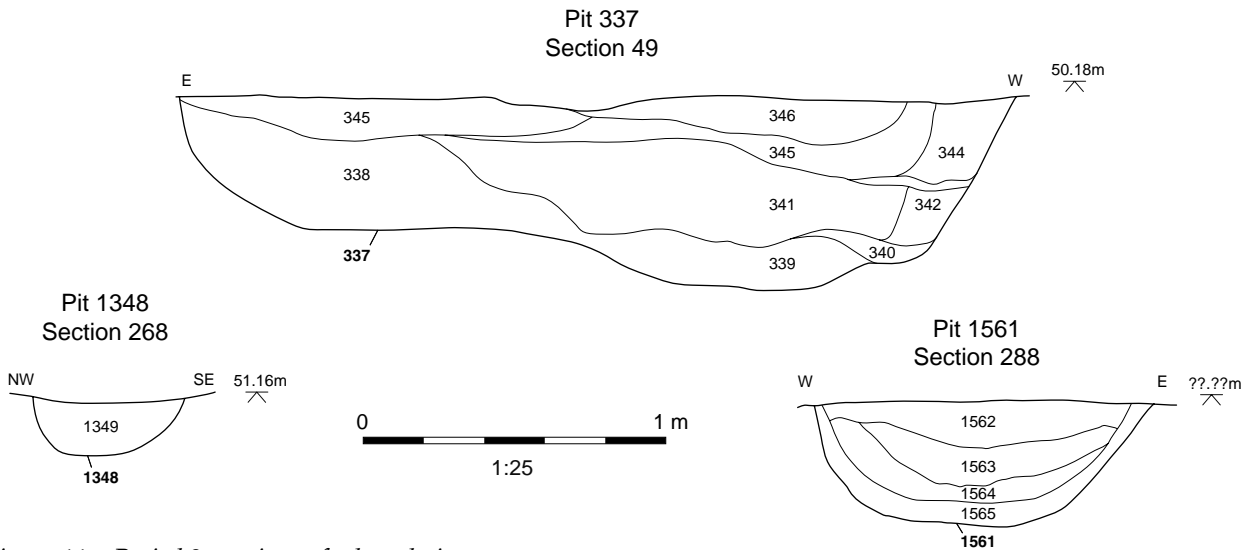


Figure 11 Period 2: sections of selected pits

between the waterholes and ditches, however, suggest that the boundaries were clearly visible when the waterholes were dug, and that only a brief period of time had therefore elapsed before the digging of the pits.

## Pits

### *Pits adjacent to linear boundaries 6044 and 6045*

Pits 1312, 1561 and 1569 were all located close to the main linear boundary formed by ditches 6044 and 6045. Pit 1561 was the most westerly of these features (Fig. 11, section 288). It was circular in plan with steep sides and a flat base and measured 1.15 m in diameter and 0.4 m deep. A primary fill of reddish brown gravelly silt (1565) was overlain by a dump of burnt material (1563 and 1564) 0.2 m thick containing much charcoal, as well as numerous sherds of bucket urn and pieces of fired clay and burnt stone. This was sealed by a back-filling deposit composed of brown silty clay (1562).

Pit 1569 was uncovered between ditches 6044 and 6045, next to a possible return on the north side of 6044. It measured 2.0 m in diameter and had a conical profile, with sides which sloped at 45° to a concave base at a depth of 0.9 m. An initial fill of gravelly material resulting from natural silting 0.12 m thick (1570) was overlain by a layer of deliberate back-fill (1571) which filled the remainder of the pit. The feature was dated to the Bronze Age by a small quantity of pottery recovered from this upper fill.

Pit 1312 was positioned on the line of ditch 6044, adjacent to the terminus of one of the segments of which the ditch was composed. It was sub-circular in plan, measuring 3.2 m x 2.75 m, and 1.3 m deep with a flat base. It contained three fills (1311, 1317 and 1425) which may represent either deliberate back-filling or natural silting. It is possible that this feature should be interpreted as a waterhole, since its dimensions are consistent with those of the smaller waterholes

discovered elsewhere in the excavation, but there is no conclusive evidence for this interpretation. Unlike most of the definite waterholes, its basal fill exhibited no indication of being deposited in standing water.

### *Pits within enclosures*

Pits 337 and 357 were both located fairly centrally within the same field enclosure. Pit 337 was oval in shape, measured 2.8 m along its longer east-west axis, and was 1.2 m wide (Fig. 11, section 49). Its sides were steep and its base generally flat with a depth of 0.6 m. A total of nine fills were recorded, comprising primary silting (338) followed by a series of deposits (339-345) culminating in a dump of domestic refuse and burnt material (346). This final fill contained a large assemblage of animal bone and Bronze Age pottery, as well as a small assemblage of worked flint.

Pit 357 was circular with gradually sloping sides and a more concave base. It had a diameter of 2.2 m and was 0.6 m deep. After an initial slumping of material from the sides of the pit (358), its earliest fill comprised a deposit of clean redeposited natural (359), sealed by a final deliberate back-fill of greyish brown silt (360) which contained a single sherd of Bronze Age pottery.

### *Isolated pits*

Pit 5149 was located 10 m north of enclosure 6115. It was oval in plan, measuring 2.4 m x 1.7 m, and 0.5 m deep with steeply sloping sides and a flat base. It contained three fills of mid to dark brownish grey silty clay (5146, 5147 and 5148). The pit was cut by a 1st century field boundary ditch (5153).

Pit 115 was an isolated feature located near the western end of the excavation. It was oval in shape, measuring 0.95 m x 0.85 m, and had steep sides and a flat base. It was 0.26 m deep, and contained a single fill (114) which yielded two sherds of Bronze Age pottery.

**Burials**

**Grave 1566** (Fig. 12)

Grave 1566 was located toward the north-western limit of the 1998 excavation area and contained the skeletal remains of a female aged 18-25 years. The grave pit was roughly oval in shape, and measured 0.95 m in length by 0.6 m wide, with a depth of 0.14 m. It was aligned east-west, with the body (1568) placed in a crouched position with the head to the east. The body lay on its back with the arms folded across the stomach, while the legs were turned to the north with the knees drawn up to the chest in a foetal position. A globular urn was placed next to the left side of the body. The burial was sealed by a single back-filling deposit of reddish brown silty clay (1567), probably the spoil from the digging of the pit.

The grave had been truncated by ploughing, resulting in the loss of much of the skull, as well as the upper part of the left leg and pelvis and the lower part of the right leg, as well as the rim of the accompanying vessel.

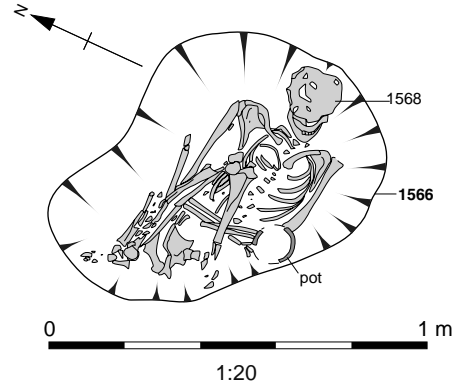


Figure 12 Period 2: plan of crouched inhumation burial 1568 in feature 1566

**Cremation burials** (Fig. 13)

At the southern margin of the site six small pit-like features were exposed during the 1997 evaluation, one in Trench 21 and five in Trench 20. All had a fill containing charcoal and burnt bone. The single feature in Trench 21 (2103), lying partly beneath the

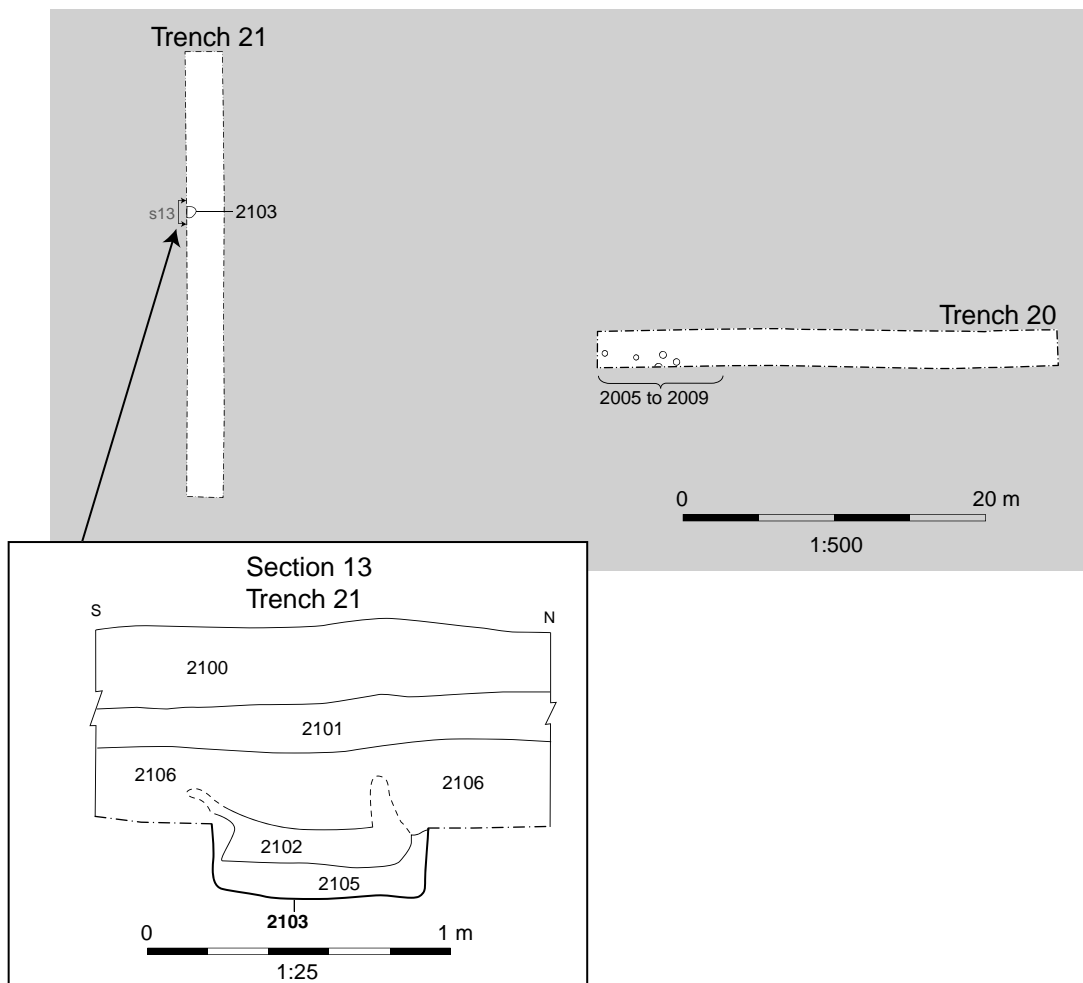


Figure 13 Period 2 plan showing locations of cremation burials in 1997 evaluation trenches 20 and 21

western edge of the trench, was sectioned and shown to be 0.70 m across and 0.48 m deep while analysis of the contents of the main fill (2102) revealed that the burnt bone was human (Fig.13, section 13). A flint flake was also associated with this material and suggested a Bronze Age date for the feature. This was supported by a radiocarbon determination on a sample of burnt bone from 2102 (sample 2) which produced a date of 1410-1260 cal BC at 95% confidence (OxA-18033). Feature 2103 was initially thought to have been cut through a buried ploughsoil (2106) but this impression seems to have been caused by plough disturbance and worm action ('ghosting') above the feature and it is likely that layer 2106 originally sealed it. The five similar features in Trench 20 (2005 to 2009), all c 0.30-0.40 m across, clustered at the west end of the trench and were thus about 30 m distant from feature 2103 in Trench 21. Because of the 'ghosting' effect these features were left *in situ* in the expectation that they would be excavated when a wider area was examined, rather than being recovered out of context. In the event this part of the site was not extracted and the features survive beneath a soil mound at the edge of the quarry.

The evidence indicates the existence of a cluster of unurned cremation burials at the southern edge of the site, but their numbers remain unknown. The limited associated dating material suggests a middle Bronze Age date for these features.

### PERIOD 3: LATE IRON AGE - ROMAN OCCUPATION

#### Introduction (Fig. 14)

The main phase of late Iron Age and Roman occupation was dated by the ceramic evidence between the early-mid-1st and early-2nd centuries. The occupation comprised a rectilinear double-ditched enclosure, around which lay an agricultural landscape composed of field boundaries and trackways. This complex was established *de novo*, with no evidence of any preceding Iron Age settlement. The enclosure had been identified as a cropmark on aerial photographs and subsequent to evaluation was tentatively interpreted as the site of a 'proto-villa' (Henig and Booth 2000, 84-85), but is here referred to as the principal enclosure. In the central part of the site, investigated in 1997 and 1998, the field system could be divided into two phases on the basis of the stratigraphic relationships. Two phases were similarly identified in the northern area, excavated in 2000, and these are interpreted as being the same two phases, although no direct stratigraphic links existed between the two areas. The north-eastern area of the excavation, investigated in 1999, had a rather more complex sequence of development which could not easily be linked with that of the rest of the site, and so it is described separately.

#### Principal enclosure 6100 (Fig. 15)

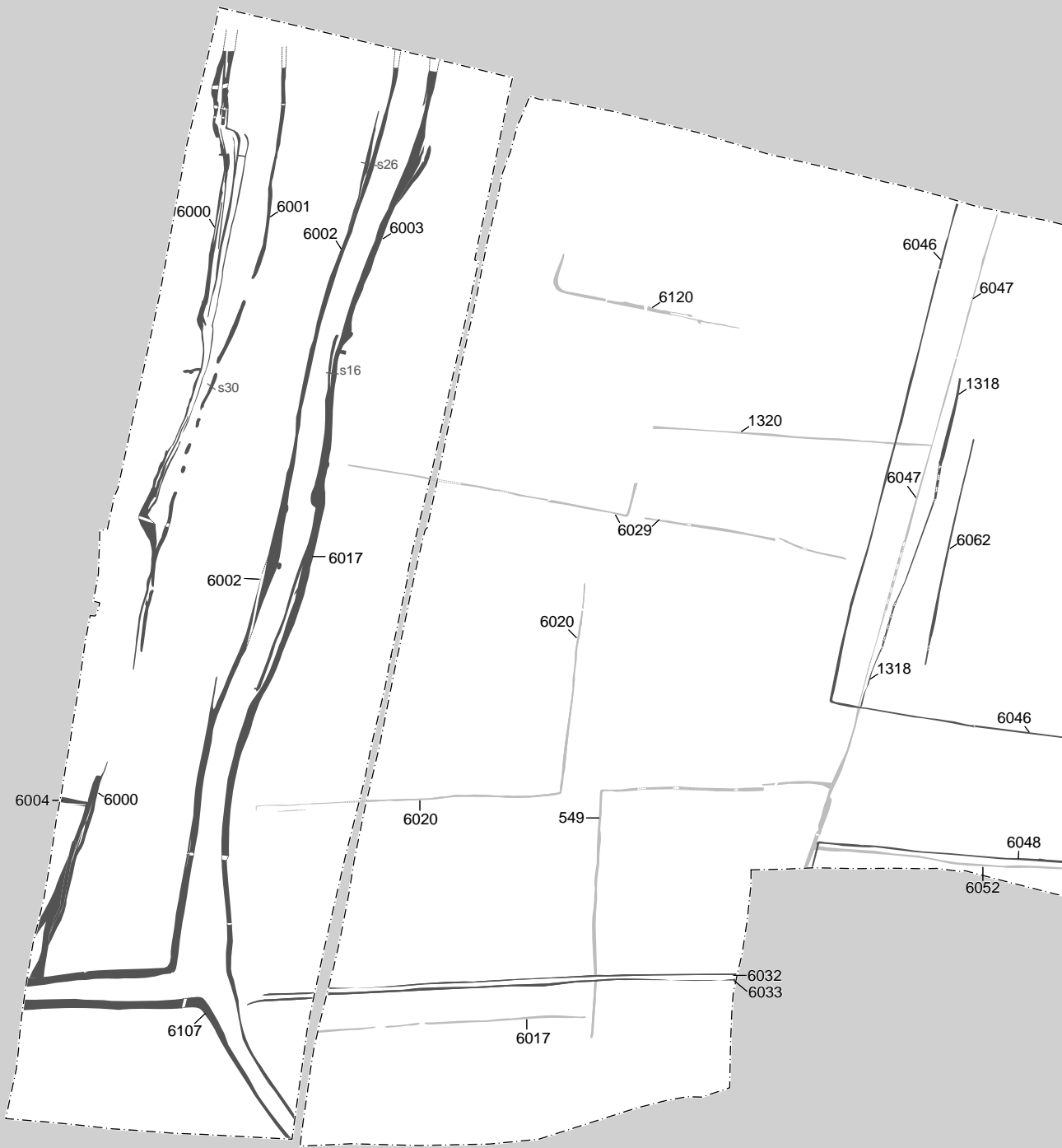
##### Enclosure ditch

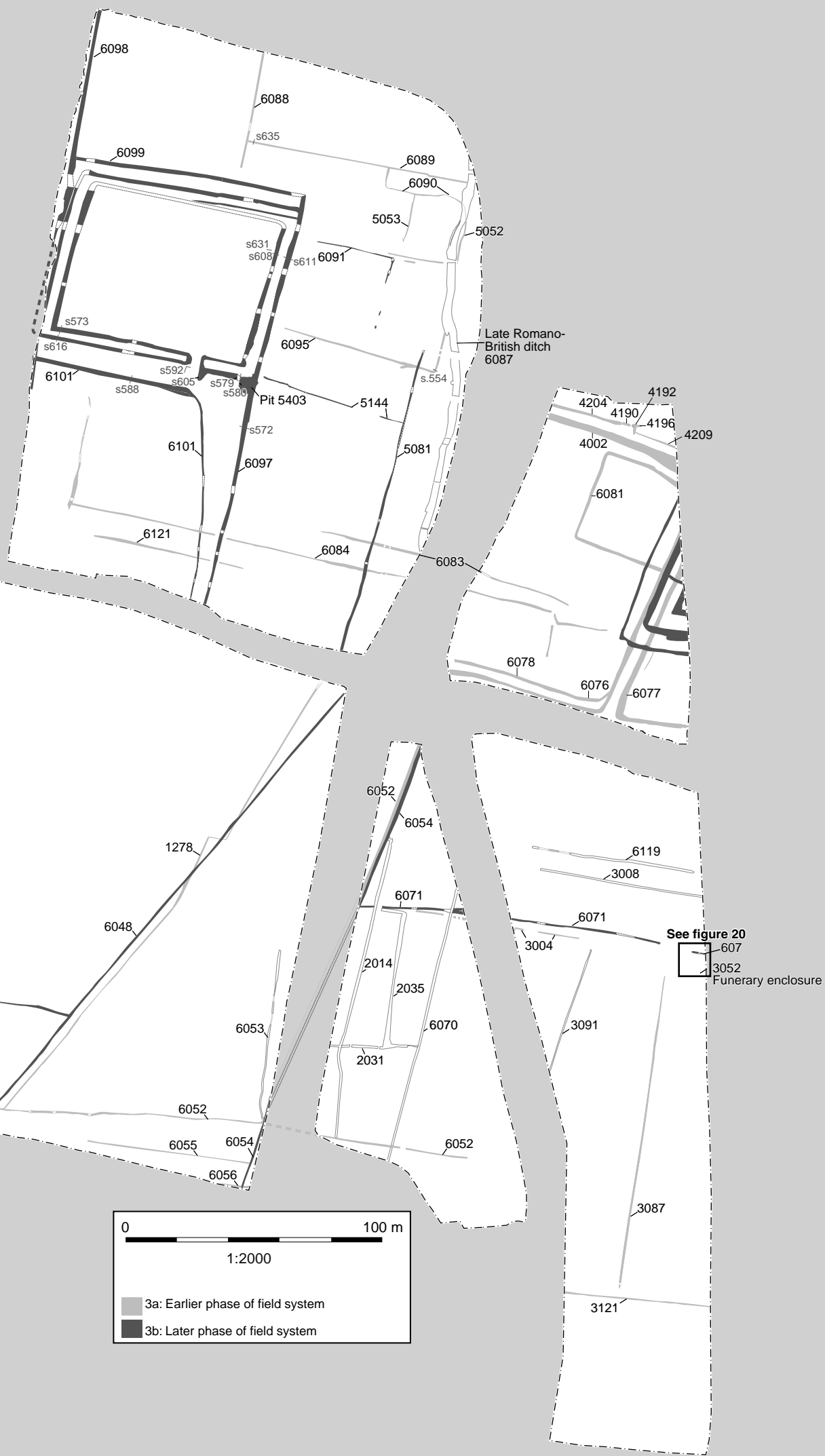
The enclosure was rectangular in shape, with its longer axis aligned ESE-WNW and extended over an area of c 0.5 hectares. It was defined by a pair of concentric ditches c 3 m apart which enclosed an area measuring 75 m x 55 m with a single entrance located on the enclosure's southern side, off-centre toward the south-eastern corner. The enclosure was double-ditched on all four sides, as is clearly seen on one of the aerial photographs (NMR 4619/4) which usefully shows the principal Roman features without the complicating factor of post-Roman cultivation features on the same alignment. On excavation the inner ditch on the north side was almost completely obscured by a medieval plough furrow, while the outer ditch on the east was largely removed when it was recut as more extensive boundary (6097, see below). The outer ditch on the west side lay almost entirely beyond the edge of the excavation and in addition, like the corresponding ditch to the east, had been recut by a later field boundary. Elsewhere, excavation inevitably revealed a more complex plan and sequence than was suggested by the aerial evidence. The two main enclosure ditches were generally V-shaped in profile, with quite steeply sloping sides and narrow bases. The outer ditch was consistently the more substantial, with a width of 1.3-2.5 m and a depth of 0.7-1.1 m (cut 5211: Fig. 16, section 616; cut 5235: Fig 16, sections 579 & 580) compared to the inner ditch's dimensions of 0.85-1.8 m in width and 0.5-1.0 m in depth (cut 5208: Fig. 16, section 573; cut 5388: Fig 16, section 608). In the majority of sections excavated across the ditches, the features were recorded as having been re-cut, the later phase usually being shallower than the original ditch. Both phases were filled with sequences of grey silty clay deposits containing varying amounts of flint gravel, often overlying a primary fill of yellowish sandy gravel. There was no discernible chronological distinction between the pottery recovered from fills of the successive phases of the enclosure ditches. The majority of ceramic and other finds, however, came from the later fills. More detailed description of the enclosure deals with each side in turn, proceeding clockwise from the south side.

##### South side

The entrance was formed by the two main ditches turning to join each other on either side of a causeway 3.5 m wide. The effect of this was to create a short entrance passage 6-7 m long between the ditch terminals, an effect that was increased by the digging of a projection 3 m long on the outer side of the eastern terminal. The overall variation in the depth of the enclosure ditches was particularly noticeable here.

*See overleaf: Figure 14 Overall plan of features of Periods 3a and 3b*







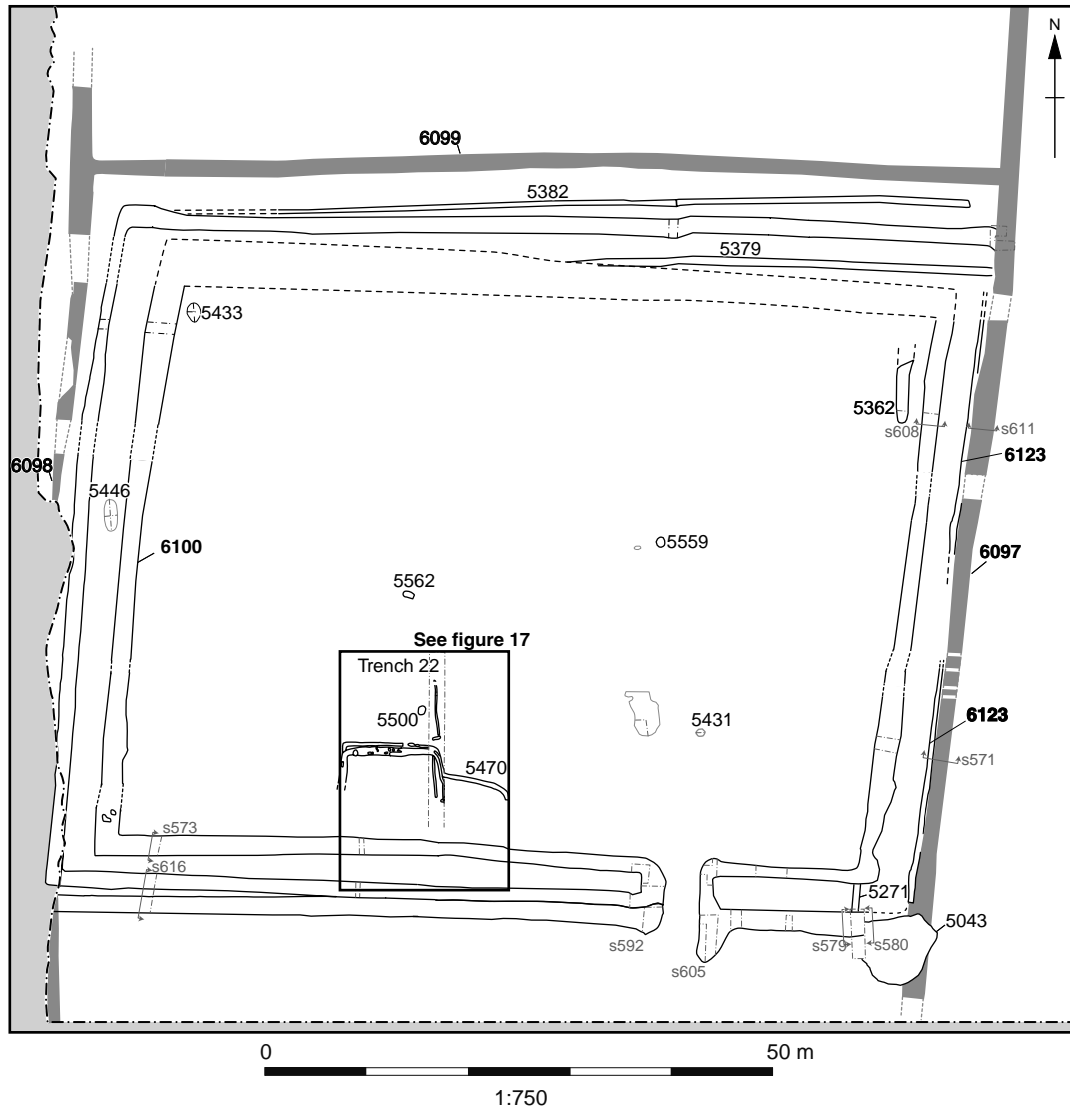


Figure 15 Period 3a: plan of principal rectilinear enclosure and its internal features

The ditches were generally larger on this side of the enclosure, and were found to be at their deepest at the terminals flanking the entrance (Fig. 16, sections 592 & 605).

To the west of the entrance, the two phases of the outer ditch diverged gradually but eventually quite appreciably, with the later phase dug to the north side of its predecessor (eg. cut 5213: Fig. 16, section 616). At the south-west corner of the enclosure the gap between the inner and outer ditches had been halved from a minimum of *c* 3.75 m in the first phase to barely 1.6 m in the second phase. The later ditches were both less substantial than their predecessors. In particular the second phase of the inner ditch at this point (cut 5210 in Fig. 16, section 573) was significantly narrower and shallower than its predecessor. This cut was only identified in section, however, and did not appear in a section some 20 m to the east. It is therefore possible that it represented a recut of fairly limited extent.

#### West side

Part of the west side of the enclosure lay at the very edge of the site and just beyond it, close to a former modern field boundary and in an area that had seen significant disturbance related to earlier, unrecorded gravel extraction. A further consequence of the edge of field location was that the aerial photographs, while still useful, were unclear in the vicinity of the south-west corner. Not all of the details are certain, therefore. The inner ditch was for the most part well-defined, and as on the south side the recut was considerably slighter than the primary cut of the ditch, and located towards the outer (in this case western) edge. There was a consistent gap of 3.2-3.5 m between the inner and the outer ditch on this side, but it seems almost certain that the 'outer' ditch here was only the later of the two main phases of ditch seen at the west end of the south side of the enclosure. Evidence from the extreme south-west corner shows this ditch turning northwards, while its

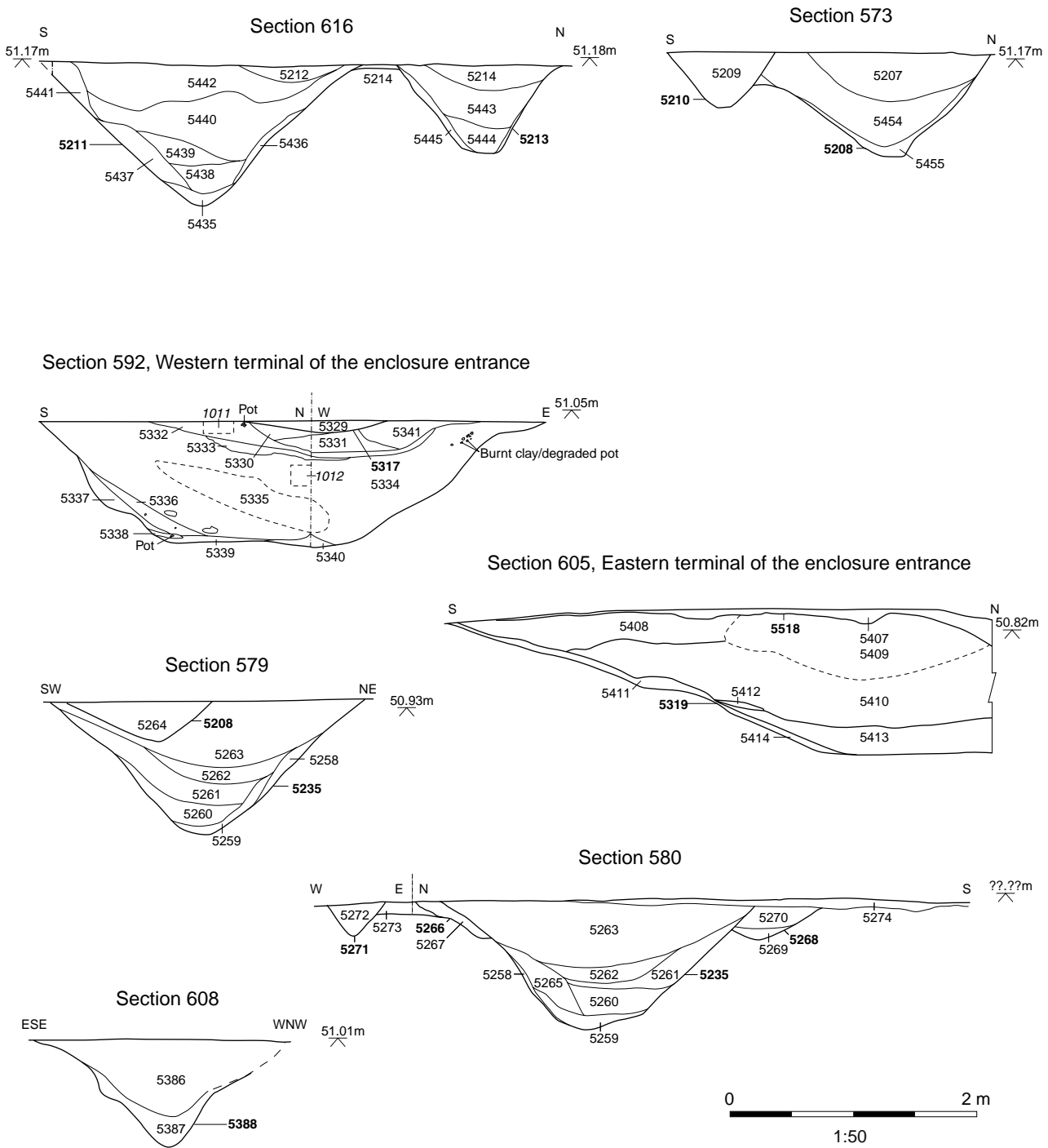


Figure 16 Period 3a: sections of ditches of principal rectilinear enclosure

predecessor continued westwards beyond the limit of the site. This is consistent with the evidence of the aerial photographs which suggest that the distance between inner and outer ditches towards the north-west corner, where both are quite clearly visible, was of the order of 6 m.

The primary outer ditch on the western side, therefore, was hardly encountered at all within the excavated area. It was seen in the lower part of a section towards the north-western corner of

the enclosure, its upper part completely removed by a later field boundary ditch (6098) on the same alignment (see below), at which point it was almost contiguous with the later, more easterly phase. It is uncertain if this close spatial arrangement was maintained further south, but this is possible. The position of the north-west corner of the enclosure was almost entirely obscured by an east-west aligned medieval plough furrow and by later disturbance, the inner corner lying entirely beneath the furrow

while the outer corner, again truncated by the later field boundary ditch, was very unclear, although its general position is certain.

#### *North side*

The east-west plough furrow already mentioned completely masked the line of the inner enclosure ditch on this side. Including the latter feature, there were five east-west aligned linear features assigned to this period and defined with varying degrees of certainty, in a band some 12-15 m wide north-south. The most northerly of these was probably not related directly to the enclosure and is interpreted as another field boundary (6099, see below). The outer enclosure ditch (5068), had only a single cut and it may have merged with both versions of the outer west side ditch, but in a disturbed area where the details of these relationships were not recoverable. Additional to the main double ditched layout were two smaller gullies, both aligned approximately east-west. Gully 5379, ranging from 0.65-1.2 m in width and 0.4 m deep, lay between the two ditches, consistently *c* 2.0-2.2 m south of the south edge of the outer ditch, and ran from the line of the outer east side enclosure ditch for at least 42 m, at which point it was obliterated by the medieval furrow that also obscured the inner north side enclosure ditch. It is possible, therefore, that this feature was the equivalent of the later phase outer enclosure ditch seen on the west and south sides, but as its western part was completely lost this is not certain.

A further gully, 5382, 0.5-0.7 m wide, 0.36 m deep and notably steep-sided, lay north of the outer enclosure ditch. Its eastern terminus lay 4 m west of the line of the north-east corner of the enclosure, at a point some 2 m north of the outer enclosure ditch. The gully gradually converged with the ditch, and was traced for approximately 70 m, fading out to the west right against the northern edge of the enclosure ditch. Apart from its location, gully 5382 therefore had no recorded relationships with any of the components of the enclosure. Although it was undated it seems likely to have been associated with the enclosure in some way.

#### *East side*

The inner ditch was clearly defined and had two cuts, the later being less substantial than the earlier, and located towards the inner (west) side of the alignment, although the overall width of the ditch varied. The outer ditch, fairly consistently *c* 3.6 m distant from the inner one, was largely removed by a later field boundary ditch (6097) on the same alignment (see below). A notable aspect of this side of the enclosure was the presence of a gully, 6123, typically 0.45-0.55 m wide, which lay immediately inside (ie west of) the inner edge of the outer ditch and was traced for much of the length of this side, terminating just short of the south-east corner of the enclosure. There was no clear relationship between the gully

and the adjacent enclosure ditch, but the fact that the gully was partly truncated by the boundary ditch 6097 suggests that the enclosure ditch and the gully, the positions of which clearly reference each other, were contemporary.

At the south-east corner of the enclosure, a small north-south gully (5271) extended the alignment of the inner east side ditch and linked the two east-west south-side ditches. It is likely to have been at least broadly contemporary with these. A further north-south aligned ditch (5362) was located in the north-east corner of the enclosure, only 1.6 m inside the line of the inner enclosure ditch and apparently parallel with it. Feature 5362 was some 14 m long, with a clearly-defined southern terminal but truncated by a medieval plough furrow at the north end. The ditch was 1.2-1.4 m wide and up to 0.54 m deep. Its silty clay fills produced 1st century pottery.

#### *Bank/rampart*

The linking of the inner and outer ditches at the entrance clearly demonstrated their contemporaneity. The space between the two circuits left little room for any activities, and almost the only feature recorded in this area was a tree throw hole (5446) on the west side. The size and location of banks associated with the enclosure ditches is uncertain. The ditches, however, were more substantial on the southern side, or 'front', of the enclosure, particularly adjacent to the entrance, indicating that the bank (or banks), wherever positioned, is likely to have been correspondingly larger in this area.

The enclosure ditch fill sequences did not in fact give a clear indication of the presence of an adjacent bank or banks. The proximity of pit 5433 to the inner ditch in the north-west corner of the enclosure cannot be used to suggest that there was no bank located immediately inside this circuit, since this feature is likely to have been a tree-throw hole (see below) and could have been of any date, but the location of ditch 5362 does appear inconsistent with the location of a substantial bank adjacent to this ditch. An alternative interpretation, that the upcast from both ditches was used to construct a single bank in the space between them seems to be precluded by the presence of gully 5271 (see further discussion below).

#### *Internal features* (Fig. 17)

##### *Rectilinear structures*

The only evidence found for structures standing within the enclosure was a group of beam slots and associated postholes situated on the south side of the enclosure, west of the entrance. The earliest of these structures survived as a beam slot 5538 aligned ESE-WNW. The slot was 0.3 m wide and only 0.1 m deep, and was filled with a single deposit of greyish brown clay loam (5537). To the east, it extended into Evaluation Trench 22, where a similar slot on a NNE-SSW orientation (22/14) probably represents

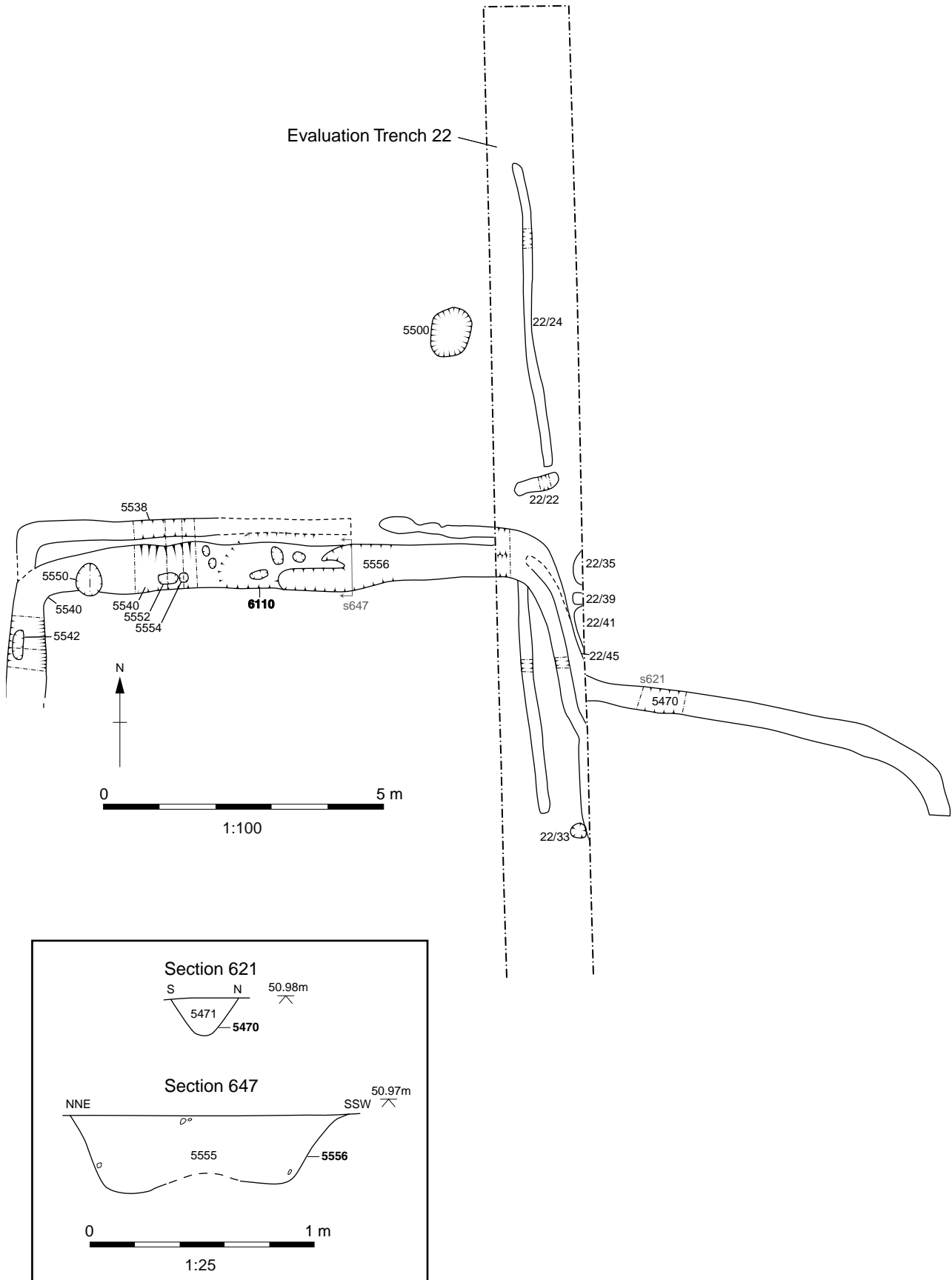


Figure 17 Period 3a: Plan and sections of structures within enclosure

the eastern end of the structure. At its western end the slot turned a right angle to the south to form the western end of the structure, but most of this end had been removed by the digging of a later beam slot 6110. No evidence was observed for the south side of the structure as this area had been truncated by a plough furrow. The surviving evidence indicates that the slot represents a rectangular structure founded on ground-fast beams, and measuring 9 m ESE-WNW and between 4 m and 7 m wide. The absence of any evidence for internal supports might suggest that the width is likely to have been toward the lower end of this range.

The structure represented by beam slot 5538 was subsequently replaced in the same location by a similar structure, 6110. As with the earlier structure this survived as a rectilinear beam slot, the southern side of which had been removed by a later plough furrow. The western end lay on the same line as that of the previous structure, completely truncating it, but the north side was slightly further south than that of slot 5538 and the eastern end, which again had been identified in the evaluation trench (22/16, 22/20), further east. The overall dimensions of this structure were 9 m ESE-WNW and 3-6 m wide. The slot was more substantial than that of its predecessor, measuring 0.75 m in width with a flat base at a depth of 0.16 m (Fig. 17, section 647), but had a similar fill (5539, 5555) from which two sherds of mid-1st century pottery were recovered. A number of post-holes (5542, 5550, 5552, 5554) were recorded cut into the fill of this slot, all of which penetrated into the underlying natural geology. These may have held the building's main structural uprights, while the beam slot served as a foundation for wattle panels between them. The oval shape of these postholes may result from a rocking motion having been employed to loosen the posts when the building was demolished. Another beam slot 5470 extended for 6.5 m beyond the eastern end of the structure (Fig. 17, section 621). It was not possible to establish whether this was an extension to the end of the structure 6110, or represents the remains of a separate structure.

A row of postholes (22/33, 22/35, 22/37, 22/39, 22/41, 22/43 and 22/45) recorded in Evaluation Trench 22 was aligned parallel to the eastern ends of the two structures, but which phase they relate to was unclear.

Immediately to the north of these structures, the evaluation also recorded the remains of another rectilinear structure. This comprised a beam slot (22/24) 5.5 m in length, on a similar alignment to the eastern end of structure 6110, with a possible westward return at its southern end (22/22). A large vertical-sided posthole (5500) to the west of this slot filled by a 'clean' greyish brown sandy loam (5501) may have held a post supporting the roof of the structure. No other evidence for this structure was recovered during the main excavation, but it would appear to represent a similar building adjacent to the surviving structure.

#### *Other features*

Very few other features were identified within the enclosure. North of the structural complex was a single pit (5562), which was oval in plan, measuring 1.2 m x 0.5 m, and was 0.14 m deep. Its only fill, a deposit of dark greyish brown sandy clay (5563), contained two sherds of 1st century pottery, as well as some fired clay.

A number of other anomalies within the enclosure (5431, 5433, 5502, 5559 and 5573) were investigated and interpreted as tree throw holes on the basis of their irregular profiles and homogenous brown silty clay fills. None of these features was dated.

### **Trackways and field system**

#### *Western trackway* (Fig. 18)

The trackway was defined by a pair of parallel ditches (6002, 6003) aligned north-south which followed a slightly sinuous course across the west end of the excavated area. The ditches were between 7 m and 8 m apart and were exposed for a length of some 305 m before the trackway diverged, with one branch extending toward the south-east while the other turned westward. Both branches continued beyond the limits of the excavation, while to the north the trackway similarly extended beyond the area under investigation. The ditches had each been re-cut on numerous occasions, generally to a V-shaped profile. Their dimensions varied from one section to another, possibly a consequence of having experienced varying degrees of truncation along their lengths. The maximum recorded width was 2.25 m, with a depth of 0.75 m, although the smallest measurement was only 0.6 m wide and 0.16 m deep (ditch 6003, cut 138: Fig. 18, section 16; ditch 6002, cut 119: Fig. 18, section 26). The various phases of the trackway ditches were recorded as having between one and four fills composed predominantly of greyish brown silty clay derived from the natural alluvium, probably through natural silting processes.

Dating evidence from these features was minimal. Four sherds of Roman pottery were recorded from component contexts of ditch 6002. One was of 1st century AD date while the other three were in Oxford colour-coated ware, indicating a late 3rd-4th century date for their associated fills.

The boundaries forming the field system exposed across the main area of the excavation invariably respected the line of the trackway, with ditches running up to but not crossing it. This would indicate that the trackway formed a major boundary within the scheme of land division. It is uncertain whether further field enclosures existed west of it, beyond the excavated area.

#### *Boundary ditches west of the trackway*

Boundary ditch 6000 branched off the northern side of the western branch of the trackway and extended northward, parallel with the main north-south alignment of the trackway. The feature was exposed for a



Plate 8 Aerial view of 1997 excavation looking north. The Period 3 trackway ditches are particularly clear.

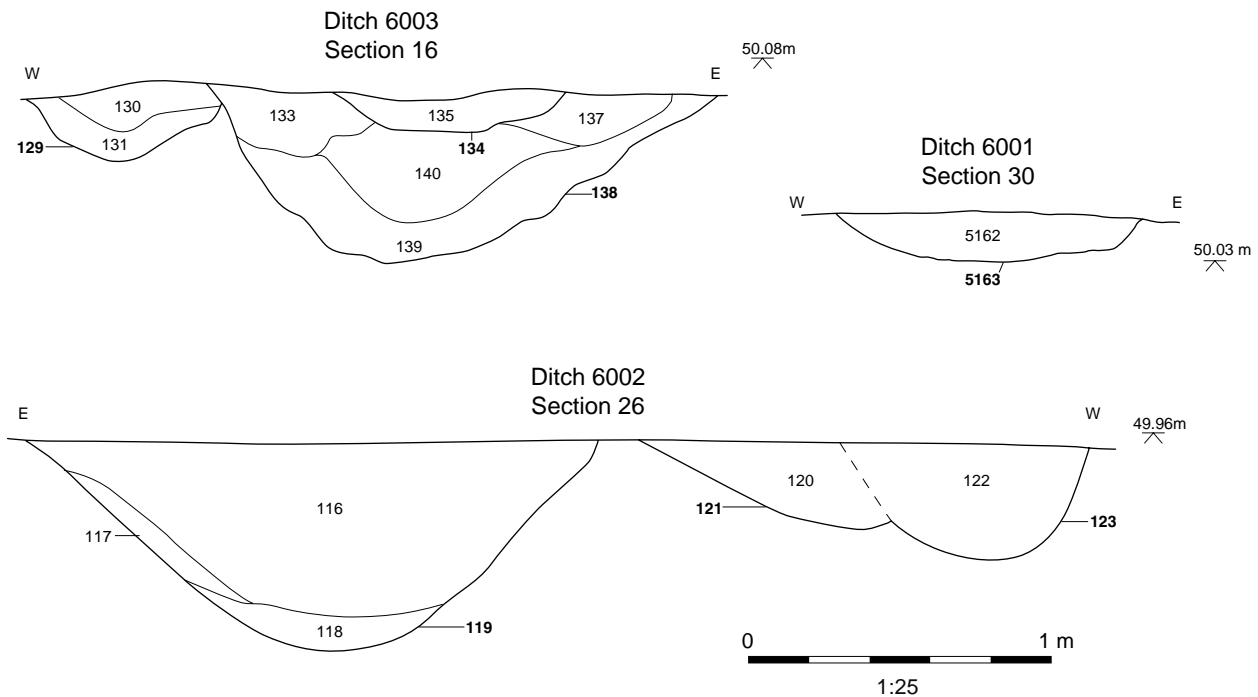


Figure 18 Period 3: Sections of ditches of the western trackway

total length of 305 m, and continued further beyond this to the north. It lay *c* 30 m west of the trackway and followed a similarly sinuous line, with several distinct kinks apparent along its length. As many as six phases of this boundary could be identified, indicating that it had some considerable longevity. It was slightly less substantial than the trackway ditches, with a width of between 0.35 m and 1.0 m and a maximum depth of 0.26 m, and contained only a single fill which yielded very few artefacts (and no Roman material). Toward the southern end of this boundary, ditch 6004 branched off it to the west, but was only exposed for a length of 9 m before passing beyond the western limit of the excavation.

In its final form (6001) this boundary followed a straighter line, particularly in the northern half, where it ran to the east of its earlier phases. This last phase survived to a depth of no more than 0.16 m (ditch 6001, cut 5163: Fig. 18, section 30), and had a segmented appearance, probably due to having been intermittently truncated along its length.

### Period 3a: Earlier phase of the field system

#### Northern area (Figs 14 & 19)

The northern part of the area investigated was divided up by a series of approximately parallel field boundary ditches lying on a WNW-ESE orientation (6089, 5052, 6095, 6084). The most northerly of these boundaries was ditch 6089 which was exposed for a total length of 90 m, continuing to the east beyond the limits of the excavation. To the west it ended at ditch 6088, which lay perpendicular to it on a NNE-

SSW alignment. Ditch 6088 was recorded for a length of 46 m before it too continued beyond the excavated area to the north. Its southern terminus was obscured by a later plough furrow. Both ditches were steeply V-shaped in profile and 1.0 m wide with a depth of 0.4 m, and were filled by identical deposits of dark brown silty clay (ditch 6089: Fig. 19, section 635).

Ditch 5052 was parallel to ditch 6089 and 32 m to the south of it, while ditch 6095 lay a further 40 m to the south. Ditch 6095 extended on this alignment for 61 m and was the better preserved of these features with a width of 0.75-1.0 m and a depth of up to 0.45 m (Fig. 19, section 554), whereas 5052 was 27 m long and survived to a depth of only 0.11 m. Both these ditches turned to the north at their eastern ends, but it was not possible to ascertain whether they were physically joined to each other or to ditch 6089 as the digging of later Roman ditch 6087 had disturbed the areas where these relationships would have been located. To the west, they respected the side of enclosure 6100, utilising this as the western boundary of the areas being enclosed.

Fifty five metres from the junction of ditches 6088 and 6089, ditch 6090 branched off the latter feature to the south. It extended southward for 7 m before turning toward east and extending for a further 30 m to form two sides of a rectangular enclosure adjacent to the south side of ditch 6089. The eastern end of this enclosure had been removed by the digging of a later ditch 6087, so it is uncertain whether the ditch enclosed this end or whether it was left open. The ditch itself was 0.9 m wide and up to 0.34 m deep and contained a single fill of brown clay silt. A possible entrance into the enclosure was identified on

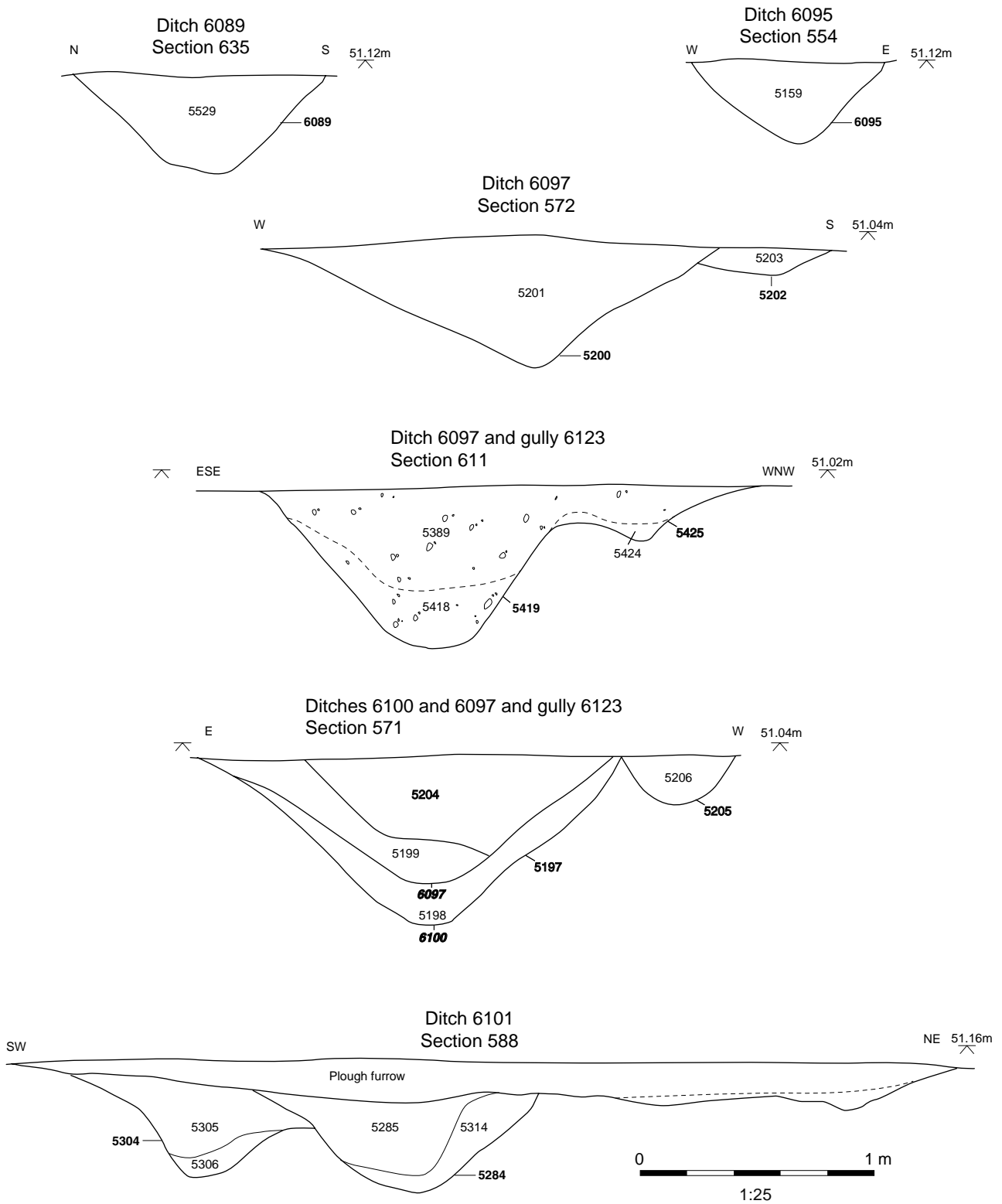


Figure 19 Periods 3a and 3b: Sections of field boundary ditches





*Plate 9 Period 3 field boundary ditches 6032 and 6033 looking west*

its southern side in the form of a break through the ditch 2.15 m wide. Excavation of the termini flanking this entrance revealed them to be no more than 0.05 m deep, raising the possibility that the break in the ditch could be the result of modern plough-truncation having completely removed the ditch at a point where it was particularly shallow, rather than representing an original entrance. However, the slight but distinct in-turning of the enclosure ditch on either side of the break would appear to confirm that this was a real entrance.

The area between this enclosure and ditch 5052 was further sub-divided by ditch 5153. This feature branched off ditch 6090 and extended southward for a total length of 19 m, creating an almost square enclosure with ditch 5052 defining its south and east sides. This enclosure measured 24 m north-south by 21.5 m east-west and was accessed through an entrance 5 m wide at its south-western corner.

Ditch 6084 lay *c* 80 m south of ditch 6095 on the same ENE-WSW orientation. It extended on this alignment for a total of 195 m, spanning the 1999 and 2000 areas, turning northward at its western end and continuing intermittently for a further 43 m. As with many of the ditches on this site, it was not particularly substantial, with a width varying between 0.8 m and 1.0 m and a maximum surviving depth of 0.35 m. Three sherds of pottery dated to the later 1st century AD were recovered

from the upper of the two fills of this feature (4161). Ditches 6083 and 6121 lay parallel to ditch 6084 to its north and south sides respectively. These features were each *c* 9 m from ditch 6084 and may have bounded track- or droveways running alongside it. Ditch 6085 was located at the east end of ditch 6084 and had a crooked, dog-legged shape. It may have been associated with ditch 6084 or intended to serve as an extension of it. Ditch 4160, aligned north-south and located a short distance to the south of the east end of ditch 6084 may also have been contemporary with these features. It is possible that the narrow entrances between the ditches served to control the movement of animals between the areas which these boundaries divided.

#### *Central area (Fig. 14)*

A major boundary ditch (6047) running NNE-SSW was exposed for a total length of 222 m, extending across the entire width of the 1998 excavation and continuing in both directions beyond the area investigated. This feature measured between 0.45 m and 1.4 m in width, and on excavation proved to be up to 0.38 m deep with steep sides and a flat base. It was filled by a single deposit of dark brown silty soil which contained no finds.

The area to the west of ditch 6047 was divided into a pattern of rectilinear fields by a series of ditches aligned north-south and east-west. These boundaries

were all relatively insubstantial, measuring around 0.5 m in width and rarely surviving to a depth of more than 0.15 m, and contained similar fills of reddish brown silty clay. Ditch 549 branched westward off ditch 6047 for *c* 75 m. At its western end, it turned a right angle and extended southward, enclosing the north and west sides of an area measuring *c* 80 m north-south by 75 m east-west. West of this ditch, a rectilinear area was bounded on its north and south sides respectively by ditches 6020 and 6017. These features lay on parallel east-west alignments *c* 70 m apart, the latter cutting a middle Bronze Age boundary ditch (6016) which shared a similar alignment. The western side of this enclosure was formed by trackway ditch 6003. To the north of these two adjacent enclosures, the eastern end of ditch 6020 extended northward for *c* 70 m before petering out, separating two similar field enclosures, again bounded to the west by the trackway and to the east by ditch 6047. The northern extent of these enclosures was defined by ditch 6029, which lay on a WNW-ESE alignment, giving these areas a slightly trapezoidal shape. A break 5 m wide in this boundary, located to the east of its mid-point, may be an original entrance. At the terminal defining the western side of this entrance the ditch returned northwards to divide a further pair of enclosures. The field on the eastern side of this boundary, again bounded to the east by ditch 6047, was enclosed on its north side by ditch 1320 and measured 88 m east-west and between 30 m and 38 m north-south. The enclosure to its west was considerably larger, measuring 66 m north-south with its northern side defined by ditch 6120.

The area east of ditch 6047 revealed much less evidence for sub-division. A single ditch (6052) branched off ditch 6047 near the southern edge of the excavation and extended eastward for at least 270 m before petering out. Ditch 1278 branched off the north side of this feature and extended north-eastward for *c* 220 m, eventually passing beyond the excavated area and under the modern Didcot-Appleford road. This ditch exhibited a sharp dog-leg toward its northern end adjacent to the point at which it cut across middle Bronze Age boundary ditch 6045. This may indicate that the remains of an earthwork or hedge-line associated with the earlier boundary survived into the Roman period, although no such evidence survived at the time of the excavation. There was no evidence for further division of the large trapezoidal area between ditches 6047 and 1278, although boundaries could have been defined by hedges, which would have left no archaeological trace. At the eastern end of the excavation, ditches 3004 and 3121 lay on parallel alignments to 6052 and are likely to have been contemporary with it, as is ditch 3087, which formed a NNE-SSW boundary at right angles to these features.

### *Period 3b: Later phase of the field system*

During the period of use of the field system a number of modifications were made to its layout. In the northern part of the site this involved the replacement of the previous complex of boundaries with an entirely new system, but in the central area the changes were less radical, comprising the re-alignment of a few of the existing boundaries. The ceramic evidence, although limited in quantity, indicates that the field system had only been established for a short time before these alterations were made.

#### *Northern area*

In the northern part of the site, the new arrangement was based on a series of three parallel ditches aligned NNE-SSW (5081, 6097 and 6098). Ditches 6097 and 6098 were aligned on east and west sides of the principal enclosure (6100), incorporating the line of its outer ditch into their alignments. Ditch 6097 was initially a relatively shallow feature with a depth of no more than 0.25 m, but was subsequently re-cut as a more substantial, V-shaped ditch 2 m wide and up to 0.75 m deep (Fig. 19, sections 572 and 611). Only a single phase was recorded for ditch 6098, which was of a similar scale to the later phase of ditch 6097, measuring more than 2 m in width and 1.2 m deep.

Ditch 6101 ran alongside ditch 6097 on a parallel alignment, and similarly possessed two phases and a steeply V-shaped profile. The two ditches bounded a trackway *c* 5 m wide, widening toward its northern end where ditch 6101 turned to extend westward parallel to the southern side of the principal enclosure (cut 5304: Fig. 19, section 588). The trackway continued beyond the southern limit of the 2000 excavation but was not encountered in the 1998 excavation immediately to the south, and so must have terminated at a point between the two areas. This may indicate the existence of an east-west boundary of Roman date beneath the unexcavated modern field boundary. Ditch 6101 continued beyond the western edge of the excavation, where it presumably intersected with or joined ditch 6098.

Ditch 6099 was a subsidiary field boundary, extending WNW-ESE between ditches 6097 and 6098. It measured 1.5 m in width and was U-shaped in profile, with steep sides and a flat base at a depth of 0.35 m. The need for a new ditch in this position suggests that the boundary formed by the ditch and bank of the north side of the former principal enclosure was no longer in existence.

To the east of these features, ditch 5081 was slighter, measuring only 1.0 m in width and with a depth of 0.26 m. This ditch did not extend into the northern part of the area, but in view of the shallowness of the ditch this may be due to truncation rather than reflecting its original extent. All three ditches may originally have extended throughout the length of the 2000 excavation. The area between ditches 5081 and 6097 was divided laterally by ditches 5144 and 6091.

A series of ditch segments (5135 and 5176) extending NNE-SSW between these ditches probably represent further sub-division of this area.

#### *Central area (Fig. 14)*

In the central part of the investigated area the east-west ditch 6052 was replaced by the shorter ditch 6048. This extended only as far as the junction of ditch 6052 with ditch 1278, at which point the later ditch turn north-eastward to follow the alignment taken by 1278, albeit on a straighter line without the dog-leg. Ditch 6046 branched off this boundary westward, extending for 110 m before turning to the north to replace the earlier ditch 6047 on a similar orientation, but *c* 10 m to the west of its predecessor. It was presumably as part of the same programme of alterations that a double-ditched boundary defined by ditches 6032 and 6033 was created in the south-western part of the site. This may have been a replacement for the boundary *c* 10 m to the south formed by ditch 6017. To the east of ditch 6051, ditch 3004 was replaced on approximately the same alignment by ditch 6071, which cut the north side of a funerary enclosure 3052 (see below), while a new boundary was created by the digging of ditch 6087, which ran NNE-SSW across the eastern part of the excavation, continuing to the south beyond the limits of the investigated area, and extending beneath the Didcot-Appleford road to the north. Ditches 6046 and 6048 may be the same features as ditches 6098 and 5081 in the area to the north.

#### *Enclosure 6100*

It is uncertain whether the principal enclosure was still in existence at this point. The incorporation of the outer ditches of its western and eastern sides into the field system suggests that the enclosure still existed in some form. Similarly, ditch 6101 appears to have respected the enclosure's southern side. If the enclosure was still extant at this time, the trackway bounded by ditches 6097 and 6101 would have provided the main means of access to it, while the westward extension of ditch 6101 controlled movement to the west from the entrance. However, as noted above the digging of ditch 6099 suggests that the northern side of the enclosure may no longer have existed, while it is possible that ditch 6101 served as a boundary parallel to 6099, enclosing a field accessed via the trackway, and that its apparent association with the southern side of the enclosure is coincidental. Similarly, although the alignment of ditches 6097 and 6098 seems to have been dictated by the position of the outer circuit of the enclosure, these boundaries cut the fills of the enclosure ditch, suggesting that this had silted up by this time. If the absence of evidence for revetment of the enclosure bank genuinely indicates that there was none, it is likely that slippage of the unsupported bank material into the ditch would have occurred fairly

rapidly without regular maintenance. The silting of the ditch suggests that this may have already happened by the time the later phase of the field system was laid out, in which case, although the position of the enclosure appears to have influenced the arrangement of the subsequent field boundaries, it may by this time have existed only as a disused earthwork.

A large pit (5403) cut the junction of field boundary ditch 6097 with the south-east corner of the enclosure. This location would appear to be intentional, although no evidence was recovered which indicated the pit's function. A relatively substantial quantity (83 sherds, 1262 g) of 1st and 2nd century pottery was retrieved from it, but this material could be largely residual, derived from the enclosure ditch. The pit was very roughly circular in plan with a flat base and measured *c* 7 m in diameter and 1.1 m deep.

#### *Possible Period 3 field boundaries at the eastern end of the excavation*

Toward the eastern end of the excavation lay a series of ditches which may have been part of the field system, although they could not be definitively assigned to a specific phase on either stratigraphic or ceramic grounds. Ditches 6053, 2014, 6070 and 3091 lay on parallel NNE-SSW alignments. These features were all similarly shallow, with depths between 0.1 m and 0.2 m, and had similar fills of firm brown or greyish brown silty clay. That they were planned and laid out as part of a single integrated system is indicated by the regularity of the spacing between them. The distances between ditches 6053 and 2014, and between ditches 2014 and 6070, were both 30 m, while that between ditch 6070 and ditch 3091 was approximately twice this at 56 m. The area between ditches 2014 and 6070 was further sub-divided by an east-west aligned ditch 2031, from which ditch 2035 branched off northwards and extended for 52 m before turning westward. How far this ditch extended in this direction could not be ascertained as it was truncated by ditch 6071, part of the later phase of the field system. A notable find from fill 2030 of ditch 2031 was a fragment of human skull, while the fill (2043) of an immediately adjacent recut (2044) of this ditch contained a complete saddle quern (see Roe, 'Worked and burnt stone', Chapter 3, no. 1, Fig. 23, SF 202).

To the north of ditch 6071, a pair of ditches (3008 and 6119) lay on a parallel alignment. The ditches were 8 m apart and may have been the flanking ditches of a trackway, although it is not clear how they related to the other features in the area. Although no datable material was recovered from these features, the common alignment is suggestive of their being contemporary with the Romano-British field system. A small spread of cremated human bone (3042) was located in the upper part of the fill of ditch 6119.



Plate 10 Period 3 burial enclosure 3052 with cow burial 3106 in adjacent ditch 3102, looking east.

### Cremation burials

#### *Funerary enclosure 3052* (Fig.20)

A square ditched enclosure (3052) measuring 7 m across was located at the eastern edge of the site in the area examined in 1998. The ditch itself was continuous and shallow with a concave base. It measured 0.75 m in width and was up to 0.28 m deep (Fig. 20, sections 367 & 369), and was filled by a single deposit of greyish brown silty clay (3055, 3097, 3128) from which two sherds of mid-1st century pottery were recovered. The north side of the enclosure was cut by ditch 3094, which is likely to be a continuation of field boundary ditch 6071.

Near the centre of the enclosure was a shallow sub-circular pit (3050) measuring 0.75 m x 0.55 m (Fig. 20, section 341). A shell-tempered ware jar containing the cremated remains of a single adult (3053) was placed upright against the south-west edge of the pit. This positioning of the vessel to the side of the pit suggests that some other object may have occupied the central area, a hypothesis which may be confirmed by the discovery of the remains of at least 50 nails in the back-fill of the feature. Mineralised wood was observed within the corrosion products attached to some of the nails, and it is likely that they derived from a box or casket accompanying the burial. The cremation pit had been truncated by ploughing, removing most of the pottery vessel, along with a

portion of the cremation itself.

A shallow, concave scoop (3098) was located a short distance to the south of pit 3050. Two sherds of middle Bronze Age pottery were retrieved from its fill (3099), but these may have been residual, and so it is possible that the feature was associated with the enclosure and cremation burial. No evidence for human remains was identified in this feature. A third possible feature which lay near the south-east corner of the enclosure was not excavated.

A circular, steep-sided pit (3125) 1.1 m in diameter and 0.22 m deep was cut into the north-west corner of the enclosure ditch, a position that suggests a deliberate association. Two layers of burnt material had been dumped into this pit (Fig. 20, section 369). The first of these was a thin deposit of red, heat-discoloured soil (3129), which was overlain by a more substantial layer of charcoal-rich material (3126) from which a single sherd of 1st century pottery was recovered.

An animal burial was placed immediately outside the south-west corner of the enclosure. A complete adult cattle skeleton (3106) lay on its right side facing northward in a shallow irregularly shaped pit (3104). A piece of worked flint and a sherd of Bronze Age pottery recovered from the back-fill of the pit (3105) probably derived from the middle Bronze Age enclosure ditch 6073, which it cuts.

## **Other Features**

### ***Pit 5221***

Pit 5221 was an isolated feature located 15 m south of the entrance to the principal enclosure. It was oval in plan and measured 3.8 m long by 1.8 m wide and 0.3 m deep. A thin primary fill (5222) was overlain by a dump of ash and charcoal (5223), which was sealed by a deliberate back-fill of reddish brown silty clay.

### **1999 excavations - boundaries and enclosures (Fig. 21)**

#### ***Introduction***

The north-eastern area of the site, investigated in 1999, contained a series of features with a more complicated sequence of development than that apparent across the rest of the site. Correlation between these features and those in the rest of the excavation was hindered as this area was cut off from the other areas by the present quarry road on its western side, and by a modern field boundary/drain to the south, severing most stratigraphic links. The ceramic evidence was unable to assist in establishing correlations with the sequence in other parts of the site, as most of the pottery derived from a small number of features, and because the entire sequence appears to have occurred within a relatively short space of time, in which the various phases of development could not be distinguished on ceramic grounds. Nevertheless, a possible simplified version of the development of this part of the site in terms of the broad phasing scheme used elsewhere is shown on Fig. 14, while Fig. 21 presents the development of the 1999 area in more detail.

#### ***Ditches 4197, 4052 and 6082***

Ditch 4197 was located near the north-western corner of the 1999 area. It extended into the excavated area for 16 m on an east-west alignment, curving to a northerly orientation, with its northern end truncated by a later boundary ditch 4002. It was shallow with a concave base, and had been subject to a considerable degree of truncation. The shallowness of the ditch suggested that an opening through its eastern side was likely to result from truncation of this part of the feature rather than representing an original entrance.

Located near the eastern edge of the excavation, ditch 4052 extended NNE-SSW for 26 m, turning sharply at its southern end to continue eastward beyond the area under investigation. As was the case with ditch 4197 it was not a substantial feature, measuring 0.4 m in width and being only 0.15 m deep.

Ditch 6082 had similar dimensions and would appear to have replaced ditch 4052. It lay on the same orientation, albeit *c* 1.5 m to the west of the earlier feature, and terminated at about the same location. The NNE-SSW alignment of this ditch was,

however, shorter at 18 m. and it turned towards the south-east rather than the east. This north-west to south-east alignment was continued to the north-west by a line of four pits or postholes.

None of these features produced any datable material, and their association with the other boundaries in this area was uncertain, except that they pre-dated those ditches with which they intersected.

#### ***Enclosure 6081***

Ditches 4052 and 6082 were cut by a square or possibly rectangular enclosure (6081), at least part of the eastern side of which lay beyond the investigated area. The enclosure was 37 m north-south and at least 37 m east-west and was formed by a single ditch, which was continuous and unbroken within the area exposed in the excavation. The ditch itself was 1.2-1.6 m wide and up to 0.55 m deep, with a V-shaped profile. It contained two fills, a dark grey lower fill being overlain by a reddish brown upper layer. The location of the east side of the enclosure is uncertain, although it is perhaps most likely that it was on the same line as the western ditch of a trackway (see below) and was completely removed by that ditch. It is possible that the enclosure extended further to the east across the line of the later trackway, but the only evidence for this is a short length of ditch (4084) which, although on the same alignment as the southern arm of 6081, was less regular in plan and was recorded as cutting the east trackway ditch 6077 and is therefore likely to have belonged to a later phase.

Pottery dated to the mid-1st century was recovered from both fills of enclosure ditch 6081. There were no features within the enclosure to indicate its function.

#### ***Eastern trackway***

A trackway defined by two parallel ditches 3-4 m apart was established extending north-east to south-west across the eastern side of the area. This feature cut across enclosure 6081, which must therefore have passed into disuse by this time. The ditch to the west of trackway had two distinct phases (6076, 6078), while a re-cut was also recorded in one of the sections of the east ditch (6077). The ditches were similar in form, with widths ranging from 1.2 m to 1.7 m and quite steeply V-shaped profiles *c* 0.5 m deep. At the south end of the trackway, the ditches diverged to form a linear boundary aligned north-west to south-east, at a right angle to the line of the trackway. To the north, the trackway extended beyond the area of the excavation, and can be seen on aerial photographs continuing north-eastward beyond the Appleford to Long Wittenham road.

#### ***Enclosures post-dating the trackway***

A series of three ditches (4087, 6079 and 6080) cut across the ditches of the trackway. Within the area exposed in the excavation, these features were L-



Plate 11 *Period 3 trackway ditches 6076 and 6077 cut by later enclosure to the north, looking NNE*

shaped in plan, sharing the same NE-SW/NW-SE alignment, and formed part of enclosures or field systems lying to the east of the excavation. The ditches were all fairly substantial, with widths in excess of 1 m and depths of up to 1.1 m, and yielded pottery of the 1st and early 2nd centuries.

#### **Other land boundaries**

Ditches 4204 and 4209 extended across the northern end of the area, a distance of some 52 m, forming a boundary broken by a single entrance 6.25 m wide with slightly off-set termini. Ditch 4204 was 1.0 m wide and 0.3-0.4 m deep, while ditch 4209 was slightly shallower, with a depth of 0.12 m. The entrance through this boundary was divided into two adjacent openings by a short sausage-shaped ditch segment (4196) continuing the alignment of the entrance's western terminal. This ditch segment was 4.0 m long and 1.0 m wide and on excavation was found to be steep-sided with a depth of 0.43 m. It contained three fills (4193, 4194 and 4195) of grey and brown silty clays, the upper two of which produced small quantities of pottery dated to the 1st century AD. The two entrances thus formed were eventually blocked by the digging of two further segments of

ditch (4190 and 4192). The larger of these was ditch segment 4192 which was 4.5 m long and 1.25 m wide. It had vertical sides and a flat base with a depth of 0.31 m and blocked the eastern entrance, cutting the fills of ditch segment 4196 and the eastern terminal of the entrance in the process. Ditch segment 4190, which was dug between segment 4196 and the western terminal of the entrance, measured 3.5 m by 1.0 m, and was 0.42 m deep with similarly steep sides. Material filling these blocking ditches (4187, 4188, 4189 and 4191) contained dumps of domestic refuse including large quantities of 1st century pottery, along with animal bone and pieces of burnt or fired clay. The fills of ditch 4204 (4132, 4133, 4212 and 4213) contained similar material, indicating that these features were all back-filled at the same time.

Ditch 4002 lay on a similar alignment immediately to the south of this boundary. This was a broad, flat-based ditch, measuring from 2.6 m to almost 5 m in width and with a depth of 0.75 m, which cut earlier ditches 4197, 4052 and 6082. These ditches share the same alignments as those of the sequence of features to the south beginning with enclosure 6081, but it is not possible on present evidence to ascertain which phase of that sequence the ditches are associated with, as the point at which the features would have intersected lay beyond the excavated area, beneath the adjacent railway line. The pottery from 4002 was of mid-late 1st century date

#### **Cremation burial 4185 (Fig. 20, section 435)**

A small deposit of cremated bone was located within an isolated pit (4184) in the southern half of the 1999 excavation. The pit was rectangular and measured 0.5 m x 0.3 m, with near-vertical sides and a flat base at a depth of 0.14 m. It contained a single fill of dark, charcoally soil (4185) which included human and animal bones, both in a similarly calcined condition. The deposit of bone was too small to represent an entire skeleton, and insufficient to allow the age or gender of the individual to be ascertained. It is likely from this that the feature had been quite considerably truncated. This cremation contained no datable material, but is interpreted as being of Roman date due to its location in proximity to a number of enclosures dated to the 1st or 2nd centuries in an area lacking features of other periods, and well away from the Bronze Age cemetery identified to the south of the excavated area during the 1997 evaluation.

#### **Later Roman activity**

##### **Western trackway**

The multiple re-cuts of the ditches of the western trackway indicate that it was in use and regularly maintained over a considerable period of time. The recovery of sherds of Oxfordshire colour coated ware from several contexts within the ditches (141, 145, 157, 388) indicates that this use continued into the later part of the period, after the ditches of the field

system around it appear to have passed out of use. In this phase the trackway may have been associated with a complex of trackways and ditches excavated previously to the west of the modern village of Appleford (Hinchliffe and Thomas 1980).

#### **Boundary ditch 6087**

Boundary ditch 6087 followed a sinuous line along the eastern edge of the area investigated in 2000. It cut across the features of the early Roman field system, and was dated to the later part of the Roman period on the basis of sherds of an Oxfordshire white ware mortarium sherd recovered from its fill (5026). The ditch was exposed for a total length of 155 m, its north end continuing beyond the northern limit of the excavation while to the south it passed beneath the modern lane from Appleford to Didcot. An irregular linear feature of similar character was seen in the extreme south-east corner of the area examined in 2000 and it is possible that this was a continuation of the same ditch alignment, returning towards the west. Excavation revealed the ditch to have three phases. The earliest of these (5027, 5046) was the



*Plate 12 Period 3 late Roman ditch 6087 at eastern margin of the 2000 area, looking north*

slightest, with a width of 0.5 m and a depth of 0.25 m, the size being increased to 1.1 m wide and 0.3 m deep in the second phase (5029, 5050) and ultimately to a maximum of 1.8 m wide and 0.3 m deep in its final form (5025, 5048).

The recovery of a small quantity of later Roman pottery from the fills of the boundary ditch at the south end of the eastern trackway may suggest that this boundary also persisted in some form, although the trackway itself had been severed by the digging of ditches 6079 and 6080.

## **POST-ROMAN FEATURES**

### **Medieval cultivation**

Traces of medieval ridge and furrow cultivation survived across the eastern half of the area of the excavation in the form of parallel furrows up to 3 m wide and typically 14-15 m apart. In the southern part of the excavation, the furrows were aligned *c* NNE-SSW, parallel to the line of the Appleford-Didcot road and the axis of the main road through the village, while to the north, in the field examined in 2000, they were at right angles to this alignment. In some cases the bases of field drain lines were all that survived of the alignment of the ridge and furrow.

Ditch 6066, which extended along the northern edge of the 1997 and 1998 excavation area, was a modern drainage ditch associated with the field boundary dividing these areas from the field examined in 2000, at the southern end of which a number of ditches are also likely to have been of post-medieval date. The change of ridge and furrow alignment indicates that this boundary lay on a roughly WNW-ESE aligned headland of the medieval field systems. Another possible feature of this type was seen in 1993 as a low, broad earthwork on the same alignment in the southern part of the site, roughly 150 m south of the boundary just discussed, while further similarly-aligned headlands were identified from the air in Appleford Field to the north (Miles 1980, 15).

### **Pit 4**

Pit 4, a circular feature 2.5 m in diameter and 1.4 m deep located toward the western end of the excavation, was dated to the post-medieval period on the basis of roof tiles recovered from its fill. The nature of its basal fill, a layer of bluish grey clay (5), suggests that it held standing water and may have served as a waterhole.

## **UNPHASED FEATURES**

### **Field boundary ditches**

A number of ditches likely to represent field boundaries could not be assigned with confidence

to a specific phase by ceramic, stratigraphic or spatial evidence. The main group of such features was located in the central area of the site, east of the middle Bronze Age ditches 1234 and 6027. Ditches 6049, 6050 and 6051 lay on north-west to south-east and north-east to south-west orientations, which no other features shared, and were not obviously respecting or respected by the other features. Ditch 6057, located to the east of these features, was an L-shaped feature oriented north-south and east-west. The northern part of this ditch formed the western side of an enclosure measuring 60 m east-west by 50 m north-south, the other three sides of which were enclosed by ditch 6122. Ditch 6053 extended southward for *c* 70 m from the south-eastern corner of this enclosure continuing beyond the southern limit of the excavation.

The absence of artefactual material from the site dating to periods other than the middle Bronze Age and Roman periods would seem to indicate that these were the only significant periods of activity represented on the site. However, most of these features were cut by the ditches of the early Roman field system, while the enclosure formed by ditches 6057 and 6122 cut across the middle Bronze Age boundary ditch 6045. Some of these features could therefore belong to either phase, or indeed to an otherwise undefined intermediate phase, on stratigraphic grounds, and they produced no artefactual material that could assist in establishing their date.

#### **Animal burials 3136 and 3139**

Two sub-circular pits (3136 and 3139) located near the southern end of middle Bronze Age boundary ditch 6074 at the eastern end of the excavation each contained a complete cattle skeleton (3138 and 3140). Although the location of these features is suggestive of an association with the ditch, no evidence was found to indicate a definite date for either burial. They were assumed on site to be modern features and the associated animal remains were therefore not retained.



*Archaeological work at Appleford Sidings*

## Chapter 3: The artefacts

### STRUCK FLINT

by Rebecca Devaney and Hugo Lamdin-Whymark

#### Introduction

A total of 284 pieces of struck flint were recovered from the excavations at Appleford Sidings (Table 2). A further 21 fragments (464 g) of burnt unworked flint were retrieved from nine contexts (Table 3). A small background scatter of Mesolithic and

Neolithic flint can be distinguished from the rest of the assemblage on technological grounds. The majority of this material was recovered from Bronze Age and later features and is therefore residual. However, a substantial quantity of earlier Neolithic flint was also recovered from pit 5576. On the basis of typological and technological characteristics, the rest of the assemblage can be broadly dated to the Bronze Age. Several small assemblages of Bronze Age flint were recovered from contemporary features.

Table 2 Worked flint: Summary by tool type, phase, and feature

Phase Feature	Bronze Age						Remaining assemblage	Total
	Pit 5576	Waterhole 414	Waterhole 322		Pit 337	Other features		
Context	5577	84	325	327	346	Various		
Flake	31	31	2	5	5	14	33	121
Blade	6				1	4	6	17
Bladelet	2							2
Blade-like flake	4	1		1		3	3	12
Irregular waste	1			2	1	1	2	7
Chip	76						2	78
Rejuvenation flake core face/edge						1	1	2
Multiplatform flake core		1	1			2	5	9
Unclassifiable/fragmentary core						1		1
End scraper							1	1
Side scraper			1			1	3	5
End and side scraper						1	2	3
Disc scraper							1	1
Other scraper							1	1
Awl		1						1
Spurred piece							1	2
Serrated flake/blade	2				1		2	5
Denticulate						2	1	3
Notched flake	1							1
Retouched flake/blade	1	4	1	1			4	11
Miscellaneous retouch		1						1
Microlith							1	1
<b>Total</b>	<b>124</b>	<b>39</b>	<b>5</b>	<b>9</b>	<b>8</b>	<b>30</b>	<b>69</b>	<b>284</b>
No. burnt exc. chips (%)	14 (29)	2 (5)			1 (13)	3 (10)	2 (3)	22 (11)
No. broken exc. chips (%)	19 (40)	1 (3)	2 (40)	2 (22)	2 (25)	4 (13)	10 (15)	40 (19)
No. retouched exc. chips (%)	4 (8)	6 (15)	2 (40)	1 (11)	1 (13)	4 (13)	17(25)	35 (17)

Table 3  
Burnt unworked flint: Summary by context

Context	Count	Weight (g)
84	8	278
114	1	9
160	1	15
170	2	20
426	3	72
437	2	50
3108	1	1
4051	1	3
4203	2	16
<b>Total</b>	<b>21</b>	<b>464</b>

### Methodology

The flint was catalogued according to a broad debitage, core or tool type. Information about burning and breaks was recorded and where identifiable raw material and technological characteristics were also noted. Dating was attempted where possible. In addition, cores were weighed and burnt unworked flint was quantified by count and weight. The data was entered into an Access database.

In accordance with the assessment recommendations, certain groups of material were examined for refits, technological characteristics or utilisation. Material from earlier Neolithic pit 5576 was examined for refitting pieces. The flint was laid out and grouped according to visual similarities. Any knapping refits, conjoins or groups of related material found were recorded and described in the database.

A selection of material from Bronze Age contexts was examined for technological characteristics and utilisation, the purpose of the further analysis being to define the nature of the Bronze Age activity. The technological analysis involved the recording of a series of diagnostic attributes, including butt type (Inizan *et al.* 1999, fig. 62), termination type (Cotterell and Kamminga 1987, fig. 4), probable hammer mode (Onhuma and Bergman 1982), flake type (Harding 1990) and the extent of remaining dorsal cortex. The presence of platform edge abrasion and dorsal blade scars was also recorded (methodology following Cramp and Lamdin-Whymark, in preparation).

Low power use-wear analysis was also performed on the Bronze Age material, according to the results of experimental work (Akoshima 1987; Brown 1989; Cotterell and Kamminga 1979; Mallouf 1982; Odell 1981; Odell and Odell-Vereecken 1981; Tringham *et al.* 1974). Material was examined using x20-x40 magnifications and the distribution and morphology of the damage scars was recorded in the database. The density of the material against which the flint was used (soft, medium or hard) and the type of action involved (cutting/whittling, scraping or boring) could then be inferred.

### Provenance

The worked flint was recovered from 76 contexts, including Neolithic, Bronze Age and Roman features. The flint forms a fairly low density spread, with most contexts producing less than five pieces. However, a few *in situ* contexts contained greater numbers of flint (Table 2) and these were subject to further analysis.

### Raw material and condition

The flint appears to originate from several sources. Most pieces exhibit a thick white cortex and are likely to derive from a chalk region, such as the Chilterns, about 23 km to the south-east, or the Berkshire downs, about 26 km to the south-west. A small number of pieces have an abraded cortex, the source of which may be river gravels. Just two flakes of Bullhead flint are present. This type of flint is found in the Bullhead Bed at the base of the Reading Beds (Dewey and Bromehead 1915, 18-19) and is identified by a green cortex with an underlying orange coloured band. The closest source is between Reading and Newbury, about 25 km to the south.

The condition of the flint is variable. Pieces recovered in significant quantities, such as from contexts 84, 327, and 5577, are in a fresh condition, whereas flints recovered as single finds generally exhibit some degree of post-depositional edge damage. This indicates that many of the latter may be residual. Surface alteration is minimal with the majority of the material being uncorticated. However, a small number of pieces have a light to moderate white cortication. This includes most of the material from pit fill 5577. A small number of flints are iron stained a light to moderate orange colour. Those with a deeper orange colour are generally blades, with platform edge abrasion and narrow butts. On technological grounds these possibly date from the Mesolithic.

### Assemblage composition

In general, the flake material in the assemblage can be described as either thin and narrow or broad and relatively squat. Therefore the flint clearly derives from different industries and dates from the Mesolithic through to the Bronze Age, although the latter period is best represented. The declining standards of flintworking and the movement from the production of blades to squat flakes represent a well known phenomenon (Pitts and Jacobi 1979; Ford *et al.* 1984; Ford 1987).

### Assemblage from the Earlier Neolithic pit 5576

The assemblage recovered from the fill (5577) of pit 5576 formed a particularly coherent group of narrow and thin flakes and blades (Table 2). Although no diagnostic artefacts were present, the technological traits of the assemblage confirm an earlier Neolithic date for this material. Many pieces exhibit platform edge

abrasion, which is usually associated with the more careful flint industries of this period. Numerous chips (60% of the assemblage) were recovered which suggests that knapping debitage may be present in the pit. However, there are very few cortical, or even partly cortical, flakes suggesting that the decortication of nodules took place elsewhere. Retouched pieces include two serrated blades, one retouched blade and one notched flake. The serrated blades, one of which is broken and burnt, have very fine serrations along their left-hand edges. The retouched blade has abrupt inverse retouch along its left edge and forms a point at its distal end (Fig. 22.1). The notched flake, which is badly damaged by burning, has a broad, shallow notch on its distal end. All four pieces show signs of utilisation. There were no cores present in the pit.

Refitting analysis was carried out on the all the material recovered from the pit. The varying degrees of cortication and burning and the lack of pieces with dorsal cortex made this exercise difficult. No knapping refits were found, but two burnt and broken flakes join where part of the dorsal surface has broken away. This is likely to be a result of burning. The absence of knapping refits is, perhaps, surprising given the large number of chips recovered. However, no cores were present and just a single piece of irregular waste was identified. It is also noteworthy that a large proportion of the flakes exhibit edge damage consistent with use. It may, therefore, be reasonable to suggest that this group consists of utilised artefacts, rather than pure knapping debris.

The composition of this pit deposit is typical of Neolithic pits, containing a high proportion of retouched pieces (8%) and numerous utilised flakes and blades, a large proportion of which are burnt (29%). The absence of burnt unworked flint from this deposit is unusual, but given the scarcity of this flint in the region this is perhaps not surprising. The function of the flints in the pit is unclear, but the serrated blades may have been used for plant-working (Juel-Jensen 1994) and it is noteworthy that no hide-working tools such as scrapers or piercers are present. In this respect, the assemblage is similar to material recovered from a group of earlier Neolithic pits recently excavated at South Stoke (Cramp and Lamdin-Whymark 2005, 264-266).

### *Bronze Age assemblage*

Bronze Age features include waterholes, ditches and pits, with most contexts producing less than five pieces of flint. The raw material used in these contexts all appears to derive from chalk flint sources. The flakes are considerably broader and thicker than those recovered from the Neolithic pit and are characteristic of the Bronze Age. There are no chips present, which possibly implies that knapping took place elsewhere, although the non-recovery of micro-debitage may also be due to excavation methods. There are, however, a few pieces of irregular waste,

one rejuvenation flake, and cores. Three of the four flake cores are irregularly worked and very battered (eg. Fig. 22.2). The removals are squat and similar to flakes seen in the assemblage. The fourth core is the smallest and has slight platform edge abrasion, a characteristic usually seen in earlier industries, but again consistent with that seen on the flakes. Core sizes vary from quite small (46 g) to large (425 g).

The scrapers have semi-abrupt retouch, which is quite crude and slightly irregular on the end and side scraper. The denticulates are irregularly notched to create teeth. The awl is quite thick and heavy duty. It is likely to be hard hammer struck and has direct retouch on its right and distal edges, which forms the point (Fig. 22.3). Analysis of the usewear suggests that it has been used for boring hard materials. The serrated blade has very fine serrations and edge gloss on the dorsal surface of the left edge. It has platform edge abrasion and dorsal blade scars, characteristics that are usually associated with Mesolithic or earlier Neolithic material. This piece may therefore be residual or an atypical, specialised blank. Usewear analysis suggests that it was used for cutting/whittling and scraping hard materials on the right and left edges respectively. The five retouched flakes and the retouched blade have direct or inverse retouch on one or more edges and many had also been utilised (eg. Fig 22.4). The edges of the retouched blade may have been used for scraping medium to hard materials and the distal point has possibly been used for boring a hard material. All are trimming flakes and many are hard hammer struck. The piece with miscellaneous retouch is irregular waste with sporadic retouch on one side. Usewear analysis shows that the retouched section may have been used for cutting/whittling hard materials and that the curved end has possibly been used for scraping a medium density material. Except the denticulates, which are usually associated with the Bronze Age, the retouched pieces are chronologically undiagnostic. However, the sometimes crude nature and associated technological attributes are consistent with a Bronze Age date.

Technological attributes and evidence of utilisation were recorded for the features with the highest number of flints (pit 337 and waterholes 414 and 322), a total of 61 pieces (Table 2). Over half of the assessable material (33 pieces) is of an indeterminate hammer mode; however there are considerably more hard hammer struck pieces present than those identified as being soft hammer struck (19 and 2 pieces respectively). This suggests a hard hammer technology. Platform edge abrasion was noted on 16 pieces, about a quarter of the assemblage. In general, it is coarser than that typically seen on early prehistoric material and may derive from chipping to remove overhangs rather than from fine edge grinding. The most frequently recorded butt type is plain (21 pieces), but punctiform, cortical, linear and those with more than one removal are also present. The majority of removals have feather terminations (25 pieces), although hinged, plunging and step terminations are also present (8, 7 and 3 pieces respectively). A total

of 37 pieces, four of which are preparation flakes, retain dorsal cortex. This indicates that material from all stages of the knapping process is present. These results are consistent with the Bronze Age date given to the features.

The same flints that were examined for attribute analysis were subject to low power usewear analysis. All the pieces in the assemblage were of an assessable condition. A total of 18 pieces (30%) have one or more utilised edges, with 33 separate instances of usewear recorded.

The assemblage shows a distinct predominance of scraping edges (76%), although cutting/whittling, and boring activities are also present (15% and 9%). Patterns of damage caused by use on materials of medium and hard densities are most common (49% and 42% respectively), with a considerably smaller proportion of damage caused by soft materials (9%). Therefore, it is suggested that this assemblage was predominantly used for the working of materials such as tough vegetable matter, wood, antler and bone (Odell and Odell Vereecken 1981; Tringham *et al.* 1974). However, with the high proportion of scraping edges, which are thought to be used for working hides, a high incidence of pieces used on soft density materials was expected.

Unretouched edges are most frequently utilised, with usewear on retouched edges being recorded in just ten instances. The suggested activity varied and was not consistent with any one material density or action. In seven of these cases the edge was also straight. Straight edges (whether retouched or not) were most commonly used for scraping activities. Only three instances of boring action were recorded, all of which were used on a hard material.

#### Remaining material

About one quarter of the assemblage was recovered from Roman and undated features and is therefore likely to be redeposited. Flakes dominate the debitage category at 72%. Many are short and wide and show signs of being hard hammer struck. In general they are characteristically similar to those recovered from the Bronze Age contexts and they are likely to date from the same period. There are just nine blades and blade-like flakes, many of which have platform edge abrasion and dorsal blade scars, characteristics that are usually associated with Mesolithic or earlier Neolithic flint industries. This group includes the iron stained blades that may derive from a Mesolithic industry. The assemblage includes one rejuvenation flake. It is hard hammer struck and the platform edge had been removed. Rejuvenation flakes are usually associated with Mesolithic or Neolithic industries. On the whole the flake cores are small in size. Some are irregularly worked whilst others appear to be more economically used and show signs of slight platform edge abrasion. Due to the small number of pieces and the variety of characteristics, only a broad Neolithic to Bronze Age date can be given.

A single microlith was recovered, most closely comparable to Jacobi's type 7a, a narrow scalene

microtriangle (Jacobi 1978, 16, fig. 6). Using this typology it can be dated to the later Mesolithic. The scrapers and denticulate have direct or inverse retouch on one or more edges and many show signs of utilisation (eg. Fig. 22.5-6). There is also the finely retouched distal end of another scraper. Excluding the disc scraper and denticulate, which are usually associated with the Bronze Age, the scrapers are chronologically undiagnostic. However, their size and irregularities are consistent with Bronze Age material. The retouched blade is lightly corticated and iron stained. It has dorsal blade scars and semi-abrupt retouch and may date to the Mesolithic. The retouched flakes have retouch to their distal ends. The serrated flake has fine serrations whereas the serrated blade has just a few teeth, on both edges, before the proximal break. The spurred piece has direct distal retouch that creates a small, pointed spur (Fig. 22.7).

#### Catalogue of illustrated flint (Fig. 22)

- 1 **Retouched blade.** Slight, abrupt retouch along much of the left edge, backed by cortex on right side, forms point at distal end, utilised. Context 5577 SF 304.
- 2 **Multi-platform flake core.** Very bashed, two main platforms, short, wide flakes, 60 g. Context 325 SF 38.
- 3 **Awl.** Very thick, heavy duty, hard hammer struck, chalk flint, direct retouch on right and distal edges forms point, used for boring hard material. Context 84 SF 96
- 4 **Retouched flake.** Bifacial retouch on right edge, backed by cortex, hard cutting/whittling on retouched edge, also hard scraping on proximal left. Context 327 SF 41.
- 5 **Side scraper.** Two curving edges, one has semi-abrupt retouch and the other is cruder, signs of use, distal break. Context 568 SF 118.
- 6 **Disc scraper.** Abrupt retouch to sides and distal end, slight notch on distal edge, soft hammer struck. Context 156.
- 7 **Spurred piece.** Direct distal retouch creates a small, pointed spur. Context 5491.

#### Discussion

The flint assemblage recovered from Appleford Sidings is relatively small but contains aspects of considerable interest. The background scatter of Mesolithic flint extends the human presence on the site by several millennia, although the limited size of the assemblage prohibits accurate dating. It is likely that the flints recovered represent casual losses rather than the site of a camp. The Neolithic is again represented by a low density background scatter of flint, but also by material from an earlier Neolithic pit. The composition of this deposit is typical of earlier Neolithic pits, containing retouched pieces, numerous utilised pieces and a large number of burnt pieces. Bronze Age flint accounts for just under half of the flint assemblage. Given the presence of a Bronze Age

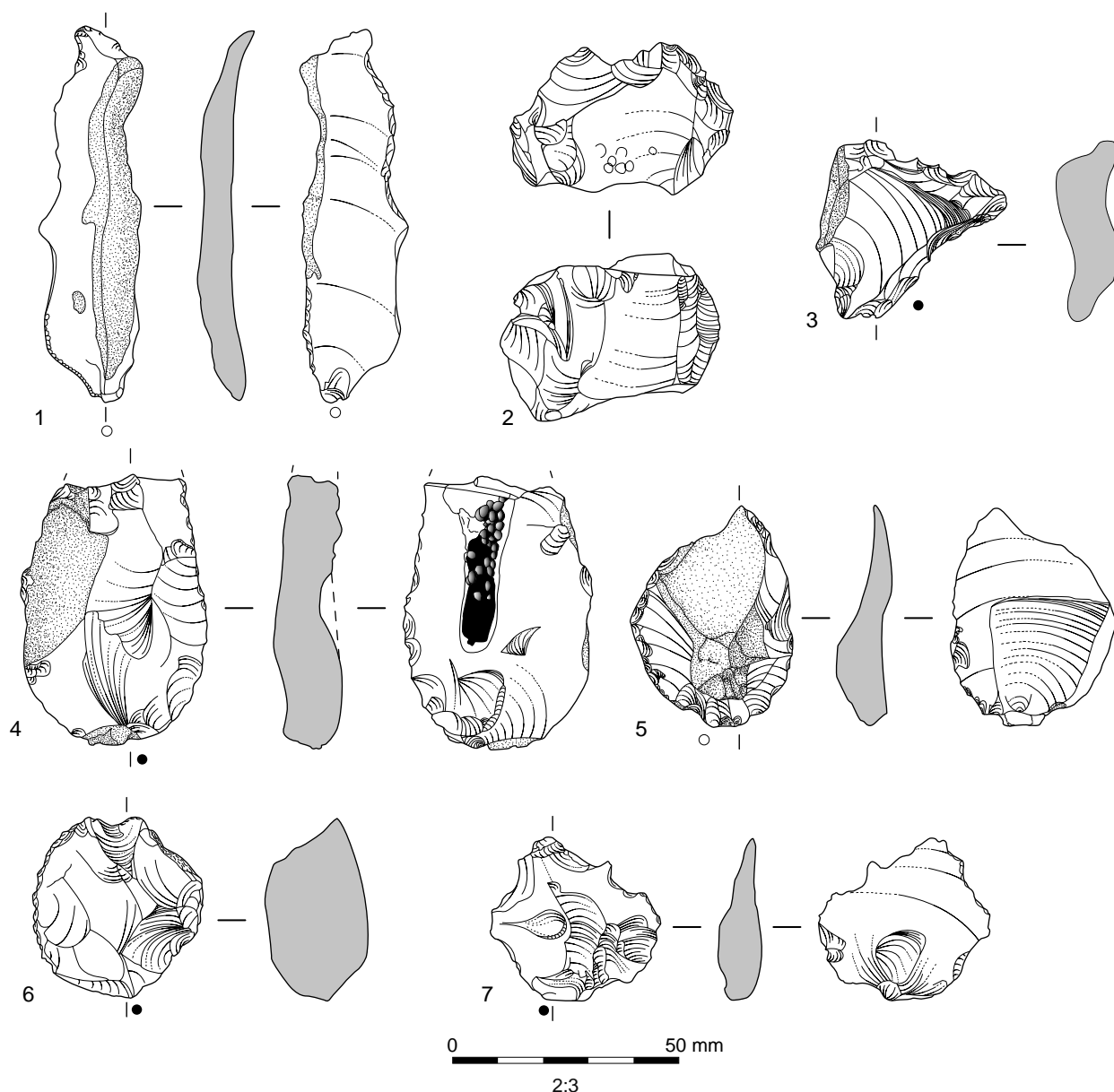


Figure 22 Struck flint

settlement on the site, this assemblage is remarkably small and relatively dispersed, with few contexts containing more than five flints. It therefore seems likely that flint formed only a small part of any toolkit.

### AMBER BEADS

by Angela Boyle

#### Introduction and quantification

Three small amber beads were recovered from the upper fill (84) of waterhole 414 in soil sample 84, in association with a sizeable group of middle Bronze Age pottery, a ?quernstone fragment (see Roe, 'Worked and burnt stone', Cat. No. 2) and charred

plant remains. Two of the beads are complete and the third comprised two conjoining pieces.

#### Catalogue

- 1 **Annular beads.** All three beads are annular, but vary in size and diameter. The largest bead is broken. All have a central perforation and are quite regularly made. (1) D: 2.4 mm; Th: 2 mm; (2) D: 4.1 mm; Th: 3 mm; (3) D: 5.6 mm; Th: 3 mm. Context 84, sample 84. Upper fill of waterhole 414. MBA.

#### Discussion

Beads and necklaces of jet, amber and faience are classically found in graves belonging to the Wessex

culture of the final early Bronze Age although a small number are known from funerary contexts in the Upper Thames Valley at Barrow Hills, Radley (Barclay and Wallis 1999, 234), Ashville Trading Estate, Abingdon (Balkwill 1978a), and Stanton Harcourt (Harden and Treweeks 1945, 29). Their occurrence in non-funerary contexts is unusual and there are no examples from the Upper Thames.

Amber would always have been seen as desirable because of its beauty and the property of static electricity. It is derived mainly from sub-marine deposits mainly around the Baltic coast although large lumps are still cast up on the Norfolk shore (Shepherd 1985, 206). It is a relatively soft material which can be cut, split or snapped without great effort and there are four main processes involved: shaping, drilling, final detailing and polishing. The examples from Appleford would have been relatively simple to make with the process involving roughing out, drilling or cutting the central perforation and perhaps some polishing.

## WORKED AND BURNT STONE

by Fiona Roe

Nine stone objects were recovered and are listed in the catalogue. Six of these relate to prehistoric activity, and comprise one complete saddle quern (Fig 23, sf 202), two quern fragments, a hammerstone/flint knapper (Fig 23, sf 25), part of a rubber and a possible slingstone. Four of these are from middle Bronze Age contexts, while two others are likely to be of a similar date. The remaining three stone objects are Roman in date and comprise a rotary quern fragment, a whetstone and a mortar. In addition a quantity of burnt stone was collected.

### Bronze Age

#### Worked stone

The complete saddle quern (Cat. No. 1; Fig. 23, sf 202) came from ditch 2044 which was not dated by pottery. However, since there was only one Neolithic feature on the site, and little trace of Iron Age activity, the probability is that this quern belongs with the other finds of middle Bronze Age date and comes from part of the Bronze Age field system. The saddle quern is typical of its kind, with a concave grinding surface that was prepared by pecking and then worn down to a smooth surface. The edges of the grinding surface are particularly smooth, since the pecking apparently did not extend this far, and wear of this kind is again typical of prehistoric saddle querns. Rough chipping of the underside, to modify the boulder into a suitable shape, is another feature also regularly noted on saddle querns. A boulder of somewhat indurated sarsen appears to have been used. This could be matched with sarsen from Fyfield

Down, near Avebury, but probably came from the chalk downs some 8 km (5 miles) south of the site, or else possibly from local gravels (Osbourne White 1907, 120; Jukes-Brown and Osborne White 1908, 84). A fragment from a second sarsen quern (Cat. No. 3), also with a pecked grinding surface, came from the top of ditch 394, which was part of the middle Bronze Age field system. This was made from a more saccharoidal variety of sarsen.

A fragment from a third quern (Cat. No. 4) came from the upper fill of waterhole 414. It has a less well preserved grinding surface, but is made from Lower Calcareous Grit, another frequently used local quern material. It could have been acquired from the Corallian ridge to the north west of the site, at a distance of less than 8 km (5 miles) (Arkell 1947, Chap VI).

Three further items consist of utilised pebbles or cobbles from local gravels. The site lies on Thames gravels, which would have been a source of usable pebbles. A complete quartzite hammerstone (Cat. No. 2; Fig. 23, sf 25) came from waterhole 168, another middle Bronze Age context. The wear at both ends is consistent with use for flint knapping. A burnt pebble of quartzitic sandstone (Cat. No. 6) from the primary fill of pit 186, appears to have been used as a rubber, while a smaller pebble of vein quartz (Cat. No. 5) from the fill of ditch 138 may have been a slingstone.

### Catalogue of worked stone

- 1 (Fig. 23) Complete **saddle quern**, concave grinding surface which has been prepared by pecking and then worn, probably made from a boulder, roughly trimmed into shape; Dimensions: 380 x 230 x 110 mm, Wt: 10.800 kg. Pale coloured quartzitic sandstone, probably sarsen, rather indurated. Context 2043, SF202, Ditch 2044. Undated
- 2 (Fig. 23) **Pebble** with wide areas of wear at either end, probably from use as a flint knapper; Dimensions: 93 x 72 x 35 mm, Wt: 260 g. Quartzite. Context 172, SF25, Waterhole 168. MBA
- 3 **Saddle quern** or **rubber** fragment, slightly burnt, with a very slightly convex worked surface that has been pecked and then worn by grinding. Dimensions: 94 x 66 x 47 mm; Wt: 210 g. Sarsen. Context 19, SF122, Localised deposit in top of ditch 394. MBA
- 4 Probable **saddle quern** or **rubber** fragment, burnt, one worked surface. Dimensions: 88 x 52 x 34 mm; Wt: 210 g. Lower Calcareous Grit. Context 84, SF113, Upper fill of waterhole 414. MBA
- 5 Probable **pebble**, possible slingstone; Dimensions: 37 x 32 x 27 mm, Wt: 30 g. Vein quartz. Context 139, SF10, Primary/principal fill of ditch 138. MBA
- 6 Part of **pebble** or small **cobble**, burnt, sides worn into five smooth and flat areas, probably from use as rubber; Dimensions: 66 x 53 x 50 mm, Wt: 290 g. Quartzitic sandstone. Context 187, sample 47, Primary (post-slumping) fill of pit 186. MBA

**Burnt stone**

The burnt stone amounts to 5.292 kg and is likely to relate to the middle Bronze Age activity on the site. It all consists of materials collected from nearby, mainly pebbles of quartzite and quartzitic sandstone from the river gravels, along with some fragments from local lithologies such as Kimmeridge Clay, greensand and flint. Such burnt stone is in no way unusual for a Bronze Age site and has frequently been recorded in the area, as for instance at Green Park, Reading, Berkshire (Brossler *et al.* 2004, 128) and at Whitecross Farm, Wallingford, Oxfordshire (Roe and Barclay 2006, 71).

**Roman**

Three fragments from stone objects were found in the ditches of the main Roman double ditched enclosure. A segment from a rotary quern (context 5289, SF 601) was made of a pebbly sandstone from the Upper Old Red Sandstone, which was imported from the Forest of Dean area. The quern was pecked into shape around the rim and on the upper surface, treatment which is typical of Roman querns made from this particular variety of stone. The fragment seems to have been re-used as a whetstone before being discarded in a corner of ditch 5286. Not all Roman mortars were well shaped and finished and the example from a corner of ditch 5316 (context 5347, SF 604) was casually-shaped from a cobble of quartzitic sandstone that probably came from the river gravels. A whetstone (5293) from cut 5286 was apparently made from local greensand. The quern and mortar fragments were recovered from opposite sides of the entrance to the ditched enclosure but both are small pieces and it is felt that their placement there may be fortuitous.

**Catalogue of worked stone**

- 7 Segment from **rotary quern**, probably from upper stone, pecked to shape around rim and on upper surface, possible re-use as whetstone, with wear on broken side and grinding surface. D: c. 400 mm, maximum Th: 65 mm. Wt: 1.26 kg. Upper Old Red Sandstone, pebbly sandstone. Context 5289, SF601, Corner of ditch 5286, main double ditched enclosure, Group 6100. ERB
- 8 Part of **whetstone**, rod variety with rectangular cross-section, traces of groove from use as point sharpener. Dimensions: 47 x 32 x 21.5 mm. Wt: 50 g. Fine-grained, slightly greenish calcareous sandstone, possibly from Lower Greensand. Context 5293, Fill of cut 5286, part of the principal double ditched enclosure. ERB, mid 1st – early 2nd C.
- 9 Fragment from possible **mortar** of irregular shape, probably made from a cobble, slightly burnt, concave surface which has been worn smooth, damaged round edge. Dimensions: 168 x 100 x 80 mm. Wt: 1.8 kg. Quartzitic sandstone, pale coloured, probably indurated sarsen. Con-

text 5347, SF604, Corner of ditch 5316, main double ditched enclosure, Group 6100, ERB

**Discussion**

The materials used in the Bronze Age querns found at Appleford are local, and both are known to have been used for saddle querns from Neolithic times onwards. For instance, Lower Calcareous Grit was used for a rubber fragment found in a Grooved Ware pit at Barrow Hills, Oxfordshire (Roe 1999, 82) while at least two of the querns found at Wayland's Smithy were made from sarsen (Whittle 1991, 87). As for the middle Bronze Age, the enclosure at Corporation Farm, Abingdon (Shand *et al.* 2003) produced fragments of both Lower Calcareous Grit and sarsen in association with Deverel Rimbury pottery. A fragment of Lower Calcareous Grit saddle quern came from a Bronze Age waterhole at the Abingdon Multiplex site (Pugh 1998), where again there was an association with Deverel Rimbury pottery. As it happens, the quern material that was available nearest to Appleford, the Lower Greensand from Culham, was not found during the excavations. However, as the source area is only some 2.4 km (1.5 miles) to the north of the site, it seems probable that it was also being utilised. Fragments were found in middle Bronze Age contexts at Corporation Farm, Abingdon, and a large saddle quern of this material, dating to the late Bronze/early Iron Age, was found during the 1973 excavations at Appleford (Ashmolean Museum; Hinchliffe and Thomas 1980, fig. 24 no. 4). All three of these materials, sarsen, Lower Calcareous Grit and Culham Greensand continued to be widely used for saddle querns until rotary querns became current. Querns of Lower Calcareous Grit are known from local late Bronze/early Iron Age sites at Mount Farm, Berinsfield (Roe forthcoming), Whitecross Farm, Wallingford (Roe and Barclay 2006, 71) and Little Wittenham (Allen *et al.* forthcoming). There is also abundant evidence for the use of Culham Greensand at Little Wittenham.

The objects made from materials collected from the local gravels can also be paralleled elsewhere, in particular the hammerstone/flint knapping tool (Cat. No. 2; Fig. 23, sf 25). Pebbles with worn and/or battered ends are characteristic of both Neolithic and Bronze Age sites in the area, occurring for instance at nearby Drayton (Barclay, Bradley *et al.* 2003, 135) and also at Wallingford (Roe and Barclay 2006, 71).

The question arises as to whether the complete small saddle quern (Cat. No. 1; Fig. 23, sf 202) may have been deliberately placed in ditch 2044, perhaps to emphasize a boundary of some kind. It has not proved possible to trace other instances of querns deposited in the ditches of Bronze Age field systems but it would seem that pots were sometimes positioned in this way. A local instance of this practice has been quoted for Dorchester-on-Thames (Barclay, Cromarty *et al.* 2006, 226), where part of a Bucket Urn was found in one of the ditches of the field system (Whittle *et al.* 1992, 160). At Twyford Down, Hamp-





Figure 23 Other worked stone

shire a series of small pits containing fragments of late Bronze Age pots, many of which were once complete, has been interpreted as deposits related to a possible territorial boundary or some such topographical feature (Woodward 2000, 51). An Iron Age example of this type of deposition is known from Overton Down, Wiltshire, where a complete jar was found in

a hole at a field corner (Fowler and Evans 1967, 298). It seems possible that complete querns could sometimes have been deposited in the same way and more certain examples may in time be recorded.

Roman querns made from Upper Old Red Sandstone are widely distributed, and include finds from throughout Oxfordshire (Shaffrey 2006, 19

Table 4 Prehistoric pottery: Summary of the pottery assemblage by period

Period	Style	No. of sherds	%	Weight (g)	%
Early Neolithic	Plain Bowl	49	5.5	420g	4.1
Middle Neolithic	Peterborough ware	1	0.1	11g	0.1
Late Neolithic/early Bronze Age	Beaker	12	1.3	68g	0.7
Early-middle Bronze Age	biconical and sub-biconical urn	16	1.8	500g	4.9
Middle bronze Age	Deverel-Rimbury	797	88.9	8869g	87.4
Mid-late Bronze Age		6	0.7	61g	0.6
Late Bronze Age		5	0.6	104g	1.0
Iron Age		9	1	116g	1.1
Indeter. prehist.		2	0.2	3g	0
<b>Total</b>		<b>897</b>		<b>10152g</b>	

and fig. 3.2). These querns were in use during the entire Roman period and occur at all kinds of sites, irrespective of status. Roman sites in the vicinity of Appleford are no exception, with querns of Old Red Sandstone being found at virtually all of them. At Mount Farm, Berinsfield, for instance they occurred in first and second century contexts (Roe, in prep).

These finds, whether prehistoric or Roman, conform to the general pattern of what is currently known of lithic usage in the area. There was much conservatism in the choice of quern materials and a suitable variety of stone might continue in use for thousands of years, so the same varieties of quernstone occur on all the sites in the area. The Roman items have produced no surprises, but worked stone of middle Bronze Age date is generally uncommon, so this small assemblage is of value for filling some gaps in the record.

## PREHISTORIC POTTERY

by Alistair Barclay

### Introduction

A total of 897 sherds (10.15 kg) of prehistoric pottery was recovered from the evaluation and excavation. The overall assemblage includes material of Neolithic, Bronze Age and Iron Age date (see breakdown in Table 4), although most of the pottery (87.4% by weight; 88.1% by count) can be assigned a middle Bronze Age date (1600-1150 cal BC). The middle Bronze Age assemblage typically consists of a range of Bucket and Globular Urns in predominantly flint and shell-tempered fabrics, and includes a noteworthy group of Globular Urns that were recovered from a deposit near the top of an infilled waterhole. A small scatter of grog-tempered sherds could be either contemporaneous or slightly earlier in date, perhaps deriving from vessels of biconical or sub-biconical form. The site also produced a small number of early Neolithic bowl sherds, a decorated Peterborough ware sherd, some Beaker sherds and sherds belonging to the late Bronze Age and Iron Age. A possible

bone-tempered Beaker sherd is of regional significance. Overall the range of material, sherd size and condition is typical for a site on the upper Thames gravel terrace. Redeposition was not considered to be a major factor with the Middle Bronze Age material.

### Methodology

The assemblage was recorded using the standard OA system for prehistoric pottery and the records were entered on to an Access database. The assemblage was quantified by count and weight, and a record was made of fabric, diagnostic features, decoration and surface treatment, firing and condition. Fabrics were coded using an alpha-numeric system.

A= sand, B= black sand (glaucconitic), Bo= bone, F= flint, G= grog, P= pellets (Fe= ferruginous), Q= quartzite, S= shell. NAT= no added temper. Inclusion size: 1= up to 1 mm, 2= 1-3 mm, 3= greater than 3 mm. A note was made of visible residues (charred, sooting, limescale). Fabric quantification by period is given in Tables 5 and 6.

The generally recognised trends for changes in fabric in the Upper Thames valley can be seen at Appleford (compare Barclay and Edwards forthcoming; Avery 1982; Cleal 1999; Barclay 2006; Lambrick 1984). Early and middle Neolithic pottery is tempered with a variety of inclusions that include flint, quartzite, sand or shell. In the late Neolithic and early Bronze Age fabrics are predominantly grog-tempered, while in the middle Neolithic flint or shell is the temper of choice. Flint continues to be used in the late Bronze Age and quartz sand is the preferred temper in the middle Iron Age (see Tables 5 and 6 above). Two unusual fabrics include the early Neolithic AP(Fe)1 with ferruginous pellets and the bone-tempered Beaker fabric BoA2. Fabrics with ferruginous pellets tend to be later prehistoric, although this simply represents the use of a particular clay source as there is no reason to believe that these inclusions have been deliberately added. In fact similar fabrics have been recorded at Ascott-under-Wychwood (Barclay and Case 2006) and at Yarnton (Barclay and Edwards forthcoming).

Table 5 Prehistoric pottery: Quantification (sherd count and weight) of early prehistoric fabrics by period

Fabric	Early Neo		Middle Neo		Late Neo early BA/early BA		Totals		Contexts
	sherd count	weight (g)	sherd count	weight (g)	sherd count	weight (g)	sherd count	weight (g)	
<b>AP(Fe)1</b>	22	237g					22	237g	5577
F1	5	62g					5	62g	5577, 1313, 600, 700
F2	8	27g					8	27g	128, 426, 453, 647, 700, 1285, 3099
F3	6	21g	1	11g			7	32g	Early N: 1039, 5577; Middle N: 3093
FA2	1	13g					1	13g	600
Q2	1	8g					1	8g	1285
S2	1	20g					1	20g	305
S3	4	15g					4	15g	5577
AF1					1	9g	1	9g	188
BoA2					1	6g	1	6g	Eval
G2					7	33g	7	33g	143, 147, 170, 188, 247, 449
GBF1					1	6g	1	6g	219
GFA1					1	2g	1	2g	170
GFA2					1	12g	1	12g	188
Ind	1	17g					1	17g	325
<b>Totals</b>	<b>49</b>	<b>420g</b>	<b>1</b>	<b>11g</b>	<b>12</b>	<b>68g</b>	<b>62</b>	<b>499g</b>	

Table 6 Prehistoric pottery: Quantification (sherd count and weight) of later prehistoric fabrics by period

Fabric	Early-middle BA		Middle BA		Middle-late BA		Late BA		Iron Age		Indeterminate		Total		Contexts
	sherd count	weight (g)	sherd count	weight (g)	sherd count	weight (g)	sherd count	weight (g)	sherd count	weight (g)	sherd count	weight (g)	sherd count	weight (g)	
G1	1	3g											1	3g	216
G3	6	319g											6	319g	210, 216, 220
GF2	3	26g											3	26g	215-6, 220
GQ3	1	95g											1	95g	213
GQF2	1	6g											1	6g	431
QF2	1	16g			1	22g							2	38g	EMBA: 4158; MLBA: 187
QFG2	2	23g											2	23g	202, 374
QGA2	1	12g											1	12g	114
F1			311	1552g			1	25g					312	1577g	MBA: 19, 21, 23, 84, 96, 100, 151, 267, 327, 378, 423, 431, 437, 453, 573, 677, 1335, 1349, 1379, 1567, 3067, 3103, 5145; LBA: 346
F2			433	5735g	4	17g	4	79g					441	5831g	MBA: 0, 19, 79, 146, 162, 169, 198, 347, 360, 384, 423, 447, 452, 477, 509, 524, 536, 677, 1333, 1335, 1349, 1371, 3105, 3108, 3506-7, 4038, 4111, 5015, 5018, 5076, 5169; MLBA: 5076; LBA: 346, 5423
F3			26	681g									26	681g	0, 19, 148, 165, 190, 356, 410, 430, 449, 1311, 3093, 3103
Q2			6	103g									6	103g	0, 188, 327, 356, 4212, 5536
QF2					1	22g							1	22g	187
S2			1	477g									1	477g	3053
S3			19	320g									19	320g	84, 1562, 1563, 1565, 5093
SF2			1	1g									1	1g	1371
A1									2	13g			2	13g	4122
A1PFe									3	69g			3	69g	211, 4040, 5184
NAT									4	34g			4	34g	5159, 5417
Ind											2	3g	2	3g	
<b>Total</b>	<b>16</b>	<b>500g</b>	<b>797</b>	<b>8869g</b>	<b>6</b>	<b>61g</b>	<b>5</b>	<b>104g</b>	<b>9</b>	<b>116g</b>	<b>2</b>	<b>3g</b>	<b>835</b>	<b>9653g</b>	

### Early Neolithic

A total of 49 sherds (420 g) of early Neolithic pottery were recovered, of which 32 sherds were found in pit 5576. Twenty two (237 g) of the sherds are from a single vessel, a plain possibly round bodied bowl with a rolled rim (Fig. 24:1). At least three further vessels are represented by body sherds in different fabrics from this feature. A further vessel is represented by a rim sherd (Fig. 24:2) from context 426, which is probably from a similar type of early Neolithic vessel to Fig. 24:1.

*Fabrics* (see Table 5)

#### *sand-tempered*

AP(Fe)1 Hard sandy fabric with naturally occurring ferruginous pellets.

#### *flint-tempered*

- F1 Hard fabric with sparse fine angular flint.  
 F2 Hard fabric with ill-sorted rare fine-medium angular flint.  
 F3 Hard fabric with common fine to coarse calcined flint.  
 FA2 Hard fabric with ill-sorted rare fine-medium angular flint and rare quartz sand.

#### *quartzite-tempered*

Q2 Hard fabric with ill-sorted rare fine-medium angular quartzite.

#### *shell-tempered*

- S2 Hard fabric with moderate to abundant, fine to medium shell platelets  
 S3 Hard fabric with moderate fine to coarse ?fossil shell platelets.

### Discussion

Both the rim forms and the range of fabrics are similar to material recovered from the causewayed enclosure at Abingdon (Avery 1982).

### Illustrated catalogue (Fig 24)

- Hemispherical bowl**, twenty two rim and body sherds (237 g). Fabric AP(Fe)1. Firing: ext. yellowish-brown; core black; int. yellowish-brown. Condition average. Early Neolithic. Context 5577.
- Rim sherd** (8 g). Fabric F2. Firing: ext. brown; core reddish-brown; int. brown. Condition average. Context 426.

### Middle Neolithic

A single redeposited sherd of decorated Peterborough ware was recovered from the fill (3093) of ditch 3092. The sherd (Fig. 24, 3) has impressed whipped cord decoration and is likely to come from either an Ebbsfleet or Mortlake style bowl.

*Fabric* (Table 5)

#### *flint-tempered*

F3 Hard fabric with common fine to coarse calcined flint.

### Illustrated catalogue (Fig. 24)

- Decorated body sherd** with whipped cord impressions (11 g). Peterborough ware. Fabric F3. Firing: ext. reddish-brown; core and int. black. Condition very worn. Middle Neolithic, Context 3093.

### Late Neolithic and early Bronze Age (LNEBA)

A total of 12 sherds (68 g) of Beaker pottery were recovered from eight contexts (19/5, 143, 147, 170, 188, 219, 247, 449). The sherds were made from mostly grog tempered fabrics (see below). One sherd was made from a principally sand-tempered fabric, while another appeared to be bone-tempered. Its use is generally quite rare, although other bone tempered Beakers are known, including a complete vessel from a grave at Yarnton (Barclay and Edwards forthcoming). The Beaker assemblage includes comb impressed sherds with zonal decoration and sherds with aplastic finger-tip and/or moulded ridges/cordons. Many of the sherds could be accommodated within Clarke's Wessex/middle Rhine group, which is quite common in the Oxford region (Clarke 1970).

*Fabrics* (see Table 5)

#### *Sand-tempered*

AF1 Hard fabric with sparse quartz sand and rare fine flint.

#### *Bone-tempered*

BoA2 Soft fabric tempered with a moderate quantity of angular ?bone fragments (up to 2 mm) and quartz sand.

#### *Grog-tempered*

- G2 Soft fabric with moderate angular grog (up to 2 mm).  
 GBF1 Soft fabric with moderate fine grog, rare black sand and rare flint.

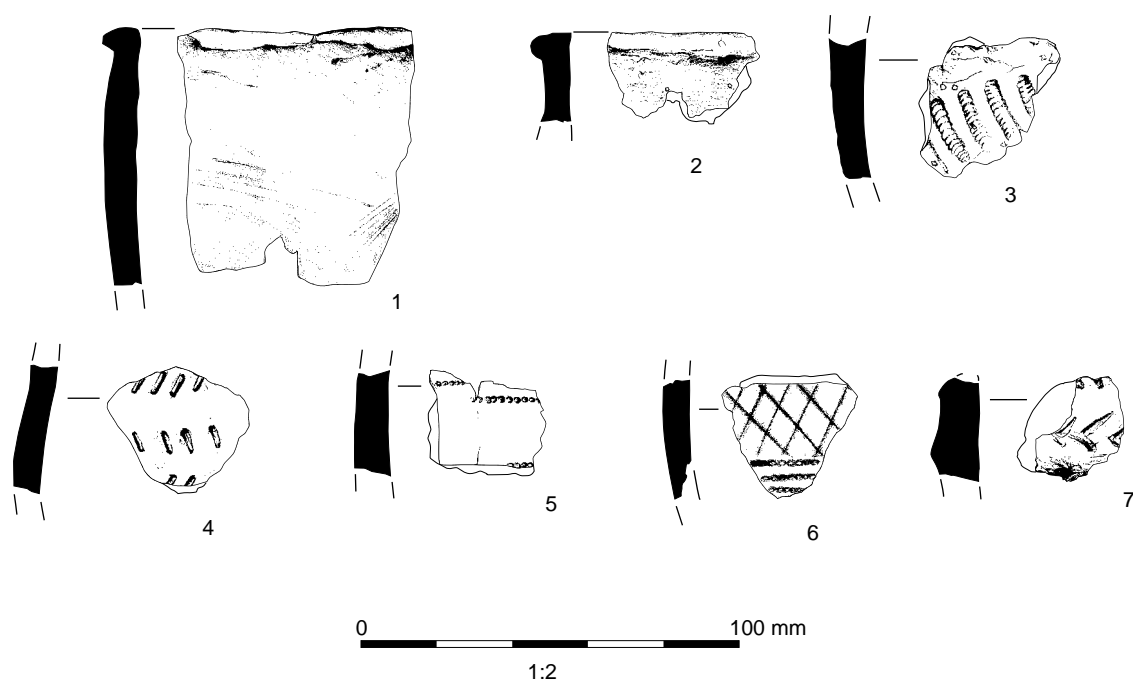


Figure 24 Early Neolithic - late Neolithic/early Bronze Age pottery, Nos 1-7

- GFA1 Soft fabric with moderate fine grog (up to 1 mm), rare flint and rare quartz sand.  
 GFA2 Soft fabric with moderate grog (up to 2 mm), rare flint and rare quartz sand.

#### Illustrated catalogue (Fig. 24)

- 4 **Beaker.** Shoulder sherd with aplastic finger-tip impressions that form a herring bone pattern (9 g). LNEBA. Fabric G2. Firing: reddish-brown throughout. Condition worn. Fill 247.  
 5 **Beaker.** Body sherd with impressed comb decoration possibly arranged in a zonal pattern (9 g). LNEBA. Fabric AF1. Firing: ext. yellowish-brown; core grey; int. greyish-brown. Condition worn. Fill 188.  
 6 **Beaker.** Body sherd with very worn comb impressed decoration arranged in a zonal pattern (6 g). LNEBA. Fabric BoA2. Firing: ext. reddish-brown; core grey; int. reddish-brown. Condition very worn. Trench 19/5.  
 7 **Beaker.** Two ?rim or body sherds (9 g) with moulded ridges decorated with aplastic finger-nail impressions. LNEBA. Fabric G2. Firing: ext. yellowish-brown; core grey; int. yellowish-brown. Condition worn. Fill 143.

#### Early-Middle Bronze Age (Biconical, sub-biconical and Deverel-Rimbury)

A total of 16 sherds (500 g) can be assigned to the final early Bronze Age and start of the middle Bronze Age (contexts 114, 154, 169, 170, 200, 202, 210, 213, 215, 216, 220, 374, 431, 4158). These sherds are all principally grog and/or quartzite-tempered and derive

from relatively thick-walled vessels (10-17 mm) and some thin walled vessels (5-9 mm). These sherds could belong to either Biconical, Sub-biconical or Bucket Urns. In the near absence of diagnostic sherds the use of grog-temper indicates a probable early date (1700-1500 BC) as does the use of grog, quartzite and/or flint. Part of a moulded handle fragment (context 202- not illustrated) is likely to come from either a Biconical or Sub-biconical urn rather than a Bucket Urn (compare with Case 1982, 110-1 and fig. 62.1). The only other featured sherd was a simple rim decorated with finger-tip impressions (context 170, not illustrated) that could belong to either a bucket or biconical-shaped vessel.

#### Fabrics (Table 6)

##### *grog-tempered*

- G1 Soft fabric with moderate fine grog.  
 G3 Soft fabric with ill-sorted moderate fine to coarse angular grog.  
 GF2 Soft fabric with moderate fine to medium grog and rare angular flint.  
 GQ3 Hard fabric with sparse to moderate coarse grog and medium quartzite.  
 GQF2 Soft fabric with moderate fine to medium grog, rare quartzite and rare flint.

##### *quartzite-tempered*

- QF2 Soft fabric with moderate fine to medium angular quartzite and rare flint.  
 QFG2 Soft fabric with moderate fine grog.  
 QGA2 Soft fabric with moderate fine grog.

### Middle Bronze Age (Deverel-Rimbury)

A total of 797 sherds (8869 g) of middle Bronze Age pottery were recovered from contexts 29/4, 19, 21-3, 79, 84, 96, 100, 146, 148, 151, 162, 165, 169, 187-8, 190, 198, 267, 327, 347, 356, 360, 376, 378, 384, 410, 423, 530-1, 437, 447, 449, 452, 477, 509, 524, 536, 573, 677, 1311, 1313, 1333, 1335, 1349, 1371, 1379, 1562-3, 1565, 1567, 3053, 3067, 3093, 3103, 3105, 3108, 3506-7, 4038, 4111, 4212, 5015, 5076, 5093, 5145, 5169 and 5536. In general very few of these contexts contained 10 or more sherds. Significant deposits include 84 (318 sherds, 1573 g), 509 (368 sherds, 3977 g), 1371 (19 sherds, 462 g), and 1563 (13 sherds, 272 g).

Vessel forms include Globular and Bucket Urns and various other types of vessel. Between seven and ten Globular Urns are represented (see Fig. 25, 9-15; Fig. 26, 17-19). The largest group of vessels came from context 84 (318 sherds, 1573 g) and includes somewhere in the region of seven urns of this type as well as sherds from a coarser vessel, probably an ovoid shaped Bucket Urn (see below). The urns are all manufactured from relatively fine fabrics tempered with flint. They are typically thin-walled, with either smoothed or burnished surfaces. With the exception of vessel No 2 (Fig. 25), all of the urns are decorated either with burnished grooves (Fig. 25, 10-13) or incised lines (Fig. 25, 14-15). It is possible that Nos 10-11 are the same vessel, although it can be noted that the sherd groups are slightly different in appearance as is the vessel profile. In most cases decoration covers a relatively large horizontal zone consisting of oblique bands of multiple lines that converge (Fig. 25, 11), criss-cross (Fig. 25, 10, 12) or form nested patterns (Fig. 25, 15). Decorative bands are bounded by either single (Fig. 25, 10-11) or multiple lines (Fig. 25, 12-15). It is probable that the motifs on Nos 13-15 consisted of pendent triangles. Many of the vessels present are likely to have been of a similar size to the most complete vessel (Fig. 25, 10) while the only plain Globular Urn style vessel (Fig. 25, 9) is notably small. Charred residue and lime-scale were noted on at least one vessel, indicating use for both the boiling of water and the cooking of food. It seems likely that the group could represent a set of vessels used for the preparation and serving of food. It is quite unusual to find such a large group of vessels from one feature, as Globular Urns tend to be found in relatively small quantities in the Upper Thames.

Globular Urns have been found at Long Wittenham (Case *et al.* 1964-5, 71 and fig. 28) and Drayton (Barclay 2003a, 288-90 and fig. 7.3) and are present at the enclosures at Corporation Farm, Abingdon (Shand *et al.* 2003). Further to the north small quantities of Globular Urn have been recovered from large-scale excavations at Yarnton (Barclay and Edwards forthcoming). One or more Globular Urns - misidentified as Iron Age - was also present at Site 20 Standlake (Catling 1982, 98 and fig. 58.26). However, none of this pottery closely resembles the group of Globular Urns from Appleford Sidings. Globular Urns have been found in greater numbers in the middle Thames

Valley and several large assemblages are known from sites near Maidenhead, Slough and Eton (Barclay forthcoming a; Raymond 2003; Barclay and Machling forthcoming).

Bucket Urns are also present within the middle Bronze Age ceramic assemblage from Appleford. The most complete vessel (Fig. 26, 16) appears to have been a very large straight sided pot decorated with an applied plain horizontal cordon and other vertical cordons that extend up to the rim. This vessel could have also been decorated with 'horseshoe' handles. Other Bucket Urns are represented by rim, cordoned body and shoulder sherds and base fragments (Fig. 26, 22-24). Bucket Urns are quite common in the Oxford region, occurring at Dorchester-on-Thames (Whittle *et al.* 1992; Barclay forthcoming b), Didcot (Timby 1992), Sutton Courtenay (Case *et al.* 1964-5) and at various site around Abingdon (Shand *et al.* 2003; Cleal 1999).

The miniature vessel (Fig. 26, 21) from Appleford can be paralleled with a group of small Bucket Urns from Long Wittenham (Case *et al.* 1964-5, 71 and fig. 28:5-8), although none are exactly similar.

### Fabrics (see Table 6)

#### Flint-tempered

- |    |  |
|----|--|
| F1 | Hard fabric with moderate to dense fine calcined flint (1 mm).               |
| F2 | Hard fabric with moderate fine to medium calcined flint (1-2 mm).            |
| F3 | Hard fabric with ill-sorted moderate fine to coarse calcined flint (1-5 mm). |

#### quartzite-tempered

- |     |  |
|-----|--|
| Q2  | Hard fabric with moderate fine to medium angular quartzite (up to 2 mm). [not on Table 6; but is on Table 5] |
| QF2 | Hard fabric with moderate quartzite and calcined flint (up to 2 mm).   |

#### shell-tempered

- |     |   |
|-----|---|
| SF2 | Hard fabric with moderate shell platelets (up to 2 mm) and rare calcined flint. |
| S2  | Hard fabric with moderate to abundant, fine to medium shell platelets.          |
| S3  | Hard fabric with moderate fine to coarse shell platelets (1-6 mm).              |

### Discussion

Fabrics F1, F2 and Q2 are strongly associated with the manufacture of Globular Urns, while the coarser fabrics F3, S2, S3 and SF2 are closely associated with the production of Bucket Urns. This range of fabrics and the correlation between vessel types is typical for the Upper Thames Valley. In this area quartzite tends to be used instead of flint for temper depending on the

local availability of raw material, and the same is true of shell. It is possible that some flint-tempered vessels could represent non-local products and exchange of vessels with communities based on the chalk downs to the south could have taken place, although this would be difficult to prove. However, the group of vessels from context 84 do stand as unusual within the upper Thames region and, therefore, could represent regional imports.

**Illustrated catalogue (Fig. 25)**

- 8 **Large ovoid jar** with a flat expanded rim. Thirty four sherds (347 g) including many with fresh breaks. Fabric Q3/mba. Colour: ext. grey brown to reddish-brown; core grey; int. yellowish-brown. Condition average. Fill 84.
- 9 **Globular Urn**, plain. Five refitting sherds (79 g) from a small, thin-walled, Rim has a squared profile. Fabric F1 mba. Colour: ext. black; core grey; int. black. Burnished exterior and smoothed interior. Condition average. Charring on lower interior surface. Fill 84.
- 10 - 11 **Globular Urns** Thirty one sherds (384 g) including many with fresh breaks from one or more thin-walled urns. The vessel(s) has an everted rim and a pierced lug, probably one of a pair. The exterior of the vessel(s) has a broad decorated band made up of oblique tooled lines. Fabric F1/mba. Colour: ext. dark brown to black; core grey; int. black. Exterior burnish. Condition average to worn. The inner lower half of the vessel has a coating of limescale and signs of charring. The upper inner surface also appears worn and pitted. Parts of the vessel appear to be fire damaged. Some sherd breaks are very worn and therefore old. Fill 84.
- 12 **Globular Urn**, thick-walled. Six sherds (223 g) including many with fresh breaks from the shoulder and base. Decorated with combed lines. Fabric F1/mba. Colour: dark grey throughout. Smoothed surfaces. Condition average. Fill 84.
- 13 **Globular Urn**, fine, thin-walled, decorated. Thirteen sherds (94 g) including many with fresh breaks. The rim is everted. The waist is decorated with a band of combed lines. It is possible that it was decorated above this band with further oblique bands. Fabric F1/mba. Colour: ext. reddish-brown; core grey; int. dark brown. Exterior burnish and interior smoothed. Condition average. Charring on the interior surface. Fill 84.
- 14 **Globular Urn**, thin-walled. Five decorated shoulder sherds (42 g). Fabric F1/mba. Colour: ext. black; core grey; int. black. Condition average. Fill 84.
- 15 **Globular Urn**, thin-walled. Two decorated shoulder sherds (18 g). Fabric F1/mba. Colour: ext. black; core grey; int. black. Condition average. Fill 84.
- 16 **Bucket Urn**, large straight sided. Rim, body and base sherds (368, 3977 g). Decorated with an applied horizontal cordon, vertical cordons and

possibly applied horseshoe handles. Fabric F2/mba. Firing: ext. yellowish-brown; core and int. black. Charred residues on outer surface. Condition average-worn. Fill 509.

- 17 **Globular Urn**. Rim sherd decorated with a herringbone pattern (12 g). Fabric F1. Firing: ext. reddish-brown; core black; int. brown. Smoothed surfaces. Condition average. Fill 96.
- 18 **Globular Urn**. Two plain rim sherds (25 g). Fabric F1. Firing: ext. reddish-brown; core and int. black. Smoothed surfaces. Condition average. Fill 677.
- 19 **Globular Urn**. Rim sherd decorated with an horizontal band of multiple lines (14 g). Fabric F1/mba. Firing: greyish-brown throughout. Condition average-worn. Fill 1567.
- 20 **Bucket/sub-biconical Urn**. A plain flat topped rim (3 sherds, 278 g). Fabric G3/emba. Firing: ext. grey/yellowish-brown; core grey; int. yellowish-brown. Condition average. Fill 210.
- 21 **Miniature vessel**. The side from a small cup or bowl. Plain with finger-nail impressed rim (19 g). MBA. Fabric F2. Firing: grey throughout. Condition average. Fill 447.
- 22 **Bucket Urn**. A plain rim (37 g). MBA. Fabric F3/mba. Firing: ext. yellowish-brown; core and int. black. Condition average. Fill 3093.
- 23 **Bucket Urn**. Rim, body and base sherds (13, 272 g). Includes a sherd with an applied finger-tip impressed cordon. MBA. Fabric S3/mba. Condition average. Fill 1563.
- 24 **Bucket Urn**. A sherd with an applied cordon decorated with finger-nail impressions (possibly same vessel as No. 22). MBA. Fabric F3/mba. Firing: ext. brown; core grey; int. brown. Condition average-worn. Fill 3093.

**Late Bronze Age and Iron Age**

The excavation produced a small number of Iron Age sherds that includes a decorated sherd from a shouldered jar (Fig. 26, 25). The decoration is incised and curvilinear and appears to form a swag motif. Similar decoration occurs on a vessel from Yarnton (Booth forthcoming), which has affinities with the All Cannings Cross style pottery of the final late Bronze Age and earliest Iron Age (Cunliffe 1991, fig A2).

*Fabric* (Table 6)

*Flint-tempered*

- |    |  |
|----|--|
| F1 | Hard fabric with moderate to dense fine calcined flint (1 mm). |
|----|--|

**Illustrated catalogue (Fig. 26)**

- 25 **Jar** decorated with incised curvilinear decoration, probably swag motifs (25 g). Shoulder sherd. Fabric F1/EEIA. Firing: black throughout. Smoothed exterior. Condition average. Fill 346.



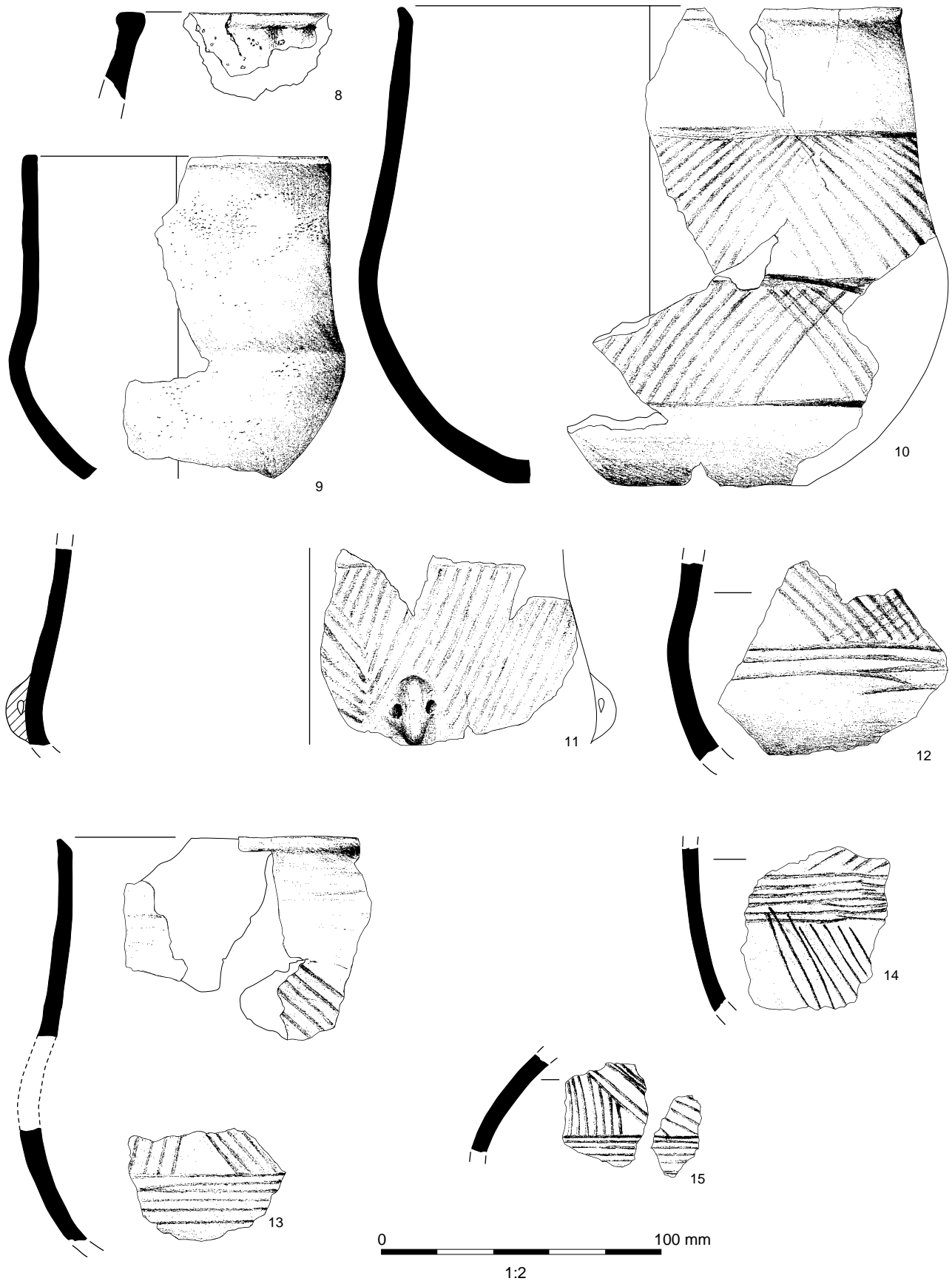


Figure 25 Middle Bronze Age pottery, Nos 8-15

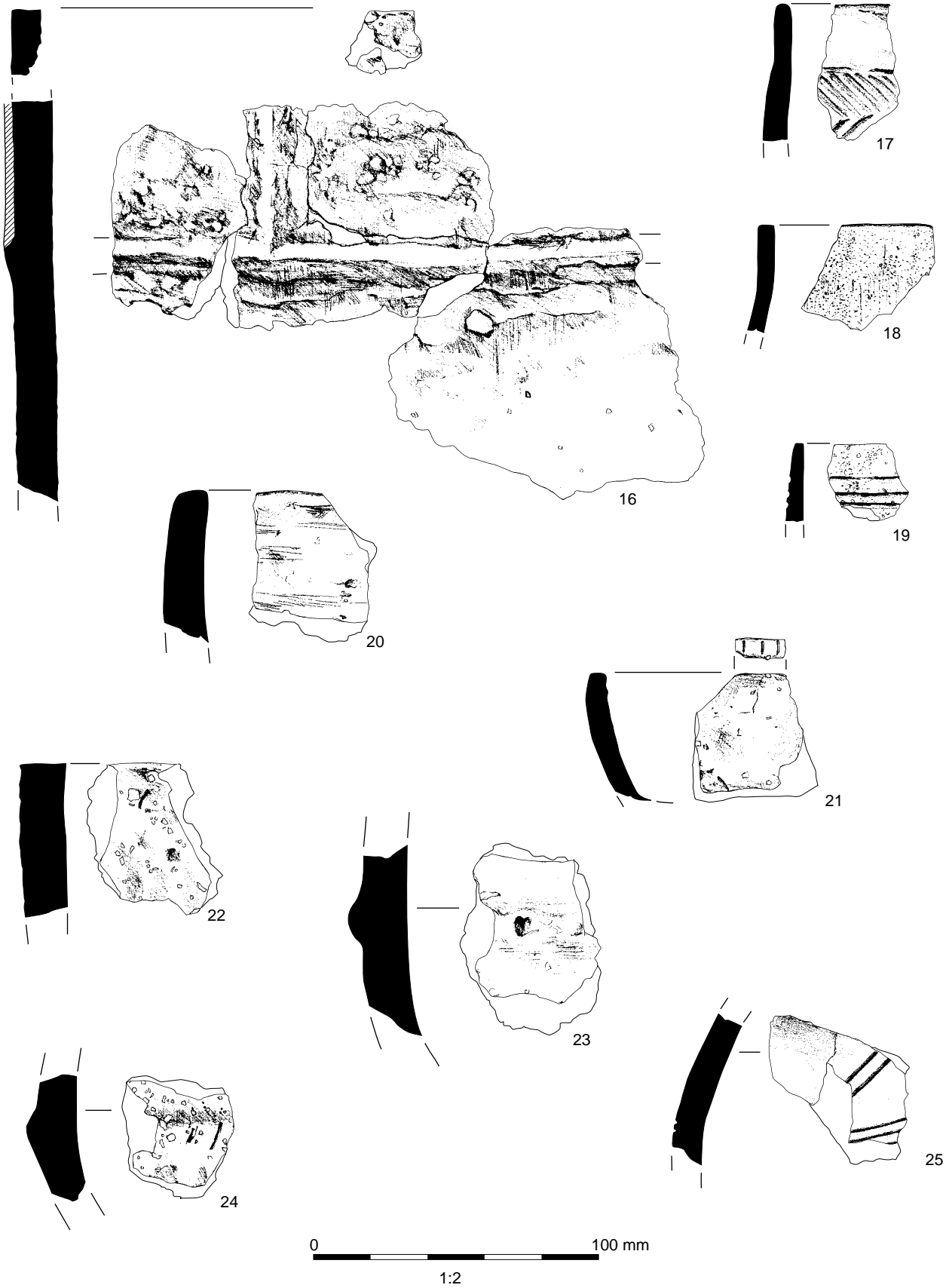


Figure 26 Middle and late Bronze Age pottery, Nos 16-26

## Overview

The small quantities of early Neolithic bowl, Peterborough ware and Beaker ware (including redeposited material) recovered reflect the general accepted pattern of small-scale, episodic occupation of the gravel terraces. The plain bowl pottery would belong not to the earliest Neolithic but to the period *c* 3650-3350 BC and would be contemporary with the long barrow at Drayton and the causewayed enclosure at Abingdon. With the notable exception of three sites - Abingdon causewayed enclosure (Avery 1982), Benson (Timby 2003) and South Stoke (Edwards *et al.* 2005) - early Neolithic pottery tends to be quite rare and is generally only ever found in relatively small quantities on the river gravel terraces in the Oxford region.

The single Peterborough ware sherd is likely to derive from either an Ebbsfleet or Mortlake ware bowl and it can be noted that a large Ebbsfleet ware assemblage was recovered from the excavations at the site of the Drayton Cursus just 5 km to the west (Barclay, Lambrick *et al.* 2003). This type of pottery would be broadly contemporary with the construction and use of the cursus monument (3500-3000 cal BC). Beaker pottery has also been recovered from occupation deposits, pits and burials within the surrounding area (Barclay, Lambrick *et al.* 2003; Clarke 1970, nos 34 and 137).

Within the region biconical urns are associated with the end of the round barrow tradition and with the first appearance of permanent settlement. Biconical and sub-biconical urns have been recovered from a number of funerary deposits and ring ditches. Important vessels include the lugged vessel from Barrow 14, Radley (Barclay and Halpin 1999, 159-60 and fig 5.9), two miniature vessels from a barrow at Mount Farm (Barclay forthcoming b) and the famous Iffley Urn with *decor de pastillage* (Tomalin 1988, 218 and fig. 6). At Appleford it is difficult to characterise the grog-tempered sherds due to a lack of featured sherds, although part of a horseshoe shaped handle was recovered. However, it can be noted that the range of fabrics is similar to that at sites such as Yarnton, where an important group of material was recovered from a pit deposit and from the postholes of a roundhouse. It seems likely that the grog-tempered sherds belong to either the Biconical Urn tradition at the end of the early Bronze Age or to the start of the middle Bronze Age.

The middle Bronze Age pottery is the most importance element to the assemblage. Although the overall size of this assemblage is not large it none the less includes a broad range of vessels and an important group of Globular Urns. Vessels can be classed into a number of categories: straight-sided Bucket Urns, Globular Urns and miscellaneous vessels. The most complete Bucket Urn was recovered from a waterhole. This appears to have been a very large straight-sided vessel decorated with a shoulder cordon and other vertical cordons. Part of a curving cordon with finger-nail impressed decoration appears to come from the same vessel. This could be part of a 'horseshoe'

handle and is likely to come from the rim.

Similar assemblages are known from occupation sites in the Abingdon and Oxford area. One was recovered from a complex of enclosures at Corporation Farm, Abingdon, although details of the pottery remain unpublished. At Yarnton an assemblage of Biconical Urn, Bucket Urns and to a lesser extent Globular Urns is associated with several open settlement sites that contain post-built roundhouses, waterholes and pits (Barclay and Edwards forthcoming; Gill Hey pers comm). It is generally accepted that Deverel-Rimbury style pottery is a development of the local Biconical and sub-biconical vessels. One change is in the use of temper with a switch from the use of grog to shell, flint or quartzite. Forms generally become less angular, although certain traits such as horseshoe shaped handles, bosses/lugs and decorated shoulders continue.

Deverel-Rimbury pottery tends to be found as secondary cremations within early Bronze Age barrows or, more rarely, within cremation cemeteries. Within this region Bucket Urns tend to be used in domestic and funerary contexts, while Globular Urns are almost exclusively found on occupation sites.

The shoulder sherd from an All Cannings Cross style vessel belongs to the earliest Iron Age. Within the region this type of pottery is relatively rare, and is only ever found in relatively small quantities. It is associated with the earliest phase of some Iron Age settlements such as Gravelly Guy, Stanton Harcourt (Duncan *et al.* 2004) and Yarnton (Booth forthcoming).

## LATE IRON AGE AND ROMAN POTTERY

by Paul Booth

### Introduction: quantities and methodology

Some 2862 sherds (*c* 46.8 kg) of late Iron Age and Roman pottery were recovered from all phases of intrusive fieldwork from 1993 onwards. This is listed in terms of ware by excavated area in Table 7. The pottery from the 1993 evaluation has been recorded and grouped with the material from the 2000 excavation of the same area as it forms a useful addition to that assemblage. The pottery dated almost entirely from the mid 1st to the early 2nd century AD. Very small quantities of late Roman material were present. Similar quantities of post-medieval pottery were noted but are not reported upon. Curiously, medieval pottery was entirely absent.

The pottery was recorded using the Oxford Archaeology's Iron Age and Roman pottery recording system, which by applying standardised codes for fabrics and forms allows easy comparison between assemblages from different parts of the region. Aspects of this are amplified below. Quantification was by sherd count, weight and EVEs (based on the percentage of rim circumferences surviving), with an additional more subjective count of vessels based on

Table 7 Late Iron Age and Roman pottery: Quantification (No of Sherds and weight) of wares by excavated area

Ware	Summary description	1997		1998		1999		1993 & 2000		TOTAL			
		Nosh	Wt (g)	Nosh	Wt (g)	Nosh	Wt (g)	Nosh	Wt (g)	% Nosh	Wt (g)	% Wt	
S20	South Gaulish samian ware (including La Graufesenque - <b>IGFSA</b> )	1	2			4	35	34	241	39	1.4	278	0.6
S30	Central Gaulish samian ware (including Lezoux - <b>LEZ SA 2</b> )							2	17	2	0.1	17	+
S32	Central Gaulish samian ware: Les Martres de Veyre ( <b>LMV SA</b> )							7	72	7	0.2	72	0.2
F35	Fine oxidised mica coated ware, Lower Farm (Booth <i>et al.</i> 1993, 138)							25	209	25	0.9	209	0.4
F40	Imported colour-coated wares undifferentiated							1	1	1	+	1	+
F42	Central Gaulish colour-coated ware ( <b>CNG CC 1</b> )							1	2	1	+	2	+
F51	Oxford red/brown colour-coated ware ( <b>OXF RS</b> ).	5	189	2	14					7	0.2	203	0.4
F65	?Local brown colour-coated ware							1	6	1	+	6	+
A23	Unassigned amphora, fine oxidised, slightly sandy							3	168	3	+	168	0.4
M21	Verulamium white ware mortaria ( <b>VER WH</b> ).							4	2036	4	0.1	2036	4.4
M22	Oxford white ware mortaria ( <b>OXF WH</b> )					1	75	1	12	2	0.1	87	0.2
W10	Fine white wares undifferentiated					8	35	9	48	17	0.6	83	0.2
W12	Fine Oxford white ware ( <b>OXF WH</b> )					6	171	6	74	12	0.4	245	0.5
W20	Coarse sandy white wares undifferentiated			1	18	49	1055	30	271	80	2.8	1344	2.9
W21	Verulamium region sandy white ware ( <b>VER WH</b> ).					1	2	4	214	5	0.2	216	0.5
Q10	Fine oxidised white-slipped wares undifferentiated							1	92	1	+	92	0.2
E20	Fine sand-tempered 'Belgic type' wares undifferentiated	1	2	1	57	16	199	16	209	34	1.2	467	1.0
E30	Medium to coarse sand-tempered 'Belgic type' wares undifferentiated	3	24			177	2143	205	2256	385	13.5	4423	9.5
E50	Limestone-tempered 'Belgic type' wares undifferentiated					1	23			1	+	23	+
E60	Flint-tempered 'Belgic type' wares undifferentiated					1	10	2	33	3	0.1	43	0.1
E80	Grog-tempered 'Belgic type' wares undifferentiated (includes <b>SOB GT</b> )	6	72	5	62	192	5517	269	6971	472	16.5	12622	27.0
O10	Fine oxidised 'coarse' wares undifferentiated					52	308	46	278	98	3.4	586	1.3
O11	Fine Oxford oxidised 'coarse' ware					31	305	27	113	58	2.0	354	0.8
O18	Fine sandy oxidised ware, local							1	2	1	+	2	+
O19	Fine sandy oxidised ware, local							2	5	2	0.1	5	+
O20	Coarse sandy oxidised wares undifferentiated					5	11	75	678	80	2.8	689	1.5
O30	Moderately fine sandy oxidised wares undifferentiated							2	5	2	0.1	5	+
O80	Coarse (usually grog-tempered) oxidised wares undifferentiated							4	70	4	0.1	70	0.1
R10	Fine reduced 'coarse' wares undifferentiated					11	35	27	211	38	1.3	246	0.5
R11	Very fine reduced Oxford 'coarse' ware ( <b>OXF FR</b> )	2	7	8	45	224	2195	173	2211	407	14.2	4458	9.5
R20	Coarse sandy reduced wares undifferentiated	1	6			233	3341	513	6279	747	26.1	9626	20.6
R21	Oxford coarse sandy reduced ware (Young 1977, 202, fabric 2)					35	619	142	2409	177	6.2	3028	6.5
R30	Moderately fine sandy reduced wares undifferentiated			1	33	40	616	51	941	92	3.2	1590	3.4
R90	Coarse (usually grog-tempered) reduced wares undifferentiated. Includes Young 1977, 202, fabric 1					1	80	39	2362	40	1.4	2442	5.2
R95	Savernake ware ( <b>SAV GT</b> )					2	72	9	400	11	0.4	472	1.0
C10	Shell-tempered ware undifferentiated			1	482	2	19			3	0.1	501	1.1
<b>Total</b>		<b>19</b>	<b>302</b>	<b>17</b>	<b>697</b>	<b>1094</b>	<b>16680</b>	<b>1732</b>	<b>28896</b>	<b>2862</b>		<b>46775</b>	

individual rim sherds. Details of rim, base, handle, spout and decorative types and other characteristics were recorded as appropriate.

The fabrics are placed in a number of major ware groups, defined on the basis of significant common characteristics. The ware groups can be combined to constitute two main classes of material, 'fine and specialist' wares on the one hand, and the rest of the coarse wares on the other hand (cf. Booth 1991). The fine and specialist ware groups (identified by the initial letter of the fabric code) are: samian ware (S), fine wares - colour-coated, lead glazed, mica coated etc - (F), amphorae (A), mortaria (M), white wares other than mortaria (W), and white slipped wares (Q). The remaining coarse ware groups are: 'Belgic type' (in the sense of Thompson 1982, 4-5), usually grog-tempered fabrics (E), 'Romanised' oxidised coarse wares (O), 'Romanised' reduced coarse wares (R) and calcareous (particularly shell) tempered wares (C).

Within these classes there are hierarchically arranged subgroups, usually defined on the basis of inclusion type, and individual fabrics/wares are then indicated at a third level of precision, both levels of subdivision being expressed by numeric codes. Thus R20 is a general code for sandy reduced coarse wares, while R21 is a specific sandy reduced Oxfordshire product. For the bulk of the present assemblage fabric identification was carried out at the intermediate level of precision, although individual wares were isolated where possible.

Initial sorting of fabrics was done by eye, with subsequent use of a binocular microscope at x20 magnification to assist identification/define the inclusion types of individual sherds. Only summary fabric descriptions or common names are given in Table 7, and they are followed (in bold) by references to the codes used in the national Roman pottery fabric reference collection (Tomber and Dore 1998) where appropriate. More complete fabric descriptions are contained within the pottery archive.

The pottery was generally in moderate to good condition, indicated by a relatively high average sherd weight of 16.3 g. Preservation of surfaces was variable. Some evidence of surface treatment such as burnishing did survive (although probably on a relatively small proportion of sherds that originally had such treatment), along with limited traces of sooting and other occasional burnt residues.

## Wares

The range of wares present on the site was relatively restricted, reflecting the narrow date range of most of the assemblage. Quantification of wares by excavation area is given in Table 7, and the occurrence of vessel types in each ware is shown in Tables 9 and 10 below. Fine and specialist wares, which totalled 7.2% of all sherds, consisted mainly of samian and white wares. The former was principally of South Gaulish origin, with a little material from Les Martres de Veyre and only two sherds probably from Lezoux. Fine (F) wares included a number of sherds of an early 2nd-century

mica-coated ware fabric (F35) known from the production site at Lower Farm, Nuneham Courtenay, but these were almost certainly all from a single vessel (Fig. 27, 3). The dominant late Roman Oxford fine ware production was represented by a very thin scatter of sherds of fabric F51 across the site - none was associated with the enclosure in the 2000 area. This area did, however, produce a single sherd probably of fabric F65. This fabric probably originates in north Oxfordshire (Booth 1997, 115) and its occurrence here in the early 2nd century is unexpected. Only two early imported fine ware sherds were present, both in the 2000 area. One of these (F42) was from Central Gaul (Fig. 27, 2), the other was a tiny fragment of uncertain origin (F40). Amphorae and mortaria were very scarce and apart from a single Oxford sherd (fabric M22) were confined to the 2000 area. The only Oxford mortarium sherd here was of a late Roman type (Young type M22) from context 5026. The body sherd from context 4098 in the 1999 area could date to any time after c AD 100, so only the sherds of fabric M21 from the 2000 area are certainly indicative of early mortarium supply to the site. All derive from a single stamped Verulamium region vessel (Fig. 27, 4). The amphora sherds, although from two distinct contexts, were also from a single vessel. This is likely to have been a wine amphora (perhaps of Dressel 2-4 type) but its source is uncertain.

A large part of the fine and specialist ware category material consisted of white wares, although these only amounted to 4% of all the pottery from the site (by both count and weight). It is not certain that all of these are appropriately assigned to the fine and specialist ware category (see further below). They include fine white wares certainly produced in the Oxford industry (W12, with sherds assigned to W10 less certainly from that source), but most are in coarse sandy fabrics (W20). These are particularly well represented in this part of Oxfordshire (for example amongst unpublished material from Abingdon) and a local origin for many seems certain. In fabric, however, they are very difficult to distinguish from similar Verulamium products (W21). The latter were certainly present in this assemblage and are possibly underrepresented in Table 7.

The principal coarse ware categories represented in the Appleford assemblage were E ('Belgic type', in the sense of Thompson 1982, 4) and R (reduced) coarse wares. Oxidised wares formed a relatively minor proportion of all the pottery present, amounting to 8.6% of the total sherds but only 3.7% of weight. E wares comprised 31.3% of all sherds (37.6% of weight), but were notably less well-represented in terms of vessel count (constituting only 16.6% of REs). Two main strands of this ceramic tradition were represented; the first dominant one (particularly in terms of weight), consisted of grog-tempered (E80) fabrics while the second comprised sand tempered fabrics in E20 (fine) and E30 (medium-coarse sand) groupings. This second tradition eventually formed the basis for the regional 'Romanised' sand-tempered reduced ware traditions that emerged in the second half of

the 1st century AD. Indeed, defining the cut-off point between E30 and R20 wares was not always easy, as it is likely that initially the basic difference was simply one of firing, with no radical transformation of fabric or vessel forms. A local origin for the E wares can be assumed but is not demonstrable directly since production sites for this material are not known. Some at least of the reduced (R) coarse wares can be identified as specific Oxford products - particularly the sherds assigned to fabrics R11 and R21 - but it is quite likely that all these wares derive from kilns in the area covered by the Oxford industry. The only possible non-local reduced fabric was R95, Savernake ware. It is not certain that the sherds assigned to this fabric here were products of the Savernake industry, but the appearance of the fabric was very similar to that of genuine Savernake products, and the few rim sherds present were of forms entirely consistent with products of that industry.

It is notable that the main R ware groupings were of fine (R10 and R11) and coarse sandy (R20 and R21) fabrics while the moderately sandy fabric grouping (R30), that generally dominates regional coarse ware assemblages from the mid 2nd century onwards, was only poorly represented. A similar contrast can be seen in the oxidised coarse wares, in which both fine and coarse sandy (O10 and O20) subgroups are represented, but the intermediate (O30) subgroup is largely missing. The sources for these fabrics were probably the same as for the reduced wares (ie. the Oxford industry), but three sherds of distinctive early Roman fine oxidised wares (fabrics O18 and O19), perhaps from an even more local source, were also recognised. These belong to a distinctive early Roman fine ware tradition identified at sites such as Abingdon and Dorchester on Thames (Timby *et al.* 1997). The grey, orange and white fabrics of this tradition date to the pre-Flavian period and were used for a range of beakers (including butt beakers), cups, dishes and other forms. The sherds of O19 were from a characteristic elaborately curved beaker, and the fragment in fabric O18, probably also from a beaker, had raised boss decoration, also characteristic of this industry. It is possible that further small fragments of these fabrics occurred amongst the sherds grouped as O10.

R20 was the most important individual fabric in the R ware group by sherd count and weight (26.1% and 20.6% respectively of the total assemblage), but in other respects R11 was more significant. The relatively low representation of this fabric by sherd count (14.2%) and particularly by weight (9.5%) is in complete contrast to its value in REs, which comprised 29.7% of the total vessel assemblage from the site. This implies a bimodal assemblage of R11 sherds, comprising small, well-fragmented pieces on the one hand (fabric R11 is typically, though not exclusively, used for thin walled, easily broken vessels) and a number of semi-complete vessels on the other hand. The repertoire in fabric R11 spans the whole range of vessel types, however, so the assemblage is not skewed by localised deposits of a limited number of

forms.

The last ware group present consisted of calcareous-tempered fabrics. There were only three sherds of a single subgroup C10 (shell-tempered fabrics), two from the 1999 area and the third from the 1998 area. The latter was the heavily truncated base of a cremation urn. This may have been a late Roman vessel, perhaps in the Harrold fabric C11 (Brown 1994), but its condition was such that confident identification was not possible. The relative absence of sherds in shell-tempered fabrics, which were quite widely distributed across the region in the early Roman period as well as later, is notable. So too is the total absence of black-burnished ware. This absence is certainly of chronological significance as black-burnished ware was ubiquitous (though never common) in the region from c AD 120 onwards, although in north-east Oxfordshire it may not have appeared before about the middle of the 2nd century AD (see below).

### Vessel types

Some 244 vessels were represented by rim sherds. These amounted to 40.53 rim equivalents (REs, a measurement based on the surviving percentage of the rim circumference). The latter is generally regarded as the most reliable measure of vessel type proportions, though with relatively small assemblages (as here) it is possible for figures to be skewed by the occurrence of one or two complete rims. A case in point is the representation of flagons, which comprised 6.7% of all REs, principally because of the occurrence of two complete flagon necks (each 1.0 RE) in the 2000 area; the representation of this type in terms of rim sherds was 2.0%. Overall, however, quantification based on REs is preferred. The vessel type categories used are set out in Table 8 together with their quantification by rim equivalents. The 1999 and 1993/2000 assemblages are distinguished here. Only three rim sherds (0.23 REs) came from the 1997 and 1998 excavation areas. These vessels were two Oxford colour-coated ware class HC bowls (Young 1977 types C45 and C51), totalling 0.20 RE, and a class D (jar/bowl) rim in fabric E80.

The overall assemblage was dominated by jar types (63.5% of all vessels), but not to the extent that would be seen on some contemporary sites (see further below). Jars were principally of medium mouthed (CD - ie. with a rim diameter in a range from two-thirds of the girth diameter up to and equal to it) or undifferentiated (C) types. Narrow mouthed types (CC - rim diameter less than two-thirds of the girth) were also quite well-represented. Distinctive late Iron Age-early Roman types such as CE and CF were present but not particularly common, nor were they confined to characteristic late Iron Age fabrics - the majority of vessels in E wares were of the generalised types C and CD. Bead rim jars (type CH), which are particularly characteristic of the late Iron Age-early Roman period in the region (cf Miles *et al.* 1986, fiche 7:A9, Nos 20-1-7), were almost entirely absent here,

*Archaeological work at Appleford Sidings*

*Table 8 Late Iron Age and Roman pottery: Quantities (rim equivalents) of vessel types from 1999 and 1993/2000 areas*

Vessel type	Description	1999		1993 & 2000		Total site including 1997 and 1998	
		RE	%RE	RE	%RE	RE	%RE
BA	Narrow mouthed flagons			2.25	9.5	2.25	5.5
BB	Wide mouthed flagons	0.48	2.8			0.48	1.2
<b><i>B flagons</i></b>		<b>0.48</b>	<b>2.8</b>	<b>2.25</b>	<b>9.5</b>	<b>2.73</b>	<b>6.6</b>
C	Jars undifferentiated	2.92	17.0	3.55	14.9	6.47	15.7
CC	Narrow mouthed jars	1.76	10.2	1.52	6.4	3.28	8.0
CD	Medium mouthed jars	4.30	25.0	7.58	31.9	11.88	28.8
CE	Squat high shouldered jars			0.64	2.7	0.64	1.6
CF	Carinated jars	0.33	1.9			0.33	0.8
CH	Bead rim jars	0.06	0.3			0.06	0.1
CI	Angled everted rim jars	0.99	5.7	0.23	1.0	1.22	3.0
CK	'Cooking pot type' jars			1.00	4.2	1.00	2.4
CN	Large (storage) jars	0.39	2.3	0.88	3.7	1.27	3.1
<b><i>C jars</i></b>		<b>10.75</b>	<b>62.4</b>	<b>15.40</b>	<b>64.8</b>	<b>26.15</b>	<b>63.4</b>
<b><i>D jar/bowls</i></b>		<b>0.69</b>	<b>4.0</b>	<b>1.23</b>	<b>5.2</b>	<b>1.95</b>	<b>4.7</b>
E	Beakers undifferentiated	0.88	5.1	0.23	1.0	1.11	2.7
EA	Butt beakers	0.47	2.7	0.24	1.0	0.71	1.7
ED	Globular/bulbous beakers	0.64	3.7			0.64	1.6
<b><i>E beakers</i></b>		<b>1.99</b>	<b>11.6</b>	<b>0.47</b>	<b>2.0</b>	<b>2.46</b>	<b>6.0</b>
FA	Hemispherical cups			0.30	1.3	0.30	0.7
FB	Campanulate cups	0.28	1.6	0.11	0.5	0.39	0.9
<b><i>F cups</i></b>		<b>0.28</b>	<b>1.6</b>	<b>0.41</b>	<b>1.7</b>	<b>0.69</b>	<b>1.7</b>
H	Bowls undifferentiated			0.04	0.2	0.04	0.1
HA	Carinated bowls	1.56	9.1	0.84	3.5	2.40	5.8
HB	Straight-sided bowls			0.13	0.5	0.13	0.3
HC	Curving sided bowls	0.36	2.1	1.21	5.1	1.77	4.3
<b><i>H bowls</i></b>		<b>1.92</b>	<b>11.1</b>	<b>2.22</b>	<b>9.3</b>	<b>4.34</b>	<b>10.5</b>
I	Bowls/dishes undifferentiated	0.16	0.9	0.03	0.1	0.19	0.5
IB	Curving sided bowls/dishes	0.10	0.6			0.10	0.2
<b><i>I bowls/dishes</i></b>		<b>0.26</b>	<b>1.5</b>	<b>0.03</b>	<b>0.1</b>	<b>0.29</b>	<b>0.7</b>
JA	Straight sided dishes	0.66	3.8	0.76	3.2	1.42	3.4
JB	Curving sided dishes	0.07	0.4	0.06	0.3	0.13	0.3
<b><i>J dishes</i></b>		<b>0.73</b>	<b>4.2</b>	<b>0.82</b>	<b>3.4</b>	<b>1.55</b>	<b>3.8</b>
KA	Hook rimmed mortaria			0.71	3.0	0.71	1.7
KE	Tall bead/stubby flange mortaria			0.06	0.3	0.06	0.1
<b><i>K mortaria</i></b>				<b>0.77</b>	<b>3.2</b>	<b>0.77</b>	<b>1.9</b>
<b><i>L lids</i></b>				<b>0.21</b>	<b>0.9</b>	<b>0.21</b>	<b>0.5</b>
<b><i>Z uncertain</i></b>		<b>0.02</b>	<b>0.1</b>			<b>0.09</b>	<b>0.2</b>
		17.22		23.78		41.23	

however, for reasons which are unclear.

The indeterminate jar/bowl class D comprised less than 5% of the assemblage. Sherds assigned to this class are typically quite small, hence the difficulty of determining their form. It is likely, however, that the great majority were from jars. Bowls were the second

largest class of vessels present, comprising 10.5% of the assemblage with a variety of types in both fine and coarse fabrics. These were followed in order of importance by flagons and beakers (6.7% and 6.1% respectively), dishes (3.8%), mortaria (1.9%) and cups (1.7%). The relatively high incidence of drinking/liq-

uid containing vessels (14.5% combined) is notable (see further below).

Tables 9 and 10 show the correlation of fabric and vessel form, though the latter is presented in terms of broad classes rather than the subtypes listed in Table 8. The data are presented in two ways, showing the contribution of each fabric to individual vessel classes (Table 9) and the range of vessels (as represented by rim sherds) within each fabric (Table 10). The figures show that there was partial separation of fine/specialist and coarse wares in terms of functional classes. The principal vessel types, jars (together with the uncertain jars/bowls) were produced in coarse wares, with a few examples in white wares. Excluding specialist types such as mortaria and amphorae, however, there was no clear cut correlation of ware groups with other vessel classes. So, for example, flagons were found in fine oxidised (O11) and reduced (R11) fabrics as well as white and white-slipped wares and even cups, which were otherwise exclusively in samian ware (forms Drag 27 and 35) also occurred in fabric R11, imitating samian form 27. Very few beakers were produced in fine and specialist wares, the great majority of these vessels being in fabric R11. The R11 examples included 'native' types such as the butt beaker (Young 1977, type R29), which also occurred in coarse sandy white ware W20 and the 'Belgic type' fabric E30, as well as smaller vessels of globular or bag-shaped form.

Bowls and dishes occurred in both fine and coarse fabrics. Samian ware accounted for 39.4% of dishes (forms Drag 15/17, 18 and 36 being present) but only 5.8% of bowls. It should be noted, however, that while single examples of Drag 30 and 37 (both South Gaulish) were the only samian bowl forms represented by rims, Drag 29 and a further Drag 30 were present as body sherds. The latter was in Central Gaulish fabric and appears anomalous in relation to the rest of the samian ware assemblage, however. A rounded bowl in mica-dusted fabric F35 has already been mentioned. Other bowls were in oxidised and reduced fabrics. Fine fabrics in this grouping (O11 and R11) were used for imitation samian ware forms such as Young (1977) types R64 imitating Drag 30, and O45 and R68, based on Drag 37, as well as for types not derived from samian ware. Interestingly, bowls were apparently absent from the E ware form repertoire. Three examples of the indeterminate bowl/dish form class (I) occurred in fabrics E20 and E30, but it is more likely (although not demonstrable) that these vessels were dishes than bowls. Even so, vessels certainly identified as dishes were scarce in this assemblage, all but one example not in samian ware being in reduced coarse wares.

#### Use and reuse

Some 66 sherds (33 each from the 1999 and 2000 areas) had evidence of burning in various forms. Twenty three sherds were just recorded as burnt, 28 had exterior sooting and 15 had internal carbonised residues. There were no recorded instances of the occurrence of

external sooting and internal charred deposits on the same sherd, however. All these categories may relate to the use of vessels for cooking, but general burning could in some cases have occurred subsequent to breakage. A majority of instances (36) were on sherds in sand-tempered fabrics, E30 and R20, particularly favoured for cooking pots.

Evidence of modification or re-use of vessels was more limited, and in all but one case was confined to sand-tempered fabrics R20 and R21. There were two examples of shaped sherds - one a simple disc, the other with a central hole as well, presumably for use as a spindle whorl. Nine base sherds had had holes knocked or drilled through them - a characteristic observed widely in late Iron Age and early Roman assemblages in the region.

There was some variation in the occurrence of these features. In the 1999 area there was only a single example of a sherd with an internal carbonised residue, while external sooting was relatively common (19 sherds), whereas in the 2000 area the situation was broadly reversed. The sample may be too small for these differences to be particularly meaningful, however.

#### Context, phasing and chronology

The great majority of the Roman pottery derived from ditches associated with the enclosures and field systems examined in 1999 and 2000. Despite the establishment of a clear stratigraphic sequence of Roman features, particularly in the 1999 area, there is relatively little evidence that this is replicated in the ceramic record. In the 1999 area, for example, some 82% of all sherds derived from contexts assigned to Period 3a. The breakdown of this material in terms of fabric revealed no meaningful variation whatever from the proportions of ware groups seen in the total area assemblage, ie there was no indication of chronological distinction between the Phase 3a material and the rest, and therefore no discernible chronological development in the assemblage. The Period 3a material included a number of relatively substantial groups dated late 1st-early 2nd century and therefore was representative of the almost the entire chronological range of pottery at the site apart from the minor late Roman component. This is presumably in part a consequence of the recutting of ditches, resulting in mixed assemblages, but it also seems that the main pottery groups accumulated in the upper fills of ditches some time after they had gone out of use. In some cases, therefore, it is likely that the majority of pottery from an individual feature does not reflect the date at which it was dug. In the 1999 area at least, it can be suggested that the majority of pottery from the fills of ditches dug in Period 3a was deposited in Period 3b. Only a very small amount of pottery in this area (just over 3% of sherds) came from the fills of Period 3b ditches and, with the exception of a single (probably intrusive) sherd of Oxford colour-coated ware (F51), was completely consistent with the rest of the material from the area. This raises the



*Archaeological work at Appleford Sidings*

*Table 9 Late Iron Age and Roman pottery: Fabrics as percentages of quantities of vessel type classes (column %)*

Ware	Vessel types											Total RE	%	
	B	C	D	E	F	H	I	J	K	L	Z			
S20					24.6	5.8		39.4					1.03	2.5
S30					10.1								0.07	0.2
S32					33.3								0.23	0.6
<b>S subtotal</b>					<b>68.1</b>	<b>5.8</b>		<b>39.4</b>					<b>1.33</b>	<b>3.2</b>
F35							8.3						0.36	0.9
F42				3.3									0.08	0.2
F51							4.6						0.20	0.5
<b>F subtotal</b>				<b>3.3</b>			<b>12.9</b>						<b>0.64</b>	<b>1.6</b>
M21										92.2			0.71	1.7
M22										7.8			0.06	0.1
<b>M subtotal</b>										<b>100.0</b>			<b>0.77</b>	<b>1.9</b>
W10			5.1										0.10	0.2
W12		0.8					3.7						0.37	0.9
W20	7.3	4.1		9.8									1.50	3.6
W21	36.6												1.00	2.4
<b>W subtotal</b>	<b>44.0</b>	<b>4.9</b>	<b>5.1</b>	<b>9.8</b>			<b>3.7</b>						<b>2.87</b>	<b>7.0</b>
Q10	36.6												1.00	2.4
<b>Q subtotal</b>	<b>36.6</b>												<b>1.00</b>	<b>2.4</b>
<b>Fine &amp; specialist subtotal</b>	<b>70.6</b>	<b>4.9</b>	<b>5.1</b>	<b>13.0</b>	<b>68.1</b>	<b>22.4</b>		<b>39.4</b>	<b>100.0</b>				<b>6.71</b>	<b>16.3</b>
E20		0.4						13.8			22.2		0.17	0.4
E30		6.5	15.9	10.2				20.7	4.5				2.40	5.8
E60		0.2											0.05	0.1
E80		15.8	2.6								33.3		4.21	10.2
<b>E subtotal</b>		<b>22.9</b>	<b>18.5</b>	<b>10.2</b>				<b>34.5</b>	<b>4.5</b>		<b>55.6</b>		<b>6.83</b>	<b>16.6</b>
O10	9.2	0.4									44.4		0.40	1.0
O11		0.4	6.2				13.8						0.83	2.0
O20		1.3											0.33	0.8
<b>O subtotal</b>	<b>9.2</b>	<b>2.1</b>	<b>6.2</b>				<b>13.8</b>				<b>44.4</b>		<b>1.56</b>	<b>3.8</b>
R10		2.9	4.6										0.84	2.0
R11	10.3	29.0	7.2	76.8	31.9	31.1	51.7	41.3					12.26	29.7
R20		23.4	49.7					26.7			100.0		8.46	20.5
R21		5.2					6.0						1.63	4.0
R30		6.9	5.6					13.8	14.8				2.19	5.3
R90		2.0	3.1										0.58	1.4
R95		0.5											0.12	0.3
<b>R subtotal</b>	<b>10.3</b>	<b>69.9</b>	<b>70.3</b>	<b>76.8</b>	<b>31.9</b>	<b>63.8</b>	<b>65.5</b>	<b>56.1</b>			<b>100.0</b>		<b>26.08</b>	<b>63.3</b>
C10		0.2											0.05	0.1
<b>C subtotal</b>		<b>0.2</b>											<b>0.05</b>	<b>0.1</b>
<b>Coarse ware subtotal</b>	<b>19.5</b>	<b>95.1</b>	<b>95.0</b>	<b>87.0</b>	<b>31.9</b>	<b>77.6</b>	<b>100</b>	<b>60.6</b>		<b>100</b>	<b>100</b>		<b>34.52</b>	<b>83.8</b>
<b>TOTAL RE</b>	<b>2.73</b>	<b>26.15</b>	<b>1.95</b>	<b>2.46</b>	<b>0.69</b>	<b>4.34</b>	<b>0.29</b>	<b>1.55</b>	<b>0.77</b>	<b>0.21</b>	<b>0.09</b>		<b>41.23</b>	
<b>%</b>	<b>6.6</b>	<b>63.4</b>	<b>4.7</b>	<b>6.0</b>	<b>1.7</b>	<b>10.5</b>	<b>0.7</b>	<b>3.8</b>	<b>1.9</b>	<b>0.5</b>	<b>0.2</b>			

Chapter Three

Table 10 Late Iron Age and Roman pottery: Vessel type classes as percentages of total vessel per fabric (row %)

Ware	Vessel types										Total RE	%
	B	C	D	E	F	H	I	J	K	L		
S20					16.5	24.3		59.2			1.03	2.5
S30					100.0						0.07	0.2
S32					100.0						0.23	0.6
<b>S subtotal</b>					<b>35.3</b>	<b>18.8</b>		<b>45.9</b>			<b>1.33</b>	<b>3.3</b>
F35						100.0					0.36	0.9
F42				100.0							0.08	0.2
F51						100.0					0.20	0.5
<b>F subtotal</b>				<b>12.5</b>		<b>87.5</b>					<b>0.64</b>	<b>1.6</b>
M21									100.0		0.71	1.8
M22									100.0		0.06	0.1
<b>M subtotal</b>									<b>100.0</b>		<b>0.77</b>	<b>1.9</b>
W10			100.0								0.10	0.2
W12		56.8				43.2					0.37	0.9
W20	13.3	70.7		16.0							1.20	3.0
W21	100.0										1.00	2.5
<b>W subtotal</b>	<b>44.2</b>	<b>37.1</b>	<b>3.7</b>	<b>9.0</b>		<b>6.0</b>					<b>2.67</b>	<b>6.6</b>
Q10	100.0										1.00	2.5
<b>Q subtotal</b>	<b>100.0</b>										<b>1.00</b>	<b>2.5</b>
<b>Fine &amp; specialist subtotal</b>	<b>34.0</b>	<b>15.4</b>	<b>1.6</b>	<b>5.0</b>	<b>7.3</b>	<b>15.1</b>		<b>9.5</b>	<b>12.0</b>		<b>6.41</b>	<b>15.8</b>
E20		64.7					23.5				0.17	0.4
E30		71.3	12.9	10.4			2.5	2.9			2.40	5.9
E60		100.0									0.05	0.1
E80		98.1	1.2								4.21	10.4
<b>E subtotal</b>		<b>87.8</b>	<b>5.3</b>	<b>3.7</b>			<b>1.5</b>	<b>1.0</b>			<b>6.83</b>	<b>16.9</b>
O10	62.5	27.5									0.40	1.0
O11		13.3	14.5			72.3					0.83	2.0
O20		100.0									0.33	0.8
<b>O subtotal</b>	<b>16.0</b>	<b>35.2</b>	<b>7.7</b>			<b>38.5</b>					<b>1.56</b>	<b>3.8</b>
R10		89.3	10.7								0.84	2.0
R11	2.4	62.9	1.2	15.9	1.9	9.1	1.3	5.4			11.86	29.3
R20		72.3	11.5			13.7				2.5	8.46	20.9
R21		84.0				16.0					1.63	4.0
R30		82.6	5.0				1.8	10.5			2.19	5.4
R90		89.7	10.3								0.58	1.4
R95		100.0									0.12	0.3
<b>R subtotal</b>	<b>1.1</b>	<b>70.7</b>	<b>5.3</b>	<b>7.4</b>	<b>0.9</b>	<b>9.7</b>	<b>0.7</b>	<b>3.4</b>		<b>0.8</b>	<b>25.68</b>	<b>63.4</b>
C10		100.0									0.05	0.1
<b>C subtotal</b>		<b>100.0</b>									<b>0.05</b>	<b>0.1</b>
<b>TOTAL RE</b>	<b>2.71</b>	<b>25.74</b>	<b>1.95</b>	<b>2.46</b>	<b>0.69</b>	<b>4.07</b>	<b>0.29</b>	<b>1.55</b>	<b>0.77</b>	<b>0.21</b>	<b>40.53</b>	
<b>%</b>	<b>6.7</b>	<b>63.5</b>	<b>4.8</b>	<b>6.1</b>	<b>1.7</b>	<b>10.0</b>	<b>0.7</b>	<b>3.8</b>	<b>1.9</b>	<b>0.5</b>		

Table 11 Late Iron Age and Roman pottery: Comparison of fabric quantifications between 1999 area and enclosure (1993/2000) area

Ware	1999						1993 & 2000					
	Nosh	%Nosh	Wt	%Wt	RE	%RE	Nosh	%Nosh	Wt	%Wt	RE	%RE
S20	4	0.4	35	0.2	0.27	1.6	34	2.0	241	0.8	0.76	3.2
S30							2	0.1	17	0.1	0.07	0.3
S32							7	0.4	72	0.2	0.23	1.0
<b>S subtotal</b>	<b>4</b>	<b>0.4</b>	<b>35</b>	<b>0.2</b>	<b>0.27</b>	<b>1.6</b>	<b>43</b>	<b>2.5</b>	<b>330</b>	<b>1.1</b>	<b>1.06</b>	<b>4.5</b>
F35							25	1.4	209	0.7	0.36	1.5
F40							1	0.1	1	+		
F42							1	0.1	2	+	0.08	0.3
F51	2	0.2	14	0.1								
F65							1	0.1	6	+		
<b>F subtotal</b>	<b>2</b>	<b>0.2</b>	<b>14</b>	<b>0.1</b>			<b>28</b>	<b>1.6</b>	<b>218</b>	<b>0.8</b>	<b>0.44</b>	<b>1.9</b>
A23							3	0.2	168	0.6		
<b>A subtotal</b>							<b>3</b>	<b>0.2</b>	<b>168</b>	<b>0.6</b>		
M21							4	0.2	2036	7.2	0.71	2.9
M22	1	0.1	75	0.4			1	0.1	12	0.3	0.06	0.2
<b>M subtotal</b>	<b>1</b>	<b>0.1</b>	<b>75</b>	<b>0.4</b>			<b>6</b>	<b>0.3</b>	<b>2123</b>	<b>7.3</b>	<b>0.77</b>	<b>3.2</b>
W10	8	0.7	35	0.2			9	0.5	48	0.2	0.10	0.4
W12	6	0.6	171	1.0	0.16	0.9	6	0.3	74	0.2	0.21	0.9
W20	49	4.5	1055	6.3	1.26	7.3	30	1.7	271	0.9	0.24	1.0
W21	1	0.1	2	+			4	0.2	214	0.7	1.00	4.2
W subtotal	64	5.9	1263	7.5	1.42	8.2	49	2.8	607	2.1	1.55	6.5
Q10							1	0.1	92	0.3	1.00	4.2
<b>Q subtotal</b>							<b>1</b>	<b>0.1</b>	<b>92</b>	<b>0.3</b>	<b>1.00</b>	<b>4.2</b>
<b>Fine &amp; specialist subtotal</b>	<b>71</b>	<b>6.5</b>	<b>1387</b>	<b>8.2</b>	<b>1.69</b>	<b>9.8</b>	<b>129</b>	<b>7.4</b>	<b>3463</b>	<b>12.0</b>	<b>4.82</b>	<b>20.3</b>

E20	16	1.5	199	1.2	0.06	0.3	16	0.9	209	0.7	0.11	0.5
E30	177	16.2	2143	12.7	0.79	4.6	205	11.8	2256	7.8	1.61	6.8
E50	1	0.1	23	0.1								
E60	1	0.1	10	0.1			2	0.1	33	0.1	0.05	0.2
E80	192	17.6	5517	32.7	1.98	11.5	269	15.5	6971	24.1	2.20	9.3
<b>E subtotal</b>	<b>387</b>	<b>35.4</b>	<b>7892</b>	<b>46.8</b>	<b>2.83</b>	<b>16.4</b>	<b>492</b>	<b>28.4</b>	<b>9469</b>	<b>32.8</b>	<b>3.97</b>	<b>16.7</b>
O10	52	4.8	308	1.8			46	2.7	278	1.0	0.40	1.7
O11	31	2.8	305	1.8	0.26	1.5	27	1.6	113	0.4	0.57	2.4
O18							1	0.1	2	+		
O19							2	0.1	5	+		
O20	5	0.5	11	0.1			75		678	2.3	0.33	1.4
O30							2	0.1	5	+		
O80							4	0.2	70	0.2		
<b>O subtotal</b>	<b>88</b>	<b>8.0</b>	<b>624</b>	<b>3.7</b>	<b>0.26</b>	<b>1.5</b>	<b>157</b>	<b>9.1</b>	<b>1151</b>	<b>4.0</b>	<b>1.30</b>	<b>5.5</b>
R10	11	1.0	35	0.2	0.08	0.5	27	1.6	211	0.7	0.76	3.1
R11	224	20.5	2195	13.0	7.36	42.7	173	10.0	2211	7.6	4.90	20.6
R20	233	21.3	3341	19.8	3.49	20.3	513	29.6	6279	21.7	4.97	20.9
R21	35	3.2	619	3.7			142	8.2	2409	8.3	1.63	6.9
R30	40	3.7	616	3.7	1.31	7.6	51	2.9	941	3.2	0.88	3.6
R90	1	0.1	80	0.5	0.15	0.9	39	2.3	2362	8.2	0.43	1.8
R95	2	0.2	72	0.4			9	0.5	400	1.4	0.12	0.5
<b>R subtotal</b>	<b>546</b>	<b>49.9</b>	<b>6958</b>	<b>41.2</b>	<b>12.39</b>	<b>72.0</b>	<b>954</b>	<b>55.0</b>	<b>14813</b>	<b>51.3</b>	<b>13.69</b>	<b>57.6</b>
C10	2	0.2	19	0.1	0.05	0.3						
<b>C subtotal</b>	<b>2</b>	<b>0.2</b>	<b>19</b>	<b>0.1</b>	<b>0.05</b>	<b>0.3</b>						
<b>Coarseware subtotal</b>	<b>1023</b>	<b>93.5</b>	<b>15493</b>	<b>91.8</b>	<b>15.53</b>	<b>90.2</b>	<b>1603</b>	<b>92.5</b>	<b>25433</b>	<b>88.1</b>	<b>18.96</b>	<b>79.8</b>
<b>TOTAL</b>	<b>1094</b>		<b>16880</b>		<b>17.22</b>		<b>1732</b>		<b>28896</b>		<b>23.78</b>	

question of the date of infill of the Period 3b features. It is possible that this took place rather later than the end of the date range for the site suggested by the pottery – that is at a time when there was no domestic debris from adjacent settlement available to find its way into the ditch fills, which therefore contained only redeposited material. Alternatively the Period 3b ditch systems may have had a very short lifespan.

These problems are hardly unique to Appleford, but may be seen in a fairly acute form here. The same difficulties apply to the 1993/2000 enclosure as to the 1999 area. Again the majority of the pottery derived from the upper fills of the enclosure ditches, principally on the south side of the enclosure. There was insufficient material stratified in earlier ditch fills to allow refinement of the chronology of the development of the enclosure. For these reasons, while ceramic phasing can be suggested on the basis of the general understanding of the pottery of the region, it cannot be demonstrated clearly at the present site, there is thus no clear cut sequence of ceramic phases to match the stratigraphic sequence.

As a whole, the assemblage indicates a mid 1st- to early 2nd-century date range for the principal Roman activity on the site. Refinement of the beginning and end dates of this range relies entirely upon the pottery evidence. Establishment of the former is difficult in the absence of clear-cut ceramic phasing; in particular there is insufficient evidence to establish the existence of a ceramic horizon in which E wares were not associated with later 'Romanised' coarse wares, though the existence of such an horizon can probably be assumed. Association of E wares and 'Romanised' wares might be expected from as early as *c.* AD 50 onwards, but is unlikely in a pre-conquest context (contra Miles *et al.* 1986, fiche 7: B4). Alternatively, isolation of a ceramic phase comprised only of E wares would suggest that activity at Appleford began before the Roman conquest.

The general chronology of E wares in the region has been discussed recently (eg Booth 2000, 41). Unfortunately, without independent dating evidence the present assemblage adds nothing to this discussion. Perhaps introduced no more than a generation or so before the Roman conquest (an earlier date has been suggested by some scholars, eg Harding 1972, 129), E wares remained in use into the later part of the 1st century AD, though only rarely are they likely to have formed a large component of Flavian assemblages. The reasonably high representation of these wares at Appleford (see Table 12) suggests, but cannot demonstrate conclusively, that occupation began before the Roman conquest. The rest of the assemblage is entirely consistent with activity through the second half of the 1st century and into the early part of the 2nd century. The great majority of the samian sherds, for example, are of 1st-century date, with a few pieces from Les Martres de Veyre dated *c.* AD 100-120 and only a couple assigned (tentatively) to Lezoux and thus indicating a date after *c.* AD 120. The other fine wares can be assigned to the early 2nd cen-

tury, the Verulamium mortarium to the late 1st-early 2nd century and the most distinctive reduced wares, particularly R11, generally to a date range of AD 70-150, although they do continue into the second half of the 2nd century (Young 1977, 203). AD 150 would seem to be the latest possible date for the main phase of early Roman settlement. The striking absence of black-burnished ware, however, which reaches the region fairly consistently from *c.* AD 120, argues for a rather earlier terminal date. There is little if anything in the assemblage, with the obvious exception of the small number of late Roman sherds that derive from a quite different phase of activity, that need date after *c.* AD 130.

The assemblages from the two main parts of the site producing Roman pottery - the 1999 and 1993/2000 areas - were compared to see if there were any significant differences between them (Table 11).

Some differences were noted in terms of relative proportions of individual fabrics and ware groups, but for the most part these seem to have been of relatively minor significance. Collectively fine and specialist wares were better represented in the main enclosure than in the 1999 trackway area, but this was only clear in terms of quantification by REs and was barely apparent on the basis of sherd count. The great majority of fine and specialist wares in the 1999 area were composed of white wares, while in the main enclosure other ware groups were relatively well-represented. Almost all the samian ware and all the early Roman fine wares, amphora and white-slipped sherds came from the main enclosure, as well as the early fine oxidised fabrics O18 and O19. Apart from these differences the main point of contrast between the areas seems to have been in the representation of the fine reduced fabric R11. One of the most important fabrics on the site, it was twice as common in the 1999 area as in the main enclosure. The reason for this is uncertain, but it might hint at a slight chronological distinction between the two areas, the higher quantity of R11 perhaps suggesting the continuation of activity in the 1999 area slightly later into the first half of the 2nd century.

The vessel type assemblages from the two areas are juxtaposed in Table 8 above. The table shows little meaningful distinction between the two areas. The most noticeable contrasts are in flagons, well-represented in the enclosure but relatively poorly represented in the 1999 area, and in beakers, which show the converse relationship. Given the degree of uniformity between the two areas in terms of the more common (and therefore statistically more reliable) vessel classes, it is uncertain whether these two differences are more than minor aberrations in the data. A concentration of drinking vessels and related types in the 2000 enclosure would be consistent with the increased emphasis on fine and specialist wares there, but this is only supported in part by the vessel type figures. It is notable that with the exception of a butt beaker in fabric E30 (Fig. 29, 43) all the beakers from the 1999 area are in the fine reduced fabric R11.

### General discussion

The late Iron Age-early Roman assemblage forms a useful addition to a body of data for rural settlements in the Oxford region that have a distinct early Roman phase and then experience cessation or radical relocation of settlement. Summary pottery fabric data from a number of these sites are presented in Table 12, the selected sites being those with a date range as close as possible to that of Appleford. They are arranged in approximate geographical sequence heading down the Upper Thames Valley. Of these sites, two - Claydon Pike and Yarnton - have continuous activity after the early-mid 2nd century, although the end of the early Roman phase is quite clearly marked, but at all the others there is either a complete end to or a major break in the occupation sequence. Characteristically these sites have origins in the late Iron Age, with the consequence that E wares are well-represented at all of them, except at Faringdon, where it is possible that the focus of late Iron Age activity fell outside the limited areas selected for detailed excavation.

Data are mostly presented in terms of sherd count. Percentages based on weight are also given for Appleford for purposes of comparison with the early Roman phase at Barton Court Farm, which is important both because of its proximity to Appleford and because of close similarities of character, but for which sherd count data were not recorded (Miles *et al.* 1986, fiche 7:B6).

At those sites in which activity is confined to the 1st century AD, such as Old Shifford and the more limited 2003 excavation at Hatford (Booth and Simmonds 2004; not in Table 12), E wares are almost totally dominant. Otherwise their representation ranges from 23% at Claydon Pike to 66% at Gravelly Guy. At the westernmost sites, Thornhill Farm and Claydon Pike, the majority of sherds assigned to the calcareous (C) ware class are of late Iron Age date and may be grouped with the E wares since they are contemporary. On this basis Appleford has one of the lowest representations of E/C wares of early Roman sites in the region, but it is not certain whether the reason for this lies in chronological or other factors. The chronological interpretation would put the inception of occupation of the site at or, more likely, only shortly before the conquest period, thus leaving a relatively short time during which E wares were effectively the only major source of supply to the site before being augmented by reduced coarse wares. An alternative view would be that the E ware component of the assemblage represented more substantial pre-conquest activity but that for reasons perhaps related to status the site was supplied principally with more 'Romanised' ceramic material from the moment that this became available in the early post-conquest period. There are no clear parallels for this situation within the region, however, and the chronological explanation seems preferable here.

In terms of other aspects of fabric supply Appleford is relatively 'normal', with the great majority of material derived from local sources. The site has

one of the highest representations of reduced coarse wares amongst those listed in Table 12, which is what would be expected to compensate for the lesser quantity of E wares. Small quantities of black-burnished ware are a recurring feature of most assemblages and where it is absent, as at Appleford, a chronological explanation - that site activity had ceased by the time of the arrival of black-burnished ware in the area - seems to apply. The abnormally high quantities of black-burnished ware seen at Claydon Pike are explained in part by evidence that its distribution had reached the Cirencester area by the late 1st century (Rigby 1982, 168), but also because Phase 2 features at Claydon Pike contained quite significant amounts of intrusive later material. The minimal representation of shell-tempered wares at Appleford is also notable. Shell-tempered wares were an important part of the ceramic range in the early Roman period in the upper Thames valley, as indicated by their occurrence at Thornhill Farm and Claydon Pike, as well as further down the valley at sites such as Yarnton and further afield in the Bicester area, where they occur not only at Oxford Road (see Table 12) but also at Alchester (Evans 2001, 367-369). It is possible that chronological factors are again at work, at least in the eastern part of the region, with shell-tempered fabrics largely absent from those sites where activity is likely to have ceased by *c.* AD 120-130, such as Hatford, Old Shifford, Gravelly Guy and Appleford, whereas they are better represented at sites where early Roman occupation continued until slightly later, in particular at Yarnton and perhaps at Oxford Road, Bicester. If this is the case there should be some correlation between the presence of shell-tempered wares and early black-burnished ware. Broadly this does seem to occur, and the absence of black-burnished ware at Oxford Road, Bicester can be explained in terms of a gradual eastward spread of black-burnished ware distribution, which Evans (*ibid.*, 364) thinks may not have reached the Bicester area much before the mid 2nd century (although, as already indicated, the 'traditional' date of *c.* AD 120 date for the arrival of black-burnished ware seems reasonable for sites only a little further west). On this basis activity at Oxford Road may have lasted into the second quarter of the 2nd century but ceased by the middle of the century at the latest.

Comparative data for the incidence of vessel types are unfortunately scarcer than for fabrics. The data presented in Table 13 draws mainly on sites already mentioned, with the addition of an assemblage from Watchfield in west Oxfordshire, quantified by vessel count rather than by REs, but with characteristics that allow it to be seen clearly alongside the other groups. It is regrettable that there are no published data on vessel types for Barton Court Farm. Some information on proportions of vessels from this site has been presented, along with comparable data from Old Shifford (also not quantified by vessel types in the published report), by Meadows (1999, 108-110), but neither the sample size nor the method of quantification are indicated and the rather implausible

Table 12 Late Iron Age and Roman pottery: Selected Oxford region sites, percentages of total sherds in major ware groups, early Roman

Site	Thornhill Farm	Claydon Pike Phase 2	Faringdon	Hatford 1991	Old Shifford	Gravelly Guy	Yarnton	Bicester, Oxford Road	Mount Farm	Appleford	Appleford (weight)	Barton Court Farm (weight)
Date range	1-e 2C	1-e 2C	mainly 1-2C	1-e/m 2C	1C	1-e/m 2C	1-2C	e/m 1C-e 2C	m 1C-2C	m 1C-e 2C	m 1C-e 2C	m 1C-e 2C
Source		Green & Booth 2007	Bryan and Brown 2004	Booth 2000	Timby 1995	Green <i>et al.</i> 2004	Booth forthcoming	Booth 1996				Miles <i>et al.</i> 1986
Ware group												
S	0.1	1.4	0.7			0.1	0.3	1.2	0.4	1.7	0.8	0.6
F		1.4	1.6	0.3			0.8		0.2	1.2	0.9	2.4?
A	0.2	0.9			0.1		+	0.1		0.1	0.4	1.1
M	+	0.4	0.1				0.2		0.1	0.2	4.7	12.0
W	0.2	3.6	1.7	4.8	0.1	0.5	1.2	2.6	1.1	3.9	3.9	1.2
Q		1.0					0.2		0.2	+	0.2	
<i>Fine &amp; specialist ware subtotal</i>	0.5	8.7	4.1	5.1	0.2	0.6	2.8	3.9	2.0	7.2	10.9	17.1
E	36.5	23.2	9.1	56.6	99.0	66.2	41.1	64.9	57.8	31.3	37.6	54.0
O	14.3	10.3	9.9	0.7	0.1	0.6	3.5	7.9	4.1	8.5	3.7	2.9
R	15.8	27.5	71.0	37.7	0.7	32.3	43.0	17.3	34.7	52.9	46.8	24.4
B	0.1	13.6	2.0			0.3	0.6		0.1			
C	32.5	16.8	4.0				9.0	3.3		0.1	1.1	
Unclassified	0.3	+						2.7	1.2			1.6
<b>TOTAL SHERDS</b>	<b>11450</b>	<b>4971</b>	<b>3144</b>	<b>1756</b>	<b>893</b>	<b>10999</b>	<b>4240</b>	<b>1124</b>	<b>2815</b>	<b>2857</b>	<b>46.5 kg</b>	<b>41.6 kg</b>

Note: data for which no source is given have been extracted from unpublished OA archives

differences in jar and bowl representation between the two sites in the late Iron Age phase (ibid, 109, Fig 7.5) suggest problems with the data, perhaps relating to an inadequate sample. The comparable figures for the early Roman period are, however, more consistent and are therefore adopted here, albeit with caution.

The majority of the assemblages are completely dominated by jars. This is a characteristic pattern for late Iron Age and early Roman rural settlement sites in the region, particularly those of lower status (see further below). Most sites have jar representation in a range from 81%-92%. Only Bicester, Appleford and Barton Court Farm fall outside this range. At Bicester, as with most of the other sites, the majority of vessels assigned to the uncertain jar/bowl category (class D) are likely to have been jars, bringing the combined percentage of these types within the standard range and leaving only Appleford and Barton Court Farm with assemblage compositions rather different from the regional pattern. The two sites appear to be similar in a number of ways, particularly if their class C and D totals are combined, giving 68.5% and 59.5% respectively. The principal difference between the two assemblages lies in the representation of bowls, which were nearly two and a half times as common at Barton Court Farm as at Appleford, or indeed anywhere else in the region. It is likely, however, that this reflects the use by Meadows of slightly different criteria for the cut-off point between jars and bowls (mentioned but not defined in Meadows 1999, 109). (In the OA system a height: girth ratio of 1:1 is used - taller vessels are jars, broader ones are bowls - there are occasional well-defined exceptions such as jar type CE.) Relatively large numbers of bowls also appear in Meadows' data for Old Shifford. The fabric breakdown for that site (Table 12) indicates a very conservative (or very chronologically restricted) assemblage, in which a figure of 12% for bowls is extremely unlikely (Table 13). It seems very likely that the recorded representation of bowls at both Old Shifford and Barton Court Farm is too high. It is impossible to estimate the extent of this, but the net effect of any adjustment of the Barton Court figures would be to bring them closer to those for Appleford.

The Appleford assemblage can be compared to others from the region in respect of status. Some inferences on this can be drawn from the data in Tables 12 and 13, which relate to other rural settlement sites that are as nearly as possible closely contemporary with Appleford. Further data covering a wider range of site types have been collected for Oxfordshire (Booth 2004; summarised in Henig and Booth 2000, 173-175) and additional data for the Cirencester region have also been drawn on here (Booth 2007). These studies have shown that there is a broad correlation between the representation of fine and specialist wares and aspects of site status. As seen in Table 12, rural sites with enclosures or groups of enclosures of late Iron Age character, such as Thornhill Farm, Old Shifford and Gravelly Guy, can have less than 1% of fine

and specialist wares (figures based on sherd count). Other sites with similar morphological characteristics, including Faringdon, Hatford, Yarnton and Mount Farm, can have fine and specialist ware levels up to c 5%. It is not clear if there are other criteria or characteristics which distinguish these sites from the first group, but such characteristics have not been identified so far and at present all these sites have to be seen together.

The initial survey of the evidence (Booth 2004) showed that fine and specialist ware levels above about 5% seem to be associated with rather different types of site, including roadside settlements/small towns (Middleton Stoney, Asthall and Alchester) and the early villa phase at Rough Ground Farm, Lechlade, to which can be added the Phase 2 settlement at Claydon Pike (Fairford, Glos) and Appleford, all of these sites falling in the 6-10% range. Three rural sites were identified in the initial survey as having significantly higher fine and specialist ware levels (see also Henig and Booth 2000, 173, Fig 6.11). One of these was the present site, but the sample consisted only of the material from the 1993 evaluation and is clearly not fully representative, while the other two sites were Barton Court Farm and Watkins Farm, Northmoor. Fine and specialist wares comprised 21.3% at Watkins Farm, an enclosed settlement in the Windrush valley with no other obvious indications of high status. The great majority of the total consisted of white wares (a situation also seen for example in the Hatford 1991 assemblage and indeed in the 1999 area at Appleford), and it has been noted above that there may be room for debate about whether these should be included in the fine and specialist ware category. However, it is dangerous to dismiss evidence just because it does not appear to fit the model. In the case of Watkins Farm possible explanations of the apparently anomalous quantities of fine and specialist ware include a chronological one (the site does not start until after the conquest period), or involve refinement of the model to exclude white wares. Alternatively the figures could be taken at face value to suggest that the site is of rather different character from other settlement enclosures in the area, although other evidence to substantiate this is elusive at present.

In the case of Barton Court Farm the data rely on quantification by weight, with the potential difficulties involved in comparing data from different measures (which is why fine and specialist ware percentages based on weight for Appleford are also shown in Table 12). Moreover, the assemblage was only quantified in terms of very broad fabric groupings which cannot be precisely equated with the ware classes used here. The Barton Court Farm fine and specialist ware figures are dominated by mortaria, the total of which 'was inflated by the discovery of a single large vessel' (Miles *et al.* 1986, fiche 7:B6) from the main enclosure ditch, coincidentally a situation paralleled exactly at Appleford. If some allowance is made for this the Appleford and Barton Court Farm data appear to be quite similar, at least in broad terms. For a truer comparison, however, the data for



Table 13 Late Iron Age and Roman pottery: Selected Oxford region sites, percentages of major vessel classes (mostly REs), early Roman

Site	Thornhill Farm	Claydon Pike Phase 2	Watchfield	Hatford 1991	Old Shifford	Gravelly Guy	Yarnton	Bicester, Oxford Road	Appleford	Barton Court Farm
Date range	1-e 2C	1-e 2C	mainly 1-2C	1-e/m 2C	1C	1-e/m 2C	1-2C	e/m 1C-e 2C	m 1C-e 2C	m 1C-e 2C
Source		Green & Booth 2007	Laidlaw 2001	Booth 2000	Meadows 1999	Green et al. 2004	Booth forthcoming	Booth 1996		Meadows 1999
Vessel class										
A	0.3									1.5
B	1.8	1.0	0.7			0.9	1.9		6.3	
C	86.7	81.8	92.3	90.2	81.5	91.9	81.2	61.3	63.7	47.5
D	0.8			0.3	4.5		2.1	22.9	4.8	12.0
E	1.3	0.1	4.0	4.8	2.0	0.1	1.6	5.2	6.1	6.0
F	0.1	1.7				0.1	0.2	0.2	1.7	3.0
G	1.9	2.1				0.8	0.2			
H	5.0	10.6		0.4	12.0	5.1	8.3	4.3	10.1	25.0
I	0.4			0.3			1.7	1.4	0.7	
J	0.7	1.4	3.0	2.8			1.4	3.6	3.8	3.0
K		0.2					0.5		1.9	2.0
L	0.9	0.2				0.5	0.3		0.5	
M	0.1							0.9		
Z/Unclassified		0.7		1.1		0.8	0.6	0.2	0.2	
<b>TOTAL REs</b>	<b>77.54</b>	<b>44.26</b>	<b>149*</b>	<b>17.59</b>	<b>**</b>	<b>117.03</b>	<b>67.76</b>	<b>15.21</b>	<b>40.53</b>	<b>**</b>

\*Vessel count. \*\*Measure and total unknown

Note: data for which no source is given have been extracted from unpublished OA archives

the late Iron Age pottery at Barton Court Farm should be combined with those for the early Roman period, since the distinction, largely meaningless in ceramic terms, was not drawn in any of the other assemblages discussed here. This has not been done, however, because while the majority of the Iron Age assemblage at Barton Court Farm is clearly of late Iron Age date there is a smaller, unquantifiable component of middle and even possible early Iron Age material (eg *ibid.*, fiche 7:A5, No 1.2) within it, which should be separated out. Were this possible, the net effect of combining the late Iron Age and early Roman material from Barton Court Farm would be to increase substantially the proportion of the assemblage comprised of E wares and to reduce correspondingly the representation of other ware groups.

Overall, Appleford has one of the highest late Iron Age/early Roman fine and specialist ware representations from the region and thus bears comparison with a number of nucleated sites such as Abingdon and a small group of rural settlements. In ceramic terms there appear to be quite close similarities between the ranges of fabrics present at Appleford and Barton Court Farm in particular, though the method of quantification of the latter makes detailed comparison impossible.

Distinctions between sites on the basis of fine and specialist ware representation are generally mirrored in the relative proportions of vessel types, though the shortage of reliable data makes it less easy to draw firm conclusions about this. The assemblages defined as 'low status' on the basis of wares tend to be almost totally dominated by jars, as already discussed and illustrated most clearly in the largest assemblage of this date from the region, from Gravelly Guy (Stanton Harcourt). Regardless of site character and status, however, there is a general chronological trend across the region which sees a gradual diversification of assemblages, reflected principally by a decline in jar numbers and a corresponding increase in the representation of bowls with the result that, in very crude terms, bowls can be up to twice as common in the later Roman period as they were in the 1st and 2nd centuries, though a 50% increase in their representation appears to be typical, mostly to levels between *c* 60% and 75% in the 4th century (Booth 2007). Sites such as Appleford, with less than 70% jars in the early Roman period, are thus quite unusual in the Oxford region. Roughly comparable assemblages from Oxfordshire are found only in the small towns of Alchester and Asthall, although even the latter had more jars than Appleford in its early phases. Interestingly, more direct comparanda, not only in relation to the proportion of jars in the assemblage but also with regard to the overall ratio of jars:bowls/dishes:liquid containers/drinking vessels, come from the upper Thames Valley. Three sites here, Whelford Bowmore, Stubbs Farm (Kempsford) and Neigh Bridge (Somerford Keynes) have vessel class breakdowns comparable to that at Appleford. Unfortunately the precise character of some of these sites, and particularly Whelford Bowmore, is not

very clear and neither Stubbs Farm nor Whelford Bowmore was occupied before the 2nd century, so the parallels are not exact in chronological terms.

Despite its relatively modest size, therefore, the Appleford assemblage stands out clearly in comparison with most contemporary rural settlements in the area. The range of wares, and the repertoire of vessels used, was wider than average and suggest a slightly wider range of trade networks and some modification of typical late Iron Age approaches to the types, preparation and serving of food and drink. Within the site there are slight hints of spatial variation in the assemblage. In particular the majority of the imported pottery concentrated in the 1993/2000 enclosure, but otherwise ceramic differences between the main two parts of the early Roman occupation area were minimal.

### Catalogue of illustrated sherds

In each entry the fabric is given first, followed by the type description and the context number. Within each context or feature group vessels are ordered in type sequence within the major ware groups. References to Young are to Young 1977.

#### *Principal enclosure 6100.*

The pottery from the fills of different components of the enclosure ditches is presented here as a single group.

(Figure 27)

- 1 S20. Drag 37 bowl, with decoration in panels divided by bead rows. The general composition and a number of the elements are paralleled on a bowl from Verulamium (Hartley 1972, 229-230, D44). A Flavian date is certain. Context 22/9.
- 2 F42. Type E beaker, form uncertain. Context 22/9. Fill of 22/8 inner enclosure ditch (?6100)
- 3 F35. Type HC curving sided bowl imitating Drag 37. Effectively Young type O45 as below (No. 13), with mica coating. Context 5287 and 5289.
- 4 M21. Type KA hook rimmed mortarium with stamp of DOCCAS, dated *c* AD 85-110. Context 5292. Fill of 5286 enclosure ditch (6100)
- 5 W21. Type BA narrow mouthed ring necked flagon. Context 5289. Fill of 5286 enclosure ditch (6100)
- 6 W12. Type CD medium mouthed jar. Context 5289.
- 7 W20. Type EA butt beaker. Context 5417, fill of 5319 enclosure ditch (6100)
- 8 Q10. Type BA narrow mouthed ring necked flagon. Context 5478. Fill of 5474 enclosure ditch (6100)
- 9 E80. Type CC narrow mouthed jar. Context 5457. Finds reference in enclosure ditch (6100)
- 10 E30. Type CD medium mouthed jar. Context 22/9.
- 11 E30. Type CD jar with burnishing on shoulder

Archaeological work at Appleford Sidings

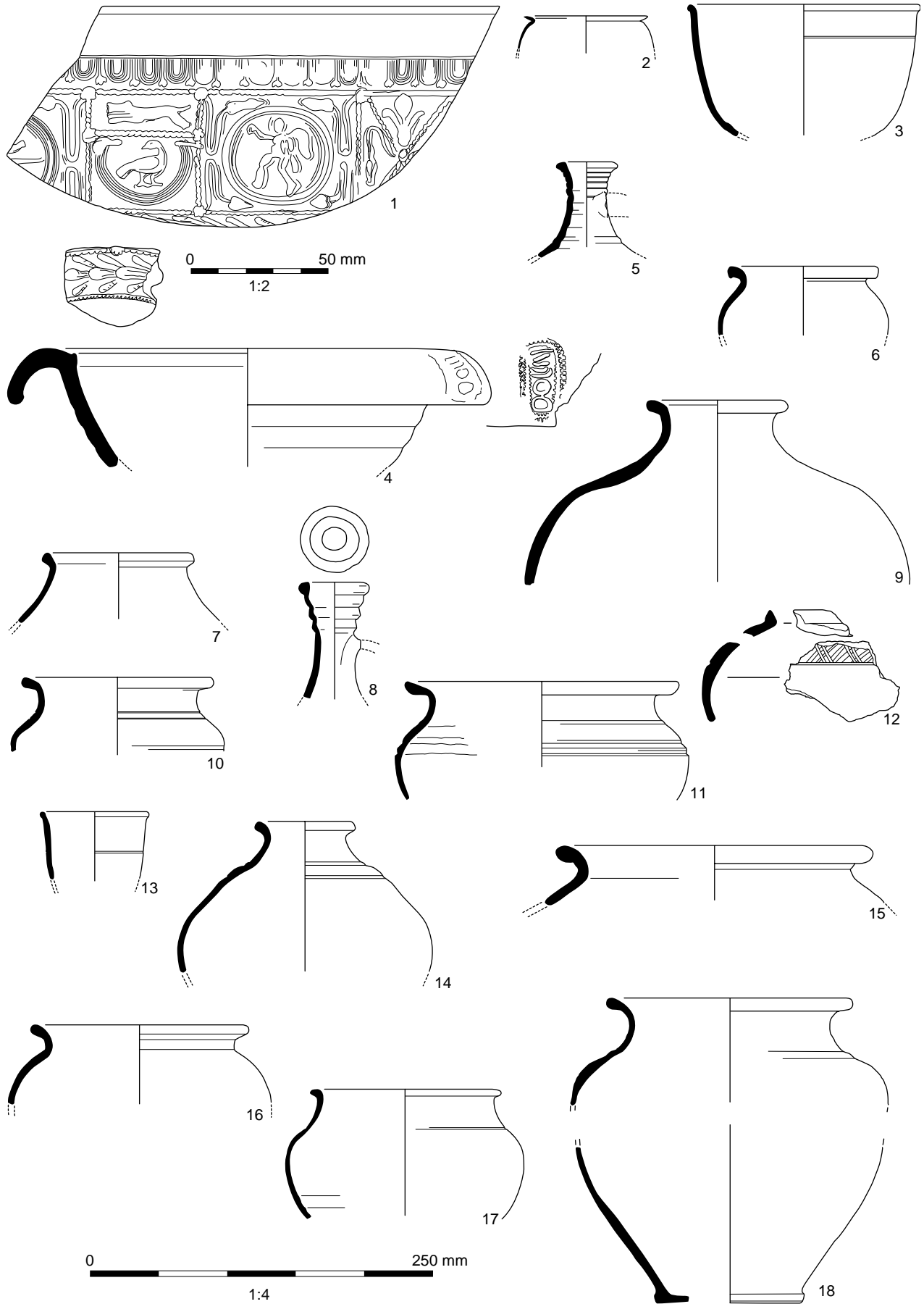


Figure 27 Roman pottery, Nos 1-18

and occasional burnished lines below the girth. Slightly sooted. Context 22/9.

- 12 E30. Type CH bead rimmed jar with pointed rim. Narrow band of burnished lattice on shoulder with burnished zone beneath. Context 5591. Fill of 5593 enclosure ditch (6100)
- 13 O11. Type HC curving sided bowl (Young type O45). Context 5287 and 5289.
- 14 R21. Type CC narrow mouthed jar. Context 5359. Fill of 5068 enclosure ditch (6100)
- 15 R90. Type CD medium mouthed jar. Context 5451. Fill of 5427 enclosure ditch (6100)
- 16 R20. Type CD medium mouthed jar. Context 5582. Fill of 5584 enclosure ditch (6100)
- 17 R11. Type CD medium mouthed jar. Context 5591. Fill of 5593 enclosure ditch (6100)
- 18 R20. Type CD medium mouthed jar with patchy exterior burnish, but probably originally burnished overall. Context 5456. Finds reference in enclosure ditch (6100)

(Figure 28)

- 19 R20. Type CD medium mouthed jar. Context 22/9.
- 20 R30. Type CD medium mouthed jar with faint traces of burnished lines on neck. Context 5582. Fill of 5584 enclosure ditch (6100) with non-joining sherds in Context 5292, fill of 5294 enclosure ditch (6100).
- 21 R11. Type CD medium mouthed jar. Context 5289.
- 22 R11. Type CD medium mouthed jar burnished on the shoulder. Context 5289.
- 23 R20. Type CD medium mouthed jar with paired grooves defining wavy burnished line. Roughly burnished on lower body. Context 5292.
- 24 R20. Type CE high shouldered jar. Context 22/9.
- 25 R11. Type CE high shouldered jar with groove at girth and on lower body, which is burnished. Context 5582.
- 26 R11. Type CK 'cooking pot type' jar, with a hole knocked in the base. (Young type R27). Context 22/9.
- 27 R11. Type HA carinated bowl (Young type R64) with rouletted decoration on upper body wall above three grooves. Context 22/9.
- 28 R11. Type HA carinated bowl. Context 5248. Fill of 5236 enclosure ditch (6100)
- 29 R21. Type HA carinated bowl with some external sooting. Context 5408. Fill of 5319 enclosure ditch (6100).
- 30 R20. Type HB straight sided bowl (Young type R45). Context 5289.
- 31 R20. Type HC curving sided bowl burnt and sooted on the outer part of the rim. Context 5376. Fill of 5378 enclosure ditch (6100)
- 32 R20. Type L lid with patchy exterior burnish. Similar in form to some bowl types, the complete lack of evidence for any internal finishing suggests that this vessel is a lid. Context 5417.
- 33 R20. Sherd cut down to form spindle whorl. Context 5582. Fill of 5584 enclosure ditch (6100)

*Fill of pit 5403 at south-east corner of principal enclosure.*

- 34 R30. Type JA straight-sided dish. Context 5423.

*Fill of ditch 5362 - inside and parallel to east side of principal enclosure.*

- 35 E30. Base of dish with burnished underside and groups of oblique burnished lines on interior surrounding slight raised ridge. Context 5364.
- 36 R20. Type CD jar. 5364.

*Fill of gully 5232.*

- 37 E30. Type CD medium mouthed jar with girth grooves. Context 5231.

*Fill of tree hole 5217, south-west of entrance to principal enclosure.*

- 38 R11. Base of shallow bowl or dish with illiterate potter's stamp. Although quite deeply impressed, the stamp is poorly preserved and insufficiently complete for close parallels to be found. Context 5219.

(Figure 29)

*1999 Area: Group from adjacent ditch segments 4190 (fills 4187-4189) and 4192 (fill 4191) east of and at right angles to it.*

- 39 W20. Type BB flagon or jug with handle scar below cordon on neck. Context 4187.
- 40 W20. Type C jar burnished on the top of the rim and the neck. Context 4188.
- 41 E80. Type CD medium mouthed jar. Context 4187.
- 42 E80. Type CN storage jar. Context 4191.
- 43 E30. Type EA butt beaker with bosses in a zone on the shoulder defined by grooves. Faint traces of burnishing on the neck and lower body. Context 4191. Fill of ditch 4192. Phase 3a
- 44 E30. Type JB curving sided dish burnished on interior. Unusually this piece is completely oxidised in firing. Context 4187
- 45 O11. Type CF carinated jar, equivalent to reduced type Young R25, slightly burnt. Context 4188 and 4189. Fill of ditch 4190, Phase 3a
- 46 R11. Type CC narrow mouthed jar. Context 4189 and 4191.
- 47 R11. Type CD medium mouthed jar. Context 4187, 4188 and 4189.
- 48 R30. Type CD medium mouthed jar. Context 4187, 4188 and 4189.
- 49 R20. Type CD medium mouthed jar. Context 4188.
- 50 R11. Type ED bag shaped beaker with groove on shoulder and lower body. Probably originally burnished overall. Context 4191
- 51 R11. Type FB campanulate cup (Young type R62). Context 4187.
- 52 R20. Type HA carinated bowl with traces of sooting on both interior and exterior. 4188 and 4035.

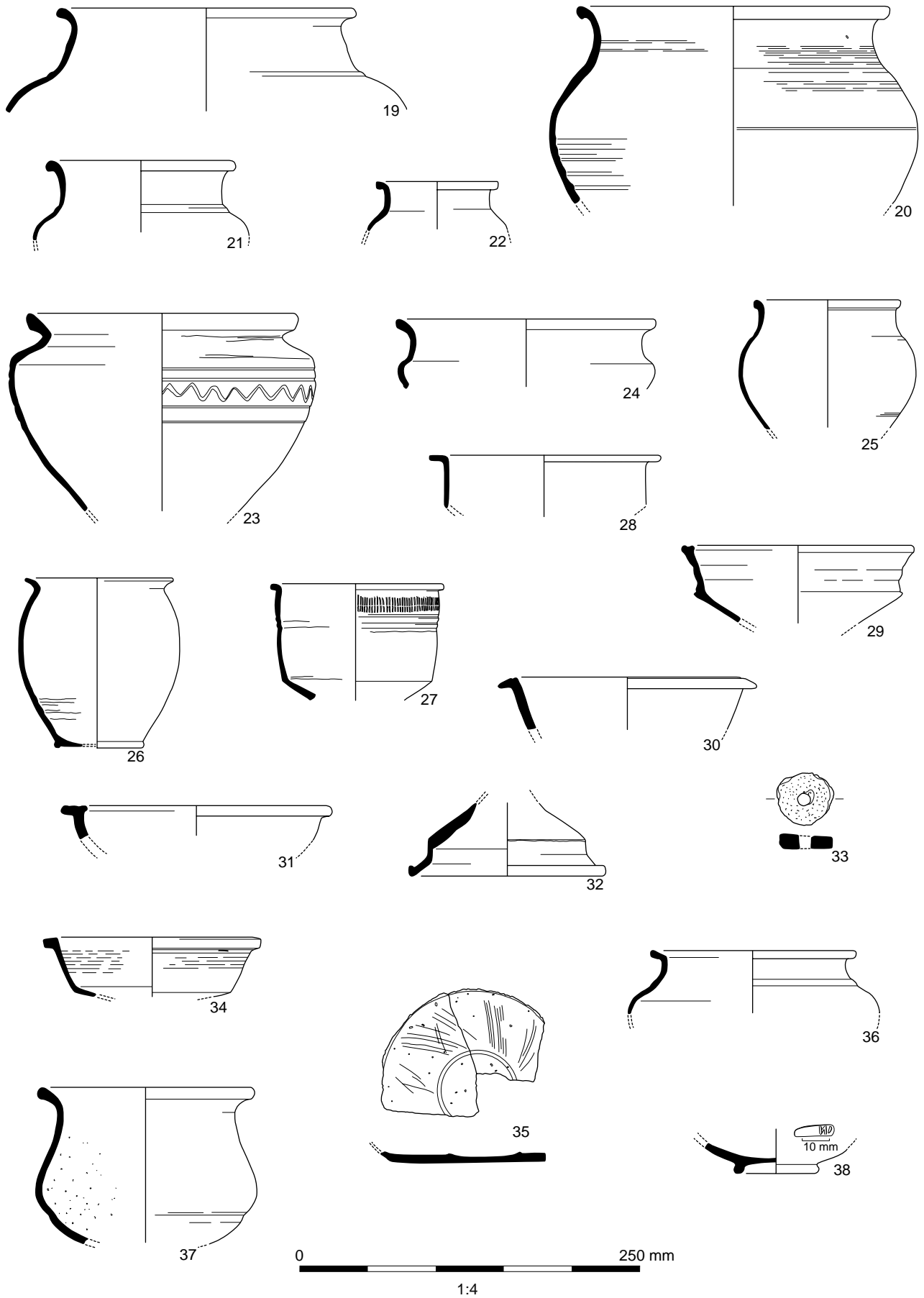


Figure 28 Roman pottery, Nos 19-38

Chapter Three

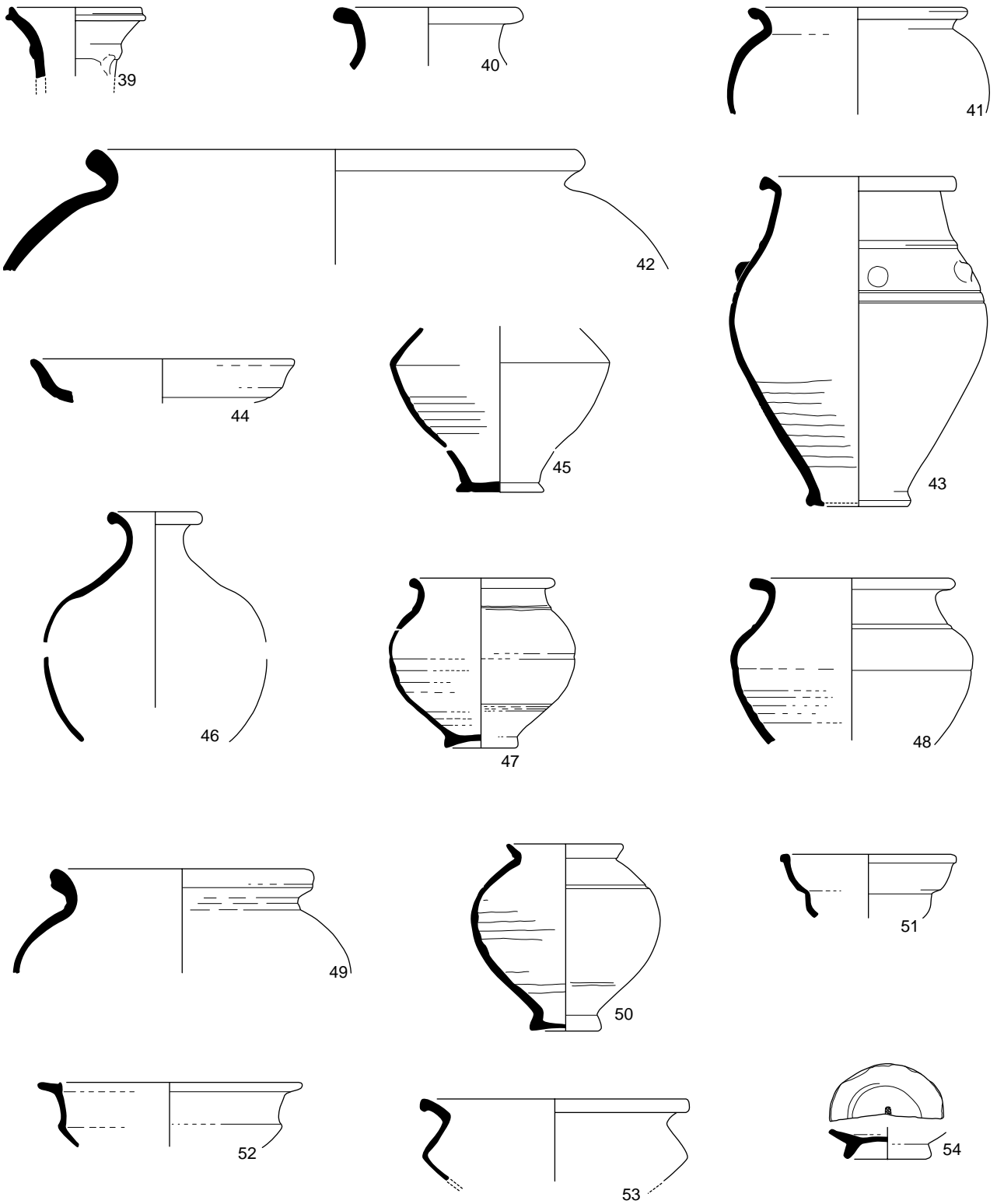


Figure 29 Roman pottery, Nos 39-54

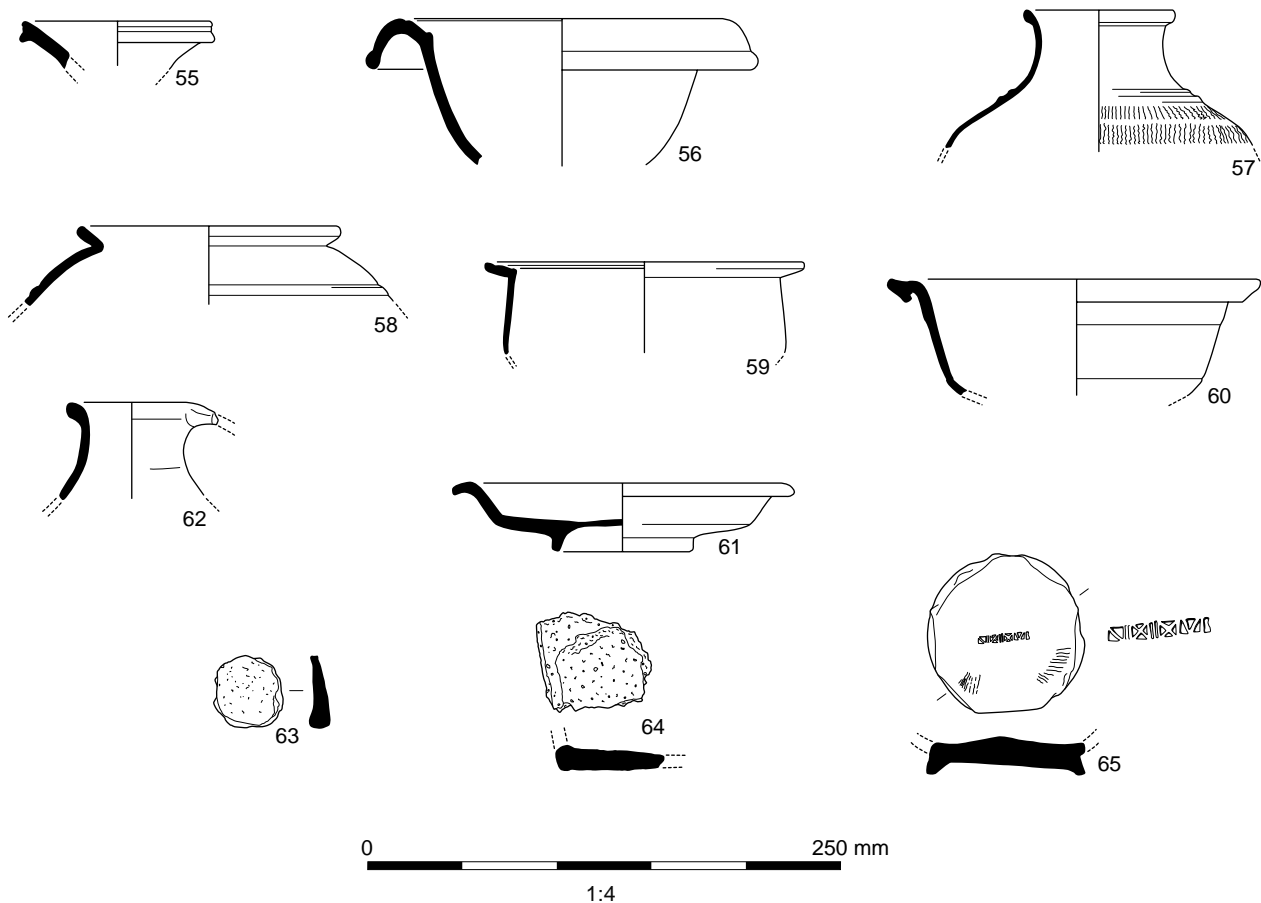


Figure 30 Roman pottery, Nos 55-65

- 53 R11. Type HA carinated bowl. Loosely comparable to Young type R57. 4187.  
 54 R11. Base of bowl or dish with fragmentary, small potter's stamp. Insufficient survives for it to be possible to tell if the stamp was literate or not. The general character of the base and stamp are very similar to No. 38. 4188.

4212.  
 59 R11. Type HA carinated bowl (Young type R56). Context 4212 and 4213. Fill of ditch 4211 (4204) Phase 3a  
 60 R20. Type HA carinated bowl. Context 4212.  
 61 R11. Type JA straight sided dish. Context 4133. Fill of ditch 4134 (4204)

(Figure 30)

**Group from ditch (Group 4204) that cut the fills of ditch segment 4190 at its western terminal.**

Cut 4211 (fills 4212 and 4213) is the eastern terminal of this ditch and cut 4134 (fill 4133) lay further west. The group is likely to be close in date to the previous group. The cutting of the ditch is assigned to Phase 3a, but the fills clearly date to the early 2nd century.

- 55 W20. Type CC narrow mouthed jar. Context 4212.  
 56 W12. Type HC rounded bowl, burnt. Young type W61, imitating the Oxford mortarium form M2. Context 4133.  
 57 R11. Type CC narrow mouthed jar with rouletted decoration on the shoulder. Context 4212.  
 58 R20. Type CI angled everted rim jar. Context

**Miscellaneous pieces**

- 62 R11. Type BB wide mouthed flagon or jug, probably originally burnished overall. Context 4116. Fill of uncertain feature.  
 63 R20. Lower body wall/base angle sherd trimmed to rough disc shape. Context 4125. Fill of ditch 4124 (Group 6080)  
 64 C10. Base of jar used as a cremation urn. Context 3053. Fill of cremation burial pit 3050  
 65 F51. Base of shallow bowl, most probably of Young type C45 with internal rouletted ring and potter's stamp. The latter is poorly preserved, but belongs to a group of such stamps formed principally of crosses and vertical lines. It is not paralleled exactly in Young's corpus, but is broadly similar to stamps such as his no. 32 (*ibid*, 178-9). Context 388. Fill in top of trackway ditch 386 on

Table 14 Fired clay: Quantification (count and weight) by excavation area

Area	Date	No. pieces	% no.	Weight (g)	% weight	Mean fragment weight (g)
1997	mainly middle Bronze Age	33	10.9	1104	8.7	33.5
1999	early Roman	135	44.7	3960	31.4	29.3
2000	early Roman (enclosure area)	134	44.4	7565	59.9	56.5
<b>TOTAL</b>		<b>302</b>		<b>12629</b>		

south side of track junction.

## FIRED CLAY AND CERAMIC BUILDING MATERIAL

by Paul Booth

### Fired clay

Some 12.6 kg of fired clay (approximately 300 pieces) were recovered. The material was scanned rapidly and recorded in terms of general fabric characteristics, firing and form (where discernible), with quantification by fragment count (discounting the small crumbs to which some pieces had been reduced) and weight, the latter being taken as the more reliable measure. The material derived from three main areas, of contrasting character (Table 14):

#### Bronze Age

The material recovered from the western part of the site in 1997 came largely if not entirely from features of probable Bronze Age date. The fabrics were variable but all were essentially slightly to moderately sand-tempered with variable amounts of other inclusions (fine shell in one case, clay pellets in another) in a few cases. The use of locally-derived clays is indicated. The majority of the material (78% by weight) derived from two contexts, 244 and 249, both fills of the same waterhole (feature 242). All these fragments were irregularly fired (the great majority of all the fired clay across the site was more or less oxidised) and they included pieces from one or more cylindrical loomweights. Two characteristically curved fragments from context 244, possibly from the same loomweight, had approximate diameters of 100 mm and 100-120 mm respectively. A further rounded fragment from 249 was less certainly from an object of this type. Cylindrical loomweights are characteristic of the middle-late Bronze Age but cannot be dated more precisely within that range except by association with other material. No other finds were associated directly with the loomweights and the only other dating evidence from the waterhole was a single small sherd of Beaker pottery, but a middle Bronze Age date for the feature seems likely. Examples of cylindrical loomweights from the region include a rare decorated one from Blackbird Leys, Oxford (Barclay 2003b). None of the remaining fragments (from contexts 84, 112, 170, 188, 220, 241 and

318) had any chronologically or functionally diagnostic characteristics, but those in contexts 84, 170, 188 and 220 were associated with pottery of early or middle Bronze Age date.

#### Early Roman

As with the Bronze Age material the fired clay fabrics of early Roman date were principally tempered with sparse to moderate quantities of quartz sand, which may have occurred naturally in the clay. Particles of iron oxides were notable in a few pieces, and shell and calcareous grits occurred occasionally. The only certain deliberately-added tempering agent was organic material, the presence of which was indicated by voids in the fabric of a substantial proportion of the fragments. The quantity of organic inclusions varied considerably, from rare to abundant, making it the principal tempering agent in the latter case. The occurrence of organic inclusions was not quantified systematically as it appeared to be very variable. In effect the fabrics formed a continuum from those with sand and little or no organic material to those dominated by such material, with sand as a secondary inclusion type. There is no clear indication that these differences were functionally or in any other way significant. The fragments are generally moderately well-fired at most, and for the most part oxidised, though irregularly fired surfaces are seen on some pieces.

The great majority of pieces with distinctive morphological characteristics fall into one of two broad groups: discs or rectangular blocks. The distinction is clear in the case of fragments with well-defined edges, but there is also a fairly clear separation of the two types on the basis of thickness, the rectangular blocks being apparently consistently thicker than discs. In terms of fabric there is no clear distinction - both forms occurred in the spectrum of sand/organic temper combinations. In some examples there is a difference in the quality of finish of opposing surfaces, one being smoother than the other, but this is not seen uniformly.

Six certain and one possible edge fragments of discs were recorded - three deriving from a single object (in contexts 4187 and 4188) ranging from 16-24 mm in thickness and with an estimated diameter of 300-350 mm (Fig. 31, No\*). The other edge fragments were 12-13 mm, 15-16 mm and 15-17 mm in thickness, while a further edge fragment over 21 mm thick was possibly from a disc. A small number of fragments with surviving upper and lower surfaces



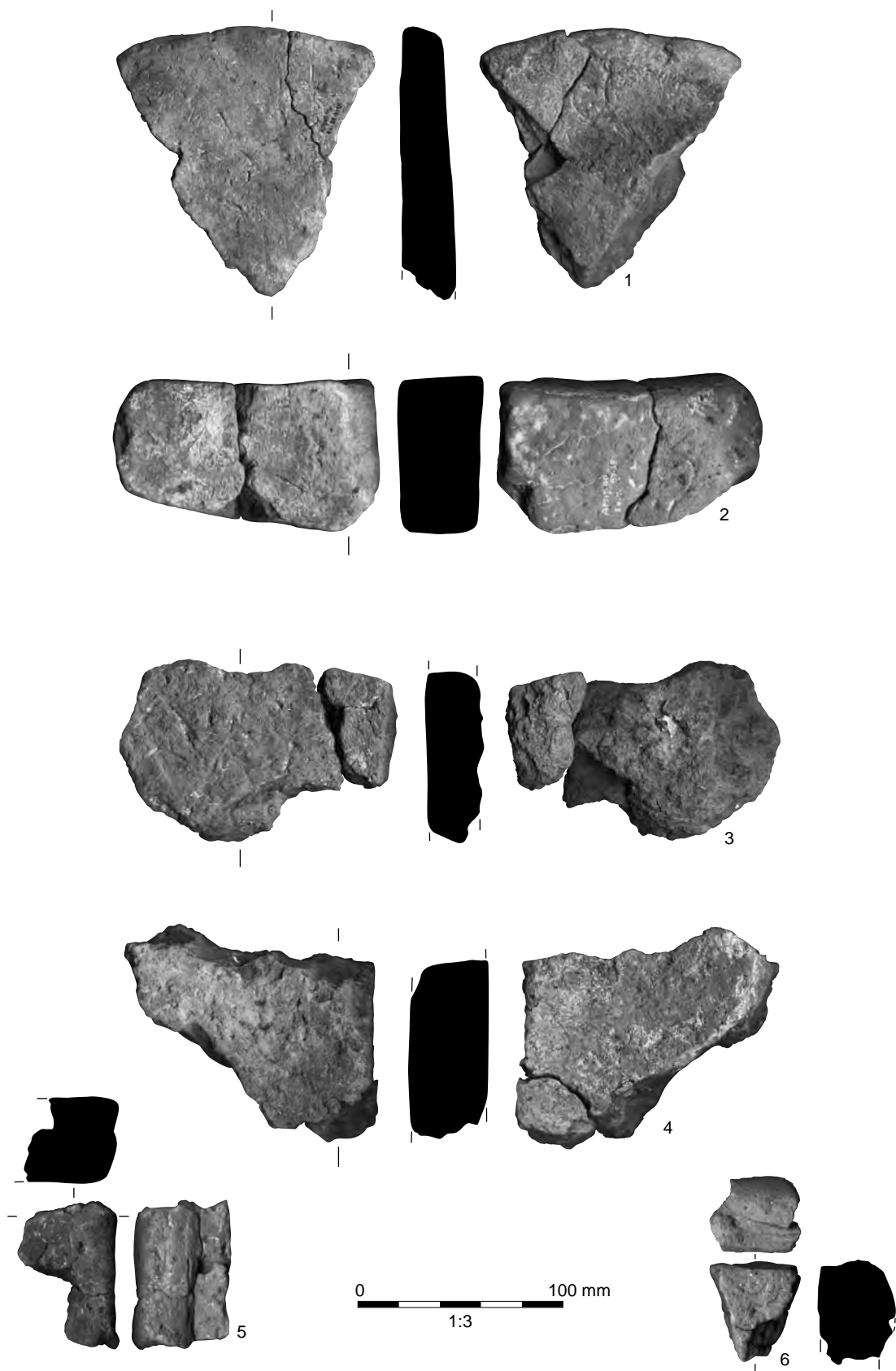


Figure 31 Fired clay

Table 15 Fired clay: Quantification (fragment count), sorted by average thickness (numbers of typologically certain edge fragments in brackets)

Av. thickness	Number of fragments	
	Discs	Rectangular blocks
11-15 mm	1 (1)	
16-20 mm	7 (5)	
21-25 mm	?1 (1)	2 (1)
26-30 mm		7 (3)
31-35 mm		9 (2)
36-40 mm		8 (3)
41-45 mm		4

but no edges fell within these thickness ranges and were interpreted as belonging to the disc category. The average thickness of fragments assigned to the two main object groups are plotted in Table 15. While most of the discs were certainly identified as such on the basis of edge pieces, a smaller proportion of the 'rectangular blocks' had surviving edges (indicated in brackets in the table). It is possible, therefore, that not all the fragments assigned to that category on the basis of thickness certainly belonged to it (and some could perhaps have been from discs), but the consistent correlation of straight-edged fragments with thicknesses from 25 mm upwards (it should be noted that both the block fragments in the 21-25 mm thickness category were in fact 25 mm thick) supports this. A few fragments were thicker than 45 mm, but none of these provided a full thickness measurement. It is not certain if they were from rectangular blocks or from objects of some other form.

The relatively fragmentary nature of the material means that in only one case could any dimension other than thickness be determined for the rectangular blocks. The one case was a narrow block of simple rectangular section only *c* 75 mm across and at least 140 mm long, joining fragments of which occurred in contexts 5413 and 5417 (Fig. 31, No\*). It is unclear how typical this form was of the rest of the material, but larger incomplete fragments with minimum widths of 82, 85, 87, 95, 100 and 117 mm were noted, indicating the presence of wider blocks. The surviving edges of the blocks varied considerably in profile, from simple straight edges perpendicular to the surface of the block, to more rounded or slightly angled edges. In some cases the edge seems to have been slightly thicker than the main body of the block.

The discs and blocks belong to object types increasingly widely recognised in the region. Discs, for example, are known from Old Shifford (Barclay *et al.* 1995, 136-138), Gravelly Guy (Barclay and Wait 2004), Farmoor (Sanders 1979, 53-54, nos 124-7), Alchester (Booth *et al.* 2001, 261) and Oxford (Biddulph 2005), all in early Roman contexts, and perhaps from Wyndyke Furlong, Abingdon (Barclay 1999, 43), as well as in several of the sites evaluated in the area of the potential Abingdon Reservoir (Hearne 2000). At pres-

ent the distribution of clay blocks is more localised, but they occur again at several of the Abingdon Reservoir sites, as a category of material labelled 'underfired tile', characteristically a fairly soft, heavily sand-tempered material, usually grey-brown or reddish brown in colour and formed into flat slabs, typically *c* 30-40 mm thick (OAU 1998, 37). Further examples are known from Hatford (Booth and Simmonds 2004, 344-5) and also from Wyndyke Furlong, Abingdon (Barclay 1999, 43), all from early Roman contexts. Others have derived from the recent (2003) excavations at Castle Hill, Little Wittenham (examined by the writer; Allen *et al.* forthcoming). There the associated pottery was mostly of late Roman date but it is not clear that this indicates the date of the slabs. The Castle Hill material included blocks in the thickness range used for discs at Appleford, as well as thicker pieces, but the general similarity of the material is otherwise marked - no discs were noted at Castle Hill.

Neither group of material is well-understood. Possible interpretations of the discs include a function as ceramic lids, or for cooking or perhaps as stands for pottery vessels. The thicker blocks may have been related to the discs in some way, as is suggested at Appleford by the use of the same fabrics for both types of object. Some examples of both also have evidence of burning on one or both surfaces, but this is not observed consistently and in general does not appear frequently enough to suggest a routine use in cooking. A function in food preparation, with round or rectangular slabs providing a smooth, dirt free working surface, is perhaps possible. The narrow rectangular block from Appleford is morphologically similar to some firebars from kiln structures, but it is both too well-finished and insufficiently hard-fired for this to be its likely function.

The distribution of both object types at Appleford is fairly consistent. The disc fragments were concentrated in the 1999 excavation area, but one did occur in the main enclosure area and the total number of fragments was perhaps too small for such variation in distribution to be particularly significant. The rectangular blocks were more numerous (in terms of weight) in the principal enclosure area, but there was otherwise no difference in the character of this material occurring in the two early Roman occupation areas.

### Ceramic building material

A single fragment of ceramic building material, weighing 42 g, was recovered from context 5420, part of the early Roman enclosure in the 2000 area. The fragment was curved and could therefore have been from an *imbrex*, but its Roman date (on fabric grounds) is not certain and the total absence of other Roman material makes its significance doubtful. The fragment may be of post-medieval date and intrusive in the Roman ditch fill. A further 12 pieces (681 g) of flat roof tile from various contexts were all of post-medieval date.

**METAL OBJECTS**

by Paul Booth

**Copper alloy**

Only two copper alloy objects, one a modern cartridge case end, were found. The other object is the bottom of a circular seal box of a well-known pattern. Unfortunately, insufficient survives of the lid for the nature of its decoration to be determined. Parallels come, for example, from Verulamium (Waugh and Goodburn 1972, 122-3, nos 65 and 66) from contexts dated to the first half of the 2nd century AD, and from Fishbourne (Cunliffe 1971, 118-119, nos 129-131), the last of these from a first period occupation level. Circular seal boxes fall into two main types. Examples with zoomorphic decoration on the lid (such as Verulamium no 65, quoted above) are generally mid 1st-early 2nd century in date (Feugère and Abauzit 1995, 50; cf Brewer 2002) and are probably imported, while other circular types occur from the 2nd century onwards (Tongue 2004, 23; see also Derks and Roymans 2002 for general chronology). In the absence of the lid the Appleford example, securely dated to the later 1st to early 2nd century (at latest), could be of either type. Regional examples are scarce, but include a circular lid from Asthall (Lloyd-Morgan 1997, 80, no 15) and a lower part from Wanborough, Wilts (Hooley 2001, 78-79, no 17). The nearest examples with zoomorphic decoration are from Alchester (Feugère and Abauzit 1995, 53; Brewer 2002, 183), Cirencester (Viner 1982, 93) and Frocester, Glos (Price 2000, 56-57, no 329/330).

Fig. 32 **Base of circular seal box**, 19 mm in diameter and 5 mm deep, with four sub circular holes and two notches on the side to accommodate the string to which the seal was attached. The hinge and a tiny fragment of the outer edge of the lid also survive. Context 5322 (SF 603), primary fill of cut 5321, part of the outer west main early Roman enclosure ditch (group 6100) near the north-west corner of the enclosure.

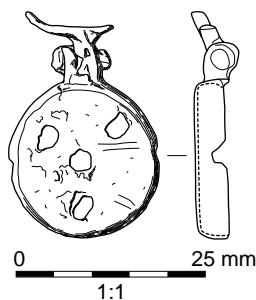


Figure 32 Copper alloy sealbox

**Iron**

Some 485 fragments of iron were recovered, the majority being nails or miscellaneous fragments. The iron work in general was in very poor condition. Many of the objects, especially those recovered from sieving, were heavily corroded with little of the original metal surviving. Some fragments of chronologically undiagnostic form are from poorly-dated contexts and could be of Roman or later date.

The 1997 area produced three iron objects, a nail and a small fragment from ditch 353 (context 362) and a further irregular fragment from ditch 642. A single nail came from context 4109 in the 1999 area. The 2000 area produced ten objects including a sheet fragment from 5493, part of the Period 3b field system. All but one of the remaining objects, which were all nails or probable nail fragments, were from component fills of the main enclosure ditch 6100.

The most significant collection of ironwork from the site was recovered from feature 3050, the cremation burial in the 1998 excavation area. The entire fill of this feature (3051) was collected and sieved, the resulting residues containing c 450 ferrous fragments (weight 192 g) many of which were minute and unidentifiable and others simply comprised small lumps of corrosion detached from the objects of which they originally formed part.

All the identifiable objects in this collection were nails, of which only about four were complete but at least 50 were present (based on a count of heads). While there is some variation in size (the complete examples are 15, 16, 22 and 32 mm long, including the heads), the surviving fragments suggest that the majority were probably in a range from 15-25 mm in length. The only significant exception was a single nail at least 55 mm long which appeared to have a smaller nail corroded by the head to its shaft at about the midpoint. These were generally quite fine, square sectioned nails with thin, flat, circular or sub-circular heads and where the details can be seen are all of type 7 in Manning's typology, described as 'probably used in upholstery work' (Manning 1985, 135). The method of recovery means that there is no detailed indication of their position or the extent of their distribution within the feature, which therefore does not permit any reconstruction of the object from which they derived. It seems likely, however, that this would have been a wooden box, although another small item of furniture is perhaps possible. Fragments of mineral-replaced wood adhered to a few of the nail fragments but the species was uncertain. On the basis of the number of nails it can be suggested that the larger ones perhaps secured the box structure itself while the smaller ones, the majority, had a decorative function, either in their own right or for attaching leather or fabric to the outer surface of the box. There was no evidence of other types of iron fitting, such as the angle brackets, hinges and clasps sometimes found in association with caskets used in cremation burials (cf Borrill 1981, 307-315).

Objects probably, or certainly, of post-Roman date

comprise a group of 21 nails from context 9 of the 1997 excavation and a large S-shaped link, probably originally of figure of eight form, from a 'root hole' (1270) in the 1998 site, most likely from a piece of post-medieval farm machinery. In the 2000 area a fragment of strip and a nail came from post-medieval contexts 5047 and 5392 respectively. Two very small ?tube fragments (counted as a single object) from 5259, a component fill of the early Roman enclosure ditch, were of modern character and were presumably intrusive in this feature.

## GLASS

*by Denise Allen*

Four small fragments of blue-green glass (weighing *c* 3 g) were recovered from context 5591, the upper fill of cut 5593, a component of the main enclosure ditch group 6100.

The fragments, two of them joining; all appear to be from the same vessel. They are thin-walled, blown, and their curvature suggests that the vessel was a relatively large one. The exterior surface of all fragments has scratch marks running in a single direction. The most likely identification is that these were from a cylindrical bottle, as these vessels often have vertical scratches around the body, thought to have been made when they were taken from and replaced in wooden or basket containers of some kind. These vessels were made in a wide variety of sizes and were commonly used as containers during the 1st century AD (Price and Cottam 1998, 191-4, fig 88). The glass is remarkable only in that such finds are relatively rare on early Roman rural settlement sites in the region. Five fragments of early Roman (1st-3rd century) bottle glass were noted at Barton Court Farm, but their contexts are unknown - the only catalogued piece was unstratified (Price 1986, 6: A12-13)

*Archaeological work at Appleford Sidings*

# Chapter 4: Human and animal remains

## HUMAN SKELETAL REMAINS

by Annsofie Witkin

### Introduction

Cremated and unburnt human bone from six contexts was analysed. One articulated inhumation (1568) was dated to the mid Bronze Age. Also of this date are the remains of an unurned cremation burial 2103. Cremated bone was recovered from three further contexts: an urned cremation burial 3053, the fill (3051) of pit 3050, and an unurned cremation burial 4185, all dated to the mid 1st-early 2nd century AD. A disarticulated, unburnt skull fragment was recovered from a ditch fill (2030) also probably of early Roman date.

### Methodology

#### *Assessment of age, sex and stature*

The cremated bone was analysed according to the standard procedures for the examination of cremated bone set out by McKinley (1994a, 5-6). Where possible age was assessed using dental attrition patterns (Miles 1962; Brothwell 1981). Sex was ascertained from the sexually diagnostic features of the skeleton (Workshop 1980; Buikstra and Ubelaker 1994). Stature was estimated by using the length of the humerus. The regression formula developed by Trotter (1970) was then used for the calculation of height.

#### *Pathology*

The remains were examined for abnormalities of shape and surface texture. When observed, pathological conditions were fully described and recorded following the standards set out in osteological textbooks. Due to the small size of the assemblages, prevalence rates were not calculated.

## Results

### *Bronze Age remains*

A summary of the results is presented in Table 16.

#### *Disturbance and condition*

Inhumation 1568 was found in an oval cut (1566) and was orientated east-west. The individual was crouched with the arms folded across the stomach area and the feet located beneath the pelvis. Pottery from surrounding features and the grave itself suggests a mid to late Bronze Age date. The burial had been heavily truncated, and had lost most of the cranium, hips, hands, legs and feet. The remains were also extremely fragmented and all but two teeth were loose. The preservation of the bone was, however, good.

Cremation burial 2102 was not excavated in its entirety (only part lay within the evaluation trench in which it was located) and it is estimated that *c* 60% was recovered. The burnt bone was situated within a *c* 0.4 m deep circular pit (2103), with vertical sides and a near flat base. The feature had been truncated by ploughing and bone was visible on the surface.

#### *Demography and stature* (Table 16)

A minimum number of two individuals was represented, one by the articulated inhumation burial and one by the cremated remains. The inhumation burial was a female and is estimated to have been 148.69 ± 4.45 cm tall.

#### *Pathology*

The surviving teeth (31/32) of the skeleton 1568 had small deposits of dental calculus on the anterior dentition (mineralised plaque; Hillson 1996, 225). Four carious lesions were also present on the occlusal surfaces. These common conditions are generally related to diet and poor oral hygiene. The mandibular

Table 16 Human bone: Summary of the Bronze Age human remains

Context	cut	deposit type	quantification	age/sex	pathology summary
<i>unburnt bone</i>					
1568	1566	inhumation burial	<i>c</i> 75% complete	18-25yr. female	hypoplasia, calculus, caries
<i>cremated bone</i>					
2102	2103	unurned cremation burial	829 g	>18yr. unknown	None present

canines each had one hypoplastic line in the enamel, caused by the disruption of the mineralisation process during tooth formation. The aetiology of the condition is multifactorial but is commonly linked with nutritional deficiency or diseases during childhood (Roberts and Manchester 1995, 58).

The antero-lateral aspect of the left femoral shaft had a small area of striated lamellar bone. This is indicative of a non-specific inflammation of the periosteum - on the cortical surfaces. This infection could have spread from a focus elsewhere in the body via the blood stream (Manchester 1983, 37). The lesion was healed and longstanding.

#### *Pyre technology and cremation ritual*

The cremated bone was generally white in colour indicative of full oxidation (Holden *et al* 1995a and b; McKinley 2000, 40) with only a few black and white cranial fragments. Observations at modern crematoria have shown that collectable fragments (<2 mm fraction) from an adult cremation weigh between 1000-2400 g with an average of 1650 g. Weights between 1600-3000 g have also been cited but it is unclear whether this also includes the weight of bone dust (McKinley 1997, 68). The relatively low weight of cremation burial 2102 is largely due to the partial recovery of the feature. The majority of the bone (50%) from the this burial was recovered from the 5 mm sieve fraction and the largest surviving bone fragment was relatively small at *c* 45 mm long. A number of factors may affect the level of fragmentation of cremated bone (McKinley 1994b); in this instance the partial excavation of the burial may have been a factor resulting in small fragment size. Elements from all skeletal areas were represented in the burial; the small quantity of fragments from the axial skeleton is possibly a consequence of the partial recovery of the cremation burial rather than their deliberate exclusion and the relatively high proportion of cranial fragments is due to the ease of identification. There was no apparent preferential selection of skeletal elements included in the burial.

The cremation burial also contained five grammes of animal bone. These are likely to represent the remains of pyre goods.

#### *Roman remains*

A summary of the results is present in Table 17.

#### *Demographic data*

A minimum of two individuals, both adults and one probably male, were represented by the cremated remains and an adult female by the disarticulated unburnt bone.

#### *Disturbance and condition*

Cremation burials 3053 and 4185 represented the remains of *in situ* deposits. Both graves had suffered disturbance due to plough damage. The urned burial 3053 survived to a depth of 0.18 m and the vessel (3052) was extremely truncated and fragmented. It is likely that bone was removed from the vessel as a result of the disturbance and this may also have resulted in increased fragmentation. The bone from the surrounding pit fill (3051) was moderately abraded, probably through plough damage.

The cut (4184) containing cremated bone 4185 was 0.14 m deep and bone was visible on the surface. Some disturbance of the fill had been caused by burrowing animals as well as by root intrusions and some bone fragments were slightly abraded.

The disarticulated unburnt bone (2030) was in good condition but extensively fragmented. The breaks present were fresh and must have occurred during the excavation.

#### *Pathology*

Degenerative changes were present on the atlas vertebra in cremation deposit 3051. These moderate degenerative changes are common in adults over the age of 30 in modern populations and are caused by normal wear and tear of the skeleton.

The remnants of the orbital roofs of the disarticulated cranial vault 2030 had scattered fine foramina. This type of lesion is known to be caused by anaemia. The anaemia is likely to have occurred as the body's response to an infectious disease. Pathogens need iron in order to survive and spread in the body;

Table 17 *Human bone: Summary of the Roman human remains*

context	cut	deposit type	quantification	age/sex	pathology summary
<i>unburnt bone</i>					
2030	2031	disarticulated	52 fragments	>18 yr. female	cribra orbitalia
<i>cremated bone</i>					
3051	3050	redeposited pyre debris	190 g	>18 yr. unknown	Moderate degenerative joint changes on the atlas vertebra
3053	3050	Urned cremation burial	627 g	>18 yr. male	None present
4185	4184	Unurned cremation burial	115 g	>18 yr. unknown	None present

if the iron is withheld, the pathogens find it harder to reproduce. Withholding iron makes the body deficient and the lesions present on the orbital roofs are caused by the body's attempt to produce more red blood cells in order to compensate for the lack of iron from the pathogens (Roberts and Manchester 1995, 167). The lesions were healed at the time of death of this individual.

#### *Pyre technology and ritual*

The cremated bone was generally white in colour indicative of full oxidation (Holden *et al* 1995a and b; McKinley 2000, 40). However some cranial fragments were grey and black with a white core and two tooth roots were also black. The low weights of both the deposits are largely due to loss from plough damage. More bone was present in cremation number 3051 probably because of the protection afforded by the urn. This is clearly illustrated when comparing the levels of fragmentation within each of the two deposits: some 57% of the bone from the urned cremation burial (3051) was recovered from the 10 mm sieve fraction and the maximum surviving fragment length was 87 mm. Nearly half of the bone (45%) from the unurned cremation burial (4184) was recovered from the 5 mm fraction and the largest fragment measured 37 mm. Elements from all skeletal areas were represented in the burial. Again, the relatively high proportion of cranial fragments is due to the ease of identification and there was no apparent preferential selection of skeletal elements included in the burial.

The unurned cremation burial 4185 contained 8 g of burnt animal bone, which probably represent the remains of pyre goods. Iron nails within grave fill 3051 were probably from an object placed within the grave. Pyre debris, consisting of fine fraction fuel ash, was redeposited in the fill surrounding the urned cremation (3053), which itself also contained iron fragments.

## ANIMAL REMAINS

*by Jennifer Kitch*

### Introduction

A total of 3509 (16167 g) fragments of animal bone were recovered during the excavations from 1997-2000. Many of the fragmentary elements were refitted reducing the total count to 2262 fragments. An additional 2604 fragments (811 g) of bone were recovered from environmental samples sieved through meshes of >10 mm, 10-4 mm and 4-2 mm.

### Methodology

Identification of the bone was undertaken with access to the reference collection housed at OA and published guides. All the animal remains were counted and weighed, and where possible identified to species, element, side and zone (Serjeantson 1996). Fusion data, butchery marks (Binford 1981), gnawing, burning and pathological changes were noted when present. Ribs and vertebrae were only recorded to species when they were substantially complete and could be identified accurately. Undiagnostic bones were recorded as micro (rodent size), small (rabbit size), medium (sheep size) or large (cattle size). The separation of sheep and goat bones was based on the criteria of Boessneck (1969) and Prummel and Frisch (1986), in addition to the use of the reference material housed at OA. Where distinctions could not be made, the bone was recorded as sheep/goat (s/g).

The condition of the bone was graded using the criteria of Lyman (1996), grade 0 being the best preserved bone and grade 5 indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable.

The quantification of species was based on the total fragment count, in which the total number of fragments of bone and teeth was calculated for each *taxon*. In addition the minimum number of individuals (MNI) was calculated using the zoning method (Serjeantson 1996). The elements used for working out MNI do not include ribs, vertebrae, loose teeth, tarsals and carpals.

Tooth eruption and wear stages were measured using a combination of data from Halstead (1985), Grant (1982) and Levine (1982), and fusion data were analysed according to Silver (1969). Measurements of adult, that is, fully fused bones were taken according to the methods of von den Driesch (1976), with asterisked (\*) measurements indicating bones that were reconstructed or had slight abrasion of the surface.

### Results

#### *Condition*

The overall condition of the bone was quite varied within the assemblage. As can be seen from Table 18 below, the assemblage contains material ranging from grade 1 to grade 5 of Lyman's (1996) criteria. The majority of the assemblage was of grades 3 to 4, which is broadly defined as moderate to poor overall condition.

In general, the bone in better condition was recovered from pits and waterholes, whereas the bone in poorer condition was recovered from ditches and gullies. This is not unexpected as bones within pits and waterholes are more likely to have become covered over in a relatively short period of time. In contrast, bone within ditches and gullies is more likely to have been subjected to weathering, trampling and abrasion, as these features are usually backfilled more slowly.



Table 18 Animal bone: Summary of condition of the combined hand-collected and sieved assemblages, by Period (% age)

Condition	Period				Total
	Middle Bronze Age	1st-2nd Century AD	Post Medieval	Unphased	
1	1%	0%			1%
2	10%	8%		2%	7%
3	78%	48%		17%	58%
4	9%	29%		63%	26%
5	2%	15%	100%	18%	8%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

### Species representation

Tables 19 and 20 below summarise the identified *taxa* for the hand collected and the sieved assemblages by the phases of activity at Appleford Sidings.

The animal bone assemblage from Appleford Sidings was dominated by domestic species. Cattle were the most abundant species, followed by sheep/goat, pig and then horse. Single fragments of dog, cat and domestic fowl were present within the assemblage. Small numbers of wild species, such as red and roe deer were also present within the assemblage, while micro mammals, fish and amphibians were found in small quantities, all recovered from the sieved bulk samples.

The minimum number of individuals (MNI) of the main domestic species for each phase (Table 21) indicates a change in emphasis in the husbandry practices between the two main periods. In the middle Bronze Age phase sheep/goat were the dominant species, followed by cattle and then by pig and horse. Then in the 1st-2nd century phase cattle became the most abundant species, followed by sheep/goat and then pig and horse. This indicates a shift in husbandry

practices at Appleford Sidings.

### Middle Bronze Age

The middle Bronze Age period features on the site produced 59% of the animal bone fragments in the assemblage. The bone was recovered mainly from waterholes and pits, which may account for the relatively good preservation of the material in this period assemblage.

### Sheep/Goat

Sheep/goat was the most abundant species in this phase. Only two bones were positively identified as sheep and so were incorporated within the general sheep/goat category for the purposes of analysis. As no goat bones were positively identified it is possible that all the sheep/goat remains from the site were of sheep, but the number of certain sheep bones is such that this conclusion can only be tentative. Most sheep/goat skeletal elements were represented within the assemblage, suggesting that whole carcasses were present on site. The remains from this period were,

Table 19 Animal bone: Number of fragments of each taxon from the hand collected material, summarised by period

Taxon	Period				Total
	Middle Bronze Age	1st-2nd Century AD	Post Medieval	Un-Phased	
Cattle	54	61		20	135
Sheep/Goat	91	29		4	124
Pig	13*	5			18
Horse	1	6		2	9
Dog		1			1
Cat		1			1
Domestic fowl		1			1
Red Deer	2				2
Roe Deer	1				1
Large mammal	139	211	1	116	467
Medium mammal	119	70		48	237
Small mammal	2				2
Unidentified	454	312		498	1264
<b>Total</b>	<b>876</b>	<b>697</b>	<b>1</b>	<b>688</b>	<b>2262</b>

\*7 fragments from a partially articulated skeleton

Table 20 Animal bone: Number of fragments of each *taxon* from the sieved assemblage, summarised by period

Taxon	Phase			Total
	Middle Bronze Age	1st-2nd Century AD	Un-Phased	
Cattle	2	3	4	9
Sheep/Goat	17	1	9	27
Pig	1		1	2
Mole		2		2
Vole	2			2
Frog/Toad			1	1
Amphibian	1		1	2
Bird			1	1
Fish	2			2
Large mammal	4	8	55	67
Medium mammal	89	4	41	134
Small mammal	14		1	15
Micro mammal	4		8	12
Unidentified	1838	48	442	2328
<b>Total</b>	<b>1974</b>	<b>66</b>	<b>564</b>	<b>2604</b>

Table 21 Animal bone: Minimum number of individuals (MINI) by period

Period	Cattle	Sheep/Goat	Pig	Horse
<b>Middle Bronze Age</b>	3	7	2	1
1st-2nd Century AD	4	2	1	1

however, too fragmentary to provide measurements for withers heights.

Six sheep/goat bones were recorded with disarticulation butchery marks. All the butchered bone from this period was recovered from waterhole 414, while a single sheep/goat tibia recovered from waterhole 209 displayed signs of carnivore/omnivore gnawing. Contexts of this period produced 13 burnt sheep/goat bones, 11 of which were recovered from waterhole 414. A burnt metapodial was recovered from ditch group 6010 and a humerus from pit 337. Burning of the bone may have occurred in the context of cooking or the disposal of rubbish.

The number of bones for which age could be determined was too small to produce an age at death profile for sheep/goat husbandry practices. However, this small number of bones suggests a range of individuals aged from 3-10 months to over 8 years old. The range of ages would suggest that Appleford Sidings was a small producer settlement breeding and utilising the animals on site. The utilisation of sheep for wool, milk and meat would probably be common practice.

#### Cattle

Cattle are the second most abundant species within the assemblage, occurring in considerably smaller numbers than the sheep/goat remains. As with sheep/goat, most skeletal elements were represented within

the assemblage, suggesting that entire carcasses were on site for utilisation. The identified cattle remains were too fragmentary to provide measurements for withers heights.

A total of five cattle bones were recorded with butchery marks, occurring within several pits and waterholes. The butchery evidence is consistent with disarticulation and meat removal practices. A single fragment of cattle skull with attached horncore, from waterhole 180, displayed chop marks at the base of the horncore indicating removal of the horn for working. Carnivore gnawing was recorded on four cattle bones of this period, all from waterholes (180, 191 and 209) and two burnt femur fragments were also recovered from waterhole 180, possibly burnt as part of the cooking or waste disposal process.

Two cattle bones from this period displayed pathologies. A first phalanx recovered from waterhole 209 had expansion of the proximal and distal articular surfaces, consistent with arthritic or joint stress related trauma. These extensions of the joint surface can be common in the joints of draft animals (Baker and Brothwell 1980, 117). A large cattle horncore recovered from waterhole 180 had a large drainage sinus in the dorsal aspect, caused by a non-specific infection from within the bone.

Only two mandibles that could be aged were recovered from contexts of this period, one from an old adult and one from an animal below two years of age. Additionally a single humerus from an animal

aged below 12 months and two fragments of femur and an ulna all from animals aged below 42 months were recovered. The range of ages suggests that both young and old animals were present and utilised on site. Cattle would have been used for milk, traction, meat, horn and leather on a small producer site.

#### *Pig*

A total of 14 fragments identified as pig were recovered from deposits of this period. Seven fragments from pit 322 appear to be from the rear half of a partially articulated piglet skeleton aged below 12 months. The remaining fragments are generally juvenile, where it is possible to assess, and were recovered from a series of pits and waterholes from across the site. No evidence of burning, gnawing, pathology or butchery was identified on any of the pig remains from this phase. Pigs are generally kept for meat and provide few secondary products: when utilised for meat the animals are often slaughtered young, leaving a few adults for breeding.

#### *Horse*

A single fragment of horse skull was recovered from middle Bronze Age waterhole 177.

#### *Wild Species*

A red deer metatarsal and a fragment of skull and antler were recovered from waterholes 168 and 180 in this period. Additionally a roe deer mandible was recovered from waterhole 209. The red deer metatarsal had possibly been split along the shaft for marrow extraction; no other butchery was recorded. The presence of these wild species on site suggests the deer were occasionally hunted to supplement diet and perhaps provide materials in the form of hide and antler.

#### *Micro Mammals and Amphibians*

Only seven fragments of micro mammal and amphibian were recovered from contexts of this period. A single amphibian long bone was found within the sieved samples from ditch 405. Additionally four fragments of micro mammal and two identified as vole came from the sieved samples of pit 1561. Owing to their size, such bones often do not survive, or are overlooked in hand-collected assemblages, with the result that these species are often under represented within the assemblage.

#### *Fish*

Two fragments of fish bones were recovered from this period, from the sieved samples of ditch 405 and waterhole 414. The bones have not been identified further.

#### *1st - 2nd century AD*

There was a much smaller assemblage of animal bone from features of this period. The bone was primarily recovered from ditches, which may account both for the smaller number of fragments and their poorer condition in comparison with the material from the middle Bronze Age.

#### *Cattle*

During the 1st-2nd century, cattle replaced sheep/goat as the dominant species within the assemblage. The majority of the cattle remains from this period were recovered from ditches, the majority from component ditches of the principal enclosure group 6100. Most skeletal elements were well-represented within the assemblage, again indicating that entire carcasses were present and utilised on site. No measurements for cattle withers heights were recovered owing to the fragmentary nature of the assemblage.

A total of five bones displayed evidence of butchery, all consistent with dismemberment and filleting processes. Two fragments from ditch 6100 showed evidence of carnivore gnawing, possibly indicating that the disposed remains were left exposed to scavengers. A single first phalanx, also from ditch group 6100, displayed a pathology of a considerable extension of the proximal articular surface and new bone growth on the superior surface, possibly as a result of trauma. Grooves and eburnation on the proximal articulation may have been a secondary reaction to the initial trauma.

Four mandibles indicated ages at death, based on tooth eruption and wear stages, ranging from 18-30 months to old adult. Fusion data of two unfused radii from individuals below 42 months of age and two metapodials from animals aged below 24 months also provides the evidence of young individuals within the assemblage. The presence of both young and old cattle suggests that the cattle would have been used for milk and traction as well as meat, horn and leather.

#### *Sheep/Goat*

No bones were positively identified to either species and all the fragments were therefore classified as sheep/goat. The majority of skeletal elements were represented within the assemblage, but smaller bones such as phalanges, carpals/tarsals and skull fragments appear to have been absent in this period. This could suggest that the assemblage only represented refuse from secondary butchery and food waste. However, as the bones in question were small and fragile, their absence may have been due to preservation factors. No evidence of butchery, gnawing or pathologies was noted within the assemblage.

Age at death could only be determined for a single mandible, from an animal aged 3-5 years. Two unfused femurs from the assemblage suggest an age at death of below 30 and 32 months for two animals.

Due to the small assemblage size little information can be gained about husbandry practices, but it is likely that sheep/goats would have been kept for milk, meat and wool.

#### *Pig*

A total of five identified pig fragments were recovered from deposits of this period, all from components of ditch group 6100. No evidence of gnawing, butchery or pathology was noted on any of the bones. An unfused femur from an animal aged less than 42 months old and an unfused third metatarsal from an animal aged below 24 months were the only ageable pig bones of this period. As pigs are generally kept for meat and are usually slaughtered quite young these ages are not unusual.

#### *Horse*

Six horse bones were identified in deposits of this phase. No evidence of butchery or gnawing was noted on any of the bones, but it is possible that horses were processed for meat after death. Within this small assemblage was an adult cheek tooth from an animal aged between 5.25 and 7.5 years. There was also a maxilla from an animal less than 2 years old and a calcaneus from a neonatal/juvenile animal.

#### *Other Domesticated Species*

Single fragments of cat mandible, dog mandible and a domestic fowl carpo-metacarpus were recovered from ditch group 6100.

#### *Wild Species*

A mole, represented by two articulating fore-limb bones, was the only wild species identified in this period. As moles are burrowing creatures, it is possible that these bones are actually intrusive within the assemblage.

#### *Post medieval*

A single fragment of poorly preserved large mammal long bone was recovered from a post-medieval pit [4].

#### *Unphased*

Some 564 bone fragments were recovered from unphased contexts. The majority of these remains consistently reflect the assemblages from the phased deposits.

A single rib of a large mammal, probably cattle, from ditch 5031 displayed pathological changes on both surfaces of the rib blade consistent with an infection of the periosteum tissues surrounding the bone. These may have been the result of a trauma or more likely of a pulmonary disease such as bronchitis. The rib had subsequently been chopped through, indicat-

ing that the animal had been processed for meat.

#### **Articulated skeletons**

Three articulated animal burials were uncovered during the excavations at Appleford Sidings, but none of the bones were retained. Animal burials 3136 and 3139 were from undated features. A third burial (3106) of a relatively complete articulated cattle skeleton was recovered from a pit cutting an early Roman ditch (3102). The cattle burial is now thought to have been associated with the nearby funerary enclosure group 3052 but at the time of excavation this and the other complete animal burials were thought to be of relatively recent date and were thus not recovered.

#### **Discussion**

The animal bone assemblages from both the middle Bronze Age and the early Roman periods are relatively small, providing only a few data for the animal husbandry practices from each period. The assemblages suggest that Appleford Sidings was generally a small producer site, breeding and utilising animals on site for traction, for milk, meat and other secondary products.

The assemblages of the two periods did differ in character. The emphasis on sheep/goat husbandry seen in the middle Bronze Age was greatly reduced in the 1st- to 2nd-century period, when there was more of an emphasis on cattle husbandry. Pig occurred in both periods in relatively small numbers. Horse was present in both phases in small numbers. In the 1st- to 2nd-century period at least two horses were noted, with at least one a juvenile. Horses could have been for both traction and riding, and although no butchery evidence was noted, it is not unusual for horse to be processed for meat after death. Domesticated animals such as cat and dog were present during the early Roman period, possibly as working animals, pets, or as scavengers. Domestic fowl was also present and would have been kept for meat and egg production.

The presence of both red and roe deer in the middle Bronze Age suggests that the hunting of wild animals supplemented the diet and consequently that uncultivated areas in which these could dwell lay within range of the site. Fish bones were present in the middle Bronze Age phase indicating that fish supplemented the diet, but the species are unknown and the numbers very small, so their precise significance cannot be established. The amphibians and micro mammal species are to be expected on any semi-rural site with open refuse-receiving or waterlogged features. Their small numbers may indicate that features did not remain open for any great length of time, or may perhaps be related to preservation and/or collection bias.

*Archaeological work at Appleford Sidings*

## Chapter 5: Environmental evidence

### WATERLOGGED MACROSCOPIC PLANT AND INVERTEBRATE REMAINS

by Mark Robinson

#### Introduction

Excavations on the First Gravel Terrace of the Thames at Appleford Sidings discovered a system of small middle Bronze Age fields and trackways, many of which were associated with waterholes or wells. Early Roman enclosures and trackways were also present. The water table was high and many of the deeper features contained waterlogged sediments. Forty samples from eight middle Bronze Age waterholes, an early Roman pit and an early Roman ditch were assessed for their potential for waterlogged macroscopic plant and invertebrate remains. Preservation in most samples was poor but six samples were shown to have the potential for full analysis.

#### Samples (Table 22)

The samples were washed over onto a 0.25 mm sieve to recover organic remains. A sub-sample of each was sorted in water under a binocular microscope for the full range of plant, insect and mollusc remains. The remainder of each organic fraction was subjected to paraffin flotation to extract insect remains. The flots were washed with detergent and sorted in water under a binocular microscope for insect remains and any charred remains. The residues from paraffin flotation were sieved to 0.5 mm and rapidly sorted for charred remains.

The specimens were identified with reference to the collections of the Oxford University Museum of Natural History and the results listed in Tables 23-28, giving the minimum number of individuals or recording presence (+). The botanical nomenclature follows Clapham *et al.* (1987), nomenclature for Coleoptera follows Kloet and Hincks (1977) and nomenclature for molluscs follows Kerney (1999). The tables

also give the weights or volumes of each sub-sample analysed for each category of evidence. The results for Coleoptera (beetles) have also been displayed by habitat-related species groups in Figure 32 (groups after Robinson 1991, 278-81, & fig. 125).

#### Middle Bronze Age waterholes

The three waterholes supported faunas and floras suggestive of small stagnant pools. The small water beetles *Helophorus cf. brevipalpis* and *Ochthebius cf. minimus* were particularly abundant in Waterholes 180 and 456. Seeds of *Ranunculus S. Batrachium* sp. (water crowfoot) were present in all the samples and very well represented in Waterholes 456 and 517. The occurrence of seeds of *Lemna* sp. (duckweed) in Samples 112 and 113 suggested that this small floating plant covered the surface of the water in Waterhole 517. Most of the samples also contained shells of molluscs of stagnant water, such as *Lymnaea truncatula* and *Anisus leucostoma*.

There were a few seeds from plants of marginal habitats that were likely to have been growing on marshy ground around the edge of the waterholes, for example *Mentha cf. aquatica* (water mint) and *Lycopus europaeus* (gipsywort) in Waterholes 180 and 456 and *Glyceria* sp. (flote grass) in Waterhole 517. Some of the insects were species of muddy habitats at the edge of water, such as the staphylinid beetles *Lesteva longolytrata* and *Platystethus cornutus* gp. However, there appears to have been a relatively abrupt transition between the wet conditions of the waterholes and the well-drained terrestrial environments from which the other biological remains were derived.

Unfortunately, pollen analysis was not undertaken on sediments from any of the waterholes with good preservation. The insect evidence suggested a largely unwooded landscape. Wood and tree-dependent Coleoptera averaged around 2% of the terrestrial Coleoptera from the three waterholes. The more host-specific of the tree and shrub-feeding beetles were species of scrub and hedgerow rather than bee-

Table 22 Waterlogged macroscopic plant and invertebrate remains: Provenance of samples

Sample no.	Context	Description
68	287	primary fill of middle Bronze Age Waterhole 180.
67	288	secondary fill of middle Bronze Age Waterhole 180.
110	458	primary fill of middle Bronze Age Pit 456.
112	529	primary fill of middle Bronze Age Waterhole 517.
113	528	secondary fill of middle Bronze Age Waterhole 517.
400	4015	primary fill of late 1st- early 2nd century AD Roman Enclosure Ditch.

bles which feed on major woodland trees. The bark beetle *Scolytus rugulosus*, which was found in both Waterholes 180 and 517, tends to be associated with *Prunus* spp. (sloe etc). The weevil *Acalles turbatus* bores into dead twigs, especially in hedges, while the leaf beetle *Chalcoides* sp. feeds on the leaves of *Salix* spp. (willows and sallows) and *Populus* spp. (poplars). Another beetle likely to have been associated with scrub was *Anthonomus* cf. *rubi*, which mostly feeds on *Rubus* spp. (brambles).

While the insect evidence suggested that the scrub was a minor part of the landscape, perhaps taking the form of hedges alongside the Bronze Age field ditches, the macroscopic plant remains suggested a much stronger presence of mixed scrub. Seeds of *Rubus fruticosus* agg. (blackberry) were abundant in all the samples. The samples also all contained stones of *Crataegus* cf. *monogyna* (hawthorn) and *Cornus sanguinea* (dogwood) along with *Prunus* or *Crataegus* type (sloe or hawthorn) thorny twigs and *Sambucus nigra* (elder) seeds. Stones of *Prunus spinosa* (sloe) and buds of *Salix* sp. (sallow or willow) were present in Waterholes 180 and 517. Waterhole 180 contained the greatest diversity of remains of shrubs, with seeds of *Rhamnus catharticus* (purging buckthorn), *Rosa* sp. (rose) and *Corylus avellana* (hazel) additionally present. Interestingly, Sample 68 from Waterhole 180 con-

tained a stone of *Crataegus* sp. with one flattened face that was possibly from *C. x media* (hybrid hawthorn), the cross between *C. monogyna* (hawthorn) and *C. laevigata* (midland hawthorn). It tends to occur in scrub or hedges which have been derived from woodland. As well as the remains of woody species, there were also seeds of various herbs that were likely to have grown in the somewhat shaded conditions amongst the bushes, including *Chaerophyllum temulentum* (rough chervil), *Urtica dioica* (stinging nettle) and *Rumex conglomeratus* (sharp dock).

Such vegetation is typical of the scrub which develops on the gravels of the Upper Thames Valley when some grazing is occurring, which favours the thorny species. It is also characteristic of old hedgerow, that is hedges that are at least several hundred years old (Hooper 1971) and would presumably result from hedges created by the selective clearance of scrub or the mixed planting of hedges. The high proportion of macroscopic remains of scrub species in the samples suggested that this vegetation predominated in the immediate vicinity of the waterholes. However, macroscopic plant remains tend to be very local in origin. The dispersive power of insects means that they would have been derived from a much larger catchment and it is probable that the insects reflected conditions over a wider area than the macroscopic

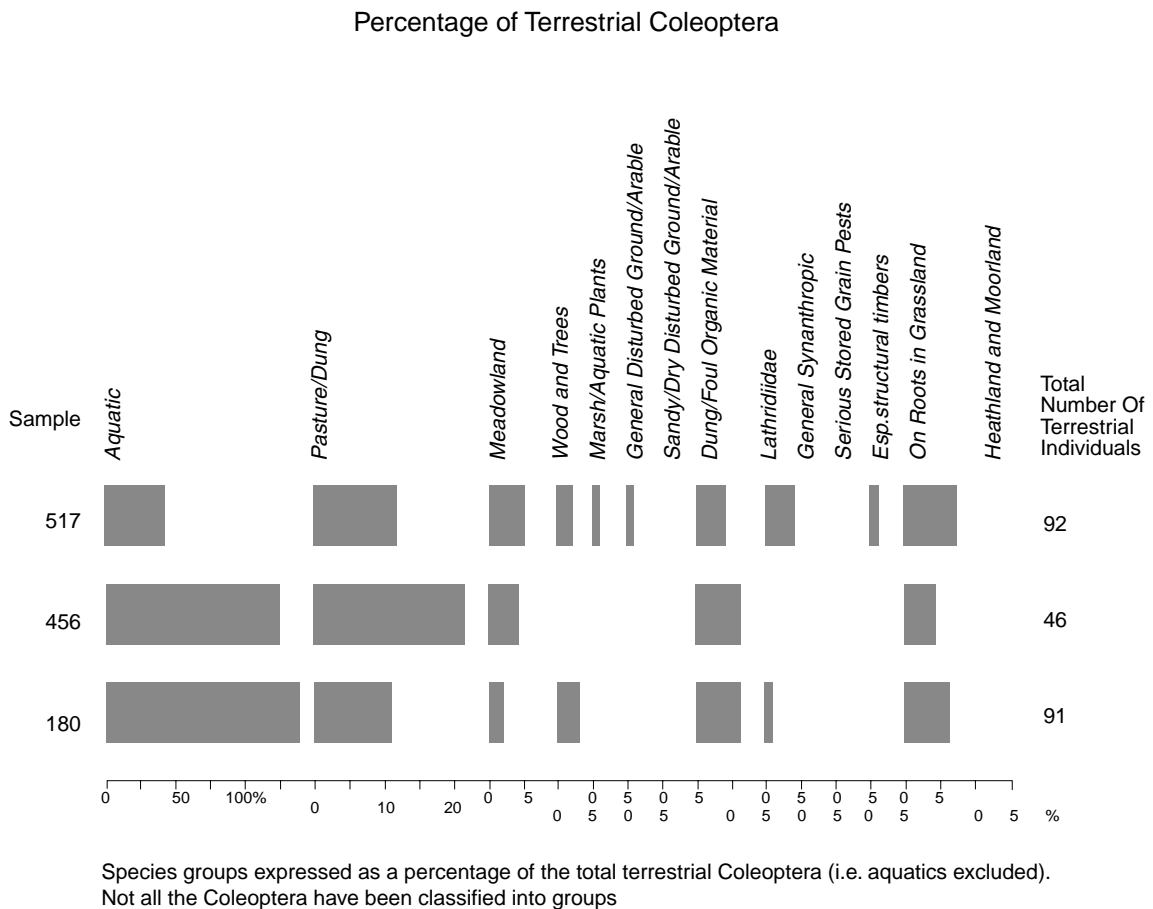


Figure 33 Terrestrial coleoptera: Species groups expressed as percentages of total terrestrial coleoptera

plant remains. It is therefore likely that scrub was concentrated in the vicinity of the waterholes.

The areas around the waterholes were not entirely shaded. The land snails from the waterholes were mostly species of open country. Species of *Vallonia*, including *V. excentrica*, were well represented in the two samples from Waterhole 180. *V. excentrica* is a snail of well-drained unshaded habitats. The waterlogged seeds from terrestrial herbaceous plants of open habitats were mostly from weeds of disturbed ground, such as *Stellaria media* gp. (chickweed) and *Chenopodium polyspermum* (all-seed). Weedy broken ground was probably the other major habitat near the waterholes. Some of the plants of disturbed ground, such as *Ranunculus* cf. *repens* (creeping buttercup), also occur in grassland communities. Its seeds were numerous in all the samples. Seeds of plants restricted to grassland were fewer, but included, for example, *Leontodon* sp. (hawkbit). It is likely that the disturbed ground graded into grassland with distance from the waterholes.

The insects from the middle Bronze Age waterholes suggested grassland to have been a major component of the surrounding landscape. Chafer and elaterid beetles whose larvae feed on the roots of grassland plants, such as *Phyllopertha horticola* and *Agrypnus murinus*, comprised around 6.5% of the terrestrial Coleoptera (Fig. 32, Species Group 11: On roots in grassland). All the samples contained grass-feeding bugs of the genus *Aphrodes*. Clover and vetch-feeding weevils of the genera *Apion* and *Sitona* were quite well represented (Fig. 32, Species Group 3: Meadowland). Other beetles which feed on grassland herbs included *Hydrothassa glabra*, which feeds on *Ranunculus* spp. (buttercups), in Samples 68 and 113 and *Ceuthorhynchidius troglodytes*, which feeds on *Plantago lanceolata* (ribwort plantain), in Sample 113. Many of the terrestrial Coleoptera, such as the ground beetle *Calathus fuscipes*, readily occur in grassland. A well-drained sunny aspect to some of the grassland was suggested by the occurrence of *Brachinus crepitans* (bombardier beetle) in Sample 113.

Scarabaeoid dung beetles which feed on the droppings of domestic animals grazing on pasture were well-represented in all the samples, comprising around 13.5% of the terrestrial Coleoptera (Fig. 32, Species Group 2: Pasture/dung). *Aphodius* cf. *sphaerelatus* was the most numerous but there was an example of *Onthophagus taurus*, which is now extinct in Britain, in Sample 113 from Waterhole 517. It is very likely that the small fields in which the waterholes were situated were used as pasture for domestic animals.

There was also evidence for the processing of arable crops. Sample 68, from Waterhole 130, contained a single waterlogged seed of *Linum usitatissimum* (flax). Charred crop remains were present in the residues of the samples processed for insect remains, the most closely identifiable being a grain of hulled *Hordeum vulgare* (six-row hulled barley) and a glume base of *Triticum spelta* (spelt wheat) in Sample 68 from Waterhole 180. It is very plausible that those crops were

grown in some of the small fields.

The insects did not give any strong indication of the proximity of the middle Bronze Age settlements itself. There was only a single example of *Anobium punctatum* (woodworm beetle, Fig. 32, Species Group 10: Esp. structural timbers), which tends to infest structural timbers. The synanthropic beetles of Species Group 9 were absent and beetles of foul organic material (Species Group 7: Dung/foul organic matter) and of mouldy straw, hay etc (Species Group 8: Lathridiidae) were no more abundant than might be expected on grassland with some grazing.

#### **Romano-British ditch 4014**

The most numerous snails in Ditch 4014 were *Anisus leucostoma*, and other water snails were absent, suggesting that the ditch held stagnant water, perhaps seasonally. The seeds included *Ranunculus* S. *Batrachium* sp. (water crowfoot) and *Alisma* sp. (water plantain), both plants likely to have grown in the ditch. By far the most abundant seeds were of *Rubus fruticosus* agg. (blackberry). Other shrubs included *Prunus spinosa* (sloe) and *Crataegus* cf. *monogyna* (hawthorn), represented by stones and thorns. Leaf fragments of *Salix* Sect. *Caprisalix* sp. (sallow) were also present along with the leaf beetle *Phyllodecta* sp., one species of which feeds on sallows. It is possible that a hedge was established alongside the ditch. Most of the seeds of terrestrial herbaceous plants were species which commonly occur in hedgerows, including *Chaerophyllum temulentum* (rough chervil), *Bryonia cretica* ssp. *dioica* (white bryony) and *Urtica dioica* (stinging nettle).

Unfortunately, only a small assemblage of insects was available for study from Ditch 4014, so it was not possible to give a detailed reconstruction of the surrounding landscape in the early Roman period. However, the insects suggested open conditions and species of grassland were well represented. These included the bug *Aphrodes bicinctus*, the elaterid beetles *Agrypnus murinus* and *Agriotes lineatus* and weevils of the genus *Apion*. The occurrence of dung beetles from the genus *Aphodius* suggested some grazing by domestic animals.

#### **Discussion**

In a consideration of the environmental sequence of the Barrow Hills area, on the second gravel terrace of the Upper Thames Valley at Radley, the view was advanced that grassland predominated but some arable plots were present and there was a tendency for mixed thorn scrub to become established whenever management was relaxed (Robinson 1999, 273). The results from the middle Bronze Age waterholes at Appleford Sidings are consistent with such an interpretation. They showed an economy based on the raising of domestic animals and the cultivation of a range of crops in a cleared, organised landscape. Although Appleford Sidings was situated on the First, rather than the Second, Gravel Terrace, the



Archaeological work at Appleford Sidings

		No. of seeds					
		Middle Bronze Age			RB		
Feature		180	288	456	517	528	4014
Context		287	288	458	529	528	4015
Sample		68	67	110	112	113	400
Sample volume litres (weight kg)		1.0	1.0	1.0	1.0	1.0	(1.0)
<i>Ranunculus cf. repens</i> L.	buttercup	20	12	19	10	42	1
<i>R. bulbosus</i> L.	bulbous buttercup	4	1	-	-	3	-
<i>R. parviflorus</i> L.	small-flowered buttercup	-	1	-	-	-	-
<i>R. S. Batrachium</i> sp.	water crowfoot	7	2	143	254	1780	14
<i>Papaver rhoeas</i> tp.	poppy	1	-	-	-	-	-
<i>P. argemone</i> L.	poppy	-	-	-	-	2	1
<i>Fumaria</i> sp.	fumitory	1	1	-	-	-	-
<i>Coronopus squamatus</i> (Ash.) Forsk.	swine cress	-	-	-	-	-	1
<i>Cerastium cf. fontanum</i> Bau.	mouse-ear chickweed	-	-	-	-	-	1
<i>Myosoton aquaticum</i> (L.) Moen.	water chickweed	34	17	-	-	-	-
<i>Stellaria media</i> (L.) Vill.	chickweed	61	28	7	18	29	-
<i>S. graminea</i> L.	lesser stitchwort	1	1	-	-	-	-
<i>Chenopodium polyspermum</i> L.	all-seed	-	-	10	6	8	-
<i>C. album</i> L.	fat hen	-	1	2	-	-	-
<i>Atriplex</i> sp.	orache	5	2	-	3	1	6
<i>Linum usitatissimum</i> L.	flax	1	-	-	-	-	-
<i>Rhamnus catharticus</i> L.	purging buckthorn	3	2	-	-	-	-
<i>Rubus fruticosus</i> agg.	blackberry	42	13	18	41	50	61
<i>Potentilla cf. reptans</i> L.	creeping cinquefoil	-	-	-	1	-	2
<i>Rosa</i> sp.	rose	5	2	-	-	-	-
<i>Prunus spinosa</i> L.	sloe	4	2	-	1	-	3
<i>Crataegus cf. monogyna</i> Jacq.	hawthorn	15	6	5	7	11	3
<i>C. cf. x media</i> Bechst.	hybrid hawthorn	1	-	-	-	-	-
<i>Cornus sanguinea</i> L.	dogwood	1	5	2	1	2	-
<i>Chaerophyllum temulentum</i> L.	rough chervil	21	8	-	-	-	3
<i>Aethusa cynapium</i> L.	fool's parsley	2	1	-	1	2	-
<i>Apium nodiflorum</i> (L.) Lag.	fool's watercress	-	-	-	-	-	1
<i>Pastinaca sativa</i> L.	wild parsnip	-	-	2	2	1	-
<i>Torilis</i> sp.	hedge-parsley	9	1	-	-	-	-
<i>Daucus carota</i> L.	wild carrot	1	1	-	-	-	1
<i>Bryonia cretica</i> L. ssp. <i>dioica</i> (Jacq.) Tut.	white bryony	-	-	-	-	-	1
<i>Polygonum aviculare</i> agg.	knotgrass	1	-	1	-	1	-
<i>P. persicaria</i> L.	red shank	1	-	-	-	3	1
<i>P. lapathifolium</i> L.	pale persicaria	-	-	1	1	5	-
<i>Rumex conglomeratus</i> Mur.	sharp dock	18	23	6	2	4	2
<i>Rumex</i> spp.	dock	10	9	12	1	11	3
<i>Urtica urens</i> L.	small nettle	-	1	-	1	-	-
<i>U. dioica</i> L.	stinging nettle	35	4	8	2	6	10
<i>Corylus avellana</i> L.	hazel	-	1	-	-	-	-
<i>Solanum cf. dulcamara</i> L.	woody nightshade	2	3	-	-	-	1

Table 23 Waterlogged seeds

		No. of seeds					
		Middle Bronze Age			RB		
Feature		180	288	456	517	528	4014
Context		287	288	458	529	528	4015
Sample		68	67	110	112	113	400
Sample volume litres (weight kg)		1.0	1.0	1.0	1.0	1.0	(1.0)
<i>Mentha cf. aquatica</i> L.	water mint	1	-	5	-	-	-
<i>Lycopus europaeus</i> L.	gipsywort	2	1	4	-	-	-
<i>Prunella vulgaris</i> L.	selfheal	-	1	2	4	1	-
<i>Lamium</i> sp.	dead nettle	1	1	-	-	-	-
<i>Galeopsis tetrahit</i> agg.	hemp-nettle	-	-	-	-	1	-
<i>Glechoma hederacea</i> L.	ground-ivy	1	1	-	-	-	-
<i>Plantago major</i> L.	great plantain	-	1	-	-	-	-
<i>Sambucus nigra</i> L.	elder	7	15	5	11	20	9
<i>Bidens</i> sp.	bur-marigold	-	-	1	-	-	-
<i>Tripleurospermum inodorum</i> (L.) S.B.	scentless mayweed	-	-	-	-	-	1
<i>Carduus</i> or <i>Cirsium</i> sp.	thistle	3	1	2	4	6	2
<i>Lapsana communis</i> L.	nipplewort	-	1	-	-	-	-
<i>Leontodon</i> sp.	hawkbit	8	1	1	3	7	-
<i>Picris hieracioides</i> L.	hawkweed ox-tongue	2	1	-	4	1	-
<i>Sonchus oleraceus</i> L.	sow thistle	1	1	-	-	1	-
<i>S. asper</i> (L.) Hill	sow thistle	6	2	-	1	-	-
<i>Alisma</i> sp.	water plantain	-	-	-	-	-	2
<i>Potamogeton</i> sp.	pondweed	-	-	-	-	1	-
<i>J. articulatus</i> gp.	rushes	-	-	20	-	50	-
<i>Juncus</i> spp.	rush	-	-	10	20	10	-
<i>Lemna</i> sp.	duckweed	-	-	-	1	2	-
<i>Eleocharis S. Palustres</i> sp.	spike rush	-	-	-	3	6	1
<i>Carex</i> spp.	sedge	1	5	1	9	5	1
<i>Glyceria</i> sp.	flote-grass	-	-	-	-	5	-
<i>Gramineae</i> indet.	grass	13	4	2	7	6	-
<b>Total</b>		<b>352</b>	<b>184</b>	<b>289</b>	<b>419</b>	<b>2,083</b>	<b>132</b>

Table 23 Waterlogged seeds (continued)

results were very similar to those from the middle Bronze Age waterhole at Eight Acre Field, Radley, which was dated to 1680-1420 cal BC  $2\sigma$  (GY-3379) (Robinson 1995). In particular, both sites had much evidence from macroscopic plant remains for mixed thorn scrub around the waterholes which contrasted with insect evidence for more open conditions in the wider landscape. Similar results are being obtained from middle Bronze Age waterholes further upstream on the Thames floodplain at Yarnton (Robinson unpublished). What is uncertain is whether the waterholes were adjacent to mixed hedges or, when a waterhole fell out of use, scrub was allowed to grow over that part of the site. The occurrence of charred crop processing remains in the waterholes suggested that they were close to the settlement areas and it is

possible that when a house and its associated waterhole fell out of use, there were social factors which prevented the area being used for grazing.

The crops identified from the middle Bronze Age waterholes at Appleford Sidings, spelt wheat, six-row hulled barley and flax, have all recently been found in middle Bronze Age waterholes at Yarnton (Robinson unpublished). The record for spelt is early but a grain of spelt wheat from a well at Yarnton gave a date of 1740-1410 calBC  $2\sigma$  (OxA-6548). Current evidence suggests that spelt wheat was first cultivated in the Upper Thames Valley during the middle Bronze Age but it did not entirely displace emmer wheat (*Triticum dicoccum*) to become the only major wheat crop grown in the region until the end of the late Bronze Age. Indeed, emmer wheat was the only

Table 24 Other waterlogged plant remains

			No. of items					
			Middle Bronze Age			RB		
Feature	180	288	456	517	528	4014		
Context	287	288	458	529	528	4015		
Sample	68	67	110	112	113	400		
Sample volume litres (weight kg)	1.0	1.0	1.0	1.0	1.0	(1.0)		
<i>Rubus</i> sp.	(blackberry etc)	prickle	+	+	+	-	+	-
<i>Prunus</i> sp.	(sloe etc)	wood	-	-	-	-	+	-
Pomoideae indet.	(hawthorn, apple etc)	twig	-	-	+	-	-	-
<i>Prunus</i> or <i>Crataegus</i> sp.	(hawthorn or sloe)	thorn	+	+	+	+	+	+
<i>Populus</i> sp.	(poplar)	bud	-	-	-	-	-	1
<i>Salix</i> Sect. <i>Caprisalix</i> sp.	(sallow)	leaf frag.	-	-	-	-	-	+
<i>Salix</i> sp.	(sallow, willow)	capsule	1	-	-	-	-	-
<i>Salix</i> sp.	(sallow, willow)	bud	2	-	-	1	-	3
bud scale indet.			+	+	-	+	+	-
deciduous leaf frag. indet.			+	+	-	+	-	+
leaf abscission pad			+	+	-	+	+	-

+ present

Table 25 Charred Plant Remains

			No. of items					
			Middle Bronze Age			RB		
Feature	180	288	456	517	528	4014		
Context	287	288	458	529	528	4015		
Sample	68	67	110	112	113	400		
Sample volume litres (weight kg)	10	10	12	10	10	(1.0)		
<i>Polygonum aviculare</i> agg.	(knotgrass)	seed	-	1	-	-	-	-
<i>Hordeum vulgare</i> L. - hulled lateral	(six-row hulled barley)	grain	1	-	-	-	-	-
<i>Hordeum</i> sp. - hulled	(hulled barely)	grain	-	2	-	-	-	-
<i>Hordeum</i> sp.	(cultivated barley)	rachis node	-	-	-	-	1	-
<i>Triticum dicoccum</i> (Schr.) Schübl.	(emmer wheat)	glume base	-	2	-	-	-	-
<i>T. spelta</i> L.	(spelt wheat)	glume base	1	-	-	-	-	-
<i>T. dicoccum</i> Schübl. or <i>spelta</i> L.	(emmer or spelt)	glume base	4	1	-	-	-	-
cereal indet.		grain	-	2	-	1	-	1
Gramineae indet.	grass	seed	-	-	1	-	1	-

wheat identified from the middle Bronze Age waterhole at Eight Acre Field (Robinson 1995).

The results from Appleford Siding suggest the ground surface to have been well drained and relatively dry during the middle Bronze Age. The evidence from the nearby Roman settlement at Appleford Field was of some areas of damp grassland on the First Terrace (Robinson 1980, 93). However, this would be consistent with the rise in water table known to have occurred in the valley bottom between the Bronze Age and Roman period (Robinson 1992).

The occurrence of the dung beetle *Onthophagus taurus* in a middle Bronze Age context is of interest for this extinct dung beetle was found in a middle Bronze

Age waterhole at Yarnton (Robinson, unpublished) and is known from other Neolithic and Bronze Age sites in the Thames Valley (Robinson 2002, 58). It is clear that major changes have occurred to the scarabaeid fauna of dung in Britain since the Bronze Age, in part perhaps related to climatic fluctuations.

The results from the early Roman ditch at Appleford Sidings supported the suggestion advanced for Appleford Field that the ditches of the Roman enclosure system had hedges alongside them (Robinson 1980, 92-3). They likewise gave evidence of an unwooded landscape with grassland.

The investigations at Appleford Sidings were useful because they throw light on the middle Bronze

Table 26 Mollusca

Feature	Min No. of Individuals					RB 4014
	Middle Bronze Age					
	180	288	456	529	528	
Context	287	288	458	529	528	4015
Sample	68	67	110	112	113	400
Sample volume litres (weight kg)	1.0	1.0	1.0	1.0	1.0	(1.0)
<i>Carychium</i> sp.	1	1	-	-	2	-
<i>Lymnaea truncatula</i> (Müll.)	8	1	-	-	-	-
<i>Anisus leucostoma</i> (Milt.)	1	7	3	-	31	6
<i>Cochlicopa</i> sp.	2	1	-	-	-	-
<i>Vallonia costata</i> (Müll.)	1	-	-	-	1	1
<i>V. pulchella</i> (Müll.)	-	4	-	-	2	-
<i>V. excentrica</i> Sterki	4	3	-	-	-	-
<i>Vallonia</i> sp.	15	8	-	-	-	1
<i>Vitrea</i> sp.	-	1	-	-	-	-
<i>Nesovitrea hammonis</i> (Ström)	-	1	-	-	-	-
<i>Aegopinella nitidula</i> (Drap.)	1	-	-	-	-	-
<i>Clausilia bidentata</i> (Ström)	-	1	-	-	-	-
<i>Trichia hispida</i> gp.	3	2	1	1	4	2
<i>Cepaea nemoralis</i> (L.)	-	1	-	-	-	-
<b>Total</b>	<b>36</b>	<b>31</b>	<b>4</b>	<b>1</b>	<b>40</b>	<b>10</b>

Age environment and economy of the Upper Thames Valley. They add weight to the evidence from Yarnton that spelt wheat had become a significant crop in the region in the middle Bronze Age rather than, as had previously been thought (Robinson 1996, 49-50) being a late Bronze Age introduction. The similarity of the results with those from the earlier waterholes at Eight Ace Field, Radley, lends support to the middle Bronze Age radiocarbon date obtained for it whereas the excavator had regarded the waterhole to be late Bronze Age, as was a second waterhole on the site. The results from the early Roman ditch at Appleford Sidings served to confirm and extend the evidence from the nearby site of Appleford Field.

## CHARRED PLANT REMAINS

by Denise Druce

### Introduction

A number of bulk samples of up to 45 litres were taken from selected features in order to carry out analysis of the charred plant remains. Ten bulk samples were chosen for analysis and these are shown, along with their associated contexts and features, in Tables 29 and 30. Six contexts, 84, 170, 346, 1349, 1564, and 5510 came from Period 2 (middle Bronze Age) features (Table 29), and four contexts, contexts 5259, 5332, 5363, and 5409 came from Period 3 (Romano-British) features (Table 30). The Romano-British contexts 5259, 5332, and 5409 came from the fills of the

double-ditched enclosure, the latter two from the western and eastern side of an entrance respectively. Context 5363 came from the fill of a ditch (feature 5362) presumed to be contemporary with the enclosure. The middle Bronze Age contexts came from a concentration of features situated south west of the Romano-British enclosure, which were associated with a number of field systems. Context 5510, however, came from a waterhole (feature 5512) situated away from the main concentration of middle Bronze Age features.

### Methodology

Samples between 14 and 45 litres in size were processed using bulk flotation with a modified Siraf flotation machine and the flots collected onto a 250µm mesh and air-dried. Any identifiable charred and waterlogged seeds, charred cereal chaff and other charred plant remains were extracted and sorted using a binocular microscope. Other material such as bone, insects, and any cultural remains were also noted. Identification was aided by comparison with the modern reference collection held at Oxford Archaeology North. Whole charred cereal grains and cereal grain fragments were extracted. The charred cereal grain fragments were quantified; however the numbers are not included in the total count in the tables. Nomenclature follows Stace (1991). Actual counts of the charred plant remains are given in the tables; any waterlogged seeds are quantified on a scale of 1-5.

Archaeological work at Appleford Sidings

Feature	Min No. of Individuals						Species Group
	Middle Bronze Age					RB	
	180	288	456	517	528	4014	
	Context	287	288	458	529	528	
Sample	68	67	110	112	113	400	
Sample volume litres (weight kg)	10	10	12	10	10	(1.0)	
<i>Carabus nemoralis</i> Müll.	-	-	1	-	-	-	
<i>Notiophilus</i> sp.	-	-	1	-	-	-	
<i>Dyschirius globosus</i> (Hbst.)	1	-	-	-	-	-	
<i>Clivina collaris</i> (Hbst.) or <i>fossor</i> (L.)	-	2	-	-	1	-	
<i>Trechus obtusus</i> Er. or <i>quadristriatus</i> (Schr.)	-	-	1	-	2	1	
<i>Bembidion lampros</i> (Hbst.) or <i>properans</i> Step.	-	1	1	1	-	-	
<i>B. biguttatum</i> (F.)	-	-	1	-	1	-	
<i>B. guttula</i> (F.)	2	-	-	1	1	-	
<i>Bembidion</i> sp.	-	1	-	-	-	-	
<i>Pterostichus longicollis</i> (Duft.)	-	-	1	-	1	-	
<i>P. melanarius</i> (Ill.)	1	1	-	-	-	1	
<i>P. cupreus</i> (L.) or <i>versicolor</i> (Sturm)	1	-	-	1	-	1	
<i>Calathus fuscipes</i> (Gz.)	2	-	1	1	-	-	
<i>C. melanocephalus</i> (L.)	-	1	-	-	-	-	
<i>Agonum muelleri</i> (Hbst.)	-	-	1	-	-	-	
<i>Amara</i> sp.	-	2	1	1	-	1	
<i>Harpalus rufipes</i> (Deg.)	-	-	-	-	1	-	6a
<i>H. affinis</i> (Schr.)	1	-	-	1	-	-	
<i>Brachinus crepitans</i> (L.)	-	-	-	1	-	-	
<i>Haliplus</i> sp.	1	-	-	-	1	-	1
<i>Coelambus impressopunctatus</i> (Schal.)	1	-	-	-	-	-	1
<i>Hydroporus</i> sp.	2	1	-	-	-	-	1
<i>Agabus bipustulatus</i> (L.)	1	1	-	1	-	1	1
<i>Agabus</i> sp. (not <i>bipustulatus</i> )	-	-	-	-	1	-	1
<i>Colymbetes fuscus</i> (L.)	1	1	1	-	1	1	1
<i>Hydrochus</i> sp.	-	-	1	1	-	-	1
<i>Helophorus aquaticus</i> (L.)	-	1	-	-	-	-	1
<i>H. grandis</i> Ill.	-	-	2	-	-	-	1
<i>H. aquaticus</i> (L.) or <i>grandis</i> Ill.	2	1	-	-	1	-	1
<i>Helophorus</i> spp. ( <i>brevipalpis</i> size)	34	22	46	15	4	4	1
<i>Cercyon atricapillus</i> (Marsh.)	-	-	-	-	1	-	7
<i>C. haemorrhoidalis</i> (F.)	2	-	-	1	-	-	7
<i>Cercyon</i> sp.	-	2	1	-	-	-	7
<i>Megasternum obscurum</i> (Marsh.)	1	-	1	-	2	1	7
<i>Hydrobius fuscipes</i> (L.)	2	1	1	1	1	-	1
<i>Onthophilus striatus</i> (Forst.)	-	-	-	-	1	-	
<i>Hister bissexstriatus</i> (F.)	-	-	1	-	-	-	
<i>Hister</i> or <i>Paralister</i> sp.	-	-	-	-	1	-	
<i>Ochthebius minimus</i> (F.)	1	3	-	-	1	-	1
<i>O. cf. minimus</i> (F.)	17	30	7	6	4	-	1
<i>Hydraena cf. riparia</i> Kug.	1	4	-	-	-	-	1

Table 27 Coleoptera

Chapter Five

Feature	Min No. of Individuals						Species
	Middle Bronze Age					RB	
	180	288	456	517	528	4014	
	Context	287	288	458	529	528	
Sample	68	67	110	112	113	400	Group
Sample volume litres (weight kg)	10	10	12	10	10	(1.0)	
<i>H. testacea</i> Curt.	-	-	-	-	-	1	1
Ptiliidae indet.	-	1	-	-	2	-	
<i>Choleva</i> or <i>Catops</i> sp.	-	1	-	-	-	-	
<i>Silpha atrata</i> L.	1	-	-	-	-	-	
<i>Micropeplus porcatus</i> (Pk.)	-	-	1	-	-	-	
<i>Lesteva longoelytrata</i> (Gz.)	2	1	3	-	-	1	
<i>Carpelimus bilineatus</i> Step.	-	1	-	-	-	-	
<i>Platystethus cornutus</i> gp.	2	2	1	-	1	-	
<i>Anotylus rugosus</i> (F.)	1	-	-	-	-	1	7
<i>A. sculpturatus</i> gp.	-	-	1	-	-	-	7
<i>Stenus</i> spp.	-	1	1	1	2	-	
<i>Lathrobium</i> spp.	-	-	-	-	1	1	
<i>Rugilus</i> sp.	-	-	1	-	-	-	
<i>Xantholinus linearis</i> (Ol.)	1	1	-	-	-	-	
<i>X. linearis</i> (Ol.) or <i>longiventris</i> Heer	1	-	-	1	1	-	
<i>Philonthus</i> spp.	-	-	1	2	2	-	
<i>Staphylinus caesareus</i> Ced. or <i>dimidiaticornis</i> Gem	-	-	1	-	-	-	
<i>S. olens</i> Müll.	-	-	1	-	-	-	
<i>Tachyporus</i> sp.	-	-	-	-	1	-	
<i>Tachinus</i> sp.	1	-	2	-	1	1	
Aleocharinae indet.	3	1	2	1	3	1	
<i>Geotrupes</i> sp.	1	1	1	1	-	-	2
<i>Aphodius distinctus</i> (Müll.)	1	1	-	-	-	-	2
<i>A. granarius</i> (L.)	-	-	2	-	-	1	2
<i>A. porcus</i> (F.)	-	-	-	1	-	-	2
<i>A. pusillus</i> (Hbst.)	-	-	1	-	-	-	2
<i>A. cf. sphacelatus</i> (Pz.)	1	1	3	2	1	1	2
<i>Aphodius</i> spp.	1	-	-	1	2	1	2
<i>Oxyomus sylvestris</i> (Scop.)	-	-	-	-	1	-	
<i>Onthophagus ovatus</i> (L.)	2	-	1	-	1	-	2
<i>O. taurus</i> (Schreb.)	-	-	-	-	1	-	2
<i>Onthophagus</i> sp. (not <i>ovatus</i> )	1	-	2	-	1	-	2
<i>Hoplia philanthus</i> (Fues.)	-	-	-	1	-	-	11
<i>Phyllopertha horticola</i> (L.)	2	1	1	1	2	-	11
<i>Dascillus cervinus</i> (L.)	1	1	-	-	-	-	
<i>Byrrhus</i> sp.	-	-	1	-	-	-	
<i>Dryops</i> sp.	-	-	-	1	1	-	1
<i>Agrypnus murinus</i> (L.)	-	1	-	1	-	2	11
<i>Agriotes lineatus</i> (L.)	-	-	-	-	-	1	11
<i>A. obscurus</i> (L.)	-	-	-	1	-	-	11
<i>Agriotes</i> sp.	2	-	1	1	-	-	11

Table 27 Coleoptera (continued)

Archaeological work at Appleford Sidings

Feature	Min No. of Individuals						Species Group
	Middle Bronze Age					RB	
	180	288	456	517	528	4014	
Context	287	288	458	529	528	4015	
Sample	68	67	110	112	113	400	
Sample volume litres (weight kg)	10	10	12	10	10	(1.0)	
<i>Cantharis</i> sp.	-	-	-	1	-	-	
<i>Anobium punctatum</i> (Deg.)	-	-	-	1	-	-	10
<i>Malachius</i> sp.	-	-	-	1	-	-	
<i>Brachypterus urticae</i> (F.)	1	-	-	-	1	-	
<i>Atomaria</i> sp.	1	2	1	-	-	1	
<i>Olibrus</i> sp.	-	-	-	1	-	-	
<i>Enicmus transversus</i> Ol.	1	-	-	-	1	-	8
Corticariinae indet.	-	-	-	1	2	-	8
<i>Donacia impressa</i> Pk.	-	-	-	-	1	-	5
<i>Chrysolina polita</i> (L.)	-	-	-	1	-	-	
<i>Gastrophysa polygoni</i> (L.)	1	-	-	-	-	-	
<i>Phaedon</i> sp.	1	-	-	-	-	-	
<i>Hydrothassa glabra</i> (Hbst.)	1	-	-	-	2	-	
<i>Phyllodecta</i> sp.	-	-	-	-	-	1	4
<i>Longitarsus</i> spp.	3	1	2	1	2	-	
<i>Altica</i> sp.	-	-	1	-	-	-	
<i>Crepidodera ferruginea</i> (Scop.)	-	-	-	1	-	-	
<i>Chalcoides</i> sp.	-	-	-	1	-	1	4
<i>Chaetocnema concinna</i> (Marsh.)	2	2	-	1	1	-	
<i>Apion</i> spp.	2	-	1	1	2	5	3
<i>Phyllobius</i> sp.	1	-	-	-	-	-	
<i>Sitona</i> cf. <i>hispidulus</i> (F.)	-	-	-	-	1	-	3
<i>Sitona</i> sp.	-	-	1	-	1	-	3
<i>Hypera</i> sp. (not <i>punctata</i> )	-	1	-	-	-	-	
<i>Alophus triguttatus</i> (F.)	-	-	-	1	2	-	
<i>Acalles turbatus</i> Boh.	2	-	-	-	-	-	4
<i>Ceuthorhynchidius troglodytes</i> (F.)	-	-	-	-	1	-	
Ceuthorhynchinae indet.	1	2	-	1	1	-	
<i>Anthonomus</i> cf. <i>rubi</i> (Hbst.)	2	1	-	-	-	-	
<i>Tychius</i> sp.	-	1	-	-	1	-	
<i>Mecinus pyraister</i> (Hbst.)	-	1	-	-	1	-	
<i>Scolytus rugulosus</i> (Müll.)	1	-	-	-	1	-	4
<b>Total</b>	<b>118</b>	<b>101</b>	<b>104</b>	<b>61</b>	<b>71</b>	<b>31</b>	

Table 27 Coleoptera (continued)

**Results**

**Period 2 (middle Bronze Age) contexts (Table 29)**

*Charred cereal grain*

All of the middle Bronze Age contexts, except context 5510 (from waterhole 5512), contained charred

cereal grains of predominantly *Triticum* sp. (wheat) and *Hordeum vulgare* (barley), with limited *Avena* sp. (oats) in contexts 346 and 1349. Most of the barley grains appeared to be of the hulled variety, however, the specimens in context 84 were too degraded to exhibit any identifiable remains of lemma or palea. All of the contexts, again, except context 5510, contained a relatively high number of indeterminate grains too degraded to identify with any degree of certainty,

Table 28 Other Insects

Feature	Min No. of Individuals					RB
	Middle Bronze Age				4014	
	180	288	456	517		
Context	287	288	458	529	528	4015
Sample	68	67	110	112	113	400
Sample volume litres (weight kg)	10	10	12	10	10	(1.0)
<i>Pentatoma rufipes</i> (L.)	-	-	-	1	-	-
Anthocorinae indet.	3	1	2	-	1	-
<i>Gerris</i> sp.	1	-	-	-	-	-
<i>Philaenus</i> or <i>Neophilaenus</i> sp.	1	2	-	-	-	-
<i>Aphrodes bicinctus</i> (Schr.)	1	1	-	1	-	2
<i>Aphrodes</i> sp.	-	-	1	-	1	1
Aphidoidea indet.	1	2	1	-	2	-
Homoptera indet.	1	-	-	-	-	1
Trichoptera indet. - larva	-	-	-	-	1	-
Trichoptera indet. - larval case	-	-	-	-	2	-
<i>Myrmica rubra</i> (L.) or <i>ruginodis</i> (Nyl.) – wkr.	-	-	1	-	-	-
Hymenoptera indet.	1	-	2	2	-	-
Chironomidae - larval head capsules	+	+	+	+	+	-
<i>Dilophus febrilis</i> (L.) or <i>femoratus</i> (Meig.)	-	-	1	-	-	-
Diptera indet. - puparium	1	-	-	-	1	-
Diptera indet. - adult	2	-	3	-	1	-

+ present

plus a high number of grain fragments. Contexts 84 (from waterhole 414) and 346 (from pit 337) contained the highest number of cereal grains with 133 specimens in each.

#### Charred cereal chaff

Only two of the middle Bronze Age contexts, contexts 84 (from waterhole 414) and 170 (from waterhole 168) contained appreciable amounts of cereal chaff. The other four contexts either contained no chaff (as in context 5510) or a very limited (<5) number of fragments. Much of the cereal chaff in context 84 consisted of *Triticum* sp. glume base fragments, however, a number of glume bases and spikelet forks could be accurately identified as *Triticum spelta* (spelt wheat). Context 170 also contained a number of spelt wheat glume bases and spikelet forks as well as one barley rachis and several oat awn fragments. Both samples contained a very limited amount of culm nodes.

#### Other charred edibles

Context 84 (from waterhole 414) contained a number of charred remains that could be considered as collected/cultivated foodstuffs. These included *Corylus avellana* (hazelnut) shell fragments, *Brassica* sp. (cabbages), and fragments of *Vicia/Lathyrus/Pisum* (vetches/beans/peas). It is not easy to separate the seeds of the brassicas and therefore it is difficult to

determine whether the seeds came from a cultivated or collected (wild) source. Additionally, given the size of the vetches/beans/peas (i.e. < 5mm) they are unlikely to be from a cultivated variety of plants. Even if these *taxa* were collected as a food source given the relatively low numbers they were unlikely to have formed a major part of the diet.

#### Charred weed seeds

Context 84 (from waterhole 414) and context 40 (from waterhole 168) were both rich in charred weed seeds. These included a number of ruderals that occur on cultivated ground such as *Chenopodium/Atriplex* (goosefoots/oraches), *Stellaria media* (common chickweed), *Rumex acetosella* (sheep's sorrel) and *Tripleurospermum inodorum* (scentless mayweed). *Poaceae* (grass family) seeds were notably abundant in both these contexts, as were *Fabaceae* (pea family) seeds, which are prevalent in open grassland. Both contexts also contained a number of *taxa* indicative of wet/damp conditions, such as *Montia* sp. (blinks) and *Galium* sp. (bedstraws). Context 40 in particular, contained a relatively high number of *Juncus* sp. (Rushes) and *Eleocharis palustris* (common spike-rush) seeds. The same context also contained five cf. *Sorbus* sp. (whitebeam) seeds, a plant typical of wooded, scrubby ground. The remaining contexts contained a limited number of similar *taxa*, however context 1018 from waterhole 5512 contained just one identifiable



species, which was *Rumex obtusifolius* (broad-leaved dock), prevalent on waste/cultivated soils.

#### *Waterlogged weed seeds*

Context 5510 (sample 1018) from waterhole 5512 was the only context to contain any waterlogged seeds. These included *taxa* typical of waste/cultivated ground, such as *Rumex obtusifolius* and *Stellaria media* and also *taxa* prevalent in hedgerows/wood borders and scrub such as *Torilis japonica* (upright hedge-parsley), *Rubus fruticosus* (blackberry) and *Prunus* sp. (sloe/wild cherry).

#### *Mineralised weed seeds*

Context 84 (from waterhole 414) contained 4 mineralised *Galium* sp. seeds.

#### *Other material*

All of the middle Bronze Age contexts contained charcoal fragments and some contained calcined mammal bone fragments (see Table 29). Context 84 from waterhole 414, however, also contained a number of 'cultural' remains such as indeterminate fragments of leather and parts of four very small amber beads (see Boyle, 'Amber beads', Chapter 3, above).

### **Period 3 (Romano-British) contexts (Table 30)**

#### *Charred cereal grain*

The quantity of charred cereal grain (both determinate and indeterminate) in each context varied considerably and ranged from 5 cereal grains in context 5259 (from ditch 5235) to c 1776 in context 5363 (from ditch 5362). The quantity of charred cereal fragments mirrored this range, with 30 fragments in context 5259, and > 10,000 in context 5363. The dominant determinate cereal *taxa* were *Triticum* sp. (wheat), followed by a much lower quantity of *Hordeum vulgare* (barley). Two *Avena* sp. (oat) grains were present in contexts 5259 and 5409; however these are likely to be from a wild variety. Context 5332 (from ditch 5318) contained three *Secale cereale* (rye) grains. A relatively high concentration of the cereal grains from context 5409 (68 out of 324) exhibited sprouted embryos.

#### *Charred Cereal Chaff*

The quantity of cereal chaff in each of the contexts, again, broadly mirrored that of the cereal grains with context 5363 containing the most having over 7000 items. All of the samples contained a higher concentration of chaff relative to grain apart from context 5332 (from ditch 5318). The dominant cereal chaff in all the contexts was *Triticum* sp. (wheat) glume base

fragments and *Triticum spelta* (spelt wheat) glume bases and spikelet forks. A number of *Hordeum vulgare* (barley) rachis was also present in context 5363 (from ditch 5362). Context 5363 and 5409 (from ditch 5319) contained noticeable amounts of *Avena* sp. (oat) awn fragments, and context 5259 (from ditch 5235) contained one oat floret base that was unfortunately too degraded to accurately identify to species level.

#### *Other Charred Edibles*

The number of charred seeds from other collected/cultivated *taxa* was limited and was similar to the range present in the middle Bronze Age contexts. This included hazelnut shell fragments, brassica seeds, and vetches/peas. The low amount, however suggests that none were collected or cultivated on a large scale, the seeds having possibly entered the feature as part of crop processing waste.

#### *Charred Weed Seeds*

Like the material from the middle Bronze Age contexts, the Romano-British contexts contained a range of *taxa* indicative of open grassland and/or cultivated soils with an element of wet/damp ground. *Fabaceae* (pea family) and *Poaceae* (grass family) seeds were notably abundant in context 5363 (from ditch 5362).

#### *Other Material*

All of the Romano-British contexts contained charcoal fragments, and contexts 5332 and 5362 contained limited mammal bone fragments.

## **Discussion**

### **Period 2 (middle Bronze Age) contexts**

The charred plant remains from the middle Bronze Age waterhole contexts 84 and 170 are likely to represent crop-processing waste from the settlement that was dumped into the features. As this type of material is allochthonous; the weed seeds only tend to represent the growing conditions prevalent at the site of cereal cultivation and not the environment of the waterholes themselves. This makes it difficult to determine the original use of the features through the botanical evidence. Given that they were described as waterholes associated with a number of field systems however, it is possible that they were utilised for dumping waste material after they went out of use as watering holes for livestock. In the case of context 84, other 'rubbish' such as leather and personal items was also deposited/dropped in the feature.

Context 5510, from waterhole 5512, which was situated away from the main concentration of sites,

contained mainly waterlogged seeds that are likely to reflect the immediate environment, which appears to have been a mixture of waste and cultivated ground with hedgerows/scrub/open woodland. The fact that this context contained no charred cereal grains or chaff and only limited charred weed seeds suggests that it was never used for the dumping of domestic waste. The context did, however, contain a number of charcoal fragments including several *Prunus* sp. (cherries/blackthorn) fragments (see Thompson and Francis, below) that complements the presence of *Prunus* sp. stones in this sample. Jones (1978) mentions that cherries/blackthorn tend to colonise land that is reverting back from cleared woodland, especially where there is a certain amount of animal grazing, supporting the case for animal husbandry taking place at the site. The Bronze Age environmental evidence from Barrow Hills, Radley recorded a similar suite of scrub *taxa*, which Robinson (1999) suggested tends to develop following a reduction in land management (see also Robinson above).

The limited amount of cereal chaff in the contexts from the pits (346, 1349 and 1564) suggests that they were either used for dumping spoilt grain, or as storage pits.

Evidence for the type of cereals being cultivated during the Bronze Age in southern Britain is very limited and therefore there is little material with which to compare this site. It is thought that the most common cultivated wheat, until at least the end of the Bronze Age, was *Triticum dicoccum*, emmer wheat (Moffett (1999) and glumes of emmer wheat were discovered from a mid-late Bronze Age context at Eight Acre Field, Radley (Robinson 1995, 49). However there are exceptions to this rule as the earliest phase (middle Bronze Age) of the site at Ashville Trading Estate, Abingdon, contained evidence of bread/club wheat and some form of barley (Jones 1978). Although remains of emmer were present in the late Neolithic, Iron Age, and Romano-British features at Ashville, it was absent from the middle Bronze Age contexts. Jones and Robinson (1986) suggest that this pattern is consistent with the national picture which suggests that there is a reduction in emmer cultivation during the Bronze Age in Britain. The evidence from Appleford Sidings indicates that the main crop being cultivated was spelt wheat with barley as a secondary crop. The weed seeds associated with the cereal crops suggest that a variety of soils were being cultivated including wet/damp habitats. It appears that wild pea and grasses in particular, were very invasive and were consequently gathered with the harvest. *Fabaceae* (pea family) seeds have been consistently recorded with crop remains from the late Iron Age onwards in central and southern Britain (e.g. Jones 1978; Pelling 2000, 326-7) and as these

plants are known nitrogen fixers they are often associated with decreasing soil fertility. If correct, this suggests that soil exhaustion may have become a problem at Appleford Sidings as early as the Bronze Age period.

### *Period 3 (Romano-British) contexts*

The charred material from the Romano-British contexts is likely to represent crop-processing waste dumped into the ditches after being utilised as fuel. The relatively high concentration of grains with sprouted embryos in context 5409, however, suggests that this material may also have been made up of spoilt grain. The cereal *taxa* are consistent with other evidence from the area as spelt wheat and barley appear to be the characteristic cereal crops grown in much of central and southern Britain during the Romano-British period. Remains of spelt wheat, bread/club wheat and barley were also recovered from Romano-British waterholes/wells during the 1973 excavations at Appleford (Robinson 1980). The nature of the weed seeds from the Romano-British contexts also mirrors those from middle Bronze Age contexts. Both contained weed seeds that suggest that a variety of soils were being cultivated, including some damp/wet ground. Similarly, the Roman-British farmers also had to contend with very invasive crop weeds, as they did during the middle Bronze Age.

### **Conclusion**

The charred plant remains from the two phases of occupation at Appleford Sidings reflect a similarity in arable practices carried out in the middle Bronze Age and the Romano-British period. The evidence suggests that both phases of activity included the cultivation of similar crops, chiefly spelt wheat and barley, on similar areas of land subject to the invasion of similar crop weeds. Although several Iron Age enclosures were recorded during the 1973 excavation, no charred plant remains from that period were analysed. In the absence of evidence of Iron Age activity at the present site it is difficult to assess whether the evidence here represents continuity in arable practices or not.

The two sampled waterholes situated within the main concentration of middle Bronze Age features appear to have been utilised for dumping domestic waste after their use as waterholes had ceased. The waterhole situated away from the main focus of activity provided evidence for a habitat of rejuvenated scrub/woodland edge, possibly subject to animal grazing. This feature was never utilised for the dumping of domestic waste.

The Romano-British evidence is consistent with that from other areas of southern Britain, the Bronze Age evidence, however, has provided valuable information about a period that is relatively poorly understood.

Context No	84	170	346	1349	1564	5510
Sample	84	40	81	202	205	1018
Feature	Uppermost fill of Waterhole 414	Fill of Waterhole 168	Fill of Pit 337	Fill of Pit 1348	Fill of Pit 1561	Fill of Waterhole 5512
Phase	MBA	MBA	MBA	MBA	MBA	MBA
Sample size - Litres	45	40	40	14	20	40
<b><sup>1</sup>Charred Cereal Grain</b>						
<i>Triticum</i> sp.	20	6	10	1	9	-
<i>Hordeum vulgare</i>	-	20	8	2	3	-
<i>Hordeum vulgare</i>	18	-	-	-	-	-
<i>Avena</i> sp.	-	-	1	1	-	-
Cerealia indet.	95	18	114	10	33	-
<b>Total Cereal Grain</b>	<b>133</b>	<b>44</b>	<b>133</b>	<b>14</b>	<b>45</b>	<b>-</b>
Cerealia indet. frag.	c 1000	c 300	c 600	c 100	c 500	-
Cerealia indet.	2	2	-	-	-	-
<b><sup>1</sup>Charred Cereal Chaff</b>						
<i>Triticum</i> sp.	54	-	-	1	-	-
<i>Triticum spelta</i>	6	3	-	-	-	-
<i>Triticum spelta</i>	12	21	-	-	-	-
<i>Hordeum vulgare</i>	-	1	-	-	-	-
<i>Avena</i> sp.	-	3	-	-	-	-
culm node	3	5	3	-	1	-
<b>Total Chaff</b>	<b>75</b>	<b>43</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>-</b>
<b><sup>1</sup>Other Charred Edibles</b>						
<i>Corylus avellana</i> frag.	12	-	-	-	-	-
<i>Brassica</i> sp.	32	1	-	-	-	-
<i>Vicia/Lathyrus/Pisum</i> frags.	15	-	-	-	-	-
<i>Vicia/Lathyrus/Pisum</i>	4	1	1	-	-	-
<b>Total Charred Edibles</b>	<b>63</b>	<b>2</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b><sup>1</sup>Charred Weed Seeds</b>						
<i>Ranunculus repens</i> -type	2	1	-	-	-	-
<i>Ranunculus scardus/parviflorus</i>	6	3	-	-	-	-
<i>Papaver</i> sp.	-	1	-	-	-	-
<i>Chenopodium album</i>	-	31	4	-	-	-

Context No	84	170	346	1349	1564	5510
Sample	84	40	81	202	205	1018
Feature	Uppermost fill of Waterhole 414	Fill of Waterhole 168	Fill of Pit 337	Fill of Pit 1348	Fill of Pit 1561	Fill of Waterhole 5512
Phase	MBA	MBA	MBA	MBA	MBA	MBA
Sample size - Litres	45	40	40	14	20	40
<i>Chenopodium/Atriplex</i>	10	6	-	-	-	-
<i>Montia</i> sp.	28	2	-	-	-	-
<i>Stellaria media</i>	6	17	-	-	-	-
<i>Polygonum aviculare</i>	-	3	-	-	-	-
<i>Polygonum</i> undiff.	4	-	2	-	2	-
<i>Rumex acetosella</i>	44	2	3	1	-	-
<i>Rumex obtusifolius</i>	12	4	-	-	-	15
<i>Viola</i> sp.	-	1	-	-	-	-
cf. <i>Sorbus</i> sp.	-	5	-	-	-	-
Fabaceae <4mm	42	77	-	2	2	-
<i>Trifolium/Medicago/Melilotus</i>	4	2	-	-	-	-
<i>Prunella</i> sp.	-	10	-	-	-	-
<i>Plantago major</i>	-	3	-	-	-	-
<i>Rhinanthus minor</i>	2	-	2	-	-	-
<i>Galium</i> sp.	10	11	-	-	-	-
<i>Anthemis cotula</i>	-	6	-	-	-	-
<i>Tripleurospermum inodorum</i>	20	2	-	-	-	-
cf. <i>Tripleurospermum inodorum</i>	10	-	-	-	-	-
<i>Carex</i> sp.	4	8	2	-	-	-
<i>Carex</i> sp.	6	4	-	-	-	-
<i>Juncus</i> sp.	-	27	-	-	-	-
<i>Eleocharis palustris</i>	2	75	-	-	-	-
Poaceae <2mm	134	30	-	-	-	-
Poaceae 2-4mm	32	66	3	-	-	-
Poaceae >4mm	4	-	-	1	-	-
<i>Bromus</i> sp.	2	1	-	2	3	-
Indet.	22	8	3	2	-	1

Table 29 Charred plant remains: Period 2 (middle Bronze Age) contexts

Context No	84	170	346	1349	1564	5510
Sample	84	40	81	202	205	1018
Feature	Uppermost fill of Waterhole 414	Fill of Waterhole 168	Fill of Pit 337	Fill of Pit 1348	Fill of Pit 1561	Fill of Waterhole 5512
Phase	MBA	MBA	MBA	MBA	MBA	MBA
Sample size - Litres	45	40	40	14	20	40
Unknown seeds	-	5	-	-	-	1
Total Charred Weed Seeds	406	411	19	8	7	17
<b><sup>2</sup>Waterlogged Weed Seeds</b>						
<i>Ranunculus sardous/parriflorus</i>	-	-	-	-	-	1
<i>Rumex obtusifolius</i>	-	-	-	-	-	1
<i>Torilis japonica</i>	-	-	-	-	-	1
<i>Rubus fruticosus</i>	-	-	-	-	-	1
<i>Prunus</i> sp. (whole)	-	-	-	-	-	2
<i>Prunus</i> sp. (frag.)	-	-	-	-	-	2
<i>Stellaria media</i>	-	-	-	-	-	1
Indet.	-	-	-	-	-	1
Indet.	-	-	-	-	-	1
<b><sup>1</sup>Mineralised Weed Seeds</b>						
<i>Galium</i> sp.	4	-	-	-	-	-
Bedstraws	4	-	-	-	-	-
<b><sup>3</sup>Other</b>						
Charcoal frag.	+	+	+	+	+	+
Charred Ericaceous leaves	-	+	-	-	-	-
Charred Seed pods	+	-	-	-	-	-
Mammal bone frag.	+	-	+	-	+	-
Calcined bone frag.	+	+	+	-	+	-
Twig fragments	-	-	-	-	-	+
leather	+	-	-	-	-	-
Beads	+	-	-	-	-	-
Insects	+	-	+	-	-	-

<sup>1</sup>Actual counts.

<sup>2</sup>Counts based on a scale of 1-5 where 1=0-5, 2=5-25, 3=25-50, 4=50-100 and 5=>100.

<sup>3</sup>+ = Present, - = Absent.

Table 29 Charred plant remains: Period 2 (middle Bronze Age) contexts (continued)

Chapter Five

		Context No	5259	5332	5363	5409
		Sample	1014	1011	1003	1006
		Feature	Fill of Ditch 5235	Fill of Ditch 5318	Fill of Ditch 5362	Fill of Ditch 5319
		Phase	RB	RB	RB	RB
		Sample size - Litres	25	23	36	33
<b><sup>1</sup>Charred Cereal Grain</b>						
<i>Triticum</i> sp.	Wheat		2	60	762	12
<i>Hordeum vulgare</i>	Hulled barley		-	8	14	2
<i>Avena</i> sp.	Oats		2	-	-	2
<i>Secale cereale</i>	Rye		-	3	-	-
Cerealia indet.	Indeterminate grains		1	65	c 1000	308
	<b>Total Cereal Grain</b>		<b>5</b>	<b>136</b>	<b>c 1776</b>	<b>324</b>
Cerealia indet. frag.			30	c 950	>10,000	>4000
Cerealia indet.	Sprouted embryos		6	5	6	68
<b><sup>1</sup>Charred Cereal Chaff</b>						
<i>Triticum</i> sp.	Wheat glume base frag.		90	78	810	>5000
<i>Triticum spelta</i>	Spelt wheat glume base		176	28	>5000	-
<i>Triticum spelta</i>	Spelt wheat spikelet forks		1	8	>1000	-
<i>Hordeum vulgare</i>	Barley rachis		-	-	20	-
<i>Avena</i> sp.	Oat floret base		1	-	-	-
<i>Avena</i> sp.	Oat awn frag.		3	5	237	272
	culm node		-	2	-	-
	<b>Total Chaff</b>		<b>271</b>	<b>121</b>	<b>&gt;7000</b>	<b>&gt;5000</b>
<b><sup>1</sup>Other Charred Edibles</b>						
<i>Corylus avellana</i> frag.	Hazelnut shell frag.		1	-	4	-
<i>Brassica</i> sp.	Cabbages		-	3	20	8
<i>Vicia/Lathyrus/Pisum</i>	Vetches/Peas/Garden pea >4mm		-	-	-	2
	<b>Total Charred Edibles</b>		<b>1</b>	<b>3</b>	<b>24</b>	<b>10</b>
<b><sup>1</sup>Charred Weed Seeds</b>						
<i>Chenopodium album</i>	Fat-hen		1	-	-	-
<i>Chenopodium/Atriplex</i>	Goosefoots/Oraches		-	-	10	-
Caryophyllaceae	Pink family		-	-	6	-
<i>Polygonum lapathifolium</i>	Pale Persicaria		-	1	-	-
<i>Polygonum undiff.</i>	Knotgrasses		-	-	-	4
<i>Rumex acetosella</i>	Sheep's Sorrel		-	1	10	-
<i>Rumex obtusifolius</i>	Broad-leaved Dock		1	-	-	-
Fabaceae <4 mm	Pea family		-	32	c 1348	164
<i>Trifolium/Medicago/Melilotus</i>	Clovers/Medicks/Melilots		4	1	-	8
<i>Prunella vulgaris</i>	Selfheal		-	1	-	-
<i>Veronica</i> sp.	Speedwells		-	-	-	4
<i>Galium</i> sp.	Bedstraws		-	-	-	4
<i>Tripleurospermum inodorum</i>	Scentless Mayweed		5	3	6	-
<i>Stellaria media</i>	Common Chickweed		-	3	-	-
<i>Carex</i> sp. trigynous	Sedges		-	9	-	-
<i>Carex</i> sp. lenticular	Sedges		-	3	-	8

<sup>1</sup> Actual Counts

<sup>2</sup>+ = Present, - = Absent

Table 30 Charred plant remains: Period 3 (Romano-British) contexts

*Archaeological work at Appleford Sidings*

		Context No	5259	5332	5363	5409
		Sample	1014	1011	1003	1006
		Feature	Fill of Ditch 5235	Fill of Ditch 5318	Fill of Ditch 5362	Fill of Ditch 5319
		Phase	RB	RB	RB	RB
		Sample size - Litres	25	23	36	33
Poaceae <2 mm	Grass family		4	16	12	20
Poaceae 2-4 mm	Grass family		27	1	c 1124	38
<i>Bromus</i> sp.	Bromes		1	1	620	8
Indet.	Indeterminate seeds		2	10	-	-
Indet.	Unknown seeds		-	1	-	-
<b>Total Charred Weed Seeds</b>			<b>45</b>	<b>83</b>	<b>&gt;3000</b>	<b>250</b>
<b><sup>2</sup>Other</b>						
Charcoal frag.			+	+	+	+
Mammal bone frag.			-	+	+	-

<sup>1</sup> Actual Counts

<sup>2</sup>+ = Present, - = Absent

Table 30 Charred plant remains: Period 3 (Romano-British) contexts (continued)

Table 31 Charcoal: Contexts and samples selected for analysis

Sample no.	Context no.	Feature no.	Feature type	Period	Notes
2	2102		Cremation	BA	
225	3126	3125	Pit	ER	
401	4185	4184	Cremation	ER	Western half of cremation
403	4185	4184	Cremation	ER	Eastern half of cremation
1018	5510	5512	Pit/Waterhole	BA	

Table 32 Charcoal: Weights of whole samples and weights of fractions

Period	Bronze Age	Bronze Age	Early Roman	Early Roman
Feature type	Cremation	Pit / waterhole	Cremation (W and E)	Pit
Sample no.	2	1018	401 + 403	225
<b>Context no.</b>	<b>2102</b>	<b>5510</b>	<b>4185</b>	<b>3126</b>
Feature no.		5512	4184	3125
Volume of soil processed (litres)	60	40	10 + 40	10
Weight of >8mm fraction (grammes)	55.3	70.9		327.5
Weight of 4-8mm fraction (grammes)	72.1	92		131.4
Weight of 2-4mm fraction (grammes)	167.4	72.4		85.6
Weight of <2mm fraction (grammes)	802.9	134.9		133.4
<b>Total weight of sample (grammes)</b>	<b>1097.7</b>	<b>370.2</b>	<b>3.3 + 8</b>	<b>677.9</b>
<b>Concentration of charcoal (grammes of charcoal per litre of soil floated)</b>	<b>18.295</b>	<b>9.255</b>	<b>0.226</b>	<b>67.79</b>

**CHARCOALS**

by Gill Thompson and Robert Francis

**Introduction**

The excellent preservation of wood charcoal from a number of features within the Bronze Age and Early Roman landscapes at Appleford Sidings led to the decision to analyse material from four selected archaeological features. The samples selected for charcoal analysis were two Bronze Age contexts: a cremation (context 2102) and a pit or waterhole (context 5510), and two early Roman phase features: a cremation (context 4184) and a pit (context 3125) (Table 31).

These samples had been recovered by flotation and were from flots which had previously been sorted for other charred plant macro remains.

**Aims of the charcoal analysis**

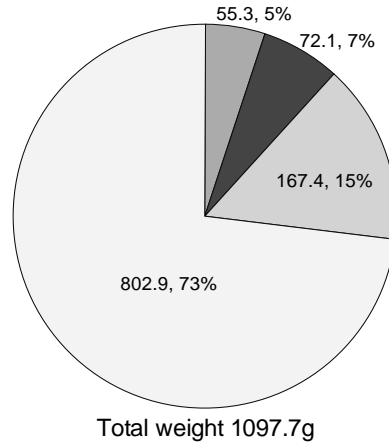
These particular features were prioritised because they offered the opportunity to explore the selection of woods used for cremation pyres during two phases at the site, and to compare the cremation residues with material from pits, which presumably represent domestic waste (D Challinor pers comm). The charcoal assemblages reflect past selection of fuelwoods for specific purposes, but were also probably sourced from the area surrounding the site. They consequently combine cultural and environmental information. The specific objectives of the charcoal analysis were to characterise the samples in terms of their fragmentation and their taxonomic richness and to compare the materials within each phase.

**Charcoal fragmentation and concentration**

**Methodology**

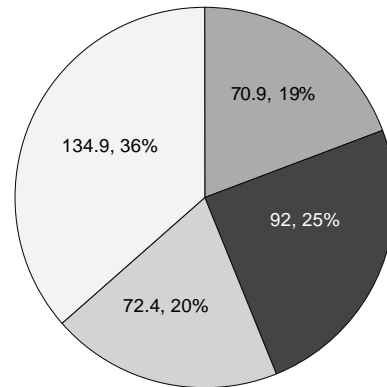
Five samples from four contexts were analysed. Three of these samples (sample nos 2, 1018 and 225 from contexts 2102, 5510 and 3126 respectively) were weighed, sieved into >8 mm, 4-8 mm and 4-2 mm and <2 mm fractions and then each fraction was weighed. The fourth context (4185, the Early Roman cremation) was represented by two flot samples and two other small charcoal samples representing samples from the east and the west of the cremation feature. These samples were significantly smaller than the others. Charcoals of identifiable size (>4 mm) were sorted from the flots. The weight of the total charcoal from this context was recorded but the material was not sieved as it amounted to fewer than 20 fragments. The aim of this was to characterise the overall assemblage in terms of its size, degree of fragmentation and concentration in relation to the quantity of soil which was originally processed by flotation. The results are set out in Table 32 and Figure 33.

Context 2102: Bronze Age Cremation



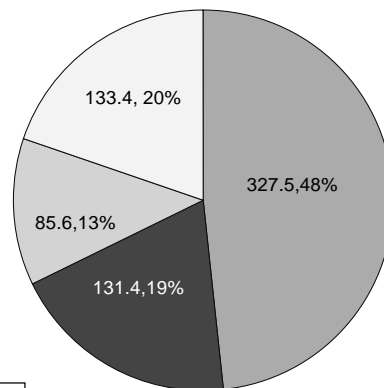
Total weight 1097.7g

Context 5510: Bronze Age Pit / Waterhole



Total weight 370.2g

Context 3126: Early Roman Pit



Total weight 677.9g



Figure 34 Charcoal: Assemblage composition in terms of fragment size (based on figures in Table 32)



Table 33 Charcoal: Assemblage composition by charcoal type (numbers of fragments and percentages)

Period	Bronze Age	Bronze Age	Early Roman	Early Roman
Feature type	Cremation	Pit / waterhole	Cremation (W and E)	Pit
Sample no.	2	1018	401	225
Context no.	2102	5510	4185	3126
Feature no.		5512	4184	3125
Alnus		13 (21.66%)		
Corylus		26 (43.33%)	9 (69.2%)	
<i>Fraxinus</i>		1 (1.66%)	1 (7.6%)	
Pomoideae		3 (5%)		
Prunus	35 (87.5%)	3 (5%)		60 (100%)
Quercus	5 (12.5%)	13 (21.66%)	1 (7.6%)	
Taxus		1 (1.66%)		
Indeterminate			2 (15.4%)	
<b>Total number of fragments</b>	<b>40</b>	<b>60</b>	<b>13</b>	<b>60</b>

### Discussion

These charcoal samples were produced from contexts with an extreme variation in concentration of charcoal in the feature. The richest or most concentrated charcoal deposit was from the early Roman pit (context 3126, with 67.79 g of charcoal per litre of soil processed), followed by the Bronze Age cremation (2102, with 18.295 g per litre soil), then the Bronze Age pit/waterhole (5510, with 9.255 g per litre soil) then the relatively meagre sample from the early Roman cremation where there was less than 1 g of charcoal produced from each litre of soil which was floated on-site.

The samples also showed different patterns of fragmentation. The sample containing the greatest proportion of large fragments (>4 mm fraction) was the early Roman pit, again followed by the Bronze Age pit/waterhole and the Bronze Age cremation.

### Charcoal identification

#### Methodology

Standard methods (Leney and Casteel 1975) were followed, fracturing individual fragments in three planes and viewing the wood anatomy using a Leica MZ11 low power stereomicroscope at x10-40 and an epi-illuminating Olympus BX41M microscope at magnifications of x100-500. The wood anatomy was compared with published sources (Schweingruber 1982; Hather 2000) and with the modern charcoal reference collection of the Department of Archaeological Sciences at Bradford.

The small sample (>4 mm) from the early Roman cremation was examined in entirety, as there were only thirteen identifiable fragments. For the other contexts, initial sub-samples of 20 fragments from both the >8 mm and 4-8 mm fractions were examined from each context. The assemblage from the Bronze Age pit/waterhole was the most diverse in terms of

taxonomic richness, and an additional 10 fragments were examined from both the >8 mm and 4-8 mm fractions.

### Results

#### Discussion

Charcoals from three of the four contexts examined from Appleford Sidings were very well preserved, in large fragments with clearly visible anatomical features. These were the Bronze Age cremation, the Bronze Age pit/waterhole and the early Roman pit. By contrast, the small assemblage from the early Roman cremation was poorly preserved in terms of numbers of fragments and in the distortion of the wood anatomy. These fragments were harder to identify as the anatomy had been modified, perhaps by burning at a higher temperature than the other material. Furthermore, the anatomy of charcoal from this particular context was also obscured by iron deposits on the surfaces and within the wood structure itself. All these aspects contributed to the fact that this context contains the only 'indeterminate' material from this analysis.

The samples can be contrasted in terms of their taxonomic composition (Table 33). The material from the early Roman pit (3126) was all from a single wood: *Prunus*, which in Britain includes the cherries and blackthorn. The early Bronze Age cremation (2102) included only *Prunus* and *Quercus* (oak) while the early Roman cremation (4185) included three species (plus some indeterminate material): *Corylus* (hazel), Pomoideae (the fruit trees, Apple, Pear, Hawthorn and Whitethorn) and *Quercus* (oak). The most diverse assemblage was from the Bronze Age pit, with seven taxa represented: dominantly *Corylus* (hazel), with *Quercus* (oak), *Alnus* (alder), Pomoideae, *Prunus* and a single piece each of both *Fraxinus* (ash) and *Taxus* (yew). This find of yew is relatively unusual in Brit-

ish archaeological assemblages.

It is perhaps surprising that the early Roman pit produced only one type of charcoal, suggesting that the material had been deposited in a single event. It will be useful to consider the source of other materials from this pit. Comparison of the two Bronze Age deposits supports the hypotheses that specific woods were selected for ritual mortuary purposes (in this case *Prunus* with oak), and secondly that the pit contained fuel residues from several fires or from different types of fire where the fuel was sourced from a variety of trees.

The early Roman pit and the Bronze Age cremation both contain significant quantities of *Prunus* charcoal. The wood anatomy of the wild cherry (*Prunus avium*) and the blackthorn (*Prunus spinosa*) can be distinguished on the basis of the width of the rays seen in tangential longitudinal section. The material from these contexts includes examples which could have come from either species. Four fragments of charred fruit stones were extracted from the Bronze Age cremation and these have been provisionally noted to be in the same size range as *Prunus spinosa* (E Huckerby pers comm) and have the surface pitting visible in modern material (see Schoch *et al* 1988, 170). The presence of these stones within this sample may suggest that some branches with fruit attached were used to fuel the cremation. This also offers an indication of the time of year for the cremation, as these trees fruit in late summer to autumn (Sutton 1998).

Overall, therefore, the charcoal assemblages from Appleford Sidings point to the selection of particular fuelwoods for cremation ritual and indicate the presence of both woodland and hedgerows in the vicinity of the site.



## Chapter 6: General discussion

### SITE SETTING AND EARLIER PREHISTORY

A small background scatter of Mesolithic and Neolithic flint was identified on technological grounds. The only securely stratified Neolithic flintwork was recovered from a single isolated pit, where it was associated with a small quantity of plain pottery of early Neolithic date, assignable to the period *c* 3650-3350 BC. Such material is typically rare on the river gravel terraces of the Oxford region, although the three exceptions noted by Barclay (see above Chapter 3, 'Prehistoric pottery'), Abingdon causewayed enclosure (Avery 1982), Benson (Timby 2003, 145-150) and South Stoke (Edwards *et al.* 2005) all lie within 12 km of Appleford. A few sherds of Neolithic pottery also occurred in the fill of one of the Bronze Age waterholes in the western part of the site. While of no great intrinsic interest, this material is significant in indicating that use of the landscape in this period was not confined to the single episode reflected by pit 5533.

The flat landscapes of the Upper Thames river terrace gravels were exploited widely from the Neolithic period onwards. Ceremonial monument complexes, as seen locally at Drayton (Barclay *et al.* 2003) and Dorchester on Thames, are the most obvious features, and the Abingdon/Dorchester area has a concentration of such sites (*ibid.*, 241), ranging from the causewayed enclosure at Abingdon (Avery 1982) to the cursus and big enclosure at Dorchester (Atkinson *et al.* 1951; Bradley and Chambers 1988; Whittle *et al.* 1992). Domestic activity is also attested in the region in the Neolithic, as for example at Gravelly Guy (Stanton Harcourt) and Yarnton, but is seen in the form of pits and postholes, with no clearly-identified structures (Barclay *et al.* 1996, 9). Compared to the density of features at the sites just mentioned the evidence from Appleford is slight in the extreme. Some shallow features may have been entirely lost through later agricultural activity, but the overall quantities of Neolithic material recovered across the site do not suggest widespread activity. Appleford was either marginal to areas exploited by local Neolithic communities, or was utilised by them in ways that leave little or no trace in the archaeological record. As noted by Barclay (see above Chapter 3 'Prehistoric pottery'), the low level activity suggested by the small quantities of Neolithic and Beaker material recovered reflects a regionally recognised pattern of small-scale, episodic occupation of the gravel terraces.

It is notable that, despite the extensive patterns of cropmarks revealed from the air on the gravel terraces of the area, there are few clear indications of

Bronze Age activity, in the form of ring ditches representing ploughed out round barrows, in the immediate vicinity of Appleford. The nearest concentrations of such sites in the area are noted at Northfield Farm (Long Wittenham) and relatively close but on the other side of the river at Fullamoor Farm (Barclay *et al.* 2003, 7). Occasional Neolithic and Bronze Age finds from Appleford Field (see above), in addition to the Neolithic finds from the present site, and (again) small quantities of probable early Bronze Age pottery, as well as residual flint, occurring in later features, indicate that there was some activity in the area perhaps throughout this extended period, but that it was apparently at a low level. It may indeed be precisely this lack of intensive activity that suggested the suitability of the site as the location for a field system in the middle Bronze Age, although at Dorchester such a field system overlay part of the earlier Neolithic cursus and the influence of older 'monumental landscapes' can be seen on the middle Bronze Age field systems at a number of other sites in the region (Yates 1999, 159).

### MIDDLE-LATE BRONZE AGE

Elements relating to the middle Bronze Age field system were widespread across the site. They were encountered in all the main areas except that excavated in 1999, though the main focus of these features was at the western end of the site. The principal elements of the system have been described above. Leaving aside morphological characteristics its attribution to the middle Bronze Age is based entirely on the ceramic evidence. Diagnostic middle Bronze Age material was recovered particularly from some of the waterholes, but the spatial relationship of these to the ditches of the field system left little doubt as to their approximate contemporaneity, and sufficient pottery came from the ditches themselves to confirm this. It was hoped to obtain radiocarbon dates from carbonised residues attached to a number of the sherds of Globular Urn from waterhole fill 84, but for various reasons these were thought unlikely to provide reliable dates and in the end the relevant samples were not submitted.

The field system belongs to a class of sites increasingly recognised in recent years, particularly by Yates (1999; 2001), with a significant concentration in the upper Thames Valley in the Abingdon/Dorchester area (Yates 1999, 158-9, fig. 1) now augmented by recent work just south-west of Abingdon in the vicinity of East Hanney, Grove and Steventon (Hearne 2000, 7-8). The nearest comparable examples are close by at Long Wittenham

and Didcot. Fragments of the complex at Northfield Farm, Long Wittenham, consisting of trackway and field boundary ditches and an associated pit cluster, were excavated by Gray (1977, 4-6, 12), but the limited associated material could not be dated more precisely than 'Bronze Age'. Following a suggestion by Balkwill (1978b, 29), Thomas (1980) proposed that elements of the cropmark complex at Long Wittenham represented a middle Bronze Age field system with analogies in other lowland British contexts. Baker (2002, 20-22) has mapped the Bronze Age elements of this site (*ibid.*, 17, fig 7b) as part of a wider study of the cropmarks of the area.

Wallingford Road, Didcot, just over 3 km distant, is the most recently excavated example of part of a Bronze Age field system in the near vicinity of Appleford (Ruben and Ford 1992). Here the arrangement of linear features, probably representing a single system, included ditches and gullies extending over an excavated area of c 50 m x 55 m. Like the Appleford system it was aligned roughly north-south and east-west and included both continuous and discontinuous ditched elements. Elsewhere in the region, north-west to south-east and north-east to south-west alignments have been noted (Yates 1999, 159). None of the examined features extended to the northern margin of the site and this was interpreted as indicating a change from enclosed to unenclosed areas (Ruben and Ford 1992, 26). Again like the Appleford system, the inception of the layout of linear features at Didcot was dated to the middle Bronze Age (*ibid.*). However in contrast to Appleford, at Didcot there was more evidence for early Bronze Age settlement activity in the area, and overall a greater density of small discrete features and of finds was present at Didcot. Even at Appleford, however, the occurrence of occasional fragments of pottery and some of the scattered flintwork suggests earlier Bronze Age activity, albeit of uncertain character, not too far from the excavated site. The relationship of such activity to the subsequent middle Bronze Age field system and (probably) associated settlement is quite uncertain, however, while at Didcot it appears that that relationship may have been quite close.

Some aspects of the archaeological record suggest that the Appleford field system may have remained in use over a considerable period of time. This was not particularly evident from the boundary ditches themselves but, as already noted, the effects of plough truncation would have been more severe on these than on the deeper waterholes. Some of the latter formed parts of quite long stratigraphic sequences.

The most striking example of this was the group of five intercutting features 168, 177, 186, 191 and 209 (see Fig. 10). While it is possible that several paired combinations of these features could have been in existence at any one time – for example 179 and 191, 186 and 209, and 186 and 168 – it is perhaps more likely that they formed a single continuous sequence, with closely adjacent features successive rather than contemporary. A likely sequence

for the group might be 191, 177, 209, 186 and 168, though other sequences are possible. It is difficult to estimate the 'working life' of an individual water hole, but the middle and upper fills of these features are generally relatively level and subjectively look as if they may have accumulated over a considerable period. It is of course most unlikely that any waterhole was completely or even substantially filled before its successor was dug, unless the users of the waterholes had other distinct locations that they exploited in sequence.

The quantities of finds recovered from the waterhole fills are generally small, and suggest natural processes of infilling, or, in the upper fills, the use of sterile material derived from the excavation of a new waterhole close to the old one. In the few cases where objects were recovered in reasonable quantity from the waterholes these were almost always from the uppermost fills. The best example of this is context 84, which was the uppermost fill of waterhole 414 and had the appearance of material that had accumulated in a hollow formed by the gradual settlement of the underlying fills. This deposit included an important assemblage of middle Bronze Age pottery, but also animal bone, charred plant remains, a stone fragment and pieces of several very small amber beads.

There is no domestic settlement focus evident within the excavated areas. Nevertheless the relative concentration of features in the western part of the site, and the quantities of pottery and other material recovered from some of them (such as feature 414), suggest that such a focus was located in the vicinity. This suggestion is based on the view that, while field systems could be quite extensive, they were essentially related to settlements, and formed an intermediate zone between the settlements and more extensive unenclosed landholdings beyond. This appears to be the pattern seen at Didcot and perhaps may be inferred from the nucleated nature of the fields seen from the air at Long Wittenham.

At Appleford it is unclear whether the majority of the pottery and other material was placed in the context of domestic rubbish disposal or whether its deposition was more structured. Either way it is not likely that the material would have been carried long distances before deposition. The occurrence of deposits containing charred plant remains, generally in the upper fills of waterholes and implying their disuse, may also suggest the disposal of domestic debris and again indicates the existence of settlement in the near vicinity. Such settlement could have lain north, west or south of the western part of the site examined in 1997. Gravel was extracted from areas to the north and west for in the 1980s with no archaeological examination and the area to the south, which does not produce cropmarks, remains an unknown quantity.

The current interpretative framework for field systems of middle Bronze Age date sees them as associated with intensification of and specialisation in stock-raising, perhaps with an emphasis on cattle

(Yates 1999). The defined enclosures, most of which are individually quite small, were probably used for holding animals in the context of 'intensified livestock farming, including selective breeding' (*ibid.*, 165). Long ditched droveways, as seen at Long Wittenham (Baker 2003, 17, fig. 7b), also formed part of some of these systems, perhaps to ensure the segregation of animals being driven to unenclosed grazing areas from those contained within the more defined enclosures. The exact nature of the boundaries may have varied, but many of the ditches and gullies are quite slight and would not necessarily have formed significant barriers in their own right. It has been widely assumed, and there is some support from environmental evidence, that in some cases these features would have been associated with hedges (Yates 1999, 165), as these would have been necessary to provide effective barriers to the movement of cattle. Some paired ditches may have flanked hedges, which may have stood on slight banks between the ditches. Banks between paired ditches were seen at Mount Farm (Barclay *et al.* 1996, 13, fig 4) while at Eight Acre Field, Radley, it was suggested that one pair of ditches might have had an intervening bank, while a fence was identified adjacent to another ditch at the same site (Mudd 1995, 62). Environmental remains consistent with the presence of hedges were also found (*ibid.*). The use of the latter field system may have extended into the late Bronze Age, as the radiocarbon sample from one waterhole gave a middle Bronze Age date, and the sample from a second associated waterhole gave a late Bronze Age date (*ibid.*, 55-56).

The Appleford Sidings excavations produced some useful evidence to supplement this picture. Unfortunately, as at Didcot, the preservation of animal remains was poor, but the principal species present at Appleford in this period was sheep/goat and one aspect of their exploitation is indicated by the presence of cylindrical loomweights of middle Bronze Age date. At Didcot the majority of bone fragments were not identifiable to species but their size was consistent with that of sheep/goat (Ruben and Ford 1992, 24). Cattle, sometimes seen as the principal species associated with well-defined middle and late Bronze Age field systems, were present at Appleford but in lesser numbers than sheep/goat. Two cattle bones had pathologies consistent with the use of the animals for traction, perhaps suggesting a more significant arable component in the overall agricultural regime than has sometimes been allowed. The evidence from Eight Acre Field, Radley, where cattle were dominant, was interpreted as suggesting intensification in cattle rearing in the late Bronze Age perhaps following a period of more mixed farming (Mudd 1995, 64). It is possible that a similar sequence occurred at Appleford, but it must be remembered that the animal bone sample size was small and much of it may have derived from domestic debris from nearby settlement. It is therefore a sample which may not have been entirely

representative of the majority of animals herded in the adjacent fields. Moreover a particularly significant feature of the Appleford Bronze Age landscape was the number of waterholes. These are specifically associated with the requirements of cattle raising (Grant 1984, 103-5) and their occurrence here implies more emphasis on cattle rearing than is suggested by the animal bones.

The environmental evidence is certainly indicative of widespread grassland. This is clear from the insects in the middle Bronze Age waterholes, many of which are directly associated with grassland plants. In addition, Scarabaeoid dung beetles which feed on the droppings of domestic animals grazing on pasture comprised around 13.5% of the terrestrial Coleoptera. Robinson (Chapter 5, above) has also noted, however, that Appleford, like Eight Acre Field, Radley had much evidence from macroscopic plant remains for mixed thorn scrub around the waterholes, which contrasted with insect evidence for more open conditions in the wider landscape, although it is unclear whether the waterholes were adjacent to mixed hedges or if scrub developed when they fell out of use. Equally unclear are the reasons that may have lain behind the disuse of waterholes.

Unfortunately assessment of samples from the Bronze Age waterholes indicated that only very low levels of poorly-preserved pollen were present and no further work, which might have provided more information on the wider environmental setting of the site, was undertaken. Examination of the charcoal from Bronze Age features, however, produced contrasting evidence. The charcoal recovered from the middle Bronze Age cremation (2102) at the southern margin of the site suggested the deliberate selection of just *Prunus* (cherries and/or blackthorn) and oak. By contrast a more diverse assemblage was recovered from the isolated waterhole or pit 5512 in the northern part of the site. Here seven taxa were represented, principally hazel, with oak, alder, *Pomoideae*, *Prunus* and single pieces of ash and yew, the last of these a relatively unusual find in British archaeological assemblages. The significance of this group of material is uncertain. Waterlogged seeds from the same feature are likely to reflect the immediate environment, and they suggest a mixture of waste and cultivated ground with hedgerows/scrub/open woodland. Waterhole 5512 was situated several hundred metres distant from the main location of Bronze Age environmental samples and therefore it is possible that the woody species present in the charcoal may have derived from a patch of woodland at the margin of an area of open fields. The general evidence for open ground suggests that any woodland could not have been very extensive. However, the presence of bones of both red and roe deer indicates that uncultivated areas in which these species could live did lie within range of the site, although such areas were not necessarily closely adjacent.

Whatever its wider significance the production of grain was clearly important at a local level and

charred plant remains deposited in the upper fills of a number of features probably represented crop-processing waste from a closely adjacent settlement. The main crop being cultivated was spelt wheat with six-row hulled barley as a secondary crop. This evidence is consistent with the national picture which suggests that there was a reduction in the cultivation of emmer, hitherto the principal cereal crop, during the Bronze Age in Britain. Interestingly, the weed seeds associated with the cereal crops suggest that a variety of soils were being cultivated, including wet/damp habitats. It is possible that the presence of wild pea, a known nitrogen fixer often associated with decreasing soil fertility, indicates that soil exhaustion was becoming a problem at Appleford Sidings as early as the Bronze Age, whereas other evidence for this problem in the region occurs in the Iron Age (cf Jones 1978). In addition to the food plants, presumably grown as well as processed on the site, there is evidence that flax was also grown, probably for the production of fibres.

The wider context of the middle Bronze Age field systems of the upper Thames Valley has been discussed by both Yates (1999) and Baker (2002). Despite increasing evidence for middle Bronze Age activity in the region, the distribution of the rectilinear field systems remains broadly concentrated in the vicinity of Abingdon/Dorchester, but spread (although localised and discontinuous) across a substantial area measuring up to 15 km east-west from Mount Farm to East Hanney, and 8 km north-south from Radley to Didcot. This may support Yates' hypothesis that by the late Bronze Age a series of distinct clusters of rectilinear field systems and associated settlements in the Thames valley were related to major regional power bases (Yates 1999, 160-163). Such clusters were identified in the area of the Thames/Colne confluence and upstream of it, in the lower Kennet valley, in the Abingdon/Dorchester area, and around Lechlade. All except the last had their origins in the middle Bronze Age. The focal site for the Abingdon/Dorchester group was identified as the riverside/island settlement at Wallingford (Thomas *et al.* 1986; Cromarty *et al.* 2006). The late Bronze Age chronology of Wallingford and the other focal sites, however, raises the question of whether comparable foci had existed in the middle Bronze Age and, if not, what might have been the impetus for the development of field systems in these particular locations at that time. There is some recent evidence of middle Bronze Age activity at Wallingford itself - perhaps significantly involving cattle remains (Bradley and Armitage 2002) - in addition to the well-known evidence for deposition of metalwork in the river (Thomas 1984), the latter representing ritual activity (eg Bradley 1990, 94-96).

Yates' hypothesis also carries the implication that the field systems originating in the middle Bronze Age remained in use into the late Bronze Age. The number of sites in the area producing evidence that substantiates this may include Appleford, but here

the evidence for late Bronze Age activity is difficult to identify. A small amount of pottery may, however, date from this period. The basic fabric tempering tradition, using flint, did not alter significantly between the middle and late Bronze Age and in the absence of chronologically-diagnostic vessel forms flint-tempered body sherds are not necessarily datable to one period or the other. Further, the absence of direct evidence for settlement in the late Bronze Age contributes significantly to the lack of material remains associated with archaeological features, which raises questions about how the continued use of field systems can be identified. This is discussed further below.

A final aspect of the Bronze Age activity - the evidence for burial - remains to be discussed. A single crouched inhumation in the north-western part of the site may have been of Bronze Age or later date. At the southern margin of the site a group of cremation burials in small pits without pottery vessels was not directly associated with dated features. It is unfortunate that these were not excavated, though there were good reasons for not doing this at the time of the 1997 evaluation. Understanding of the group is therefore based on the single partly sampled burial from Trench 21. It is only an assumption, albeit a reasonable one, that in terms of date and other characteristics this burial is representative of the group as a whole. A single radiocarbon date of 1410-1260 cal BC at 95% probability was obtained from this burial. This suggests that the burials were broadly contemporary with the use of the field system just to the north, and that the burials, though perhaps just at the margin of the defined fields, were incorporated into the landscape of fields and settlements and not segregated at a substantial distance. Here the burials were both more intimately linked to other aspects of landscape use and were not themselves placed in prominent structures. This may exemplify another stage in a wider process of landscape development that saw a move away from the monument-dominated landscapes of the Neolithic and early Bronze Age.

## LATE IRON AGE AND ROMAN

After a millennium or so in which the site saw little or no archaeologically-detectable activity, a settlement was established in its north-eastern part. This had two distinct foci only *c* 150 m apart and in terms of ceramic chronology exactly contemporary. Unfortunately only part of the eastern focus, indeed perhaps only its western margin, lay within the excavated area, so it is impossible to assess its character with any certainty. The most obvious characteristic of this area, however, is that the successive layouts of ditches indicate major reworking of the settlement plan, whereas in the double ditched enclosure to the west modifications such as the recutting of ditches do not seem to have resulted in radical alterations to the settlement layout.

### Principal enclosure

This feature appeared on the aerial photographs as a very regular rectangular double ditched enclosure with its longer axis aligned approximately east-west and a well-defined entrance in the south side. There were hints of a third ditch between inner and outer enclosure alignments along the south side west of the entrance which proved on excavation to represent a secondary phase of the outer enclosure ditch. Inevitably excavation revealed a slightly more complex situation, exacerbated by the effects of disturbance by later features on very similar alignments to those of Roman date. In particular, the sequence of ditches at the north-west corner of the enclosure itself was unclear.

Despite these problems the regularity of the enclosure is striking and in this respect, and in the consistent provision of two concentric ditches, it contrasts markedly with the majority of known enclosure sites of late Iron Age and early Roman date in the region. The subrectangular plan of sites such as Bicester Fields Farm (Cromarty *et al* 1999) is generally characteristic of the late Iron Age. The nearest excavated parallels are at Barton Court Farm where successive phases of enclosure, for the late Iron Age and the early Roman farmsteads and the late Roman villa, are all rectilinear, but even here neither was strictly rectangular nor double ditched. Both the early and late Roman enclosures incorporated a double-ditched element, but only along the east side in each case (Miles 1986, 10-11). Rectilinear enclosures are associated with some Roman villa sites in the region, of which Ditchley is the clearest example (Radford 1936, fig 8), but by no means all (eg Miles 1982, 72-3). Again the concentric element is generally lacking, although at Ditchley and perhaps also at Islip it is provided by an enclosure wall within the ditch. In view of this background it is notable that a number of the cropmark complexes in the Appleford area appear to incorporate regular double-ditched elements. A possible example can be seen just to the north of Appleford Field at Penn Copse (Miles 1982, 75), a site described as a villa, but on rather uncertain evidence, and regrettably now effectively destroyed (OA 2003). Further examples can be found only 600 m east of the principal enclosure, and further east again in the well-known site at Northfield Farm, Long Wittenham (Allen 1940; Miles 1977; Baker 2002; see Henig and Booth 2000, 96 for a view of this site). In both these cases, however, the double ditched elements appear incomplete, although this may be because they are incorporated in complex groups of cropmark features, probably of several phases, rather than being relatively self-contained.

The point may have been laboured excessively, but the physical characteristics of the principal enclosure at Appleford do appear to set it apart from the majority of contemporary sites in the region. These characteristics offered the potential for status display, but how this was achieved in relation to the bank or banks associated with the enclosure ditches

is uncertain. It has been suggested above that the material upcast from the ditches possibly formed a single bank placed between them (see Chapter 2: Period 3), but there are difficulties with this interpretation as with a more traditional view that there was a single bank behind the inner ditch - principally the presence of ditch 5362 at the north-eastern corner. No physical trace of any bank, and little indication of any obvious means of retaining it, had survived post-Roman ploughing of the site. The only possible exception to this could have been the gully at the inner lip of the outer ditch on the east side of the enclosure. Although this feature contained nothing that clarified its function, it is possible that it carried a revetment of some kind, but if so it is curious that it was only located on one side of the enclosure. On balance it seems most likely that, despite the question raised by ditch 5362, there was bank inside the inner ditch, and perhaps a further slight bank between the two ditches, which may have been revetted on the east side. Other interpretations are of course possible.

The joining of the inner and outer enclosure ditches at the single entrance perhaps served to emphasise the monumental quality of the latter, but there was no clear indication of a gate structure, despite careful examination of the relevant area. The substantial postholes that might have been expected to support such a feature should have survived here. Their absence therefore indicates that the gate structure took a radically different form from that expected, or that there was no major gate here, although this seems unlikely in view of the expression of status implied by the plan and scale of the enclosure ditches.

Even if there was no gate there are other aspects of the site which indicate the importance of this area. The arrangement of ditches south of the enclosure served to funnel movement specifically towards it. It is possible that some of these features belong to the second phase of use of the enclosure, but this is not certain, and there can be no doubt that the single entrance had occupied its identified location from the inception of the enclosure. The variations in ditch dimensions around the enclosure circuit also suggest that the south side was the most important. The importance of the entrance was also emphasised by practices of finds deposition. The conjoined ditch ends flanking the entrance produced, for example, the only two Roman quern fragments from the entire site, one from each opposing outer ditch corner. Both areas also produced relatively rich deposits of charred plant remains. It is possible that these reflect the ease of access of this area for dumping rubbish, but if the activities that generated these deposits took place within the enclosure it would have been possible to use the inner enclosure ditch for such purposes and the placement of charred deposits in the entrance is thus more likely to have been quite intentional. The regular occurrence of quern stones, complete or fragmentary, in structured deposits is a well-established feature in the Iron Age (eg Hill 1995) and the continuation of these practices into the Roman period is to be expected (Chadwick 2004, 98, 100).



It is perhaps unsurprising that the great majority of the larger pottery assemblages from the 2000 excavation area (21 of the 25 groups containing more than 250 g of pottery) came from the ditches of the principal enclosure. Much the largest of these groups came from a narrow linear fill (5292), possibly representing a slight gully cut into the top of the inner enclosure ditch between the enclosure entrance and its south-east corner. Despite the implication that this group must have dated to a late phase of the use of the enclosure (unless the inner ditch was deliberately infilled at an early stage, for which there is no other evidence), there was no discernible difference between the date of this group and that of other material from the enclosure ditches.

The pottery is important in a number of respects (see further below) but, in view of the rather atypical character of the enclosure already discussed, it is crucial for establishing its date. This has been discussed above (see above Chapter 3, Booth, 'Late Iron Age and Roman pottery'). The principal difficulty is the lack of evidence for chronological development within the assemblage, which has a suggested overall date range from about the middle of the 1st century perhaps to *c* AD 130. The fact that the great majority of the pottery from this part of the site derived from the enclosure ditches suggests that there was little if any significant activity before the establishment of the enclosure and that the date range of the latter should therefore reflect the overall date range of the assemblage. A pre-conquest date for its start is just possible, but is rather less likely than a date in the range *c* AD 50-60. The latest possible start date for the assemblage is *c* AD 70 but the presence of 'Belgic type' material in the form of E wares (see above Chapter 3, Booth 'Late Iron Age and Roman pottery') seems more consistent with an earlier date. Unfortunately greater precision is not possible. In broad terms the chronology of this period of the site is very close to that of the early Roman phase at Barton Court Farm, which '... began in the latter half of the 1st century and finished by the mid 2nd century' (Miles 1986, 12), although at Barton Court the major problem was to distinguish the E ware component in the early Roman pottery assemblage from that deriving from the preceding late Iron Age phase (see above Chapter 3, Booth 'Late Iron Age and Roman pottery').

### *Internal features*

There was regrettably little evidence for features within the principal enclosure. Despite this, the exiguous structural traces are of some significance since direct evidence of buildings of any kind is excessively rare on early Roman rural settlement sites in the region. The reasons for this remain unclear, but at present the most plausible is that the middle/late Iron Age saw a change in construction traditions in the region that resulted in the abandonment of structures that required vertical posts set in the ground, or the equally distinctive drainage gullies that often accompanied such structures. In general it is most likely

that a mass-wall construction technique, for example using cob, became prevalent (Allen *et al* 1984; Henig and Booth 2000, 82), but this assertion is still based more upon negative than positive evidence.

At Appleford, however, there was evidence for successive phases of a rectangular building based on ground-fast beams, measuring *c* 9 m long and between 4 m and 7 m wide, with perhaps an extension or a second structure at least 6 m long added in the second phase. The closest parallel for this building(s) is Structure III in the early Roman enclosure at Barton Court Farm (Miles 1986, 9) although at *c* 28-30 m long and 8.5 m wide, it is considerably larger. The footings of Structure III also consisted of horizontal slots, and although the additional presence of internal posts 1 m from the wall lines is referred to (and may have been necessary in view of the substantial span of the roof) these are not shown on the published plan (*ibid.*, 10, fig 7) nor specifically identified on the detailed plans (*ibid.*, fiche 4:E4 and 4:E5). The slots were very shallow and in places did not survive at all, though in some other places discontinuous alignments may be original and indicate the position of doorways. In one such case there were two successive postholes, both containing stone packing and fragments of white plaster, located at the end of a length of slot. There was other localised evidence of post settings within some of the slots (*ibid.*, fiche 3:D9 and 3:D10). Evidence for plastered walls within the building is indicated by the posthole fills, but the roof was probably of thatch.

It is not entirely clear whether these structural features at Appleford and Barton Court Farm reflect post-in-trench or beamslot construction techniques. Although the Appleford features were considered on site to represent beamslots, vertical post settings were recorded cutting the line of one of the slots of the second phase structure. On both sites, however, discrete postholes seem to have been used in conjunction with linear features, implying that there was a meaningful structural difference between the techniques. It is possible therefore that the instances of direct association of linear slots with postholes indicate localised repairs to the structures.

Parallels for these structures in early Roman contexts in the region are rare. Beamslot construction is found in the context of nucleated settlements, such as Asthall (Booth 1997, 8) and Dorchester, though at the latter site, timber buildings excavated in 1963 in Site B were thought not to date much before the middle of the 2nd century (Frere 1984, 113-114). Much earlier examples of the technique were also found at Dorchester in a probable, but not certain, military context (*ibid.*, 95-98), but while the presence of an early conquest period fort at Dorchester is possible, the associated finds suggested a date range in the 60s to 80s for the excavated military structures (*ibid.*, 105-106). It is therefore possible that the Appleford and Barton Court Farm buildings were already constructed by the time the Dorchester fort was established, and so, despite the fact that military structures would have been a likely model for beam slot (or post-in-trench)

construction, the introduction of this structural type may not have been via military activity at Dorchester. A further parallel, however, is seen in a rather different context in the early structures at Silchester. Here two slot-based buildings from the sequence beneath the basilica included one (Building 1) of several phases but with minimum dimensions of *c* 8.5 m x 3.5 m in the first phase (Fulford and Timby 2000, 23-24). These structures were assigned to Period 2, dated *c* 15 BC to AD 40-50. Their overall appearance, also incorporating occasional postholes, is very similar to that of the Appleford buildings. Rather than reflecting direct early military influences, therefore, the Appleford buildings may derive from a building tradition introduced into the region in the late Iron Age, initially in the high status settlement context of Silchester, within whose ambit the Dorchester area probably lay in the early Roman period (see further below).

Apart from Barton Court Farm and Appleford, rectilinear structures appear to be unknown in rural settlement contexts in the region before the later 1st century AD, when the earliest villas appear in the county, almost entirely located within the area of the north Oxfordshire Grim's Ditch (Booth 1998, 15). In no sense can the Appleford structure, or even the larger Barton Court Farm one, be compared in architectural terms with these buildings, nor with other early villa sites such as those discussed by Black (eg 1994, 100). Nevertheless the striking rectilinearity of Appleford and Barton Court Farm, both in terms of buildings and enclosures, has led to a tentative characterisation of these sites as proto-villas (Henig and Booth 2000, 84-85). A beam slot structure (Building 8) at Gorhambury has also been described in these terms (Neal *et al.* 1990, 22, 27-8). This had some similarities to the Appleford (and Silchester) structures, although its main block, measuring 15 m long and 4.5 m wide, was considerably larger, had at least three rooms, and perhaps an integral wing. There were also associated elements possibly belonging to the same building. It was, however, probably quite closely contemporary, being in use in the very late Iron Age and/or up to the time of Boudicca (*ibid.*, 35; cf Haselgrove and Millett 1997, 287-288 for the general early chronology of the site).

Whatever the precise architectural model employed at Appleford - and on balance a derivation from high status late Iron Age architecture seems preferable to direct Roman military influence - the early appearance of this alien building technique in the region suggests integration of the inhabitants of the site into a level of society that had wide-ranging contacts. In discussing the early development of some villa sites in Britain, Black (1994) has emphasised the importance of service in the Roman army by British landowners as a factor in introducing physical attributes of such service into their own surroundings. Such a model may be applicable here, but has no obvious support from the archaeological record, though it is interesting (if mischievous) to note that the unusual feature of joining inner and outer enclosure ditches

at the entrance parallels an aspect of some very early Roman fort plans, such as Hod Hill (Richmond 1968) and Alcester, Warwicks (Webster 1981, Pl II).

How is the site distinguished from contemporary settlement in terms of its material culture? In relation to architecture the distinction, as has already been discussed, is in terms of building plan rather than any other aspects, as there is no evidence for roof tiles or for wall plaster, unlike at Barton Court Farm. Small finds are extremely scarce, but this makes the presence of a seal box all the more striking. Such an indicator of literacy gives a clear hint that the site was not just occupied by peasant farmers. Other indicators of status have to be derived principally from the pottery evidence. This has been discussed at some length above (see above Chapter 3, Booth 'Late Iron Age and Roman pottery'). Analysis shows that the Appleford assemblage is distinct from most contemporary rural settlements in the area. It had a wider than average range of wares and of vessel types, reflecting a slightly wider range of trade networks. It was notable that the majority of the imported pottery (samian ware, amphora and fine ware), albeit in very modest quantities, concentrated in the principal enclosure, as did the only glass fragments from the site. These concentrations suggest that this was, as might be expected, the primary focus of higher status eating and drinking. The otherwise minor differences between the assemblages from the primary enclosure and from the 1999 area indicate that the two parts of the site were closely linked, despite the ambiguous evidence of physical means of communication between them in the form of trackways or similar features.

It is clear, however, that departures from prevailing late Iron Age patterns of daily life expressed in terms of rectilinear structures and aspects of the pottery assemblage did not extend through every aspect of the site. The fired clay is interesting in containing a group of objects which, while poorly understood, seem likely to have been used in some way in food preparation and/or cooking, but are encountered on a number of contemporary settlement sites, none obviously of high status. This might suggest that new ways of serving and presenting food were more important in terms of status display (because more overt) than new ways of preparation.

Other contrasting social practices are seen with regard to burial and comparable activities outside the principal enclosure. Towards the eastern margin of the site a single unurned cremation burial (Fig. 21, cremation 4148) lay just outside the south-west corner of an early Roman enclosure. In contrast to the earlier, Bronze Age cremations this had been placed in a small rectangular rather than a rounded pit, though there was no evidence to indicate that the burial was contained in a box. A Roman date, while not absolutely certain, seems very likely. A more complex burial was contained within a small ditched enclosure lying some 160 m distant at the eastern extremity of the site (Fig. 20). Again close dating is not possible, though a broadly early Roman date seems

certain. Here the cremated remains were placed in a pot set in a pit with a wooden box evidenced by large numbers of small nails. The surrounding ditch, roughly square in plan and *c* 7 m across, represents a monument type thinly distributed across the region, with examples at Field's Farm, Duntisbourne Abbots, Gloucestershire (Mudd *et al.* 1999, 99-104, 111-113) and Roughground Farm, Lechlade (Allen *et al.* 1993, 52-53) in the early Roman period, to which period the Appleford example should belong on the basis of its relationship to field system ditches. A broadly similar date may apply to two certain examples, and possibly three further examples, excavated recently at Tubney. However, these contained inhumation burials, notably a prone north-south aligned individual in each of the certain (conjoined) examples (A Norton pers comm). Later examples are also known at Radley, where a square ditched feature was associated with a group of cremations, and enclosed five of them (Chambers and Boyle 2007, 17), and at Gill Mill, South Leigh, where a single inhumation burial was centrally placed within the enclosure. This feature is not dated independently, but the burial rite suggests a late Roman date (cf Booth 2001, 34-36), as might also be the case with the examples from Tubney (see above). At Queenford Mill a similar enclosure, *c* 6 m x 8 m internally, contained two inhumations (Chambers 1987, 42, 45) and more certainly formed a family plot of a type familiar in a number of late and post Roman cemeteries. The nature of the connection, if any, between early and late Roman use of square burial enclosures remains uncertain (Booth 2001, 20) and there is sufficient variation within the early burials to question whether they belong to a single coherent tradition.

Given the general absence of evidence for early Roman burial traditions in the region (*ibid.*, 37) the Appleford examples are of some interest. It may be suggested that the atypical burial rite represented by the cremation within a square ditched enclosure mirrors the high status aspects of the site seen in the principal enclosure, although the burial lay some 300 m south-east of the enclosure. Like the introduction of rectilinear beamslot construction, the square ditched enclosure tradition was probably derived from burial practices more common further south and east, exemplified by sites such as King Harry Lane, Verulamium (Stead and Rigby 1989), though without the multiple burials seen there. At Appleford the practice of further ceremonies associated with this burial may be indicated by a pit containing charred material including human remains, arguably pyre debris, cut into one corner of the burial enclosure ditch and, less certainly, by the close association of a complete cattle burial. The likelihood that the association was significant, however, is reinforced by an example from Smithsfield, Hardwick-by-Yelford, where a cow was buried just outside one corner of another small square-ditched enclosure. This feature contained a four post structure, tentatively interpreted as a shrine (Allen 2000, 20 and fig. 1.11), but the similarity to the

Lechlade feature (see above), which also enclosed a timber structure as well as a cremation burial, was noted (*loc. cit.*).

At Appleford fairly certain examples of other ritual activity, in the form of probable placed deposits of objects, have already been mentioned in relation to the entrance to the principal enclosure. One further example of a probable deposit of this type occurred some 100 m west of the burial enclosure. Field boundary ditch 2031 contained a fragment of human skull. The presence of a complete quern stone in an immediately adjacent later feature may have been fortuitous, but it is perhaps more likely that the two objects were associated, or represented successive phases of special deposition in the same location, although the particular significance of the location is obscure. If correctly understood, however, these finds indicate a survival of long-established pre-Roman practices which is not surprising but contrasts interestingly with the 'novelty' of burial within a square enclosure, even if the latter was, as seems likely, also a pre-Roman tradition in origin.

#### **Other early Roman features (the 1999 area)**

A notable difference between the area of the principal enclosure and the area east and south-east of it was the evidence in the latter for a more dynamic sequence of development, in the sense that successive and quite different layouts could be discerned, even if they were on much the same general alignment. Understanding the sequence of development is, however, complicated by the lack of dating evidence for some features. The earliest features, all quite slight, occurred in the northern part of the 1999 excavation area and their real character is unclear. The major early feature was a north-east to south-west aligned trackway of at least two phases, the earlier of which is very likely to have been associated with a rectilinear enclosure (6081) to the west. While the exact relationship between the enclosure and the trackway is uncertain, as it was removed by the later version of the western trackside ditch (Fig. 21), it is perhaps most likely that the enclosure was the earlier feature and that its original east side was replaced by the western trackway ditch on the same alignment, in which case the enclosure would have been almost square. Alternatively, the eastern side of the enclosure could have been contemporary and contiguous with a possible primary western trackway ditch represented further south by feature 6078. It is also possible that enclosure 6081 originally extended further east than the line of the trackway, but the only evidence for this is a ditch (4084) which, although on the same alignment as the southern side of 6081, appears to have been of a later phase (see Chapter 2 above). The interpretation of the enclosure as lying adjacent to rather than across the line of the trackway is preferred here.

This arrangement was completely superseded by later ditches which appear to have formed the south-west corner of a multiple ditched enclosure. Three

concentric ditch corners were detected. It is not certain that all were contemporary since there were no direct stratigraphic links between them, but the two outer ones both cut the trackway ditches while the innermost is related to them in terms of similarity of dating material (all three contained pottery of late 1st-early/mid 2nd century date) and alignment. A large swathe of the likely enclosure has been lost to the railway line immediately east of the excavated area, but aerial photographs show an easterly continuation of the two inner ditches forming the south side of an enclosure, parts of the east and north sides of which are also apparent (Fig. 2). The whole suggests a quite regularly rectilinear enclosure broadly similar in character to the principal enclosure further west and perhaps a little larger than it. Cropmarks may indicate the presence of some internal subdivisions in the south-eastern part of the enclosure, as well as boundaries extending beyond it to the east (in the same way that ditches extended both north and south along the alignment of the west side of the principal enclosure), but it is not clear if any of these features are contemporary with the enclosure ditches. The outer ditch located in 1999 at the south-west corner of the enclosure is barely visible on the aerial photograph at this point and cannot be seen elsewhere. It was, however, rather less substantial than the two inner ditches and its absence from the photographs cannot be regarded as indicating its absence in the ground.

It is unfortunate that so little of this second large enclosure lay within the excavated area. The fact that it broadly shares morphological characteristics with the principal enclosure to the west is itself striking because, as already noted above, enclosures of very regular form are not common in the region; the existence of two in close proximity is notable. The links between the two enclosures are principally in terms of form and perhaps to a lesser extent in terms of date. It is impossible to say if they were functionally related. The pottery assemblages suggest slightly different emphases that may relate to status (and therefore function) and perhaps also to chronology, with a suggestion that the date range in the 1999 excavation area might have extended a little later than that associated with the principal enclosure (see above Chapter 3, Booth 'Late Iron Age and Roman pottery'). In view of the clear stratigraphic evidence for the later date of the enclosure in the 1999 area (in relation to the trackway which it superseded) it is possible that this feature should be seen as a successor to the principal enclosure to the north-west. If this was the case the existing evidence would indicate that it was a short-lived development, perhaps largely of the early 2nd century, but this assumes a functional relationship between the two enclosures which meant that only one such was required at any one time. While this is possible, and perhaps plausible on the basis of their distinctive morphological characteristics, the suggestion is not capable of proof on present evidence.

## Environment and agricultural economy

There is relatively little evidence for economic as opposed to domestic activities in the principal enclosure. Overall environmental indicators, albeit based on a smaller sample, show that the wider landscape was remarkably similar to that seen in the middle Bronze Age. Insect and waterlogged plant remains from ditch 4014 in the 1999 area suggested generally open conditions with grassland, the presence of grazing animals being indicated by dung beetles, while the ditch itself, a component of the latest phase of enclosure in this part of the site, held stagnant water, perhaps seasonally, and may have had a hedge alongside it. The richest samples of charred plant remains, however, were all recovered from the principal enclosure, indicating that this was a focus of crop processing. Even so, the remains need only have derived from activities connected with preparation of grain for use in a domestic context; the charred material probably represented crop-processing waste dumped into ditches after being utilised as fuel. One context included spoil grain. As in the Bronze Age, spelt wheat and barley were the principal cereal crops grown, in line with the evidence from Appleford Field (Robinson 1980) and elsewhere within the region and beyond (eg Booth *et al.* 2007, 281). The weed seeds were also comparable with those from the middle Bronze Age contexts in suggesting *inter alia* the cultivation of a variety of soils, including some damp/wet ground.

The agricultural economy was mixed, although the total quantities of animal bone recovered in this period were quite small. They were enough to indicate that cattle was the dominant species, in apparent contrast to the situation in the middle Bronze Age. It is notable, however, that none of the excavated waterholes was shown to be of Roman date, in contrast to the picture observed at Appleford Field (Hinchliffe and Thomas 1980, 64, 66) and also at Long Wittenham (eg Gray 1977, 9; Thomas 1980, 310), so the main areas of cattle pasture and holding may have been at some distance from the settlement focus. The other primary domesticated species, sheep/goat, pig and horse, were all present and were supplemented by domestic fowl, dog and cat, but each of these last three was only represented by a single fragment.

## Field systems, trackways and the wider Romano-British settlement pattern

Appleford Sidings formed part of a landscape that by the Roman period was not only widely exploited but also apparently well-integrated, in the sense that not only can adjacent settlement components be identified but, in some cases at least, the means of getting from one to the next can also be discerned. Much of the evidence comes from aerial photographs. Understanding of these mostly lacks chronological depth, but the work of Baker (2002) has shown what can be achieved by careful dissection of landscapes known principally from the air, but for which a little more-detailed excavation evidence is also available.

The late Iron Age/early Roman settlement at Appleford Sidings comprised a principal enclosure (Fig. 15) and apparently, further associated enclosures to the east which, in one area at least, superseded a roughly NNE-SSW aligned trackway (Fig. 21). The significance of this change, which occurred within the early Roman period, is not clear. The trackway was itself a substantial feature linked to other ditched elements. In particular, at its southern end each side ditch turned through a right angle away from the trackway alignment. Unfortunately it is unclear if this arrangement indicates a trackway junction, as seen for example in the Upper Thames Valley at sites such as Standlake (Henig and Booth 2000, 104, fig. 4.16) or Horcott (Pine and Preston 2004, 25, fig. 2.18) or the opening of the trackway into an unenclosed area, as in the case of the access to the floodplain pasture at Farmoor (Lambrick and Robinson 1979, 8, fig. 3, 27-30). At Appleford the trackway appears to be the same as one that can be seen on the aerial photographs continuing for some considerable distance north of the excavated area (see Fig. 2). This trackway did not link with other identifiable features to the north, though it is unclear if this is because it terminated or the cropmarks ceased to be visible. Hinchliffe and Thomas (1980, 69) note that trackways need not be defined by continuous ditches in open countryside if this is not required by the agricultural regime. The trackway in the eastern part of the Appleford Sidings site does, however, share a common alignment with other linear features and linked enclosures some 300-500 m to the east. These are not closely dated (though a broad Roman date seems certain) and include elements of several phases. At Appleford Field, about 700 m north-west of the principal enclosure, the (limited) excavated sample of the ditches leading to the well known Y-shaped trackway junction suggest that this system was not laid out before the early 2nd century (*ibid.*, 62). It is therefore possible that there was very little chronological overlap between this trackway system and the use of the enclosures at Appleford Sidings. Indeed it is possible that the settlement associated with the Appleford Field trackways, which developed from this time and survived up to the end of the 4th century, was in some ways a successor to that at Appleford Sidings. While it appears to lack the high-status characteristics seen at Appleford Sidings the likely presence of such a focus in the near vicinity may be suggested by the well deposit (albeit that this is a votive deposit) and mid 4th-century coin hoard from this area (Brown 1973; see also below).

Some of the evidence for major disruption of the settlement pattern of the upper Thames Valley in the early Roman period has already been mentioned in the discussion of the pottery - indeed the identification of this episode, first noted by Lambrick (1992, 83-84), relies almost entirely upon ceramic data. The number of sites occupied through the late Iron Age and early Roman periods which cease to have significant activity after the early 2nd century is very substantial (Henig and Booth 2000, 106-108). Appleford

Sidings is one of these sites. Most are low status rural settlements, but it is notable that the early Roman settlement at Barton Court Farm also came to an end at this time and was not reoccupied until the later 3rd century, in line with a pattern in which the abandoned sites were either reoccupied much later or, as seems to be more commonly the case, settlement was relocated in the general area but not immediately adjacent.

The exact chronology and interpretation of this settlement hiatus remain uncertain. While pottery dating evidence is unlikely to allow very close definition, there is sufficient concordance of dates, with outside limits mostly in the range *c* AD 120-150 but often falling within the middle part of that range, to suggest that what was happening, if not the result of a single 'event', was at least part of a short-term process and not simply a manifestation of one or more long-term trends. This would therefore appear to rule out gradual developments in environmental conditions, for example, as factors influencing settlement location. An alternative view that relates the early Roman 'failure' of sites to the limited scope of their agricultural production (Fulford 1992, 33-35) also fails to convince, particularly as Fulford advances Barton Court Farm as one of the 'successful' sites! Some more immediate politically or socially driven explanation involving quite widespread reallocation of landholdings may be the explanation, but much more work is required before firm conclusions can be drawn.

The Appleford Sidings area must have continued to be exploited after the demise of the early Roman settlement. Field boundaries across the site were assigned to two main phases and it is quite likely that at least some elements of the second phase (Period 3b) field system lying adjacent to the principal enclosure post-dated its use; they certainly post-dated its layout, as minor changes in alignment show. In the western part of the site a NNE-SSW aligned trackway may have been associated with some elements of the Roman field system, but the links are not very clear, nor is the date at which this trackway was first established. It seems to have continued in use into the late Roman period, however, and its alignment strongly suggests that it linked to the southern arm of the Y-shaped trackway junction at Appleford Field, some 700 m distant to the north. The Appleford Sidings trackway itself branched in the southern part of the excavated area, with one arm headed south-east and the other west. The destinations of these tracks are not known, but the south-easterly arm may have linked to a north-south aligned trackway that forms the axis of a groups of cropmarks identified only 300-400 m south of the west end of the site. These cropmarks include small rectilinear enclosures fronting onto the north-south trackway (see Fig. 2). Their Roman date is not certain, however, and a Bronze Age date is also possible, if less likely. The westerly arm of the trackway points approximately in the direction of a cropmark complex centred *c* 1.5 km distant just north of Didcot Power Station. This complex includes

a dense cluster of small rectilinear enclosures on both sides of a trackway whose principal axis is WNW-ESE but which incorporates a number of approximately right-angled turns. The latter characteristic is exactly paralleled by the Appleford Sidings trackway and it is possible that, despite the distance between them, the two should be seen together. More confidently identified 'long-distance' trackways are seen just a little to the east at Long Wittenham (Miles 1977, 28-9; Baker 2002, 25).

Within this local Roman landscape the only known, rather than suspected, focus of late Roman activity is that at Appleford Field. Other important aspects of the late Roman archaeology of the area include two 'hoards', one of coins dated to the 340s, and one of pewter and other objects (see Chapter 1 above). The latter, in particular, has been seen as incompatible with the 'low-status' character of the associated settlement (Brown 1973, 204) and has led to speculation about the location of a villa from which it should derive (Hinchliffe and Thomas 1980, 110). The suggestion (*loc. cit.*) that this might have been located in the unexcavated south-west part of Appleford Field itself is plausible in principle but cannot now be substantiated and the specific aerial evidence referred to is at best inconclusive. More recent consideration of comparable hoards suggests that the majority of pewter hoards in Roman Britain may have been deposited in the context of ritual activity (Poulton and Scott 1993), an interpretation specifically supported by a graffito on one of the Appleford pieces. Such activity need not have depended on the presence of a villa, though the presence of graffiti indicates literate individuals. If the graffiti were the names of the depositors of the vessels, they might be more readily associated with villa occupants rather than lower status rural workers (*cf* Evans 1987).

The wider, related question concerns the nature of the local settlement pattern. This clearly did contain villas, but was not in any way dominated by these sites in the way that the rural landscape of parts of the north of the county seems to have been (*eg* Booth 1998, 13-15). None of those in the area are well understood. The nearest known villas to the west are those at Dropshort, a substantial building partly excavated in the 1960s but unpublished (Anon 1962, 118) and a more modest structure west of Didcot, encountered in fairly recent evaluation work (RPS 2001), to which was probably related the Didcot hoard of gold coins, deposited *c* AD 160 (Bland and Orna-Ornstein 1997). Nearer at hand to the north lies the site of Penn Copse. This was partly examined in the 1960s but was subsequently bulldozed and no detailed records survive. The SMR record (PRN 2852) includes the following detail '[excavation] revealed fragmentary remains of buildings and a stone-lined well or storage pit. A quantity of pottery extending from the 1st to 4th centuries AD was found, and one 1st-century brooch.' Unfortunately it is quite uncertain if the building remains were of stone or timber and so in spite of inclusion in several gazetteers of villas (*eg* Miles 1982, 70 no. 43; Scott 1993, Oxfordshire no. 55)

the character of the site remains unclear. To the east the nearest likely villa site south of the Thames lies at Little Wittenham, just south of Round Hill (Rhodes 1948; OA 2004), while north of the river antiquarian records indicate the presence of a villa at Burcot (Taylor 1939, 333). Barton Court Farm, only just over 5 km north of Appleford in a straight line but separated from it by a great loop of the Thames, remains the only extensively examined villa site in the area.

Reconstruction of the late Roman 'villa estate' of Barton Court Farm (Jones 1986) identified a potential area of a little over 160 ha which had the best fit with the biological data. Any such reconstructions are inevitably speculative, but if roughly equivalent estate sizes were proposed for the known villas in the Appleford area (taking an optimistic view and including Penn Copse) it is clear that there are large areas of countryside that would not have fallen within these estates unless they had been very considerably larger than the Barton Court Farm model. In these general terms it can be proposed that the landscape of the Appleford area might have been divided between villa estates and lands attached to other types of settlement, the latter perhaps concentrated in an area around Appleford and Long Wittenham (always assuming that no further Roman villa sites remain to be discovered in this area, which is of course not certain). The present data do not allow us to differentiate meaningfully between the agricultural regimes of sites such as Appleford and Barton Court Farm, although Miles (1989, 68) has suggested that aspects of evidence from the latter, such as the early introduction of bread wheat, indicate a more progressive attitude to maximisation of agricultural resources. It should be noted, however, that the bases for at least some of the identifications of bread wheat at Barton Court Farm have been questioned (Campbell and Straker 2003). Similarly the nature and extent of economic and social integration between villa and other settlement types, or of differences in the legal basis of land tenure, remain unclear.

The limited current evidence indicates that the settlement in Appleford Field continued in use right up to the end of the Roman period. The material not only included coins of the House of Theodosius (Hinchliffe and Thomas 1980, 81-82), the latest period in which coinage regularly reached Britain, but also some very late-looking pottery groups (*eg* Saunders 1980, nos 49-103). Amongst these vessels was an example of a bossed dish, a distinctive and unusual type with a potential relationship to early Saxon pottery styles (Lyne 1999, 285). The localised distribution of this type in the Dorchester area is reinforced by further examples recovered in recent work at Castle Hill, Wittenham Clumps. It can only be assumed that the minimal late Roman material from Appleford Sidings probably derived from Appleford Field. It is unknown if sites such as Dropshort and Penn Copse continued to be occupied as late as Appleford Field. At Northfield Farm a single inhumation burial was certainly of 4th-century date on the basis of an associated bowl (Gray 1977, 23 no. 33), but it was the latest

feature on the site; there is little in the remaining material that need have been of 4th-century date and the majority of the pottery appears to be of the 2nd and 3rd centuries. It is possible, therefore, that by the late 4th century Appleford Field was the principal focus of settlement for a wider area than had been the case earlier. With its demise came the complete cessation of any archaeologically detectable activity at Appleford Sidings until the medieval period, although Anglo-Saxon burials and settlement are known in the general area (see Chapter 1).

### LANDSCAPE CONTINUITY

A particular feature of the Appleford Sidings landscape was the indication of long term survival of the principal alignments on the site - a characteristic that caused considerable difficulty in attributing some features to period, as mentioned above. It is clear, however, that in a landscape in which some elements remained remarkably stable over extended periods, other elements, such as the early Roman principal enclosure, were much more ephemeral and had relatively little influence on subsequent activity.

One aspect of the landscape for which a long term existence is certain is the medieval open field system. This was arguably established, on general historical grounds rather than specific archaeological evidence, by the 12th century and remained in use until the early 19th. It thus represents a period of more or less continuous use and stability of landscape organisation considerably greater than the whole of the Roman period and perhaps roughly equivalent to the life-span of the Bronze Age field systems, always assuming that the latter survived into the late Bronze Age. Positive identification of 'use' in the late Bronze Age is not possible.

There seems to be a distinct east-west boundary between the areas excavated in 1999 and 2000 to the north and the area to the south excavated in 1998. Differences in the alignment of ridge and furrow indicate that the line of a medieval headland formed a roughly east-west boundary between northern area excavated in 2000, which contained the early Roman principal enclosure, and areas to the south. The boundary was marked by a fairly substantial modern ditch, which may have been established over a considerable period. This feature continued to the east; the ditch runs eastward beyond the site and flows into the Moor Ditch, itself a tributary of the Thames, which it joins at Long Wittenham. It is likely that the boundary to the east between the 1999 area and the 1998 excavations was established at least as early as the east-west boundary identified further the west. Excavation in 1999 showed that at its southern edge the ditches (6077 and 6076/6078) defining the north-south Roman trackway turned through right angles to east and west, producing a ditched boundary mirroring the alignment of the modern field boundary (see Figure 21).

The presence of a substantial and long-lived boundary along this line, perhaps always with a component

carrying running water, would help to explain the lack of evidence for the southward continuation of features identified in the northern parts of the excavation in 1999 and 2000. A further possibility is that the north end of the NE-SW aligned trackway joined to a roughly east-west aligned trackway - defined by ditches 4204/4209 and 4002 - and paralleled the line of the major boundary to the south. Such a feature could have been a means of linking this area to the principal early Roman enclosure to the west and to the north-south route lying further west again. However, there is striking evidence for the physical discontinuity of features from east to west between the 1999 excavations and the 2000 excavations. A substantial north-south ditched boundary (6087) lay at the eastern edge of the 2000 area and may have formed an 'impermeable' barrier. This ditch had a similar sinuous character to the Roman trackway (Fig. 14, contexts 6002/6003) and ditches (Fig. 14, features 6000 and 6001) at the west edge of the site. The putative east-west route defined by ditches 420/4209 and 4002 would have had to cross this boundary.

In an earlier period there are further indications of possible long-term survival of landscape elements. This is clearest in relation to the principal north-south linear features at the west edge of the site. The general similarity of alignment between Bronze Age features and the sinuous north-south Roman trackway (ditches 6002 and 6003) strongly suggests some awareness on the part of the constructors of the latter of the existence of earlier systems of division of the landscape. Without maintenance, features such as ditches would have long since silted up more or less completely, but even these, and associated banks, might have survived as minor earthworks. Other elements such as hedges might also have been very long-lived and given the extent of truncation of the gravel would have left no archaeologically detectable trace. Even with no archaeological evidence, however, it is difficult to believe that the landscape was not utilised in any way between the Bronze Age and the late Iron Age. Indeed the broad similarity in the character of the charred plant remains and other environmental indicators recovered from both Bronze Age and Roman features argues that the basic character of the landscape had not altered significantly, which suggests that it was maintained. Disuse throughout the first millennium BC would presumably have resulted in regeneration of woodland and hence rather different conditions by the end of the Iron Age, whereas the scale and character of the layout of the late Iron Age/early Roman features strongly suggests that they were set in a mostly open landscape.

Overall, the indications are that generally open landscape conditions have prevailed in this location over an extended period of some three and a half millennia. Within this time there were probably several distinct and different foci of agricultural settlement from which the fields first defined in the middle Bronze Age were farmed. Indeed settlement activity within the present site itself was only of short duration, confined essentially to the early Roman period.

Features defining means of movement through the landscape were more durable and the overall grain of landscape use did not change even in the post-Roman period, although the trackways which had survived up to that time may now have been superseded. Intrusive disruption of the local landscape arguably did not occur until the construction of the railway in the 19th century.





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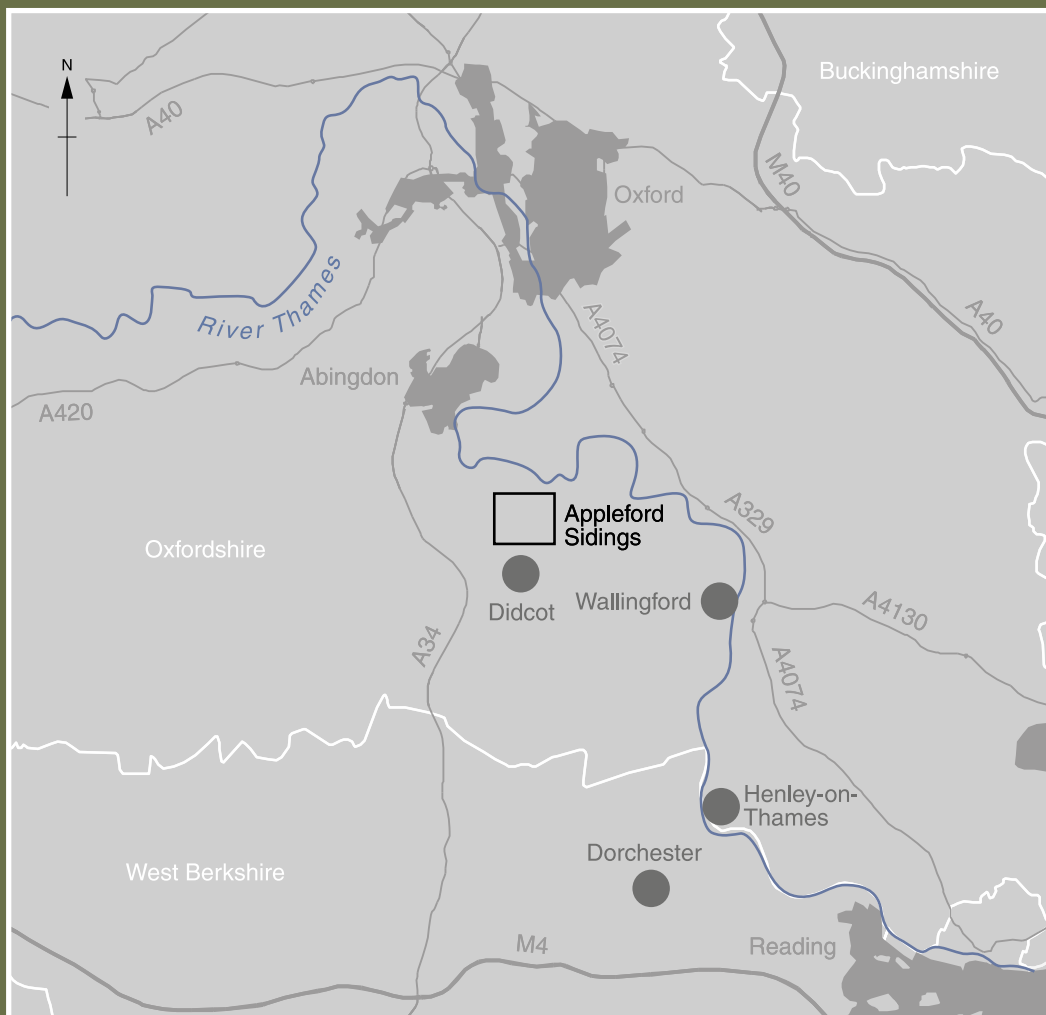
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*Archaeological work at Appleford Sidings*

From 1993-2000 Oxford Archaeology examined a sequence of rural landscapes at Hanson Aggregates' Sutton Courtenay Pit ahead of gravel extraction. The earliest of these, a rectilinear system of trackways and field enclosures, with associated waterholes for animals, developed from about 1500 BC. Probably contemporary cremation burials lay close by. No significant later prehistoric evidence was found, but about the middle of the 1st century AD a high-status double-ditched enclosure was established. This settlement was associated with further rectilinear field systems, enclosures and trackways and two cremation burials. This settlement went out of use after c AD 120 and subsequent activity was entirely agricultural in nature.



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ISBN 978-0-904220-54-4

