

# BRONZE AGE BURIAL AND LATE IRON AGE AND ROMAN SETTLEMENT AT BROUGHTON BARN QUARRY, MILTON KEYNES, BUCKINGHAMSHIRE

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with contributions by

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*A field of 14 hectares proposed for gravel extraction at Broughton Barn, east of Milton Keynes, Buckinghamshire was subject to trial excavation in 1996. Two main areas of late Iron Age and Roman settlement features were identified and these were excluded from gravel extraction. The sparse scatter of features between these two areas was subject to a watching brief during soil stripping between 1997 and 2002. Unexpected discoveries included a pair of isolated early Bronze Age cremations associated with a small Collared Urn accessory vessel. Two urned and one unurned cremation deposits, radiocarbon dated to the early Bronze Age, came from the ditch of the north-easternmost of a pair of C-shaped enclosures. One of the urns contained an exceptionally well-preserved sequence of deposition, with bone followed by charcoal-rich pyre debris and burnt soils from beneath the pyre. A ditched enclosure containing pit groups, one of which produced kiln furniture, had been established before the middle of the first century AD and continued in use to the late first/early second century. It was probably ancillary to a domestic focus to the east, which had been excluded from excavation. A later Roman settlement to the south was also excluded from excavation. A linear ditch system running parallel to a modern stream on the north-western side of the site appears to have formed part of a late Roman boundary. At some stage gravel was laid over a length of peaty ditch fills to form a surfaced causeway, perhaps replacing a former bridged crossing.*

## INTRODUCTION

### Background

A two-stage archaeological evaluation comprising desk-based study and trial excavation was carried out by Northamptonshire Archaeology in September 1996 on land to the east of Broughton Barn, Broughton, Buckinghamshire, where cropmarks had suggested the probable presence of former settlement (Figs 1 and 2; NGR SP 908 406). The work was undertaken to inform a planning application for gravel extraction made to Buckinghamshire County Council by Samuel Rose, Land Agents, acting for GFX Hartigan Ltd. A total of 68

trenches, mostly 30m long, were initially excavated using a 360° mechanical excavator with a toothless ditching bucket. They were laid out on a grid pattern, with alternate trenches at 90° to each other, to provide systematic coverage at a 3% sample of the total area (NA 1996).

The evaluation identified two main areas containing late Iron Age and Roman settlement features, one at the north-eastern end of the quarry and the other at the south-western end (Fig 3, Area 1 and Area 2). As these areas lay at the margins of the application area, both were excluded from gravel extraction. The trial-trenching had also identified a sparse scatter of features across the central area of the proposed quarry and the planning

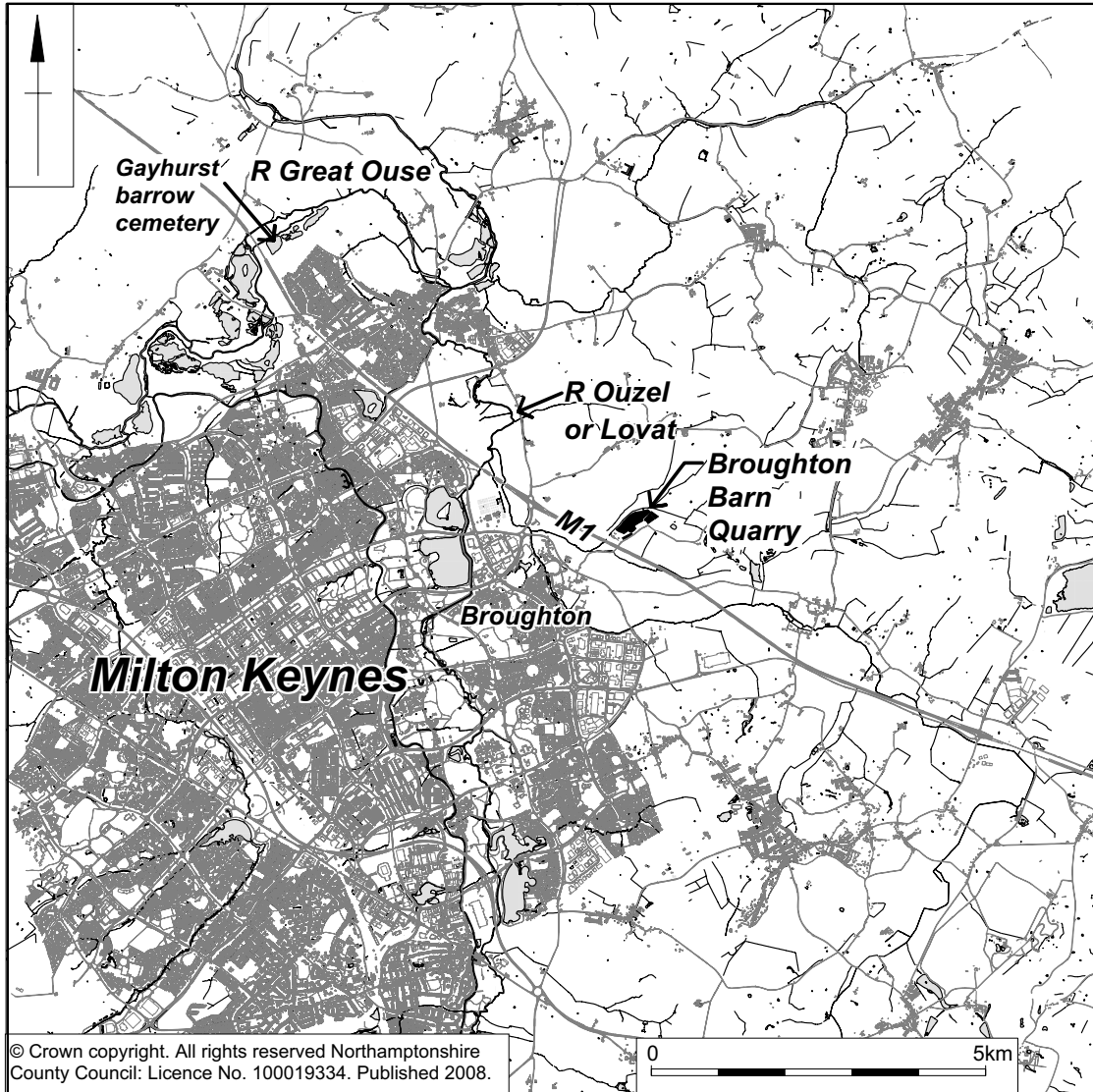


FIGURE 1 Location of Broughton Barn Quarry in relation to Milton Keynes.

permission allowed for the recording and investigation of these within a watching brief, with limited provision for the sampling of exposed features and the investigation of unexpected remains (NA 1997).

The first stage of watching brief occurred in late 1997, during stripping of soils at the north-eastern end of the quarry for the creation of a silt lagoon. Subsequently, the watching brief comprised visits

to the quarry at regular intervals between the months of March and October during the years 1998 to 2002, as stripping and extraction progressed from south-west to north-east. Visits were made both during and at the end of each stage of topsoil and subsoil stripping so that all stripped areas could be viewed.

A number of interim reports have been issued (Chapman and Hylton 2000, Chapman 2001 and

Chapman 2002), and short summaries have appeared in *Records of Buckinghamshire* (43, 2003, 220) and *South Midlands Archaeology* (30, 2000, 21; 31, 2001, 22 and 32, 2002, 19–20). The finds and records will be deposited with the Buckinghamshire County Museum (Accession number 2008.28; Site code BB00).

### Historical and archaeological background

Maps in Buckinghamshire County Record Office (BRO) show that since Inclosure in 1748 the quarry area had formed part of a compact estate, owned by the Brackwell, family that took in most of the parish (NA 1996). *A Survey, Valuation and Arrangement* of December 1779 (BRO D/X85/1) shows that the large field occupied by the quarry had formerly been divided into a north-eastern part called Lower Spring Ley with Upper Ley to the south-west. The barns in the south-western corner of the field are not mentioned in the survey or in accompanying maps, but they had been constructed by 1837, when the estate was again mapped (BRO D/X85/2).

Neither the estate maps nor a more detailed map of the parish made in 1839 (BRO MA/28/1.R) show the lane along southern-eastern boundary of the field and the quarry. This route had been added by 1886, when it was depicted on the first edition 6-inch Ordnance Survey map. By the time of the second edition 25-inch Ordnance Survey map, published in 1900, the boundary dividing the field had been removed.

Aerial photographs in Buckinghamshire Sites and Monument Record showed a sparse pattern of linear cropmarks (Refs A11/2/14 and A11/2/0A). A linear feature running across the field from north-west to south-east is a ditch associated with the eighteenth- and nineteenth-century field division, and this was located during the watching brief (Fig 3 and Fig 4, field boundary). The remaining cropmarks were faint, and the watching brief has demonstrated that some were of geological origin while others were ditches of the late Iron Age and early Roman settlement.

### Prehistoric activity (Fig 2)

At Salford Quarry, Bedfordshire, 2km to the east of Broughton Barn, there were features of both later Neolithic and early Bronze Age date (Dawson 2005), which provide a context for the activity at Broughton Barn. A cluster of pits contained quan-

ties of decorated Peterborough ware, mainly from Mortlake-style vessels with a little Fengate ware. There were also three ring-ditches, but no associated burials and little dating evidence had survived. It would be expected that these were the remains of early Bronze Age round barrows dating to the first half of the second millennium and a single sherd, possibly from a Collared Urn, provides a little support for this interpretation. At Broughton Manor Farm, 1km to the south of Broughton Barn and immediately south of the A5130, excavation of Iron Age and Roman settlement also located a pit group of early Neolithic date and a small pit containing a little Neolithic/early Bronze Age pottery (Atkins and Rees 2008).

### Iron Age and Roman settlement (Fig 2)

A Roman field system and droveway had previously been identified 400m to the east of Broughton Barn, east of Old Covert, and had been recorded under salvage conditions following stripping prior to quarrying. A small pottery assemblage dates from the mid-second century to the end of the fourth century AD (Petchey 1978). It may be noted that if the droveway at the Old Covert had continued westward on the same alignment, it would have run towards the identified late Iron and early Roman settlement focus at the north-eastern end of Broughton Barn quarry (Figs 2 and 3).

Excavation within Salford Quarry had also located a substantial early to middle Iron Age settlement, containing a pit alignment, a droveway and some 23 roundhouses, with occupation spanning the early and middle Iron Age (Dawson 2005). Four later Iron Age cremations and a Roman-period barn, suggest that a focus of late Iron Age and Roman settlement may have lain to the north of the quarry.

Since the completion of the work at Broughton Barn quarry, there has been extensive excavation of a previously unknown middle Iron Age and Roman settlement 1km to the south, at Broughton Manor Farm, immediately south of the A5130 and adjacent to a major tributary of the River Ouzel or Lovat (Atkins and Rees 2008). A dense palimpsest of ditch systems spanned the middle Iron Age to late Roman periods, indicating continuity of occupation. The wealth of the settlement in the first century AD may be indicated by a cremation cemetery, where the burials were accompanied by rich assemblages of pottery in the Aylesford-Swarling

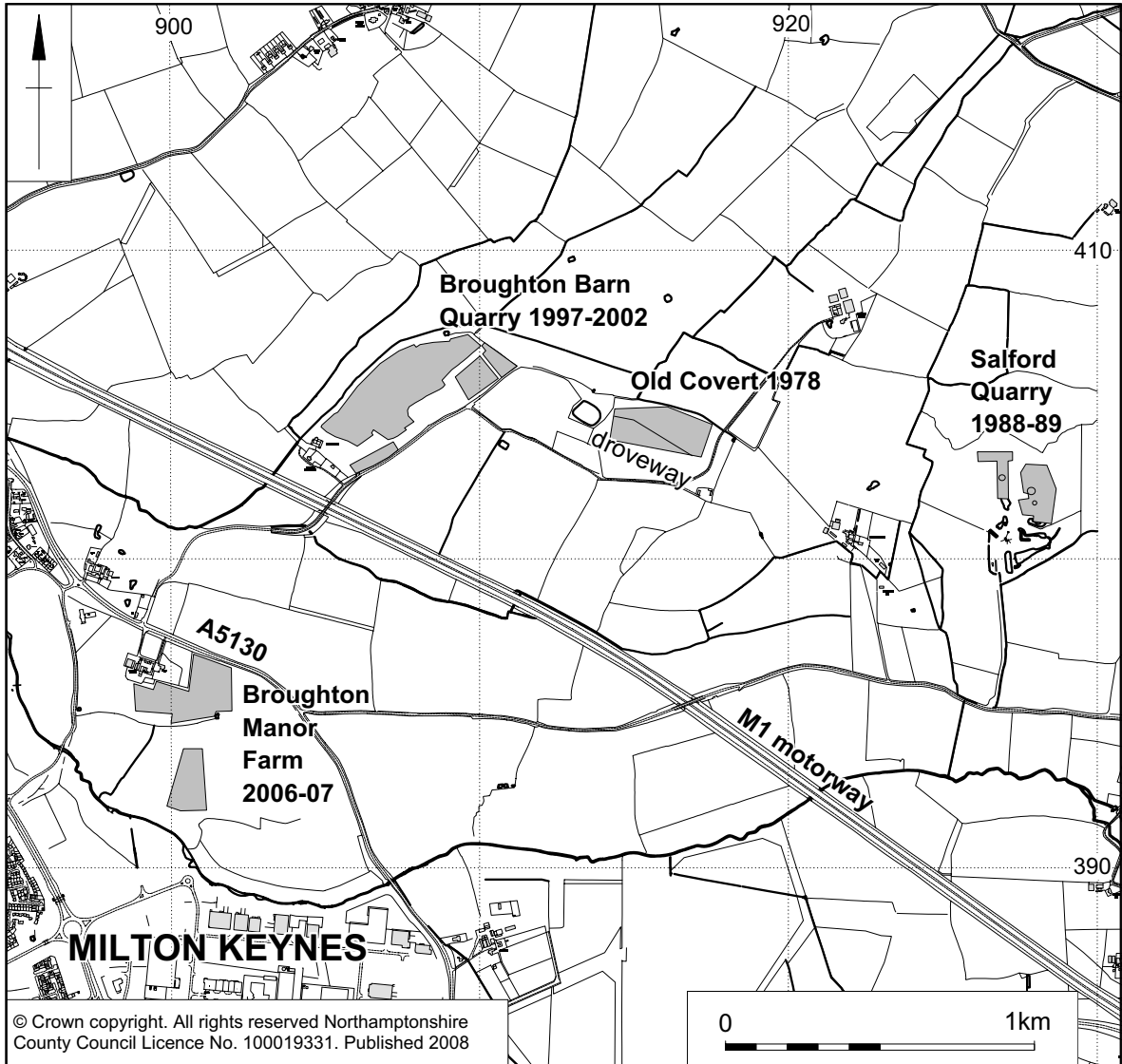


FIGURE 2 Broughton Barn Quarry and nearby excavated sites.

tradition. Through the later Roman period the settlement was a prosperous farmstead with ranges of stone buildings from the second century onward.

### Geology and topography

The quarry site comprised flat arable land situated on first-terrace river gravels, at around 67m OD. Excavation showed that the surface of the gravel was uneven and partly infilled with patches of

leached silty clays. In some instances curvilinear, silt-filled channels appeared to be the bottoms of shallow, probably short-lived, water courses within the uppermost gravel (Fig 11, 203). Some of these had been plotted as part of the cropmarks visible on aerial photographs. Along the southern boundary of the field the gravel was mixed with clay.

The northern side of the quarry was bounded by a small stream that flows into the River Ouzel or

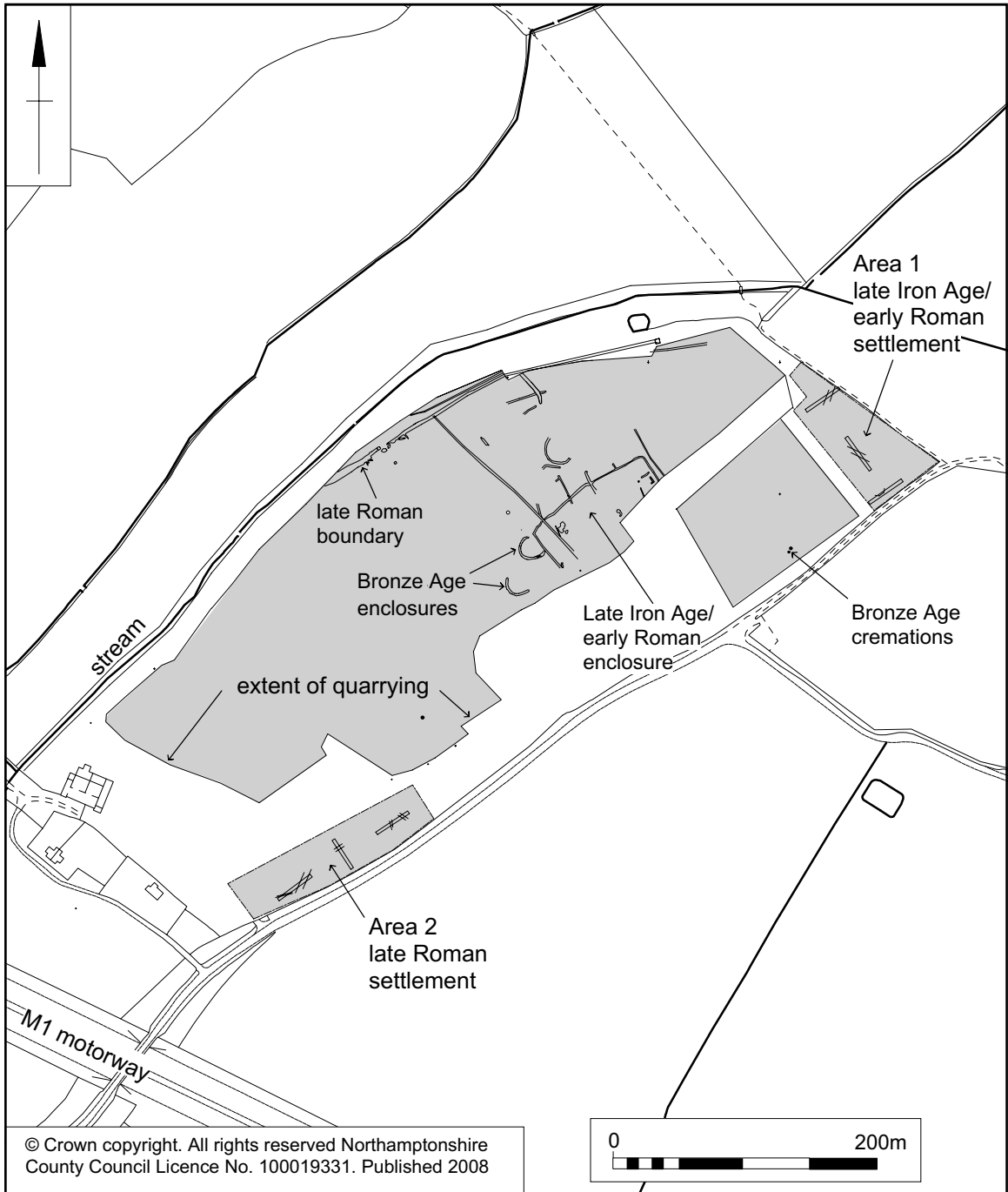


FIGURE 3 General plan, showing investigated and excluded areas (Area 1 and Area 2).

Lovat, 1km to the west, one of several tributary streams that flow westward into the Ouzel (Fig 2). The Ouzel flows northward to join the Great Ouse east of Newport Pagnell, 4.5km from Broughton Barn quarry (Fig 1).

### Methodology

Within the 14ha of the application area, a total of 8.8ha was stripped and extracted (Fig 3). This comprised a 0.7ha silt lagoon, excavated in 1997, and a further 8.1ha of stripping between 1998 and 2002. The areas not stripped included the reserved archaeological zones, which lay beneath broad bunds of dumped soils that surrounded the quarried areas on all sides (Fig 3, Areas 1 and 2). The area south-west of the silt lagoon and adjacent to the public road contained the processing plant, offices and gravel and sand stockpiles.

Soil stripping was usually carried out using a box scraper, occasionally with 360° mechanical excavators. As a result, the surface was clean enough to follow the course of major ditch-systems, but intermittent lengths were obscured by wheel tracks and loose soil. Some smaller features have been recorded but, inevitably, others must have been missed within the areas of disturbance and soil deposition. The patchy natural surface, which varied from dense gravel to leached silts, also made it difficult to locate and define features.

Features were plotted using a total station theodolite with reference to fixed survey points established on the bund around the western margin of the quarry, and related to Ordnance Survey national grid and Ordnance datum. In addition, features of particular significance were planned by hand at 1:100, with the localised grids tied to the main survey.

Major ditch-systems were sectioned at least once to establish their depth, the character of their fills, and to obtain dating evidence. Further pottery was collected from the exposed surfaces. All major features were numbered and described in a single numerical sequence. The archive also includes watching-brief forms recording the intermittent progress of the investigation.

### Summary of site chronology

The watching brief located early Bronze Age burials for which there was no previous evidence, and which the trial trenching also failed to identify (Table 1). Two cremations associated with a

Collared Urn accessory vessel were probably an isolated pair of burials with no other nearby contemporary funerary deposits or monuments. Two C-shaped enclosures probably dug around a century or two later, are assumed to form a small monument complex. Cremation burials were recovered from the ditch of the north-eastern enclosure (Fig 4, C2).

Settlement on the site began in the early first-century AD, associated with Belgic pottery forms, and continued through to the late first century/early second century AD (Figs 3 and 4). Kiln bars and perforated clay plates indicate that there were pottery kilns within this settlement, which was probably no more than a native farmstead, although in its early days it certainly had access to both imported and locally made pottery, including fine tablewares. By the third-century there was a new focus of settlement, 100m and more to the south-west. At this time, there was a boundary ditch parallel with a tributary stream. There may have been a bridge-crossing, later replaced by a gravel causeway laid over peaty ditch fills.

## THE EARLY BRONZE AGE BURIALS AND C-SHAPED ENCLOSURES

### The chronology

The early Bronze Age chronology is based on two radiocarbon dates; one from the pair of isolated cremation burials associated with a Collared Urn and one from a cremation deposit in the ditch of the eastern C-shaped enclosure (Table 2).

The radiocarbon dating indicates that the isolated cremations are likely to have been buried somewhere between 1890–1740 Cal BC (68% confidence), while the C-shaped enclosures may have been a century or two later, 1750–1580 Cal BC (68% confidence). However, at the 95% confidence level there is an overlap in the dating, so there is a less likely option that the burials and C-shaped enclosures were broadly contemporary within the two centuries between 1880 and 1680 Cal BC.

### The cremation burials

Two early Bronze Age cremation deposits at the north-eastern end of the quarry were located in October 1997 during the watching brief on the digging of a silt lagoon (Fig 4). No other archaeo-

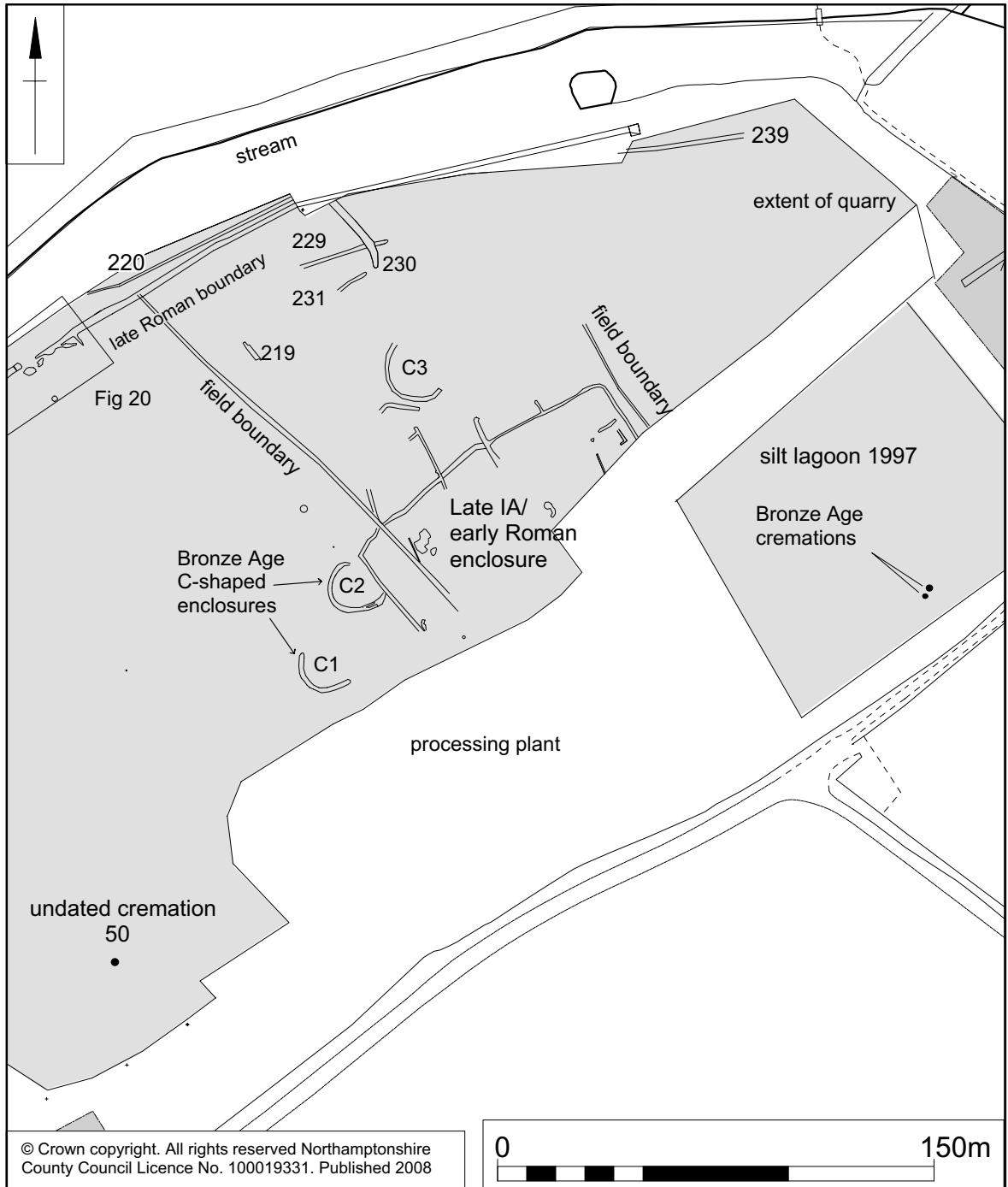


FIGURE 4 The early Bronze Age and late Iron Age/Roman features.

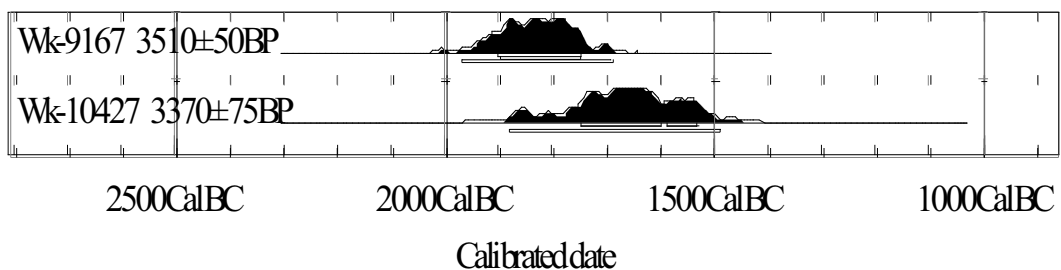
TABLE 1 The site chronology

<i>Period</i>	<i>Activity</i>
Early Bronze Age	Cremation burials with Collared Urn accessory vessel (Pits 1 and 2)  C-shaped enclosures (C1 and C2), with cremation burials in ditch of enclosure C2
Late Iron Age/early Roman (1st century AD)	Settlement, including ditched enclosure, C-shaped enclosure (C3) and pottery kilns
Late Roman (3rd-4th century AD)	Settlement (unexcavated). Stream-side boundary ditch with possible bridge and causeway
Later land use	Post-medieval field boundaries

TABLE 2 The radiocarbon determinations

<i>Laboratory &amp; Sample No.</i>	<i>Context</i>	<i>Sample details</i>	<i>dC13</i>	<i>Conventional Radiocarbon Age BP</i>	<i>Cal BC</i> 68% confidence 95% confidence
Wk-9167 BB/P1	Pit 1	Wood charcoal, <i>Quercus</i> sp. (oak), including heartwood	-25.5	3510 +/-50	1890-1740 1960-1680
Wk-10427 BB00/201	Urn 201 C-shaped enclosure (C2)	Wood charcoal, <i>Quercus</i> sp. (oak) including heartwood	-26.1	3370 +/-75	1750-1580 1880-1490

Laboratory: The University of Waikato, Radiocarbon Dating Laboratory, New Zealand  
Calibration: Ox Cal v3.4 Bronk Ramsey, 2000, Atmospheric data from Stuiver *et al* 1998



logical features were observed in the surrounding area.

Two shallow pits lay 2.8m apart (Fig 5). Pit 1, to the north, was oval in plan, 0.70m east-west by 0.36m north-south. It was up to 0.20m deep at the western end, where an urn, with a plain, undeco-

rated rim had been inverted over a deposit of cremated human bone mixed with oak charcoal and black sandy soil from the pyre. The pit had been heavily truncated, removing all but the rim of the inverted urn; much of the cremation deposit had also been lost. During machine-stripping the upper



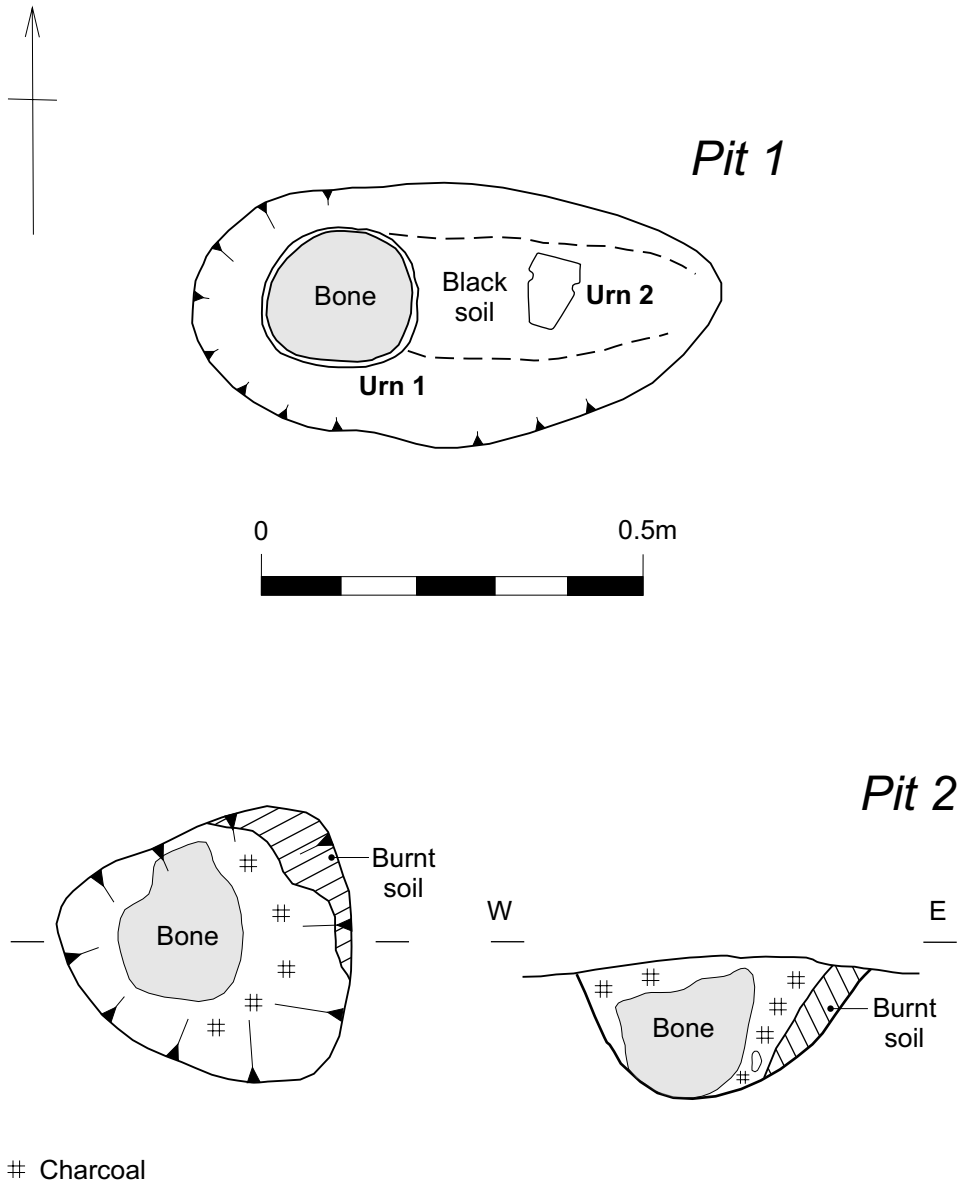


FIGURE 5 Early Bronze Age cremations, plan of Pit 1 and plan and section of Pit 2.

part of this deposit was dragged and smeared across the eastern half of the pit (Fig 6). At the eastern end of the pit a small Collared Urn lay on its side, but only the lower half survived. It appears to have been an accessory vessel within a fill of grey-black soils from the pyre (Fig 7).

A total of 158g of burnt bone from an adult of unknown sex was recovered. A few grams of bone from a child of 2–5 years were also present, although the different colour of these bones indicates that they had not come from the same pyre. It is suggested by Anderson (see below) that they were perhaps accidentally collected and mixed with the adult bones, perhaps from a communal pyre site.

Pit 2 was sub-circular, almost triangular, in plan, 0.40m diameter by 0.20m deep (Figs 5 and 8). Against the eastern side, there was a deposit of pinkish burnt sand containing some charcoal, presumably derived from the scorched ground surface beneath the pyre. A mass of just over 0.50kg of cremated bone was in a well defined, steep-sided cylindrical block, 150mm diameter by 160mm high, indicating that it been deposited on the base of the pit within an organic container, perhaps of wood or birch bark, for which no material evidence had survived. The bone is from a juvenile/young adult, 16–20 years old, but the quantity deposited represents no more than a quarter to a third of the bone

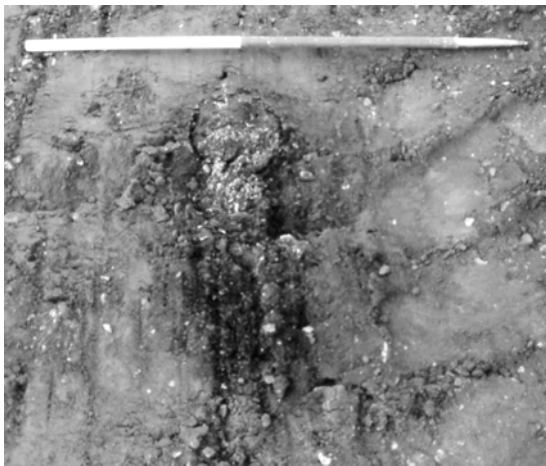


FIGURE 6 Early Bronze Age cremation, pit 1, as exposed by machine stripping, with cremated bone dragged out from within the urn.

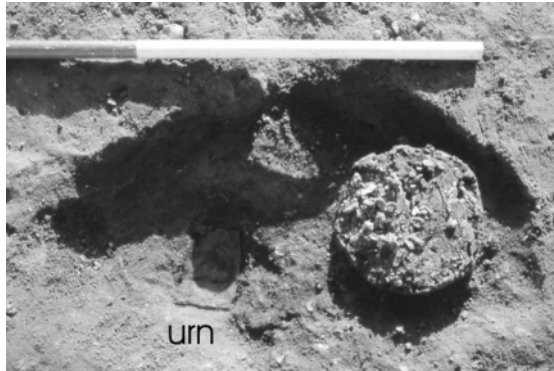


FIGURE 7 Early Bronze Age cremation, pit 1, with inverted urn (right) and small Collared Urn, lying on its side (left, urn).



FIGURE 8 Early Bronze Age cremation pit 2, with burnt soils (right) and central bone mass.

that would have been present in the pyre debris.

The bone mass was surrounded and overlain by dark soil, rich in oak charcoal, presumably collected from the pyre site.

### **The two C-shaped enclosures**

Two C-shaped enclosures lay closely adjacent (Fig 4, C1 and C2). Both were open to the north to north-east, and were on a common alignment of north-north-east.

#### ***Enclosure C1***

A curving ditch formed slightly less than a semi-circle of a C-shaped enclosure, open to the north-

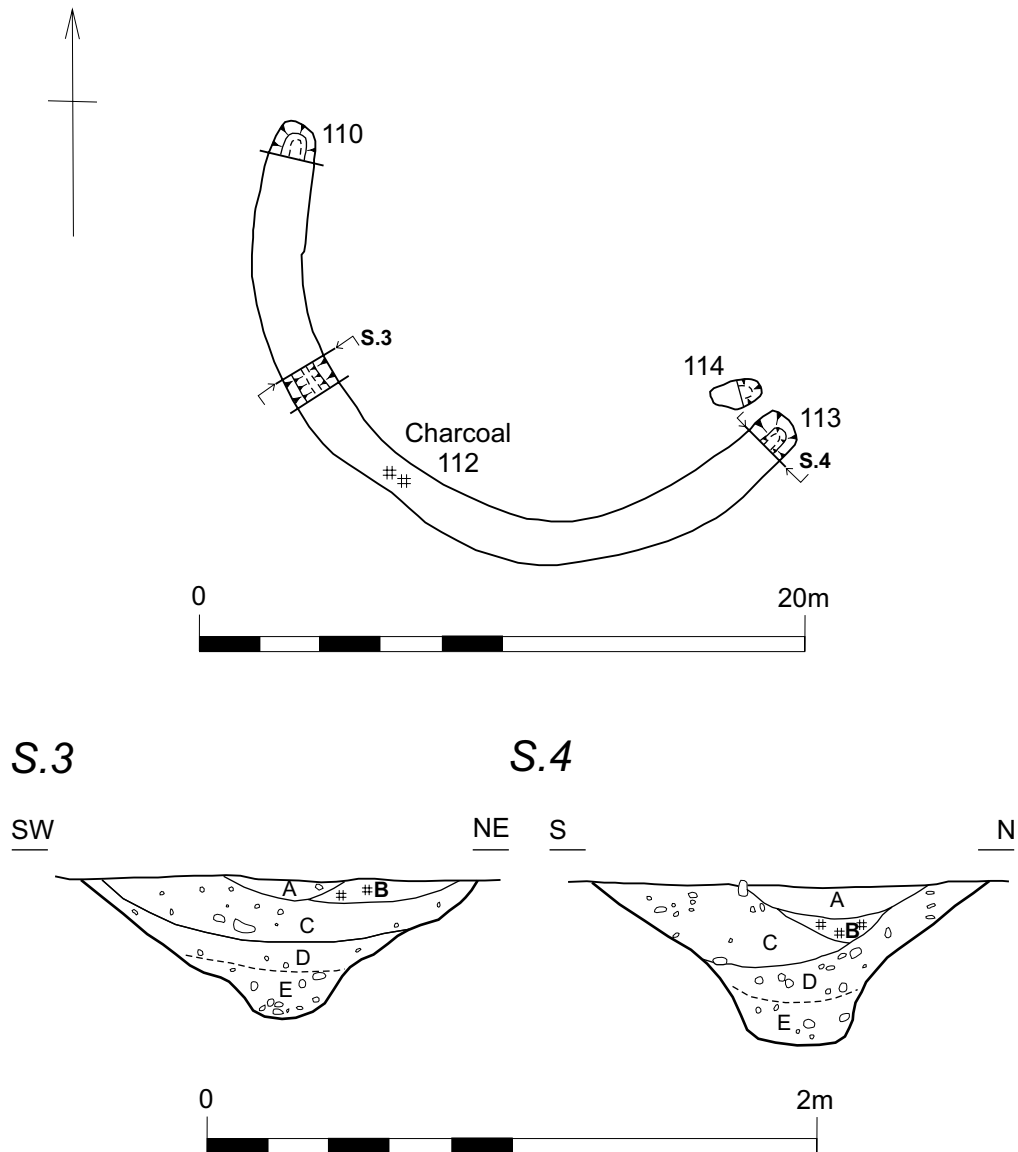


FIGURE 9 Early Bronze Age, C-shaped enclosure (C1).

east, with a projected diameter of 19m and measuring 17.5m between the squared terminals (Figs 9 and 10). The ditch was 1.3–1.4m wide, with a U-shaped profile, 0.45–0.50m deep, and heavily eroded upper edges, indicating that it had been allowed to silt naturally (Fig 9, S.3 and S.4).

The primary fill (E) was of clean sand and

pebbles, while the secondary fills were a little darker and more compact (D and C). Direct human intervention in the sequence is only evident above this, with the deposition of darker-brown loam containing scattered charcoal (B) towards the inner edge of the ditch along the entire arc. A total of 7g of charcoal was recovered from this deposit at the



FIGURE 10 General view of C-shaped enclosure (C1), looking north-west.

eastern terminal (113). Two sections (including Fig 9, S.4) suggest that this material may have been deposited within a shallow gully cut into the ditch silts. A small localised concentration of charcoal, weighing 8g, within the more extensive deposit was visible on the exposed surface near the centre of the arc (Fig 9, 112). The final ditch fill (A) was of light-brown sand containing sparse pebbles, suggesting that the soils containing charcoal were either deliberately buried or were sealed beneath a developing, largely stone-free topsoil.

The only feature within the arc was an elongated sub-rectangular pit (114), immediately adjacent to the eastern terminal. The pit was 1.60m long, 0.93m wide by 0.27m deep, with steep sides and a concave base. The fill was a homogeneous fine, light brown sandy-silt, containing sparse pebbles. This was very similar to the fill of the scatter of natural silt-filled hollows scattered across the site, although on the surface some charcoal flecking had been visible.

No finds were recovered from the C-shaped enclosure, but the absence of Roman pottery, which occurs in some quantity in nearby features, is taken to imply that it was probably contemporary with C-shaped enclosure (C2) to the north-east, which is securely dated to the early Bronze Age. The charcoal samples were not submitted for dating or wood identification, but are retained in archive.

#### **Enclosure C2**

A curving ditch formed slightly more than a semi-circle of an irregular C-shaped enclosure, open to the north-east, and which had a maximum internal diameter of 15.5m, and a distance of 12m between the terminals (Fig 11). To the south, the original ditch had a broad U-shaped profile, with heavily eroded edges, at 1.9m wide by 0.58m deep (Fig 11, S.10). This ditch form probably extended around the entire C-shaped circuit, with the exception of both terminals where the ditch was narrower and probably shallower. The terminal to the south-east was lost where it had been truncated by a Roman enclosure ditch (210), but it appeared to be narrowing at this point. To the north, the ditch narrowed from 1.70m to 0.60 wide, with the final 4.0m having a steep-sided, U-shaped profile, 0.35m deep (Fig 11, S.11, 222). The same profile was repeated in a recut, when the terminal retreated 2.0m westward.

The primary and secondary fills of the ditch derived from natural silting, while the denser pebble content in the final fill to the south may suggest an episode of infilling prior to the recutting (Fig 11, S.10).

The southern half of the ditch had a complex history of recutting. The eastern terminal retreated at least 5.0m westward, to a double-ended terminal comprising flat-bottomed ditches (Fig 11, S.10 and Fig 12). The inner ditch (205) was 0.60m wide by

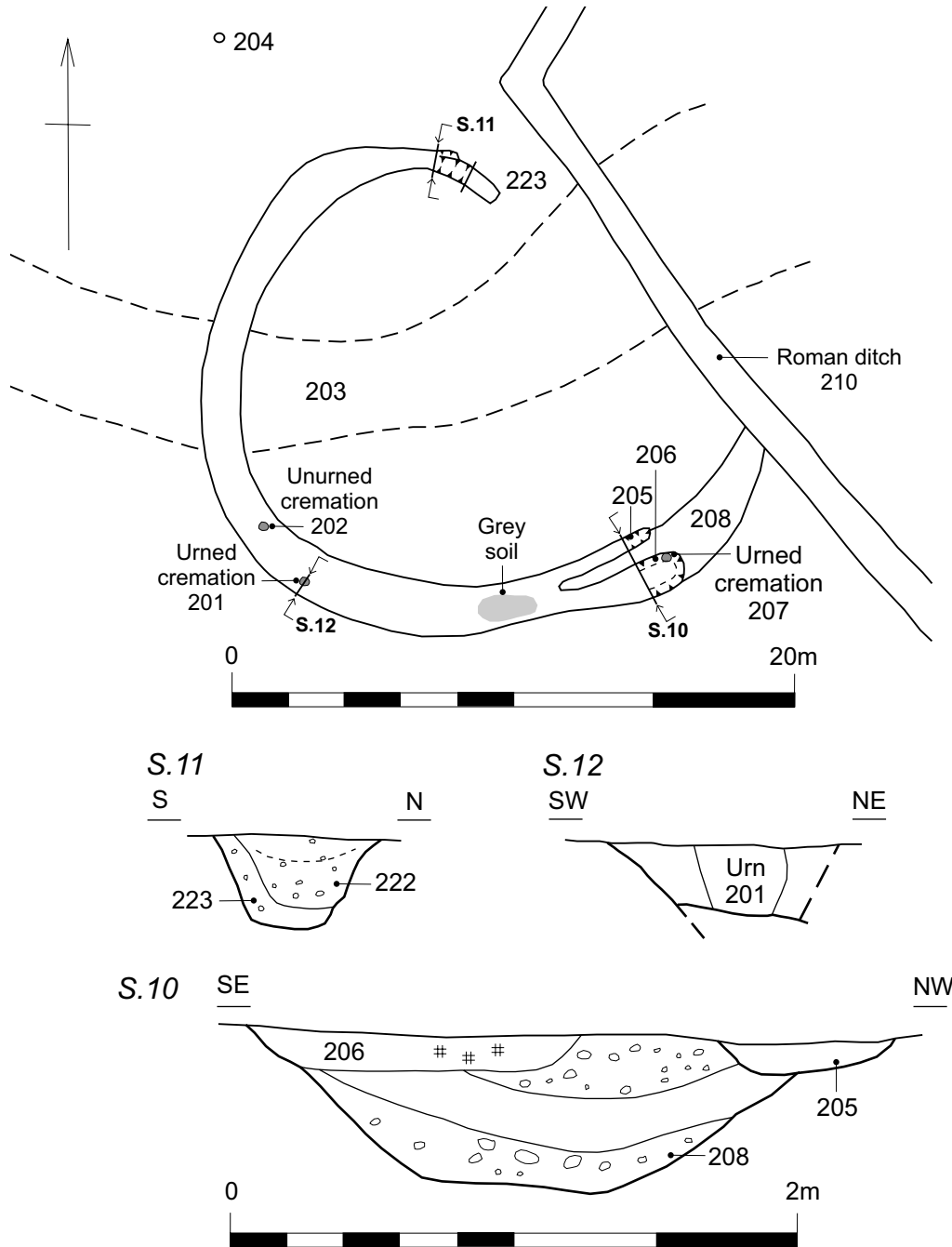


FIGURE 11 Early Bronze Age, C-shaped enclosure (C2).

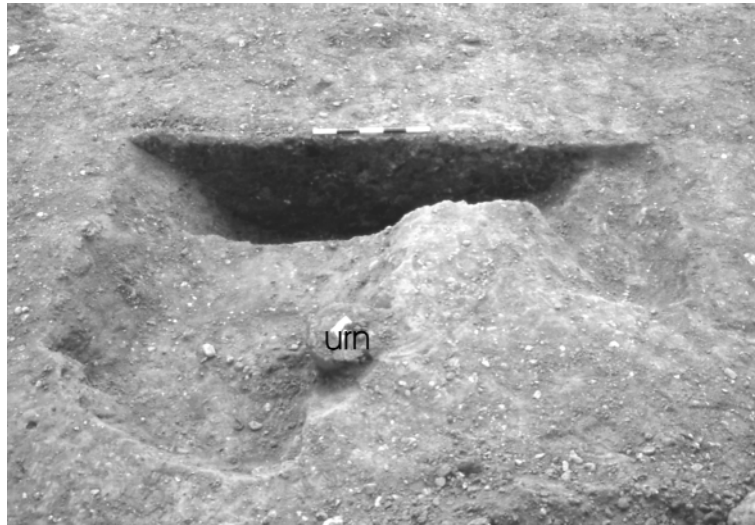


FIGURE 12 C-shaped enclosure (C2), showing recutting at southern terminals and cremation urn 207 (centre, urn), looking south-west.

0.12m deep, while the outer ditch (206) was 1.15m wide by 0.15m deep.

#### *Urned cremation 207*

Set on the base of the outer ditch at its terminal was the bottom of an upright urn containing a cremation deposit (207) (Figs 11 and 12). The urn was lifted intact to be excavated in the office. Against one side of it was a primary deposit of light-brown sand containing small fragments of burnt bone mixed with a little grey sand, up to 20mm deep (Fig 13, level 1, 1a). Above this there was up to 50mm of light-brown sand containing only sparse small bone fragments (1b). The remainder of the surviving fill (2), a depth of up to 55mm, was of grey-brown sand containing occasional charcoal flecks and occasional small fragments of bone. Unless more bone had been deposited in the upper, truncated, levels of the urn, this would appear to have been a token deposit of bone (38g) and pyre debris. The bone was from a young child and the charcoal was blackthorn (*Prunus spinosa*).

Within the ditch fill (206) to the immediate west of the cremation urn, there was a lens of darker soil containing a little charcoal (Fig 11, S.10). Further west the double ditches merged, and there was a further and more extensive area of darker soils containing some charcoal.

#### *Unurned cremation, 202, and urned cremation 201*

Two cremation deposits lay to the west, near the centre of the ditch arc (Fig 11). Towards the inner edge of the ditch a circular pit (202), 0.40m diameter by 0.25m deep, had a fill of dark grey-brown sand containing fragments of cremated bone and some charcoal flecking. A total of 290g of bone came from a child of 6–8 years, but there was insufficient charcoal to submit a sample for species identification.

Towards the outer edge of the ditch an upright urn (201) stood on top of the clean primary fill, although it may have been inserted in a pit excavated into the secondary ditch fills (Fig 11, S.12). An arbitrary box was excavated to enable the urn to be lifted and removed for excavation.

This urn contained an exceptional sequence of deposits that enable us to say much about both the deposition of material in the urn and, by inference, the collection of that material from the funeral pyre (Figs 14–16). As the urn was too poorly-preserved to be conserved, it was excavated by lowering the contents in plan across half of the vessel to provide a full section of its contents.

The sequence of deposition began with clean brown sand, 10–30mm deep, in the base of the urn (Fig 14, 1a). Large fragments of the cranium of a

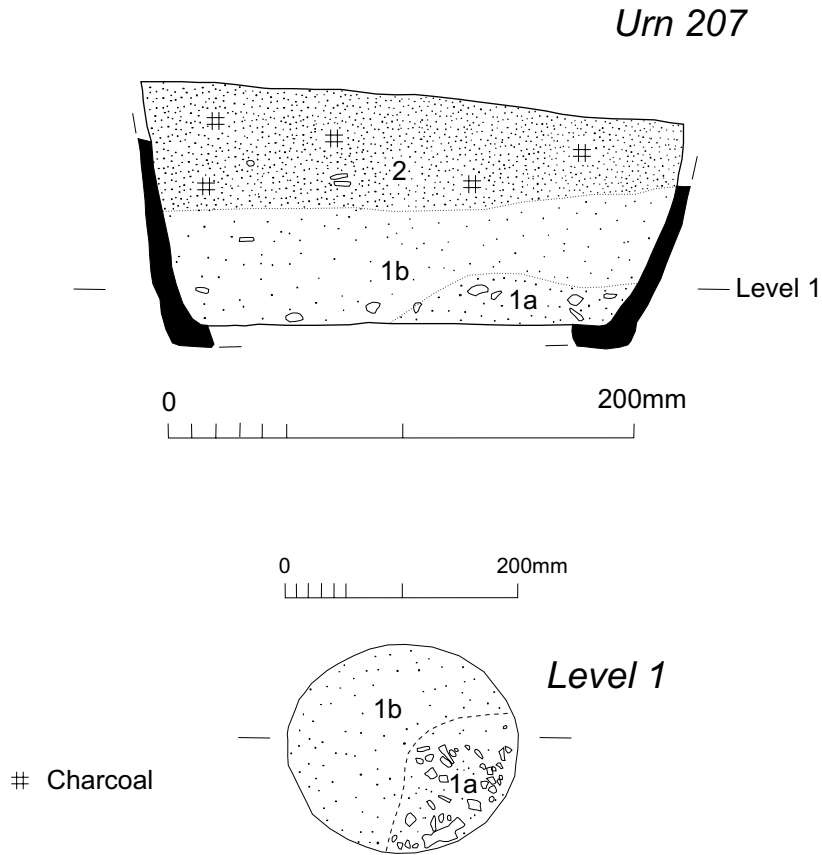


FIGURE 13 Cremation urn 207 and its contents.

skull had been deposited on top of this (Fig 14; section, base of 1b; excavated plan Level 1), indicating that obvious parts of the head had been preferentially collected from the pyre, perhaps before other bone elements. These skull fragments are, however, from a juvenile of 12–14 years, whereas much of the other identifiable bone comes from an adult.

Above the skull fragments was a mass of long bone and vertebrae fragments, including pieces of long bone often 50–80mm long, with the identifiable portion being from an adult, although also including further juvenile skull fragments. This deposit was in a clean matrix of brown sand, indicating that the bone had been carefully collected from the pyre and perhaps cleaned (washed?) to exclude other burnt debris (Fig 14; section, 1b; excavated plan Level 2). This main bone mass

formed a slightly domed deposit within the urn and around the edges there was a layer of grey charcoal-flecked sand containing small bone fragments (Fig 14; section, 2a; and at margins of plan, Level 2). This merged into a similar deposit of charcoal-flecked sand, but also containing some reddened, burnt sand and only sparse small fragments of bone (2b). These charcoal-rich sands were evidently pyre debris from which the larger bone fragments had been removed.

The layers of bone and pyre debris were sealed beneath a substantial deposit of clean yellow sand, that had not come from the pyre deposit (3a). On the surface of the clean sand there was a concentration of small bone-fragments (3b) and above this was a layer of uniform red-brown (burnt) sand (3c). It seems likely that the burnt sand had been scraped up from the scorched ground-surface beneath the

Urn 201

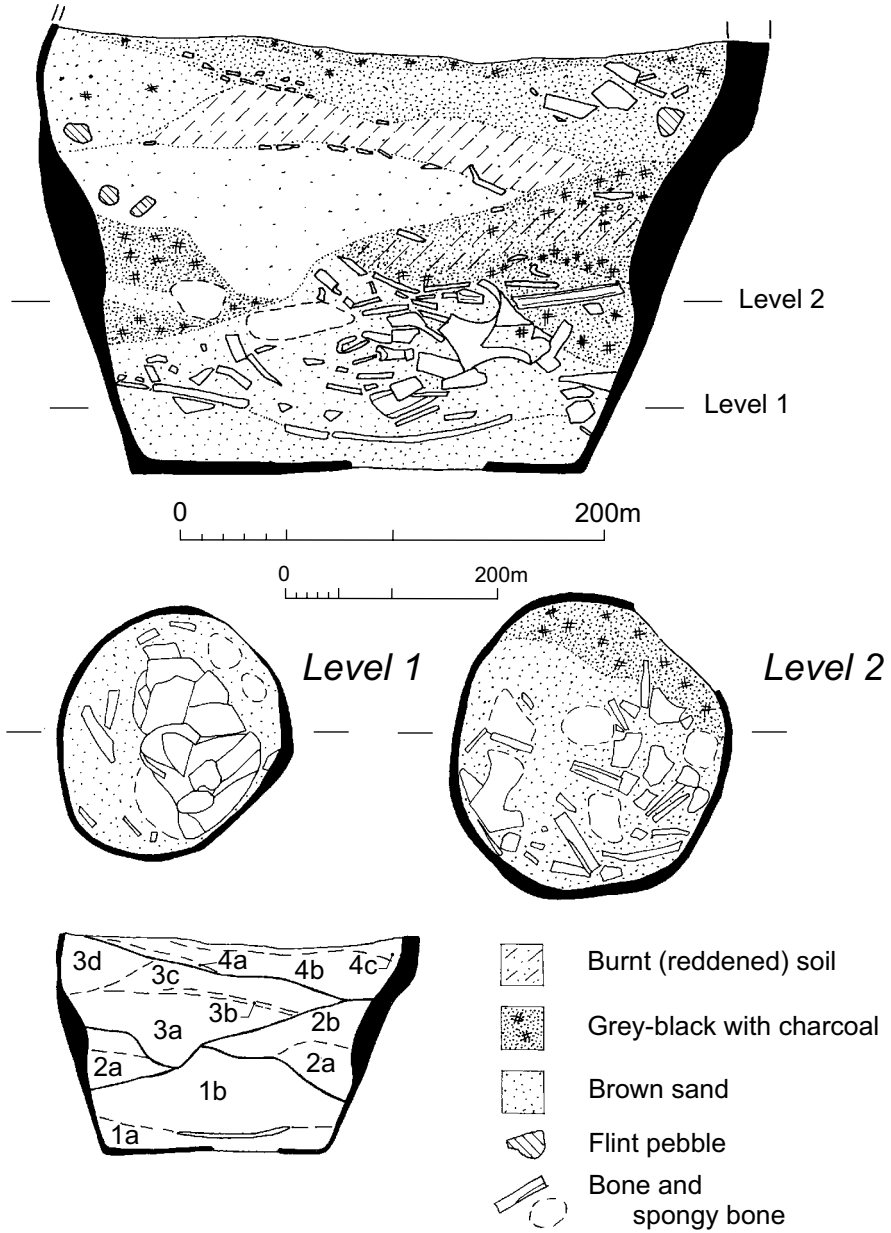


FIGURE 14 Cremation urn 201 and its contents.



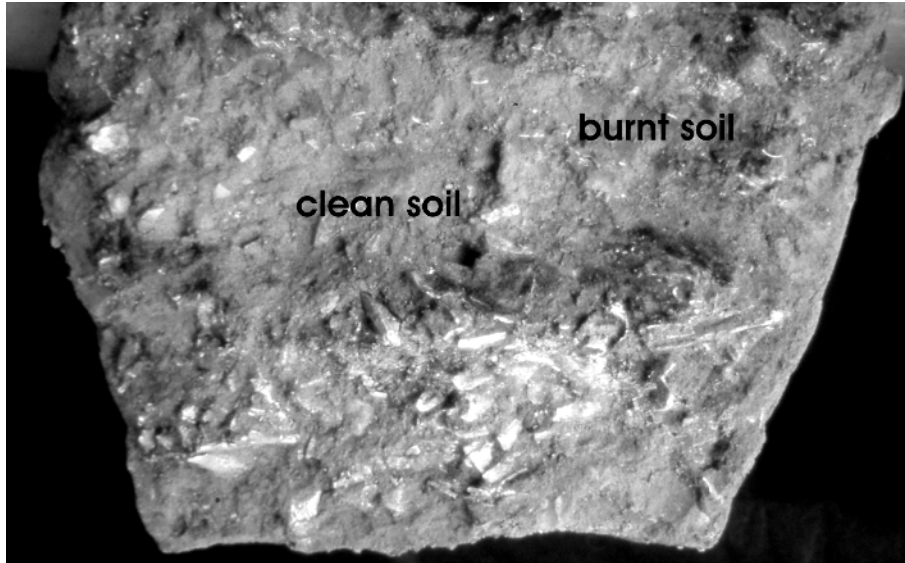


FIGURE 15 Cremation urn 201 in section, showing bone (bottom), charcoal-rich soil (centre), clean soil (top) and burnt soil (top right).



FIGURE 16 Cremation urn 201, showing exposed bone deposit (level 2).

pyre. Against one side of the pot there was a deposit of dark-brown sand containing sparse charcoal flecks (3d), perhaps further material from near the base of the pyre.

On top of the burnt sands there was a scatter of small bone-fragments (4a), lying at the bottom of a mixed layer of brown sand and grey sand containing a few small bone-fragments (4b). The final deposit was grey charcoal-flecked sand also containing sparse small bone fragments (4c).

### Other nearby features

Six metres to the north of C-shaped enclosure C2 there was a small pit (Fig 11, 204). This was sub-rectangular in plan, measuring 0.54m by 0.45m and 0.28m deep. It was cut into the top of a larger, c1.5m diameter, silt-filled hollow, one of a number of such 'natural' features in this area. This leaves uncertainty as to whether the upper deposit was contemporary with the larger feature, perhaps as part of a burnt-out tree of early post-glacial date, or contemporary with the C-shaped enclosure, and perhaps associated with the deposition of pyre debris. Within the brown sandy-loam fill there were two deposits of charcoal, both of which appeared to be single carbonised pieces of wood. Standing near vertically within the fill there was a possible carbonised post, 70mm in diameter and surviving to 150mm high. Running across the width of the pit on the exposed surface, was a further length of carbonised wood, 0.53m long by 140mm wide. The edges of the pit were poorly defined, except at the south-east end where the fill contained a sparse deposit of charcoal and some pink, burnt sand.

Due to the limited funding available, this material was not submitted for wood identification or dating, but the 300g of charcoal is retained in archive.

### An isolated cremation burial

At the south-western end of the quarry, 120m from the C-shaped enclosures, was the truncated base of an unurned cremation of unknown date (Fig 4, 50). The pit was 0.20m in diameter by 0.06m deep, with a fill of grey-black sandy loam that contained 19g of charcoal and 60g of cremated bone. As this feature could not be related to any other activity, the bone and charcoal have not been submitted for analysis and are retained in archive.

### The Bronze Age pottery by Andy Chapman

The partial remains of four vessels were recovered. There were two urns from a cremation deposit, Pit 1, at the north-eastern end of the site, and two poorly-preserved urns from the larger C-shaped enclosure (C2).

### Collared Urns from Pit 1

#### *Vessel 1*

A small, plain Collared Urn (Fig 17, 1 and Fig 18, right), stands 125mm high and has a base diameter of 62mm and a rim diameter of 90mm. The collar is 45mm deep and the rim has an internal bevel. The body and rim are typically 6–7mm thick, and the fabric contains fine laminations suggesting the former presence of organic inclusions, with no coarse mineral component. The external surface is oxidised orange-brown, while the core and interior are dark grey.

A similar small Collared Urn, but with simple incised decoration, has been recovered in association with cremation burials at Barrow 5 at the Gayhurst barrow cemetery (Chapman 2007), by the Great Ouse, 6.5km to the north-west of Broughton Barn (Fig 1). Charcoal in association with the primary cremation in this barrow has been radiocarbon dated to 1620–1515 cal BC (68% confidence, 3290+/-40 BP, Beta- 132790). A further urn of similar size was found in association with a satellite cremation at a round barrow at Raunds, West Cotton, Northamptonshire, situated on the next major river system to the north, the River Nene (Windell *et al* 1990, fig 9: Harding and Healy 2007, 244). This had an indirectly associated radiocarbon date, from a nearby cremation, of 1734–1533 cal BC (68% confidence, 3350+/-54 BP, UB-3315). These smaller Collared Urns, therefore, appear to have a currency of several centuries from at least 1900 to 1500 BC.

#### *Vessel 2*

A plain, undecorated rim from an urn, much larger than Vessel 1, with a diameter of 265mm (Fig 17, 2 and Fig 18, left). The collar would have measured in excess of 65mm deep, and is 10–12mm thick, tapering to a rounded rim. The fabric contains moderate inclusions of rounded pieces of chalk and more angular flint, both ranging from 2–8mm in size. The external surface is oxidised to a light

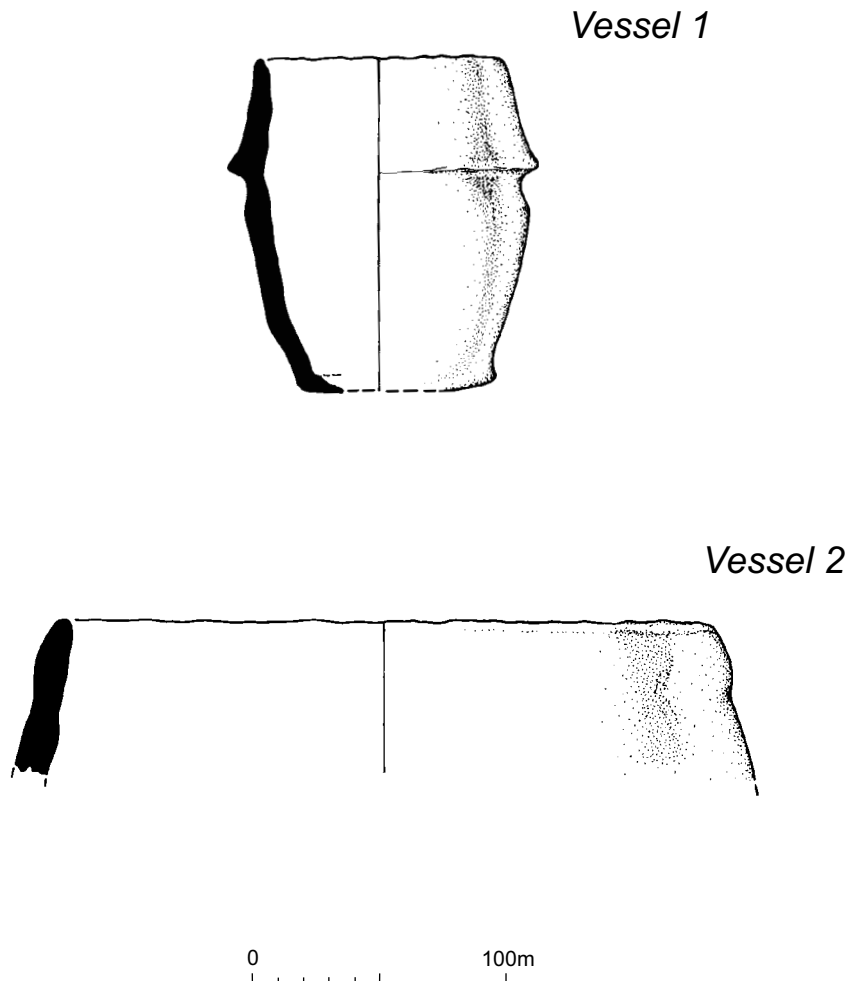


FIGURE 17 The early Bronze Age urns, Vessels 1 and 2, from Pit 1.

brown, while the core and interior are dark grey. Too little of this vessel survives to determine its form or to cite meaningful parallels, although it may have been a second and larger Collared Urn.

***Urns from C-shaped enclosure (C2)***

The two urns, 201 and 207, had both been so poorly fired that the fabrics, as recovered, were little more than heat-discoloured clay. No solid body survived for urn 207, while for urn 201, part of the upper body was solid enough to recover. These plain body sherds are 10mm thick, with the

inner third of the fabric grey in colour, with a grey to brown surface, while the outer two-thirds is red-orange through to the surface. Small voids are the result of leached inclusions, possibly of crushed shell.

As these urns were both buried upright and had been truncated, the necks and rims, which would have defined the forms, have been lost leaving only the base and lower body intact. Urn 207 had a base diameter of 195mm, but only survived to a height of 115mm. The base had been 9–10mm thick and the walls were 6mm thick. Urn 201 was slightly

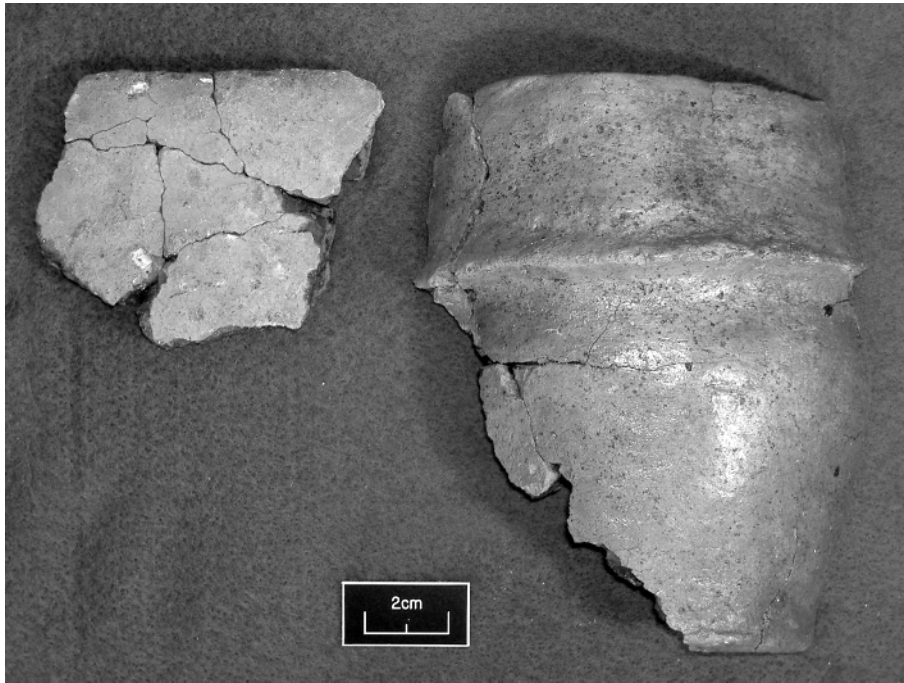


FIGURE 18 The early Bronze Age urns from Pit 1.

larger, with a base diameter of 215mm. It survived to a height of 210mm. While the surviving solid sherds were 10mm thick, the underfired parts were from 5mm to 20mm thick, but the thicker parts appeared to be at least partly a result of slumping of the unfired clay that formed much of the body. The profile was gently flaring, with a maximum diameter of 340mm.

#### **The human remains by Trevor Anderson & J Andrews**

Cremated bone from five separate deposits of early Bronze Age date was submitted for analysis. Based on dental development and bone fusion, two deposits, Pit 1 and Urn 201, appear to contain remains of two individuals, so that in total three children, two juveniles and two adults are represented (Table 3). Pits 1 and 2 lay closely adjacent, and urns 201 and 207 and unurned cremation 202 came from the ditch of the eastern C-shaped enclosure (C2).

Careful osteological examination has shown that 2.0% – 8.3% of Iron Age and Roman cremations

and 1.9% – 6.0% of Anglo-Saxon cremations contain more than one person, so-called dual cremations (McKinley 1997). Less frequently, more than one vessel within a single cremation deposit may contain human bones, so-called double cremations (Anderson and Parfitt 2002; McKinley 1994). At Broughton Barn, it is not certain that either Pit 1 or Urn 201 contained the deliberate deposition of two individuals. Indeed, in the former, the disparity in the degree of the burning suggests that the child bones were not cremated at the same time as the adult. Also, in the vessel only a small percentage of bones and teeth could be definitely assigned to either the juvenile or the adult. It is possible that both “dual cremations” actually represent accidental contamination of a single cremation with other bone debris, perhaps from a common pyre site, rather than the deliberate deposition of two individuals.

TABLE 3 The Bronze Age cremations

<i>Context</i>	<i>Total bone weight (g)</i> <i>(Identified bone: weight and percentage )</i>	<i>Age</i>
Pit 1	158 (152g & 6g, 100%)	Adult (unsexed) Child, 2–5 years
Pit 2	540 (158g, 29.3%)	Juvenile/young adult (unsexed), 16–20 years
Urn 201 Enclosure C2	1462 (620g, 42.4%)	Juvenile, 12–14 years Adult (unsexed)
Unurned, 202 Enclosure C2	290 (111g, 38.3%)	Child, 6–8 years
Urn 207 Enclosure C2	38 (0g, 0 %)	Young child?

### *Catalogue of cremated bone*

#### *Pit 1: Individual A (152g)*

*Age:* Adult (socket for third molar; fused metacarpal head).

*Comment:* Small pale fawn off-white fragments, majority under 20mm. Largest bone: 45mm, upper limb fragment.

*Identified bone:* Six cranial fragments, including a left zygomatic fragment; left mandible fragment with socket for distal root of third molar and one tooth root fragment (6g); thirty-four upper limb fragments (32g), including a metacarpal head fragment; two rib fragments (1g); one lower limb fragment (1g)

#### *Pit 1: Individual B (6g)*

*Age:* 2–5 years?

*Comment:* pale fawn, only very lightly burnt fragments, majority under 20mm. Largest bone: incomplete temporal petrous portion, 22mm.

*Identified bone:* Thirty cranial fragments, including both temporal petrous portions (5g); metatarsal(?) shaft, sub-adult (1g).

It appears that the two individuals were not cremated together, as the child bones are only lightly burnt. Possibly, the child fragments represent bone elements that were overlooked and left at the pyre site. Later, the adult body was cremated at the same site at which time the child fragments were accidentally collected and mixed with the adult bones. As such, we cannot be certain that the remains represent a deliberate deposition of two individuals.

#### *Pit 2: Cremated human bone (540g)*

*Age:* 16–20 years (root apices open; unfused/fusing epiphyses; thin cranial vault fragments).

*Comment:* One bag contains very small fawn off-white fragments, majority under 20mm; largest bone: 42mm, upper limb fragment, total weight 540g. Other bag contains minute fragments of bone within a matrix of very small grit, total weight: 521g.

*Identified bone:* 23 minute root fragments (2–9mm) (1g), including a maxillary third molar root, not fully formed. 162 cranial fragments (70g), largest vault fragment 33mm x 27mm, including temporal petrous portion; sphenoidal fragment, R. temporo mandibular joint fragment; thirty-six small (4–13mm) fragments of tooth roots: Maxilla: third molar (two roots not fully formed); second molar (two roots); first molar (four roots); right second premolar; premolars(?) (five crown fragments); Mandible: right first premolar crown fragment; canines(?) (two); incisors (seven fragments); twelve unidentified fragments (4g); four minute vertebral fragments (1g); sixty-six upper limb fragments (50g), including two fragments of unfused/fusing radial head; three hand phalanges (1g): distal portion of proximal phalanx; medial phalanx, missing proximal portion; distal phalanx, unfused; sixty-two rib fragments (22g); pelvis, an acetabulum fragment (1g); six lower limb fragments (8g), including an unfused/fusing epiphyseal fragment (?proximal tibia).

#### *The C-shaped enclosure (C2): Urn 201 (1462g)*

*Individual 1:* Juvenile, 12–14 years (tooth development and thin skull)

*Individual 2: Adult (fully-fused vertebra; clavicles and phalanges)*

Majority of remaining bones could belong to either a juvenile or an adult.

*Comment:* Small pale fawn off-white fragments, majority under 20mm. Largest bone: 60mm, proximal shaft of the right femur (14g).

*Identified bone (620g; 42.4%):*

Juvenile. Skull: 174g: (a) 74g separated on site; (b) a further 100g scattered throughout cremated material. Mainly small thin cranial vault fragments, with sutures sharp and clearly visible. Dental: L. max and L. mand third molar crowns, incompletely developed. Root fragments: Maxilla: central incisor; two premolars. Mandible: a premolar; a canine; right lateral and central incisors. (b) also contains the lateral portion of the right supra orbital process; zygomatic fragments. Dental; TMJ fragment; two mandible fragments, both lingual aspect only, containing traces of sockets for: R. 6;5;4 and L 7;6. Maxilla: R. maxillary third molar, crown incompletely developed; molar root; first and second premolar roots. Mandible: four molar roots (first or second); canine; L. central incisor root. Unidentified: 16 root fragments, including sub-adult dentition?

Adult. Vertebra: 20g, atlas fragment; cervical body fragment; thoracic body fragments; sacral fragment. Vertebral end plates fully fused. Ribs: 12g, small fragments. Clavicles: 2g, medial epiphyses: fully fused. Upper limb: 194g, majority 20–30mm in length, small diaphyseal fragments. Hand/wrist: 8g, small fragments, including an incomplete left scaphoid; three metacarpal fragments; distal portion of 11 phalanges (?8 proximal; ?3 medial); 3 distal phalanges. the latter are fully fused. Pelvis: 16g, small eroded fragments. Lower limb: 194g, majority 30–40mm in length, small diaphyseal fragments also an incomplete patella. Foot/ankle: 20g, small fragments of calcaneus and talus; an eroded R. cuneiform ii; proximal fragment of the left third metatarsal; first metatarsal shaft and head fragment.

*The C-shaped enclosure (C2): Un-urned cremation 202 (290g)*

*Age:* 6–8 years (tooth development, including the incisor with an open root apex, and the small size of the hand phalanges and the metatarsal fragment would suggest a similar age)

Recent work has suggested that the presence of a distal first metatarsal epiphysis is not as rare as anatomical texts suggest (Anderson 2001).

*Comment:* Small pale fawn off-white fragments, majority under 20mm.

*Identified bone (111g; 38.3%):* Skull: 78g, mainly very small, thin cranial vault fragments; petrous portion of mastoid. dental: 6 minute bone fragments with traces of sockets, including those of unerupted teeth. 12 crown

fragments all incompletely developed: including maxilla: second molar; r. second premolar. Mandible: first molar fragment; left first premolar and both second premolar crown fragments. unidentified: 6 crown fragments from permanent molars. 14 root fragments: including maxilla: 5 deciduous molar roots. Mandible: central incisor, root not fully developed; 3 deciduous molar roots; 2 deciduous canine roots, not reabsorbed. Unidentified: three permanent molar root fragments. Vertebra: 1g, minute arch fragments. Ribs: 8g, small fragments. Upper limb: 18g, majority under 20mm in length, small diaphyseal fragments. Hand/wrist: 1g, three small phalanges, two medial; one distal. Pelvis: 2g, small eroded fragments, including fragment of the sacro-iliac surface. Lower limb: 2g, an unfused epiphysis: distal tibia? and unfused shaft fragment foot/ankle: 1g. R. distal portion of the first metatarsal, with a distal epiphysis, incompletely fused; distal metatarsal and fragment of unfused metatarsal head; first distal phalanx.

*The C-shaped enclosure (C2): Urned cremation 207 (38g)*

*Age:* Young child (bone fragments very thin and gracile)

*Comment:* very small pale fawn off-white fragments, majority under 15mm.

**The wood species by Rowena Gale**

Charcoal associated with two groups of early Bronze Age urned and unurned cremations, Pits 1 and 2 and urns 201 and 207 from a C-shaped enclosure, was identified to species (Table 4). The samples were prepared for examination using standard methods (Gale and Cutler 2000). Charcoal fragments were supported in washed sand and examined using a Nikon Labophot-2 microscope at magnifications of up to x400. The anatomical structures were matched to prepared reference slides. When possible the maturity of the wood (whether heartwood/ sapwood) was assessed.

**Pits 1 and 2**

The charcoal included thin slivers measuring up to 10mm in length, and numerous smaller pieces.

*Pit 1–122* fragments oak (*Quercus* sp.), weighing 27g, including heartwood and wood of unknown maturity (the latter was either too degraded or of inadequate dimensions to assess maturity).

Although the charcoal was too comminuted to assess whether it had originated from roundwood or trunkwood, none appeared to be sapwood. The

presence of heartwood does not necessarily imply wood of any great age since heartwood formation sometimes occurs in wood as young as 15 years or so. However, in this instance it was impossible to estimate the likely age or dimensions of the wood prior to carbonisation and the charcoal could represent wood several decades or more in age.

Pit 2–59 fragments oak (*Quercus* sp.), weighing 12g, heartwood.

By inference, the charcoal represents pyre fuel and it is interesting that both samples consisted entirely of oak (*Quercus* sp.). While the charcoal was too comminuted to assess the dimensions of the poles used, both samples included a high proportion of heartwood indicating an origin from wood mature enough for this to have developed.

These results are comparable to those from burials at the Gayhurst barrow cemetery, Buckinghamshire, located a few miles away (Gale in Chapman 2007, 175–178). At Gayhurst, which included urned and unurned burials, the exclusive use of oak as pyre fuel appeared to be strongly associated with the status of the deceased and with the siting of the burial within the barrow (Gale 2007). It is feasible that both ritual and the practical aspects relating to the properties and supply of fuel applied to the use of oak for cremations at Broughton Barn Quarry.

### ***C-shaped enclosure (C2), Urned cremations 201 and 207***

The charcoal was well preserved and firm, although many of the fragments in urn 201, the larger of the two samples, were too narrow to identify. Charcoal from urn 207 was less frequent but also less fragmented.

Context 201, an urned cremation contained both the whole burial and pyre debris. The charcoal, which was mainly rather comminuted, occurred in a thin layer overlying the bulk of the cremated bones. It consisted of oak (*Quercus* sp.) heartwood (and wood of unknown maturity) and a member (or members) of the hawthorn/*Sorbus* group (Pomoideae).

The second burial (207) was smaller and contained only token deposits of bone and charcoal. The latter consisted of blackthorn (*Prunus spinosa*).

Pyre fuel for the two cremations appears to have been selectively chosen for each event. The contexts represented different types of burial (whole and token) and it is interesting that different woods were associated with each.

### **Discussion: Bronze Age cremations and C-shaped enclosures**

Early Bronze Age cremation burials are most commonly associated with round-barrow burial, either beneath the mound, inserted into the mound or as satellite burials within a few tens of metres of

TABLE 4 Charcoal from cremation deposits

<i>Context</i>	<i>Weight (g)</i>	<i>Pomoideae (hawthorn etc)</i>	<i>Prunus spinosa (blackthorn etc)</i>	<i>Quercus (oak)</i>	<i>Burial</i>
Pit 1	27	–	–	122h	Adult Child (2–5 years)
Pit 2	12	–	–	59h	Juvenile (16–20 years)
201 Urned	15	27 (2g)	–	21h	Adult Juvenile (12–14 years)
207 Urned	3	–	22	–	Young child

Key: h=heartwood and unknown maturity

the mound. At Broughton Barn quarry there were both isolated cremation burials, with no apparent association within any other contemporary features, and a pair of C-shaped enclosures, one of which had cremation burials deposited in the ditch. The C-shaped enclosures appear to be uncommon variations on the theme of round barrow burial, although there was insufficient evidence to determine whether the soils from the ditches had been heaped up to form low central mounds.

The presence of the Collared Urn indicates that the pair of isolated cremation deposits was of early Bronze Age date, with the radiocarbon date indicating probable deposition within the nineteenth century BC. A similar pair of pits containing cremation deposits, has been found at Mill Farm Quarry, near Gayhurst (Chapman 2007), but these lay within a barrow cemetery and only 20m from the ditch of the nearest round barrow. Other, similarly isolated burials have occasionally been found, suggesting that burial away from round barrows was perhaps not uncommon. They are probably underrepresented in the archaeological record as they will only be located by chance, most often during the investigation of known features of later dates, as at Broughton Barn. An isolated Collared Urn burial, with no known associated or nearby funerary monument, has recently been found in the valley of the River Nene, near Northampton (Foard-Colby 2008). The use of a small Collared Urn as an accessory vessel, but not as a container for a cremation deposit, has been seen at many sites, including Barrow 5 at nearby Gayhurst (Chapman 2007).

The C-shaped enclosures have a number of parallels at other locations either directly on the Great Ouse or, as at Broughton Barn, next to a tributary of the Ouse. At Broom, Bedfordshire next to the River Ivel and south of the Great Ouse, a C-shaped enclosure, open to the west, was larger than the Broughton Barn examples, at 32m diameter (Cooper and Edmonds 2007, 53–61). This was also a much more complex monument. It appeared within a landscape containing Neolithic activity, and the majority of the material within the ditch of the C-shaped enclosure was residual from this period. The C-shaped enclosure itself started as an arc of multiple, intercutting pits with a later continuous recut. Charcoal in the northern terminal has been radiocarbon dated to the early second millennium (1880–1640 Cal BC, 95% confidence),

closely comparable to the Broughton Barn enclosure.

A C-shaped enclosure from Camp Ground, Earith, on the Great Ouse at the fen edge in Cambridgeshire, measured 15m across, of similar size to the Broughton Barn enclosures (Cooper and Edmonds 2007, 60). This appeared to have been focussed on a crouched inhumation burial, but became in turn the focus for a cremation cemetery.

As at Broughton Barn, there is no clear evidence to indicate whether there had been central mounds within any of these C-shaped enclosures, leaving the relationship of the form to contemporary round barrows unclear.

Careful excavation of one of the cremation urns (201) from C-shaped enclosure C2 has produced an exceptionally clear and complex sequence with five major stages of deposition:

- 1) Skull fragments (from a juvenile) followed by large long bone fragments (mainly from an adult), all carefully extracted from the pyre and perhaps even washed to remove traces of blackened soil and charcoal
- 2) Blackened, charcoal-rich soil from the pyre, with all the larger bone fragments removed
- 3) Clean soils, to seal the deposits of pyre debris
- 4) Burnt soils from beneath the pyre
- 5) A final ‘topping-up’ with mixed pyre debris of grey, charcoal-rich soils containing small bone fragments.

The complexity of the deposition within the urn clearly reflects the care with which material was collected from the pyre. This applies to the bone itself, where it seems that fragments of the cranium, the most easily recognised skull fragments, had been preferentially collected and deposited in the urn prior to other bone fragments. This sequence is complicated by the fact that the skull is that of a juvenile, aged 12–14 years, while no other elements from an individual of this age have been identified within the main bone mass. In contrast, the other identifiable bone elements are from an adult, but no skull fragments from an adult have been identified. Anderson (above) has suggested that such ‘dual’ cremations may be the result of accidental contamination during the collection of material from a communal pyre site, but given the evident care shown in the filling of



the urn with segregated elements of the pyre debris, it seems unlikely that they would have collected elements of the wrong head, or that so much of the head of any earlier cremation would have been left behind for later accidental collection. However, it is unclear what this combination of two individuals represents.

It is also apparent that care in collection from the pyre was not just restricted to the bone, but also applied to the handling of both the blackened, charcoal-rich pyre debris and even to the separate collection and deposition of some of the scorched sand from the ground surface beneath the pyre. This highly complex and structured process of both collection from the pyre and deposition in the urn represents an extreme of care, and may be contrasted with the other urn (207) and the nearby unurned cremation (202), in both of which token quantities of bone mixed with blackened, charcoal-rich pyre debris was collected as a single mass. Another variation is seen in one of the two pit cremations, where the bone had been deposited within an organic container, perhaps a cylindrical birch-bark box or something similar.

The cremations also provide evidence for the exclusive use of oak as the pyre fuel, which has been widely seen in early Bronze Age cremations, particularly for adults. The two isolated cremations associated with the small Collared Urn both used oak exclusively for the pyres of an adult and an older juvenile aged 16–20 years. The cremation of an adult, 201, from C-shaped enclosure C2, and including at least the skull of a younger juvenile, 12–14 years, had also used of oak but included wood from hedgerow species, such as hawthorn. It is only in the cremation deposit of a young child, 207, that we see an absence of oak and the presence only of hedgerow species, in this case blackthorn. In a much larger group of cremations from the broadly contemporary Gayhurst barrow cemetery, near Newport Pagnell, four adults were associated only with oak pyre debris, while an adult, possibly female, was associated with a mixture of oak and cherry (*Prunus*) species, and a juvenile of 8–9 years was associated with a mixture of oak, hawthorn and cherry species (Gale in Chapman 2007, 175–178).

The Broughton Barn cremations, therefore, add to a growing body of evidence illustrating the complex and diverse rituals associated with early Bronze Age cremation and the collection and depo-

sition of pyre debris, where the handling of the burnt wood and even the scorched soil from beneath the pyre could sometimes become part of the ritual along with the bone itself.

## LATE IRON AGE AND ROMAN SETTLEMENT

### Late Iron Age to early Roman settlement

#### *The domestic focus, Area 1 (Fig 3)*

The 1996 trial trenching identified an area of late Pre-Roman Iron Age to early Roman settlement at the extreme north-eastern end of the quarry, which was subsequently excluded from excavation. These features produced ‘quantities of mid to late first-century pottery including platters, butt-beakers, carinated bowls, cordoned jars, lid-seated jars and storage jars all in an unabraded condition’, and one of the ditches also contained 17 fragments of rectangular kiln bars (NA 1996). However, none of the pottery recovered was deformed or cracked, as would be expected if much of the material had been wasters, so the kiln must have lain within or adjacent to an area of domestic occupation.

#### *The ditched enclosure (Figs 4 and 19)*

In the trial trenching the central area of the quarry was seen to contain ‘a disparate collection of ditches, pits and postholes’, while the pottery was ‘mostly grog-tempered ware of common form types and dates from around the time of the Roman Conquest, possibly continuing into the early second century AD’ (NA 1996, Area 2). This area therefore appeared to be broadly contemporary with the probable domestic focus to the east, Area 1, which was excluded from excavation, but had been less intensively utilized.

In the watching brief the area was seen to comprise a large ditched-enclosure containing a sparse scatter of pits and gullies (Fig 19). The associated pottery is mainly dated to the early decades of the first century AD with a smaller proportion indicating that activity continued on a lesser scale to the late first or early second century AD. It should be noted that only one of the excavated features was in excess of 0.5m deep, indicating that they had been heavily truncated by ploughing, which may have totally removed shallower features. In addition, the area was recorded under

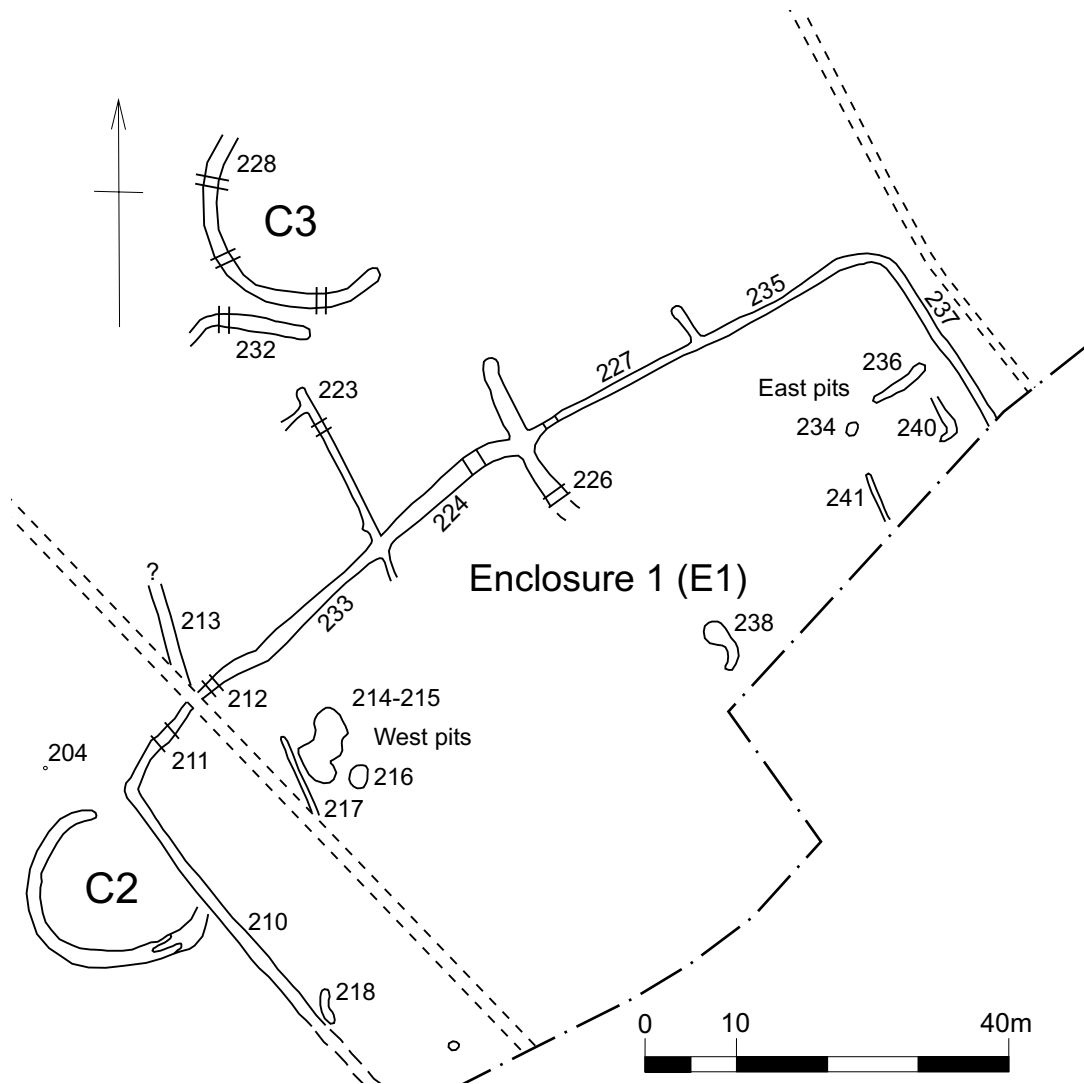


FIGURE 19 The late Iron Age/early Roman enclosure.

watching brief conditions following soil stripping with mechanical excavators, so some areas were still obscured by scattered soil and machine tracks, which may have concealed further pits and other smaller features. The enclosure ditch, for instance, was not seen continuously around its entire circuit, and intermittent lengths have been interpolated from the general pattern.

The enclosure was probably square or rectangular, measuring 90m north-east to south-west by at least 55m wide (Fig 19). The south-eastern end lay

beneath part of the processing plant area not stripped for extraction. However, trial trenching in this area in 1996 had located further ditches, suggesting that either the enclosure, or the enclosure and a further area of contemporary occupation, extended over a distance of at least 150m from north-west to south-east.

The enclosure ditch was investigated at a number of locations along the north-western arm, and pottery was also collected from the exposed ditch fills. It varied from U- to V-shaped,

1.05–1.60m wide by 0.30–0.50m deep. The fills were typically brown to greyish-brown sandy loams containing some pebbles, with little distinction between the primary and secondary fills, suggesting that they had largely silted naturally from edge erosion. To the south-west (210), there was a layer containing burnt clay above the primary fill against the inner edge of the ditch, and nearby on the northern arm (211), the fill contained fragments of a perforated, fired-clay, kiln/oven plate. At the north-eastern corner of the enclosure, a concentration of pottery from a small group of vessels was recovered from the exposed ditch fill (235), constitutes the largest single assemblage from the site (146 sherds, weighing 1.77kg).

The north-eastern arm (237) was V-shaped, 0.5m deep, but a shallower shelf on the outer side may suggest that it had been recut. The upper fill of the ditch to the south-east of this was grey-brown, perhaps as a result of hearth debris from a nearby kiln (234).

Along the north-western arm of the enclosure a number of subsidiary ditches, running at near right angles to the enclosure ditch, were recorded (213, 223 and 226). These were seen to run for up to 18m to the north-west of the enclosure, but none appeared to run as far as 10m into the enclosure, although the south-eastern ends were not located. These ditches all had very similar fills to the enclosure ditch and produced pottery of the same date range, leaving their relationship to the enclosure uncertain. Ditch (223) may have predated the enclosure, while ditch (226) appears to have been contemporary with the enclosure ditch, perhaps as a central sub-division. Its south-eastward continuation may have been lost in an area of machine disturbance at the junction of separate blocks of soil stripping, which closely coincided with the projected ditch line.

#### *Internal features*

At the north-eastern end of the enclosure there was a kiln/oven and an associated group of linear gullies (Fig 19, East pits). The base of the circular kiln or oven, survived as a shallow hollow 1.0m in diameter and 0.15m deep (Fig 19, 234). It had a fill of charcoal flecked, grey loam and above this there were fragments of fired clay from a number of broad and thick kiln bars and a single small fragment from a perforated fired-clay oven/kiln plate. There were also lumps of unfired clay, grading

from grey-green to red in colour, which had evidently come from the unfired, but scorched parts of a thick clay lining, perhaps parts of a kiln superstructure.

Close to the kiln/oven there were three lengths of linear gully, lying parallel or perpendicular to each other (236, 240 and 241). They were from 5.0 to 7.0m long by 0.6–1.2m wide. The fills were all grey-brown and contained comminuted charcoal, while gully (241) also contained some burnt stones and fragments of fired clay, suggesting that they all contained hearth debris from the nearby kiln, as did the upper fill of the adjacent length of the enclosure ditch (237). A total of 47 sherds of pottery, weighing 735g, was recovered from these features.

At the south-western end of the enclosure there was a cluster of sub-square to sub-circular, inter-cutting pits (Fig 19, West pits). Two of these were investigated (214 and 215). They both had steep sides and flat bottoms, one at 0.25m deep and the other 0.60m deep, indicating that they had been filled quite rapidly. The fills were of grey-brown sandy loam containing some pebbles and the occasional burnt cobble. To the south-west of the pits there was a 5.0m length of linear gully (217), 0.35m wide by 0.15m deep, with steep sides, a flat bottom and square terminals at either end. The fill of grey-brown sandy loam contained a little charcoal and the occasional burnt stone. A total of 34 sherds of pottery, weighing *c* 0.5kg, was recovered from these features, all of which is dated to the early decades of the first century AD.

Towards the centre of the enclosure there was a large circular pit, 2.5m in diameter, probably with other smaller pits extending to the south-east (Fig 19, 238). The fills exposed on the surface were brown loams, and as no finds were visible these features were not investigated further. Adjacent to the south-western arm of the enclosure was a group of small, intercutting pits, perhaps four in total, which were not excavated either (Fig 19, 218).

#### *The C-shaped enclosure (C3) and other early Roman features*

Twenty-metres to the north-west of the ditched enclosure there was an arc of ditch forming just under a semi-circle of a C-shaped enclosure with a diameter of 20m (Fig 19, C3). While there is some similarity of form with the Bronze Age, C-shaped enclosures previously discussed, the ditch of this

enclosure was sectioned in three places and two sherds of early Roman pottery was recovered. The fills also contained none of the burnt debris that characterised the fills of both early Bronze Age enclosures. The ditch was 1.60m wide by 0.30m deep, with steep sides and a flat base. There was a possible terminal to the south, but to the north the ditch was lost in machine disturbance, and may have continued further to the east.

To the immediate south there was a curving length of ditch (232), 1.30m wide by 0.30m deep, with a terminal to the east. It may have been contemporary with the adjacent C-shaped enclosure, and the single excavated section produced 30 sherds of early Roman pottery.

To the north and west of the C-shaped enclosure there was a sparse scatter of features (Fig 4). Two lengths of linear ditch, both running west-east (229 and 231), 1.20–1.30m wide by 0.30m deep, were traced for 30m and 10m respectively, but were undated. They were both cut by a substantial ditch (230), which was contemporary with the late Roman settlement.

To the south-west of these ditches was an elongated pit (Fig 4, 219) which was not excavated. A sub-square pit (Fig 20, 100) near the late Roman causeway, 1.50m square by 0.29m deep, with a flat bottom, contained a pottery group dated to the early decades of the first century.

### **The late Roman settlement and boundaries**

#### *A late Roman settlement, Area 2*

Part of a focus of late-Roman settlement lay in the south-eastern part of the quarry (Fig 3). The trial trenching in 1996 defined a focus of activity extending some 150m north to south and in excess of 50m west to east, with activity probably continuing eastwards, under the road (NA 1996). The ditches in this area produced ‘small quantities of abraded pottery, including Samian, Oxford Ware, grey ware, Black Burnished Ware, grogged and white wares’ (NA 1996, Area 3), dated to the third to fourth centuries AD. This area was excluded from quarrying, and lay largely beneath an earth-work bund flanking the adjacent road.

#### *The boundary ditch and causeway*

During the watching-brief, the only area of late Roman activity investigated comprised a linear ditch system on low-lying ground along the north-

western margin of the quarry. It ran parallel to the modern stream course and 10–40m from it (Figs 3 and 4). A 150m length was recorded within the quarry, and in both directions it continued beyond the quarry limits. The feature contained water-deposited silts, but its linear course suggests that it was a cut ditch or artificial watercourse, and not a natural stream channel. At the time of discovery these deposits were already partly desiccated as a result of dewatering caused by the adjacent areas of previously excavated quarry.

The character of the ditch was consistent for most its length, but a single stretch of greater complexity was recorded in more detail (Fig 20). For most of its length the ditch was some 4–5m wide, but for a length of 35m it was narrower and more complex. At the southern end of this area the ditch was 2.0–2.5m wide (101), with steep sides and a flat base, although it only survived to a depth of 0.25m (Fig 20, S.8, 101). Against the sides of the ditch there was up to 0.50m of grey-brown sandy clay (S.8, b), but the central 1.5m of the fill (a), with a steep edge against the clays, was of black peaty loam, with fragments of unworked wood scattered through it, along with freshwater snail shells. To the north there was a similar fill (104), but an intervening length of 9.0m comprised compacted gravel in light grey sandy silt (103), although beneath the gravel there was a further peaty deposit. It is suggested that the gravel had been deliberately laid into the partially silted ditch to form a firm causeway across this otherwise wet and boggy area. To either side of the causeway there were groups of narrower gullies running into the main ditch; three to the south (106) and two to the north (107). They were up to 0.5–1.5m wide, becoming shallower to the south-east. They may have served as drainage gullies taking water away from the access to the causeway and into the ditches to either side.

Immediately adjacent to the causeway was a pair of short, flat-bottomed linear pits or slots (102), 1.8 and 2.5m long, 0.65–0.08m wide, but only 0.1m deep. Another shallow flat-bottomed pit (105) was at least 4.0m long but its true shape was not defined as it was partly obscured by further deposits of compacted gravel. It is possible that these two features may have held the timber footings for one end of a small bridge, perhaps pre-dating the gravel causeway.

To the north-east of the causeway area, there was

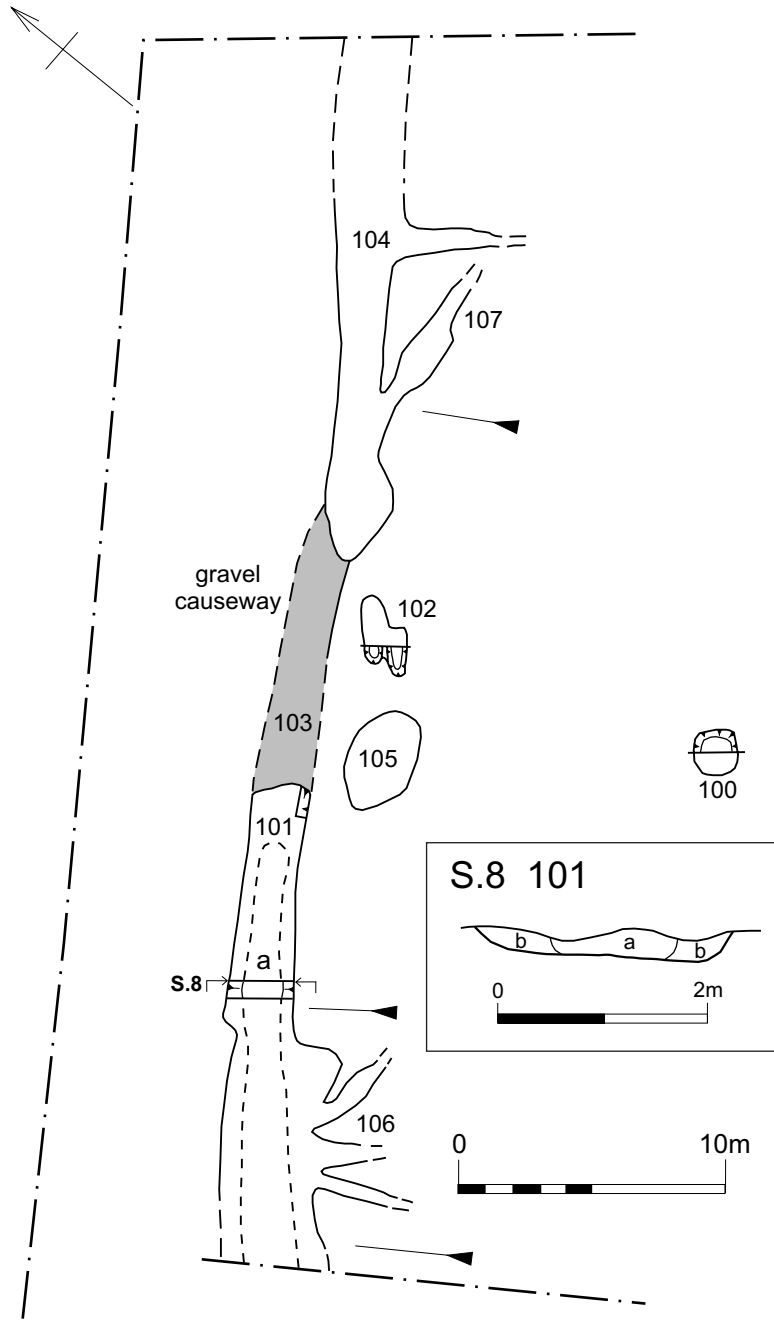


FIGURE 20 The late Roman boundary ditch.

a second boundary-ditch running roughly parallel to the main ditch, although diverging from it as it approached the causeway (Fig 4, 220). The ditch ran beyond the excavated area at this point, so it is unknown whether it continued across the line of the causeway or had provided further drainage for the causeway area. The ditch was up to 0.75m wide and, in contrast to the broad, flat-bottomed watercourse, was V-shaped and 0.75m deep. The lower fill was dark-grey silt, peaty in places, and fragments of leather, probably from a shoe (see below) were recovered. The upper fill was of mottled red-brown to grey-brown silty-clay which contained pieces of degraded natural wood.

A substantial ditch, 2.0m wide by 0.25m deep, with a stepped profile, suggesting that it had been recut on two occasions, ran at right angles to the main boundary ditch and causeway (Fig 4, 230). It produced a small assemblage of pottery dated to late third century AD.

The only ditch seen at the north-eastern end of the quarry (Fig 4, 239) was not dated but was considered more likely to relate to the post-medieval field boundary system.

### **The late Iron Age and Roman pottery by Tora Hylton**

The watching brief produced 525 sherds of pottery with a combined weight of 7.06kg, recovered from 23 individual deposits. The assemblage is dominated by Belgic pottery of the Late Pre-Roman Iron Age (95.7% by weight), much of it deriving from the enclosure ditch system (58%), with further material from two internal pit groups (18%) and enclosure C3 (9%). Small quantities of later Roman material were recovered from a series of ditches lying close to the northern-western boundary of the site.

The assemblage displays little sign of abrasion and in general the condition of the pottery is good, although it can be quite fragmentary, resulting in an overall average sherd weight of 15.4g. The analysis includes sherd count and weight by fabric type and the fabrics have been catalogued according to the Milton Keynes Roman fabric type series (Marney 1989). Where possible references have been made to Thompson's typology of Belgic Late Iron Age forms (1982) and previously illustrated examples from Milton Keynes (Marney 1989).

The assemblage comprises mainly locally manufactured kitchen, table and storage wares in grog-

tempered (72.4%) and shell-gritted (23.3%) fabrics, much of it displaying features characteristic of Belgic-type wares.

The grog-tempered wares (variations of MK Fabric Type 46a) include a range of jars, bowls, cups and beakers, some burnished or ornamented with burnished line motifs, in the form of vertical striations, horizontal wavy lines, cross hatching and lattice motifs. The jars range in size from plain large storage jars to small more highly decorated forms with shoulder cordons (Type B1-1) and girth grooves (Type B1-5), the former displaying similarities to an example from Caldecotte, Milton Keynes (Marney 1989, fig 36, 73). Bowl forms present include bowls with a plain everted rim and offset neck (Type D1-1), a girth groove (Type D1-3), a round bowl with rippled shoulder (D2-4), and a wide carinated bowl (G2-4). Other forms worthy of note include a cup with plain wide mouth and everted rim with shoulder cordon (Type E3-1) and a girth beaker (Type G4).

Shell-gritted (Mk Fabric 1a) wares comprise lid-seated jars (cf Marney 1989, fig 24, 5, 6), some with faint horizontal rilling on body and one with oblique incisions on the rim (cf Marney 1989, fig 35, 46). The lid-seated jars were all recovered from the enclosure ditches and internal pits, and date from the late first to early second centuries AD.

Later Roman fabrics recovered from the boundary system and causeway in the northern part of the site, include undiagnostic sherds of samian (MK Fabric 20) and Lower Nene Valley Colour Coat (MK Fabric 6), together with a flanged bowl (cf Marney 1989, fig 28, 4) in greyware (MK Fabric 3) and a Soft-Pink-Grog (MK Fabric 2) jar (cf *ibid* 1989, fig 27, 13), both of which date to the late third century.

A full quantification by fabric type is available in the client report (Chapman 2008), but due to a lack of developer funding none of the late Iron Age and Roman pottery has been illustrated.

### **Kiln furniture by Pat Chapman**

The assemblage of kiln furniture from the late Iron Age/early Roman enclosure comprises 82 large and small pieces, weighing 4.85kg, from kiln bars and perforated plates. The largest assemblage by weight, 3.06kg, comprises fragments from four large kiln bars, a flat plate and a perforated plate from pit (234). The most complete kiln bar is

100–125mm wide and 60–80mm thick, and the other three are closely comparable although less complete. The surfaces are uneven and carelessly smoothed and the edges are rounded. A fragment of a flat plate, 25mm thick, is possibly from a different type of kiln bar. The fabric of the kiln bars is hard but silty, with inclusions of occasional angular flint up to 25mm, and smaller angular and sub-rounded flint, the surface is orange and the interior is pink. There is also a small fragment from a perforated plate. These kiln bars are closely comparable with clay slab-bars recovered in quantity from a pottery kiln at Berrystead Close, Milton Keynes, of the mid first century AD (Zeevat 1994 and King 1994).

Part of another type of kiln bar comes from one of the ancillary ditches (226). The surviving end is neatly squared, 50mm wide, with straight smooth sides and sharp edges. For about 50mm in from the end the bar is pale brown with an abrupt change to black.

A large fragment of a plate from pit (215), to the south-west, has a very slight curve, perhaps suggesting that it had abutted the wall of a circular kiln or oven. It is 50mm thick at the edge, reducing to 30mm thick. The fabric is the same as the kiln bar from ditch (226).

The fragmentary remains of a perforated plate come from the southern end (211) of the northern-western arm of the enclosure ditch. The plates are at least 40mm thick, but have laminated and are brittle below the grey surface, while the interior is bright orange. Although none of the circular perforations are complete, they are between 8mm and 20mm apart and 40mm in diameter on the surface, where they are surrounded by raised displaced clay, and narrowing to 20mm diameter.

In the trial-trench evaluation of 1996, a ditch within the contemporary settlement area at the north-eastern end of the site, Area 1, contained 17 fragments from regular and well-fashioned rectangular kiln bars, 75–80mm thick and 40–70mm deep (NA 1996, 3–4).

The more regular kiln bars are comparable to material from kilns dating to the mid-first to early second centuries AD, such as Caldecotte Pottery Kiln II, Milton Keynes (Williams 1994 and King 1994).

### **Leather by Andy Chapman**

Fragments of leather were recovered from the waterlogged fill of a late Roman boundary ditch (220), lying to the north-east of the gravel causeway. The largest piece is 100mm long by up to 42mm wide and 1mm thick. The sides are near parallel, but tapering slightly towards one end, while the broader and better preserved end turns up slightly. The edges are slightly upturned and are typically ragged, but in a couple of places there are indentations that may be a result of stitching that had torn through the edge. The smaller pieces are largely irregular with ragged edges. However, one piece has a ragged edge and a regular semi-circular side, 37m diameter and 1–4mm thick. Another small piece has a short surviving straight edge, 20mm long, with perforations at 4–5mm intervals and 3–4mm from the edge, with indentations from former stitching running between the perforations and diagonally from the indentations to the edge.

The pieces are too fragmentary to be securely identified, but they appear to have come from a single object and the overall dimensions suggest that this may have been the sole and fragments of the upper, of a boot or shoe only some 40mm wide and a little in excess of 100mm long, and therefore infant-sized.

### **Discussion: The late Iron Age and Roman settlement**

The watching brief at Broughton Barn quarry has generated only a very incomplete understanding of the evidence for late Iron Age and Roman settlement on and around the site, and there is no intention to attempt to set this within the broad pattern of contemporary settlement that is emerging from past and current investigations in and around Milton Keynes, many of which are producing much better-quality data.

There is no evidence for any early or middle Iron Age activity at Broughton Barn quarry, and occupation appears to have commenced only in the early decades of the first century AD. This settlement was occupied until the later first century/early second century AD, but there is no evidence for continued occupation of the immediate area through the second century. By the third century a new settlement had appeared further to the south and this continued into the fourth century. During this period there was a ditched boundary running

parallel to a stream course. Peaty deposits had accumulated within the ditch, and in one location there may have been a timber bridge spanning the wet ditch that was later replaced by a gravel causeway.

The evidence, as partial as it is, does not indicate that either settlement was of particularly high status. It is likely that both were small native farmsteads, although in the early first century AD one or more pottery kilns were in use. Of particular interest is the possible provision of a bridged, and later causewayed, crossing of a wet ditch running parallel to an adjacent stream, which perhaps acted as flood protection to the settlement and its lands.

#### ACKNOWLEDGEMENTS

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The evaluation in 1996 was carried out by Joe Prentice, Tora Hylton and Steve Morris, with Michel Audouy as project manager. The excavation of the Bronze Age cremations in the silt lagoon area in 1997 was by Joe Prentice and Alex Thorne, and the watching brief at the western end of the quarry from 1998 to early 2000 was by Peter Masters, Chris Jones and Tora Hylton. The watching brief at the eastern end of the quarry from 2000 to 2002 was carried out by Andy Chapman, Chris Jones and Pat Chapman.

The late Trevor Anderson reported on the human bone, with J Andrews examining the teeth, and Rowena Gale has identified the wood charcoals. Andy Chapman has examined the Bronze Age pottery and the Roman leather, while Tora Hylton

has reported on the late Iron Age and Roman pottery and Pat Chapman on the kiln furniture. The illustrations are by Pat Walsh and Andy Chapman.

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