Prehistoric Burial, Settlement and Deposition on the King's Gate Development, Amesbury Down, Wiltshire

by

Andrew B. Powell and L. Higbee

wessex archaeology

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Animal bone deposit, Iron Age pit cluster 6394

Back cover
Aerial view of the site, Iron Age roundhouse 63410,
and section of flint cairn over Middle Bronze Age
grave 63254

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Abstract

In 2013–8 a programme of archaeological works was undertaken on land to the south-east of Amesbury, Wiltshire, in advance of the King's Gate Phase 4 residential development. The preliminary stages of work, comprising geophysical survey and evaluation relating to the wider development area, were followed by targeted excavation (in Parcels P, R, S and T), and strip, map and record excavation (in Parcel Q and the School Site). As in previous phases, these works revealed features of Neolithic, Bronze Age and Iron Age date, including part of an Early Iron Age open settlement.

Previous archaeological investigations within the wider development area, at Butterfield Down, Boscombe Down West and Southmill Hill, have revealed a landscape rich in prehistoric and Romano-British remains, including monuments, settlements and burials. The latter include the Beaker graves of the Amesbury Archer and Boscombe Bowmen. The Iron Age settlement at Southmill Hill lies directly to the north of the main excavation area in Parcel Q and was preserved in situ as part of the development consent and a management plan.

The recent excavations recorded several features containing Late Neolithic Grooved Ware, Beaker pottery and Early Bronze Collared Urn and Food Vessel pottery, indicating the extension to the south and south-west of activity previously recorded mainly at higher elevations on Amesbury Down. A small mixed-rite group of Middle Bronze Age graves lay on the south-east-facing slope of a dry valley. An extensive spread of soil, containing struck flint and other finds, which sealed the graves and extended to their west, may represent the plough-levelled remains of a turf mound raised over one or more of the graves.

The excavation also provided a further opportunity to examine one of the Wessex Linear ditches which crosses Amesbury Down, although it appears to have had little influence on the location and extent of Early Iron Age settlement activity which extended, from its focus to the north-east, over its line towards the south-west. The Early Iron Age features, including roundhouses, four-post granary-type structures, individual pits and clusters of intercutting pits, are clearly an extension of the settlement previously recorded on the King's Gate Phases 1/2 excavation to the north-east. Of major significance is the large animal bone deposit found in the upper levels of one of the pit clusters. Radiocarbon dating indicates that this deposit formed over a short time span, representing one or possibly two depositional episodes linked to a communal feasting event. Isotope analysis on cattle bones from the deposit indicates that these animals derived from a single herd, probably reared locally but potentially in a chalkland coastal setting. The evidence suggests the settlement may have had wider links and highlights the importance of sharing food and resources to bind communities.

Evidence for a later presence – Romano-British and post-medieval/modern – was limited. Romano-British activity on Amesbury Down falls within two main zones – a zone of settlement-related features lying to the north of the northern Wessex Linear ditch, and a mortuary zone comprising a line of up to eight cemeteries along the line, or to the immediate south of the ditch. The absence of Romano-British features from the Phase 4 works appears to confirm this pattern of landscape organisation. A multiple sheep burial, a lynchet and a rectilinear array of truncated undated ditches/gullies are likely to be of post-medieval/modern date.

Chapter 1
Introduction

A programme of archaeological investigations begun in 1993, undertaken prior to developments on the downland south-east of Amesbury, Wiltshire, has revealed a landscape rich in prehistoric and Romano-British remains, including monuments, settlements and burials. This report describes the results of the most recent phase of mitigation works, undertaken in 2013–16 and 2018, funded by JS Bloor Homes Ltd and Wiltshire Council. As in previous phases, these works revealed features of Neolithic, Bronze Age and Iron Age date, including part of an Early Iron Age open settlement within which was found a large 'feasting deposit' of partially articulated cattle, sheep and pig bones (Wessex Archaeology 2017).

Project Background

The 2013–16 mitigation works – referred to for planning purposes as *Kings Gate Phase 4 (658 Units)* – covered approximately 23 hectares centred on NGR 416280 140000 (Fig. 1.1). The works were undertaken following consultation with Wiltshire County Archaeological Service (WCAS) and in adherence with agreed methodologies as outlined in the Written Scheme of Investigation for each mitigation stage. The works were undertaken in six subdivisions (Parcels P, Q, R, S and T, and the School Site), and comprised trial trenching with associated targeted and strip, map and record excavation (Figs 1.2–3). These works had been preceded, in previous years, by a number of phases of evaluation, excavation and geophysical survey relating to the wider (130 ha) Archer's Gate/King's Gate development area (*ibid.*, table 1), which is already the subject of a series of three monograph publications, briefly outlined below.

The first volume in the series, *The Amesbury Archer and the Boscombe Bowmen: Bell Beaker burials at Boscombe Down, Amesbury, Wiltshire* (Fitzpatrick 2011), dealt with three Beaker graves considered to be of particular significance on account of their early date and/or the wealth and character of their associated grave goods. The graves of the Amesbury Archer and his companion were found a short distance to the east of Parcel Q, and the Boscombe Bowmen further to the north (Figs 1.2–3). The second volume, *Between and Beyond the Monuments: prehistoric activity on the downland south-east of Amesbury* (Powell and Barclay, forthcoming), covers the wider prehistoric discoveries from the development area made up until 2015. The third, *A Roman Settlement and its Cemeteries to the South-east of Amesbury* (Cooke *et al.*, forthcoming) covers the extensive Romano-British remains including settlement features and eight cemeteries containing approximately 350 graves. A single Romano-British burial (context 66018) found in the recent works has been incorporated as an appendix to the third volume.

The significance of this landscape is enhanced by its position immediately east of the Stonehenge part of the *Stonehenge, Avebury and Associated Sites World Heritage Site* (WHS), and this has been recognised by its inclusion within an *Area of Special Archaeological Significance* as designated in the Salisbury District Local Plan 2011.

Location, Topography and Geology

The Archer's Gate/King's Gate development area lies on the southern margins of Salisbury Plain, an extensive tract of Chalk downland in central southern England that runs west–east across Wiltshire and into Hampshire (Fig. 1.1). It is located on the western side of the undulating downland plateau between the River Avon to the west and the River Bourne to the east. The River Avon cuts south through Salisbury Plain from its source in the Vale of Pewsey, as does the Bourne valley, although the River Bourne is now a seasonal stream limited usually only to its southern reaches. The two rivers meet 12 km to the south of the site, at Salisbury.

The topography of the development area comprises the downland plateau at the north-east from which three ridges descend towards the south-west. The terms used in the other volumes to denote the main topographic features – i.e., the north-western, central and south-eastern ridges, and the north-western, south-eastern and southern dry valleys – are also referred to in this report (Fig. 1.2).

The site reported here comprises an irregular block of undulating ground, between 93 m and 108 m OD, within the southern half of the development area, occupying primarily the southern and western facing slopes of the central ridge and extending into the north-western and south-eastern dry valleys. It lies to the south of Southmill Hill on the north-western ridge, which is the site of an enclosed Middle Iron Age settlement, at the base of which to the north runs a prominent meander of the River Avon.

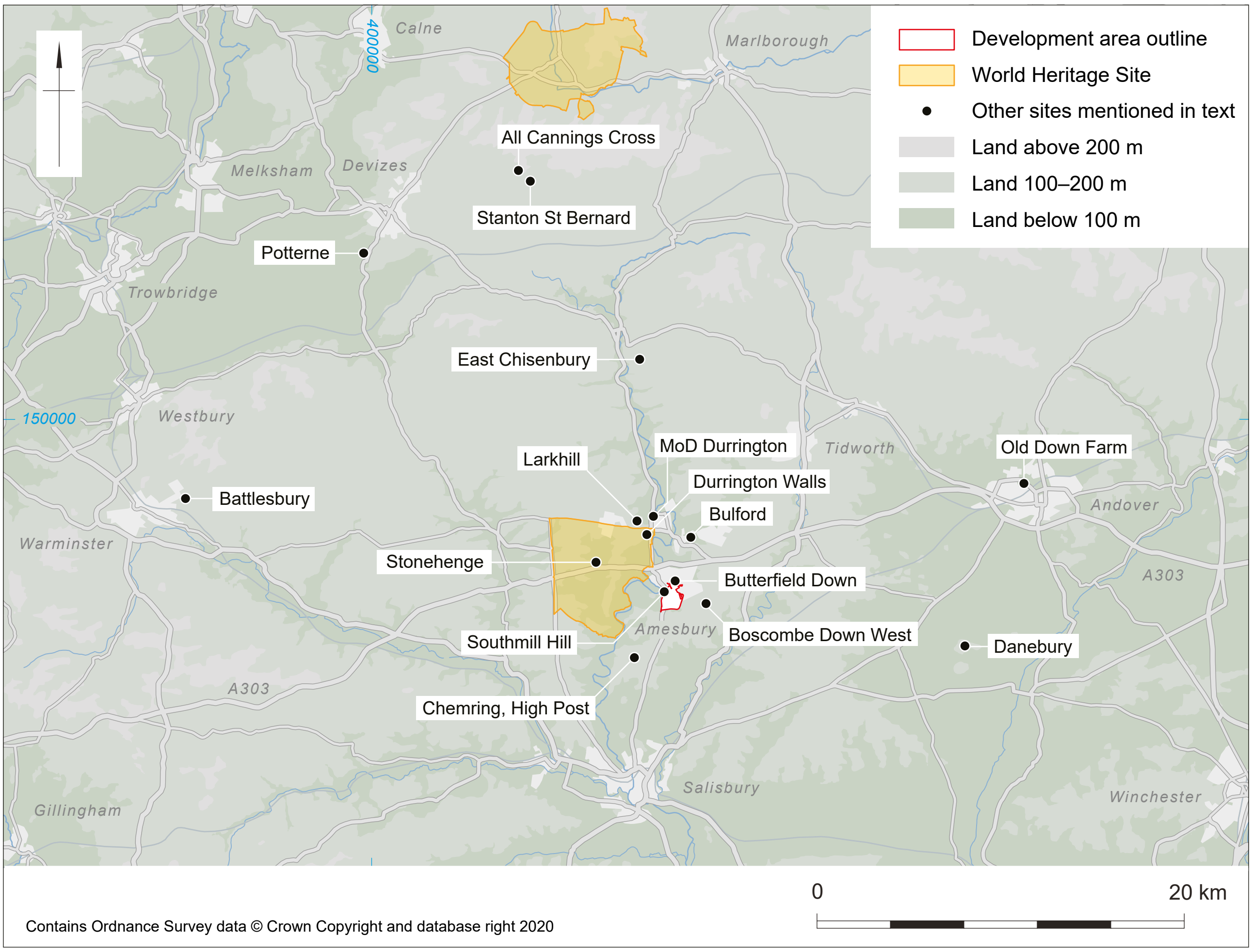

Figure 1.1 Sites around Salisbury Plain mentioned in the text

The bedrock geology is mapped as Seaford Chalk Formation, with superficial deposits of Head in the bases of the dry valleys (British Geological Survey online viewer). In places the bedrock was very degraded and cut by periglacial striations. Numerous other natural features were recorded, including tree-throw holes. A large probable sinkhole (63854), 13 m wide, was exposed in Parcel Q. It was not excavated, but pottery of prehistoric and Romano-British date, and small quantities of worked flint, burnt flint and animal bone were recovered from its surface.

Archaeological Background

The results of the programme of works on the wider development area are fully described in the three monographs referred to above (Fitzpatrick 2011; Powell and Barclay, forthcoming; Cooke *et al.*, forthcoming) and are not repeated here. In summary, those works revealed features of Mesolithic to post-medieval date, including Late Neolithic monumental features such as a post-circle and post-line, Beaker and other Early and Middle Bronze Age burials and funerary deposits including two round barrows, and numerous prehistoric pit deposits. Significant evidence was also found for Early Bronze Age, Late Bronze Age and Iron Age settlement, and of later prehistoric landscape organisation, including Wessex Linear and other ditches. In addition, there was evidence for Romano-British settlement and economic activity, and a broadly linear arrangement of eight Romano-British cemeteries.

The site lies just beyond the eastern edge of the rich and well-documented archaeological landscape to the west of the River Avon, which contains the complex of Neolithic and Early Bronze Age monuments and burial mounds within and around the Stonehenge WHS (Darvill 2005; 2016). Further recent discoveries of these dates in this area include an Early Neolithic causewayed enclosure at Larkhill (Leivers 2017), Late Neolithic henges at Bulford (Wessex Archaeology 2020), and Late Neolithic post alignments and cremation burials at MOD Durrington (Thompson and Powell 2018).

Excavations on the Butterfield Down site immediately north of the development area revealed extensive Iron Age and Romano-British features (Rawlings and Fitzpatrick 1996). Previously, in 1949, Katherine Richardson had revealed a series

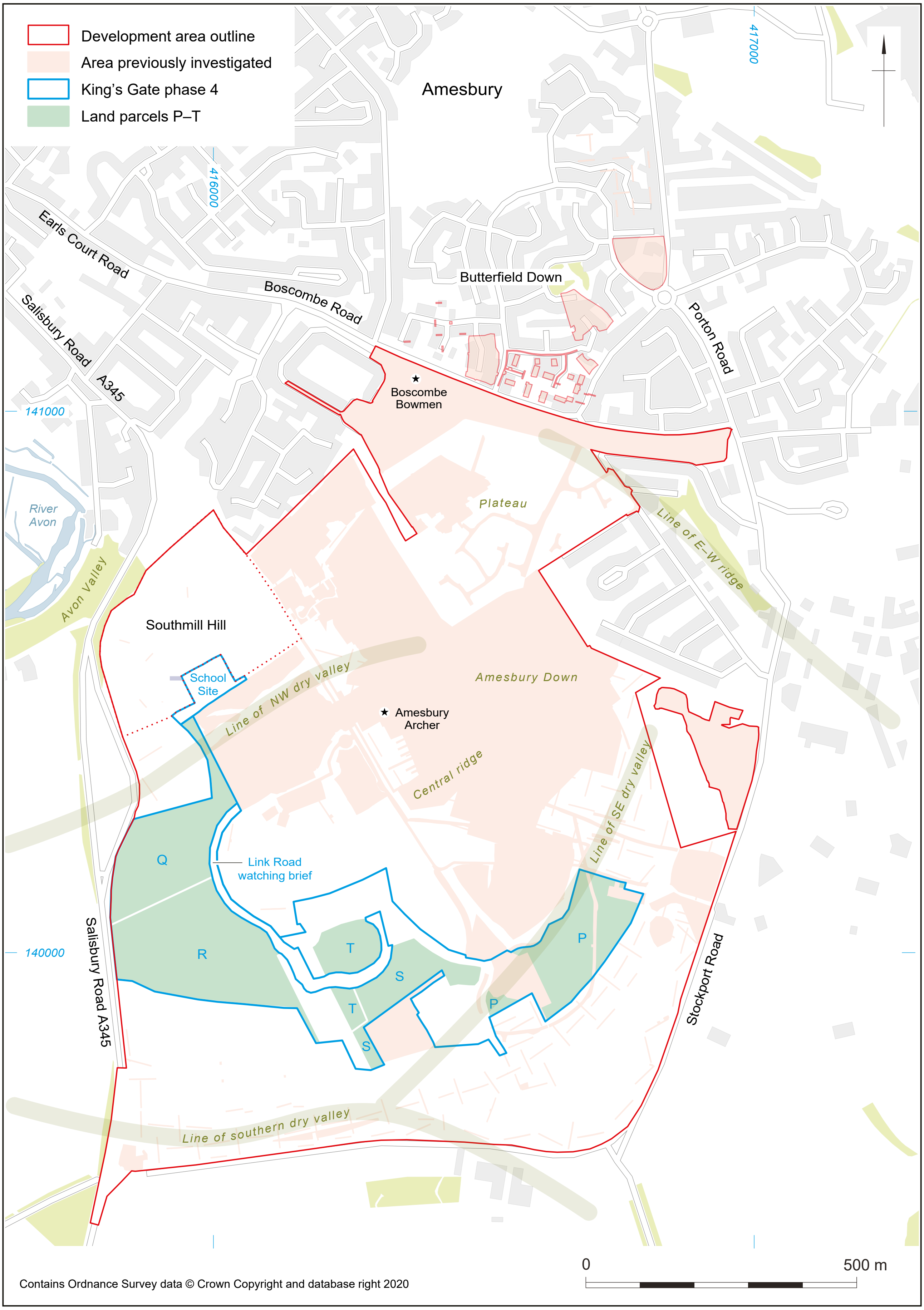

Figure 1.2 Site location

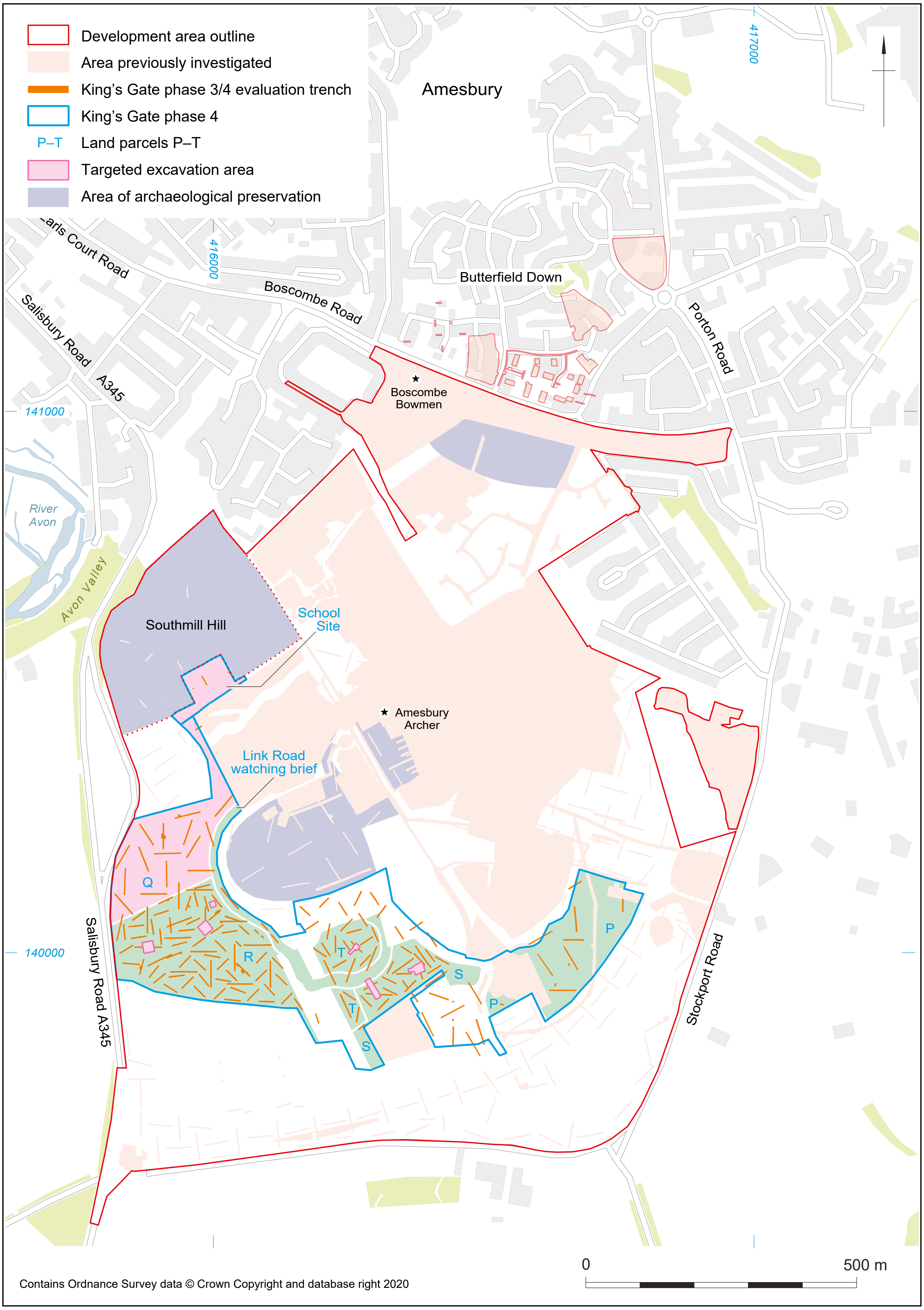

Figure 1.3 Excavation and in situ *preservation areas*

of Iron Age and Romano-British settlements and burial grounds during excavations further east, on Boscombe Down West, within the area of Boscombe Down airfield (Richardson 1951). In addition to these sites, cropmarks recorded from aerial photographs on Southmill Hill, part of which forms the north-western ridge within the development area, appear to indicate an extensive enclosed settlement, which limited evaluation has shown to be of Middle Iron Age date (Powell and Barclay forthcoming). The settlement was preserved *in situ* as part of development consent and a management plan (Fig. 1.3). Other cropmarks in the area around the development area, as well as more widely in the landscape, indicate an extensive array of linear features including Wessex Linear ditches, 'Celtic' field systems and enclosures of prehistoric and/or Romano-British date. To the south, an Early to Middle Iron settlement enclosure was excavated at High Post (Powell 2011), while to the north the excavation at MOD Durrington also revealed a Late Iron Age enclosure and Romano-British settlement (Thompson and Powell 2018).

Stages of Work

The site had been the subject of geophysical survey, evaluation and mitigation since 2004, as part of the works associated with the wider development area (Figs 1.2–4). The site included 19 trenches from a 2004–5 evaluation, in five of which a small number of undated pits and ditches were recorded (Wessex Archaeology 2005). Another 19 trenches from a 2011 evaluation also fall (wholly or partly) within the site (Wessex Archaeology 2011), although none of these contained archaeological features.

A further 46 trenches from a 2012 evaluation fall within the site, in 11 of which archaeological features were recorded, including ditches, pits and postholes (Wessex Archaeology 2013). Notable among them was a shallow pit (60780, Fig. 1.4 and below) containing three Beaker vessels, associated with struck flint, burnt flint and animal bone. A Wessex Linear ditch, previously traced in a geophysical survey and aerial photographs, and considered likely to be of Late Bronze Age/Early Iron Age date, was recorded in three of the evaluation trenches. Four clusters of intercutting pits were recorded, which together produced small quantities of Early Iron Age and Early/Middle Iron Age pottery, struck flint, burnt flint and animal bone (see below). A number of small gullies/ditches were also recorded across the site; most were undated, but one contained medieval/post-medieval ceramic building material (CBM). Eight of the trenches from a 2015 evaluation also fall within the site but contained no archaeological features (Wessex Archaeology 2015).

The geophysical survey and evaluation stages of work were partially successful in characterising the nature and extent of archaeological features. They identified several key features, notably the Wessex Linear ditch and some of the pit clusters in Parcel Q, as well as the more widely dispersed earlier prehistoric pits. However, the concentration of Iron Age roundhouses and other structures, and one of the more significant pit clusters (e.g., 63940), which contained an extensive deposit of animal bones, were not picked up by the initial investigations (Wessex Archaeology 2017).

The mitigation works for the site reported here comprised trial trenching (80 trenches) in Parcels R, S and T, on the basis of the results of which six small areas (Areas 1–6, totalling 1865 m²) were then subject to targeted and strip, map and record excavations in Parcel Q (approximately 3 ha), along a link road (1.1 ha) and on the School Site (0.68 ha) (Figs 1.3–4).

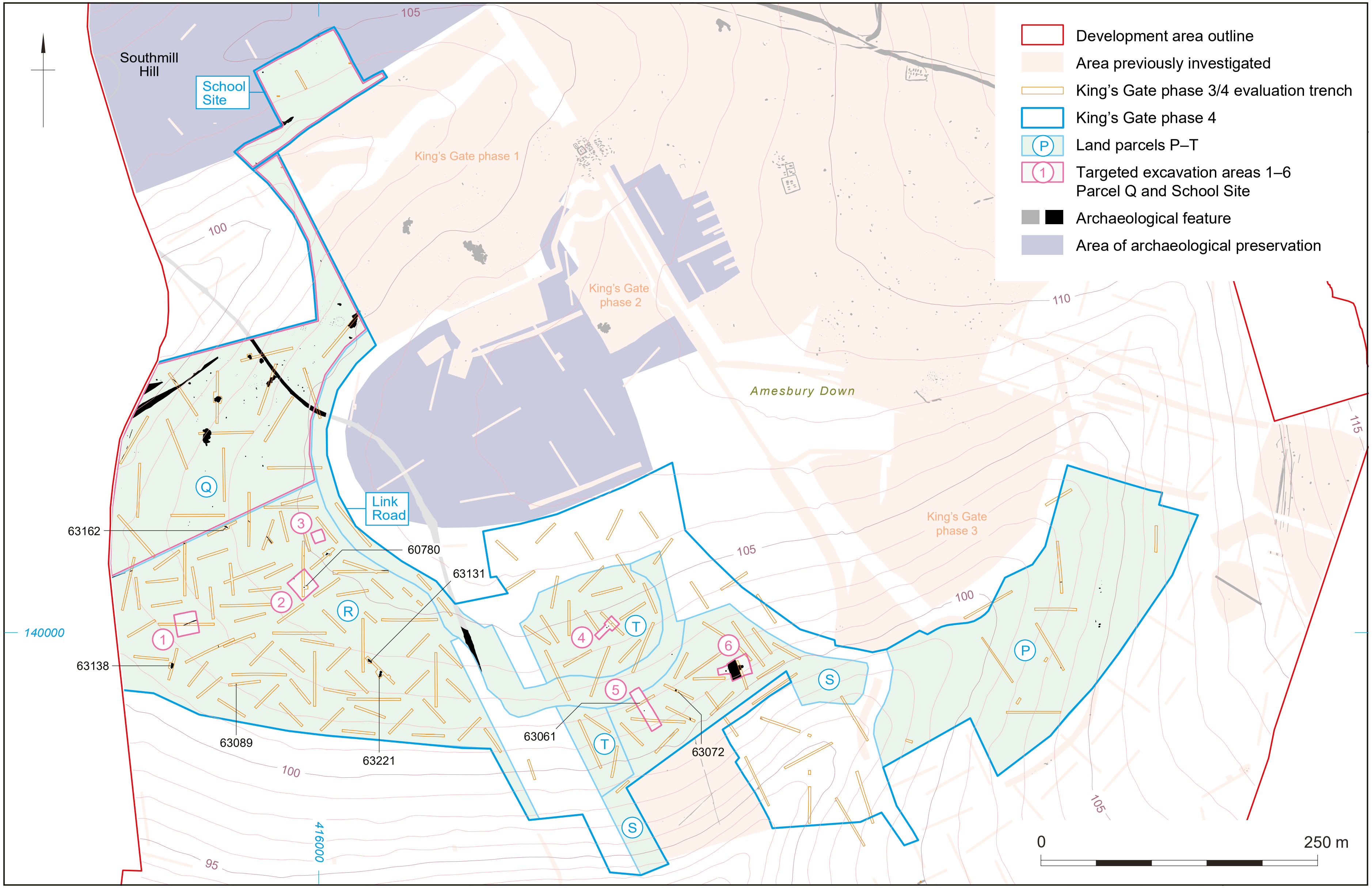

Figure 1.4 Phases of work

Chapter 2
Results

Neolithic

The only indications of Early Neolithic activity were a single scraper from tree-throw hole 63072 (Fig. 1.4) in evaluation trench 564, and two possible projectile point blanks from a Late Bronze Age pit (66027, Fig. 2.6), which might be considered as attempted leaf points (see Worked Flint).

There was more secure evidence of Late Neolithic activity. Two pits, less than 1 m apart in Parcel Q, contained Grooved Ware in the Durrington Walls substyle, their proximity and similar contents suggesting they were probably contemporary (Fig. 2.1). Pit 63537 was 0.6 m in diameter and 0.15 m deep. Its single fill contained 66 sherds (131 g) of pottery from at least three vessels, 14 pieces of worked flint, a piece of stone (106 g) with a smooth concave surface suggesting it had been utilised or deliberately collected, and fragments of animal bone (10 g). Pit 63539 measured 0.6 m by 0.7 m and was 0.1 m deep, and its single fill contained 20 sherds (55 g) from a single vessel, 10 pieces of worked flint, and burnt flint (88 g). In addition, feature 63162, in evaluation trench 596 (Fig. 1.3), contained 181 pieces of struck flint, of which 156 are typically Late Neolithic in character (see Worked Flint). This 'cigar-shaped' feature of probable geological origin (e.g., ice-wedge), had moderately steep, irregular sides, an undulating base, measured 4 m by 1.24 m wide and was 0.4 m deep.

Beaker

There was a loose grouping of two pairs of pits containing Beaker pottery (63544 and 63550 at the north-west; 63602 and 63619 at the south-east) in Parcel Q (to the immediate east of the later, Wessex Linear ditch) (Fig. 2.1). Between the south-eastern pair was a fifth, similar feature (63616) containing Early Bronze Age pottery (see below). A further Beaker pit (63816) lay some 160 m to the south-west (Fig. 2.1), while another (60780) lay 180 m to the south, in Parcel R, first recorded in evaluation trench 468 and the focus of targeted excavation Area 2 (Fig. 1.4).

Pit 63550, which was cut into the fills of a tree-throw hole, was 0.8 m in diameter and 0.4 m deep (Pl. 2.1). Its single dark brown fill contained 26 Beaker sherds (160 g), 60 pieces of struck flint, including two scrapers, burnt flint (221 g) and animal bone (1107 g). A sample of animal bone provided a radiocarbon date of 2460–2200 cal BC (SUERC-82843, 3840±22 BP) (see Table 6.6). Six Beaker sherds (16 g) were also recovered from pit 63544, 6 m to the south-west, which was 0.9–1.0 m wide and 0.6 m deep. The lower of its two fills (63552) contained 15 pieces of worked flint, including two scrapers, a sarsen fragment with a flat surface, possibly part of a quern or rubstone (ON 15325; 260 g) and animal bone (20 g), while the upper fill (63545) contained all the pottery, a further 55 pieces of flint including a third scraper, and animal bone (428 g). All the bone from the pit was from cattle, although one piece could be from an aurochs. Two samples of charred plant remains from this feature provided radiocarbon dates of 2460–2140 cal BC (UBA-41591, 3825±31 BP) and 2290–2040 cal BC (UBA-41592, 3764±29 BP), together modelled at *2300–2140 cal BC* (see Table 6.5).

Plate 2.1 Beaker pit 63550, viewed from the SSW (2 m scale)

The second pair of Beaker pits lay some 30 m to the south-east. Pit 63619 was 0.8–0.9 m in diameter and 0.3 m deep. Its thin lower fill (63620) produced 52 pieces of worked flint, and burnt flint (105 g), while its upper fill (63621) contained a further 36 flints, including two scrapers, and seven Beaker sherds (19 g) (along with four small intrusive Iron Age sherds). Pit 63602, 7 m to its south-east, was 1.1 m in wide and 0.3 m deep. Its thin lower fill contained no finds, but from its upper fill (63604) came four Beaker sherds (26 g), two pieces of worked flint, and animal bone (5 g).

At a greater distance was an isolated pit (63816), 0.6 m in diameter and 0.15 m deep, which had a single fill (63815) containing 10 Beaker sherds (41 g) from

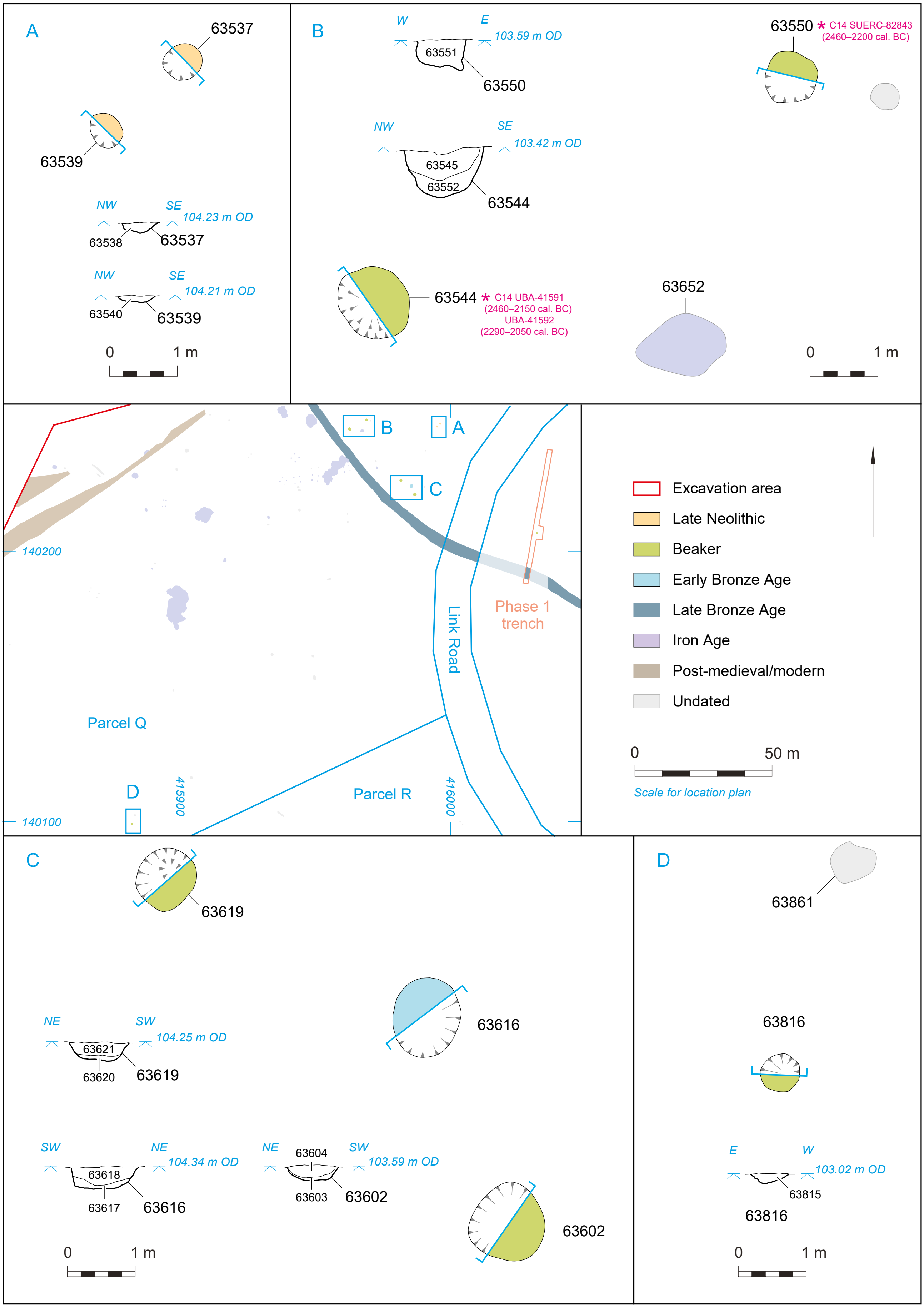

Figure 2.1 Late Neolithic, Beaker and Early Bronze Age pits in Parcel Q

two vessels, and two pieces of worked flint. A small (0.44 m in diameter and 0.17 m deep) undated pit (63861) approximately 2.7 m to the north of Beaker pit 63816, may be broadly contemporary, and contained worked (37 g) and burnt (270 g) flint, and a piece of worked stone, possibly a hone stone (154 g).

Also spatially isolated was pit 60780 (Fig. 1.4), recorded in evaluation trench 468, which was 1 m in diameter and 0.25 m deep. Its basal fill (60824) produced 25 Beaker sherds (198 g) and three (6 g) identifiable only as early prehistoric, 188 pieces of struck flint, burnt flint (495 g) and animal bone (5 g), while its upper fill (60781) contained 23 Beaker sherds (85 g) and a single Iron Age sherd (1 g), 23 pieces of struck flint, and burnt flint (84 g). An area of targeted excavation (Area 2) around this pit revealed no further features.

A single Beaker sherd (7 g) was recovered from the fill of a Middle Bronze Age inhumation grave (63254) in Parcel S, part of a small grave group investigated in Area 6 (see below). The sherd is probably residual – a number of Early Bronze Age features, although none with Beaker associations, were recorded just west of the graves.

Early Bronze Age

Midway between Beaker pits 63602 and 63619 (in Parcel Q) was a third pit (63616) of similar dimensions (1.1 m in diameter and 0.35 m deep; Fig. 2.1) and fill sequence but containing Early Bronze Age pottery. Its thin lower fill produced no finds, but its upper fill (63618) contained nine Early Bronze Age sherds (21 g), 19 pieces of worked flint, burnt flint (59 g) and animal bone (12 g). The location of this pit suggests it was broadly contemporary with the adjacent Beaker pits, and could indicate that the type of pottery deposited was not considered a significant variable.

A group of at least six features was recorded in trial trench 587 (in Parcel R; Fig. 2.2), five of them (pit cluster 63213) intercutting, the sixth (63164) less than 1 m to the east; the trench was extended to reveal their extent, all of them lying within an area 4 m wide (north-east–south-west). Together, the intercutting pits contained three sherds (36 g) of Early Bronze Age pottery, 149 pieces of struck flint, burnt flint (108 g) and animal bone (709 g), the bulk of the finds coming from the lower of two fills in the north-western pit (63180). A sample of charred plant remains from this feature provided a radiocarbon date of 2020–1750 cal BC (UBA-41594, 3544±35 BP) (Table 6.5). Most pits had single fills, the similarities between them meaning that most stratigraphical relationships could not be determined, although the most south-westerly (63201) was relatively early in the sequence. The separate pit (63164), which contained further struck flint (seven pieces) and burnt flint (1 g), was undated, but it is likely that it was contemporary with the cluster.

A line of three Early Bronze Age pits (group 63270) was recorded in Parcel T (Fig. 2.2). One pit (63045) was revealed in trial trench 573; the other two pits (63218 and 63255) were exposed 3 m and 5 m to its south-west, when the area around it was subject to targeted excavation (Area 4). Pit 63045 was 0.4 m in diameter and 0.2 m deep, with a single fill containing 35 Collared Urn sherds (317 g), probably from a single vessel, and four pieces of struck flint, as well as flecks of charcoal. Pit 63218 was 0.6 m in diameter and heavily truncated at 0.1 m deep, its single fill containing the remains of another Collared Urn (1969 g) placed upright on its base, along with 34 pieces of struck flint, burnt flint (15 g) and flecks of charcoal. Pit 63255 was 0.7–0.9 m wide and 0.15 m deep, its single fill containing three Collared Urn sherds (26 g), 187 pieces of struck flint, burnt flint (231 g) and flecks of charcoal from scrub taxa (blackthorn and purging buckthorn) used as fuelwood. Samples of charred plant remains from this feature provided radiocarbon dates of 1960–1750 cal BC (UBA-41596, 3540±32 BP) and 1890–1680 cal BC (UBA-41597, 3466±32 BP), together modelled at *1900–1740 cal BC* (Table 6.5).

Another line of three apparently associated features (4.5 m long) was recorded in Parcel S (Area 6; Fig. 2.3), two of the features containing Early Bronze Age pottery, and all producing substantial quantities of burnt flint. Pit 63259, at the north-east, was 0.8 m in diameter and 0.2 m deep, and contained a single Early Bronze Age sherd (9 g), 18 pieces of struck flint and 10.4 kg of burnt flint. To its immediate south-west was an irregular feature, 63268, 0.8m by 0.45 m and 0.1 m deep, also containing a single Early Bronze Age sherd (5 g), along with four pieces of struck flint and 2.6 kg of burnt flint. From the most south-westerly feature (63257), which was 1.2 m in diameter and 0.2 m deep, came one sherd (7 g) identifiable only as Bronze Age, along with nine pieces of struck flint and 5.2 kg of burnt flint. All three features contained occasional flecks of charcoal, but no signs of *in situ* burning.

Further sherds of Early Bronze Age pottery were recovered from Area 6. These included 19 sherds (43 g, one a rim sherd from a Food Vessel) from a 4 m-wide area (TPs 4, 8, 38, 50, 55) within an extensive spread of soil (63086), to the immediate south-east of the Early Bronze Age features (Fig. 2.3). Although this layer contained material of mixed (early prehistoric to Romano-British) date, it is possible that there were other Early Bronze Age features at this location disturbed by later activity. An additional 11 sherds (46 g, all from a single Food Vessel) were recovered from the fill of an inhumation grave (63254) that was part of a small grave group (63271, three inhumation

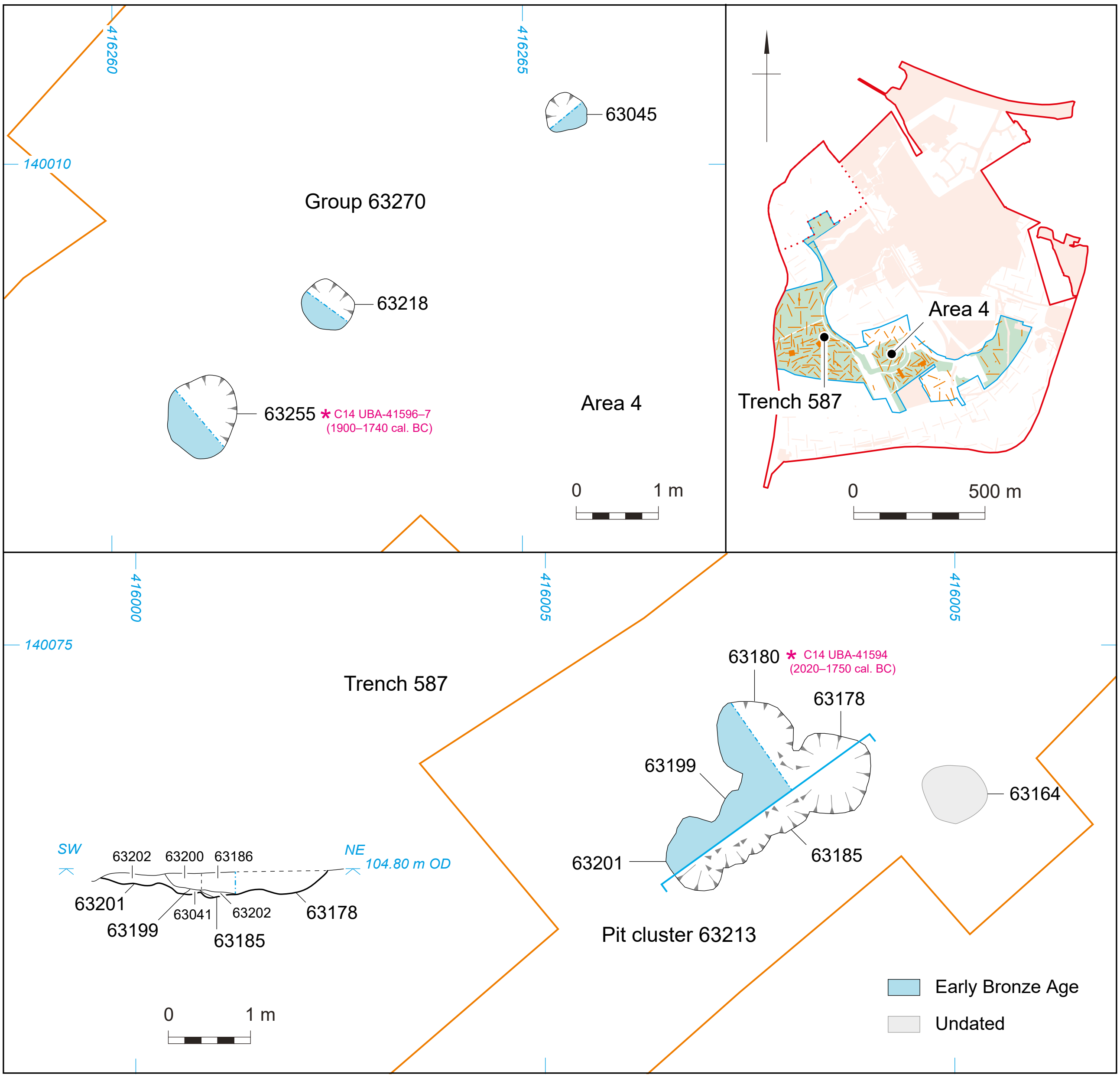

Figure 2.2 Early Bronze Age pits in Area 4 and Trench 587

graves and one cremation grave; see below) less than 10 m to the east of the Early Bronze Age features. As bone from all four graves produced radiocarbon dates in the Middle Bronze Age, it is likely that these sherds were residual; they were recovered from within a cairn of flint nodules covering the burial, and it is possible that they were picked up inadvertently as the cairn material was collected, especially given the evidence for Early Bronze Age activity in the immediate vicinity. Alternatively, it is at least conceivable that the sherds had been curated in some manner and then deliberately deposited at the grave.

Approximately 80 m south-west of Area 6, a small, isolated pit (63061), 0.5 m wide and 0.23 m deep, was recorded in trial trench 563 (Fig. 1.4). It contained one sherd (3 g) of pottery identifiable only as early prehistoric, along with five pieces of struck flint, and burnt flint (36 g). Given its character and the absence of features of other dates in this general area of the site, there is a reasonable chance that it was also of Early Bronze Age date. An area of targeted excavation around it (Area 5) revealed a small undated pit (63236, not illus.) containing a single flint, 7 m to the SSE, while another lay 6 m to the north-east (in the trial trench).

An irregular feature (63221, Fig. 1.4), 6 m by 2.5 m and up to 0.65 m deep, was recorded in trial trench 545. It was initially interpreted as a tree-throw hole, with four fills, although its main fill (63225) contained five sherds (6 g) of early prehistoric pottery, seven pieces of struck flint, including a broken scraper, and burnt flint (169 g). An adjacent pair of possible postholes (63127 and 63129, not

Figure 2.3 Bronze Age features and test pit array in Area 6

illus.) lay close to its northern end; posthole 63129 contained one piece of struck flint. An irregular cluster of at least five intercutting pits/postholes (63131) lay 10 m north-west of feature 63221. The cluster was 5 m long and up to 2 m wide and 0.5 m deep, the component features being of very variable size and profile, with unclear relationships between them. Together they contained seven pieces of struck flint and burnt flint (46 g). Although it contained no pottery, and is therefore undated, its proximity to feature 63221 may indicate an association.

The date of these features is far from secure. While large clusters of intercutting pits on the site were dated to the Iron Age (see below), most were further to the north within the area of Iron Age settlement. Feature 63221 and pit cluster 63131 appear close in form both to Early Bronze Age pit cluster 63213 (above), and late prehistoric pit cluster 63138 (below).

Middle Bronze Age

Evidence for Middle Bronze Age activity in the wider development area was relatively limited compared to earlier periods. Four widely dispersed inhumation burials (and a fifth of Middle/Late Bronze Age date) were recorded, two of them adjacent to earlier barrows, and one adjacent to a feature containing a placed Beaker; an inhumation grave had earlier been found on the Butterfield Down site to the north (Rawlings and Fitzpatrick 1996, 10). A number of radiocarbon dates on animal bone also fall within the Middle Bronze Age, two of them from animal burials (a goat and a cow) and one from a ditch which could belong to this period.

Evidence of activity on the present site, however, was entirely mortuary-related, and limited to a very small area in Parcel S, investigated in Area 6 following the identification of a number of graves in trial trench 578 (Fig. 2.4). An area of 443 m² around the graves was subject to targeted excavation, revealing the full extent of a small grave group, and an extensive flint-rich spread of soil (63086) – as well as the line of three Early Bronze Age features (63257, 63259 and 63268) described above.

Grave Group

The mixed-rite grave group (63271) comprised one cremation grave (63085) and three inhumation graves (63254, 63263 and 63267); another possible mortuary-related feature in this group may be indicated by the truncated base of a Bronze Age vessel recorded resting on the natural but not in any visible cut. All lay within an area less than 3 m across (Figs 2.3 and 2.4). While two of the inhumation graves (63254 and 63263) have a similar NNW–SSE orientation, there was no clear pattern in the grave arrangements, nor any indication of the order in which they were dug.

The subcircular cremation grave (63085, Pl. 2.2) was 0.6–0.65 m wide and 0.17 m deep with steep sides and a flat base. It contained the remains of an urned burial (64047) of three individuals – an adult male and a female and a juvenile – made in a bucket-shaped Deverel-Rimbury vessel (ON 15310). Two fills were recorded around the vessel (63249 and 63250), the lower (63249) containing further fragments of pottery (5 g), one piece of struck flint, and burnt flint (60 g). A sample of the cremated bone produced a radiocarbon date of 1510–1320 cal BC (SUERC-74091, 3160±29 BP) (Table 6.7).

The northern inhumation grave (63263; Pl. 2.3) was subrectangular, measuring 1 m long (NNW–SSE) by up to 0.6 m wide and 0.25 m deep, with near-vertical sides and a flat base. It contained the crouched skeleton of a woman aged 20–25 years (63262) laid with her head to the NNW. Fragments of bone from a second individual were also recovered from the grave (Table 4.1). A pale blue-green quoit-shaped faience bead (ON 15313) was found below the woman's right knee. Other finds within the grave fill (63261) comprised four pieces of struck flint, and burnt flint (204 g). A sample of the bone produced

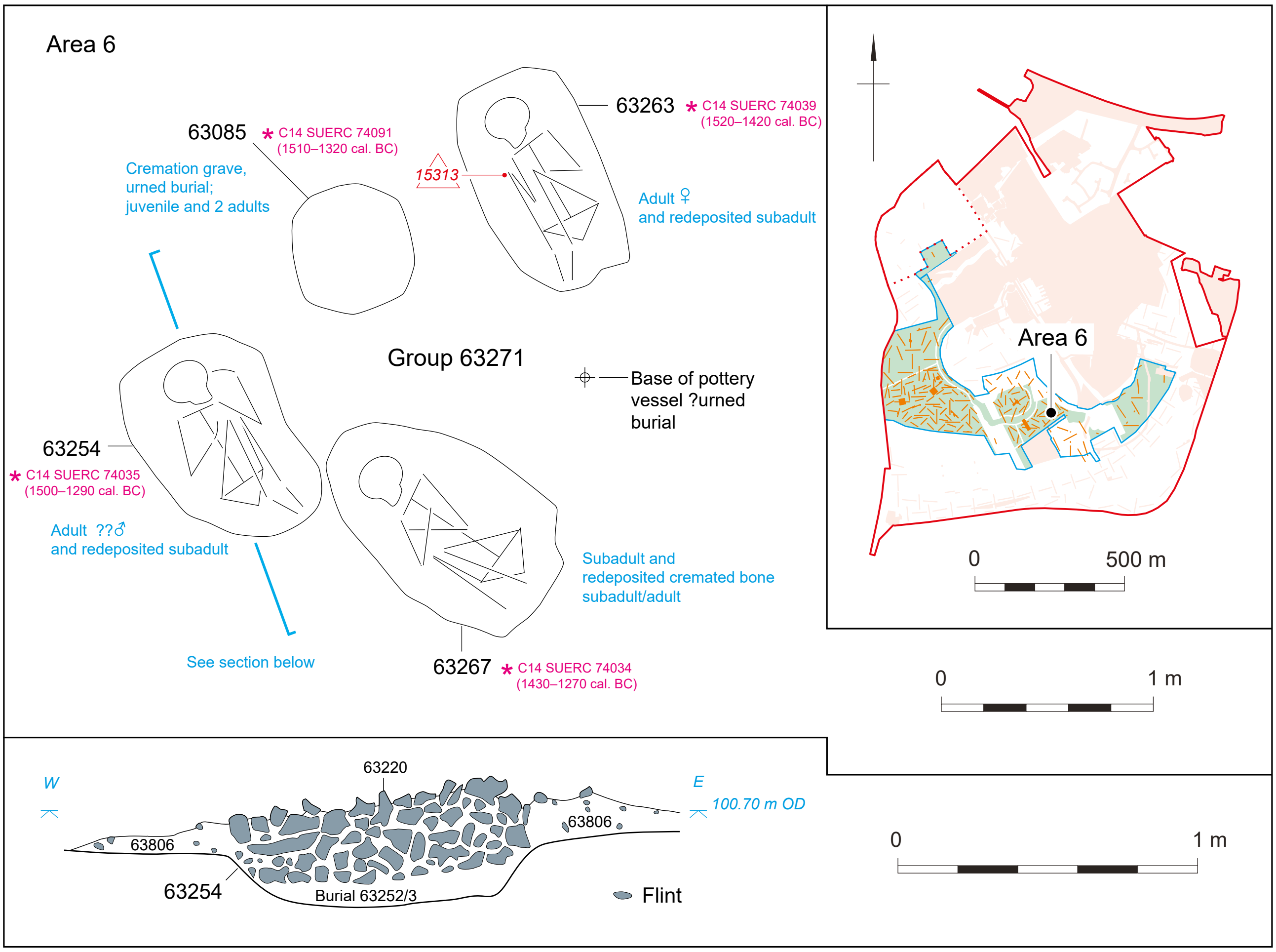

Figure 2.4 Middle Bronze Age cemetery group and section of flint cairn

Plate 2.2 Urned cremation burial in grave 63085, viewed from the north-west (0.2 m scale)

Plate 2.3 Inhumation grave 63263, viewed from the WSW (0.5 m scale)

Plate 2.4 Inhumation grave 63267, viewed from the south-east (0.5 m scale)

Plate 2.5 Inhumation grave 63254, viewed from the ENE (1 m scale)

a radiocarbon date of *1510–1410 cal BC (95.4%)* (SUERC-74039, 3212±29 BP) (Table 6.7).

The southern, oval grave (63267; Pl. 2.4) was 1.15 m long (NW–SE) by up to 0.65 m wide and 0.25 m deep with near-vertical sides and a slightly concave base. It contained the crouched skeleton of a subadult aged 14–16 years (63266), laid with his head to the north-west. Finds from the grave fill (63265) comprised a single sherd (9 g) of Bronze Age pottery, five pieces of struck flint, and burnt flint (108 g). A sample of the bone produced a radiocarbon date of *1450–1330 cal BC (95.4%)* (SUERC-74034, 3091±29 BP) (Table 6.7).

The western, subrectangular grave (63254; Pl. 2.5) was 1.05 m long (NNW–SSE), 0.75 m wide and 0.22 m deep, with steep sides and a flat base. It contained the crouched skeleton (63252) of a male aged 20–30 years, laid on his left side with his head to the NNW. The lower grave fill (63253), up to 0.1 m thick, and surrounding the skeleton, contained one sherd (7 g) of Beaker pottery (probably residual, see above) and four pieces of struck flint. The burial was sealed by a 0.3 m thick deposit of tightly packed flint nodules (63220), the top of which, forming a cairn, was 0.25 m above the natural chalk; as noted above, among the flints were 11 sherds (46 g) of Early Bronze Age pottery from a single Food Vessel. The soil matrix among the flints was similar to that of the lower grave fill. A sample of the bone produced a radiocarbon date of 1500–1290 cal BC (95.4%) (SUERC-74035, 3132±31 BP) (Table 6.7).

Part of the base of a Bronze Age pottery vessel (ON 15309) was found on the surface of the natural chalk approximately 1 m south-east of cremation grave 63085, and between inhumation graves 63263 and 63267. No cut was visible, and no associated fill was recorded. Its context, and the possible purpose of its apparent deposition, are therefore unclear, although it may be the sole survivor of a truncated urned cremation grave.

The small, mixed-rite group of graves, lying on the south-east facing slope of a dry valley, is a significant addition to the wider mortuary record. All the burials were made at the start of the Middle Bronze Age, during the 15th to early 14th centuries BC, with the inhumation burial in grave 63263, within which the faience bead was found, probably being the earliest (see Radiocarbon Dating, Chapter 6). There is no evidence for any monumental features in the vicinity that might have influenced the group's location, although there appears to be a close association with the surrounding flint spread.

Flint Spread

The extensive spread of soil rich in flint gravel (63086), which measured at least 17 m by 14 m and was up to 0.33 m thick, was recorded as sealing the Middle Bronze Age graves, and extending up to 8 m west of trial trench 578. The mid reddish-brown silty clay was excavated and sampled in a grid of 69 test pits (1 m^2) in order to identify the distributions of the lithic and other material (Fig. 2.3 and Pl. 2.6). In total it produced 1040 pieces of struck flint (including five scrapers and a denticulate), and 106 sherds (244 g) of pottery of mixed date – including Early Bronze Age (19 sherds, 43 g), Bronze Age (11 sherds, 80 g), others of general early or late prehistoric date, and nine Romano-British sherds (30 g) – along with 26 kg of burnt flint.

The spatial analysis shows that there were two main concentrations of worked flint, one to the south-west of the grave group, and the other to its east; similar patterns are evident in the distributions of the prehistoric pottery and burnt flint. These concentrations appear unrelated to the varying depths of the deposit, and in both these areas the soil was fully removed, revealing no features buried below it.

It is unclear why this layer should have survived at this location, although it may be associated with the grave group, possibly representing the plough-levelled remains of a flint and turf mound raised over one or more of the graves. The distinct concentrations of finds within it could represent activity undertaken prior to the construction of such a mound, or after it.

Late Bronze Age

Two Wessex Linear ditches are recorded from cropmarks and by excavation, crossing the wider development area. One runs ESE–WNW almost straight across the northern part of the area and does not fall within the present site. The other, which runs south-east to north-west for over 700 m across the south-western corner of the area, follows a more sinuous line, possibly due to the more pronounced topography in this area, the ditch making a clear turn to the north-west on the top of the central ridge (Fig. 1.4). This ditch, which has been previously investigated at a number of locations (Powell and Barclay, forthcoming) passes twice through the current site, being recorded where it crosses Parcel Q (as ditch 64044) as well as in two places along the line of the Link Road (Fig. 2.5).

Plate 2.6 Grid sampling of soil layer 63086, viewed from the NNW

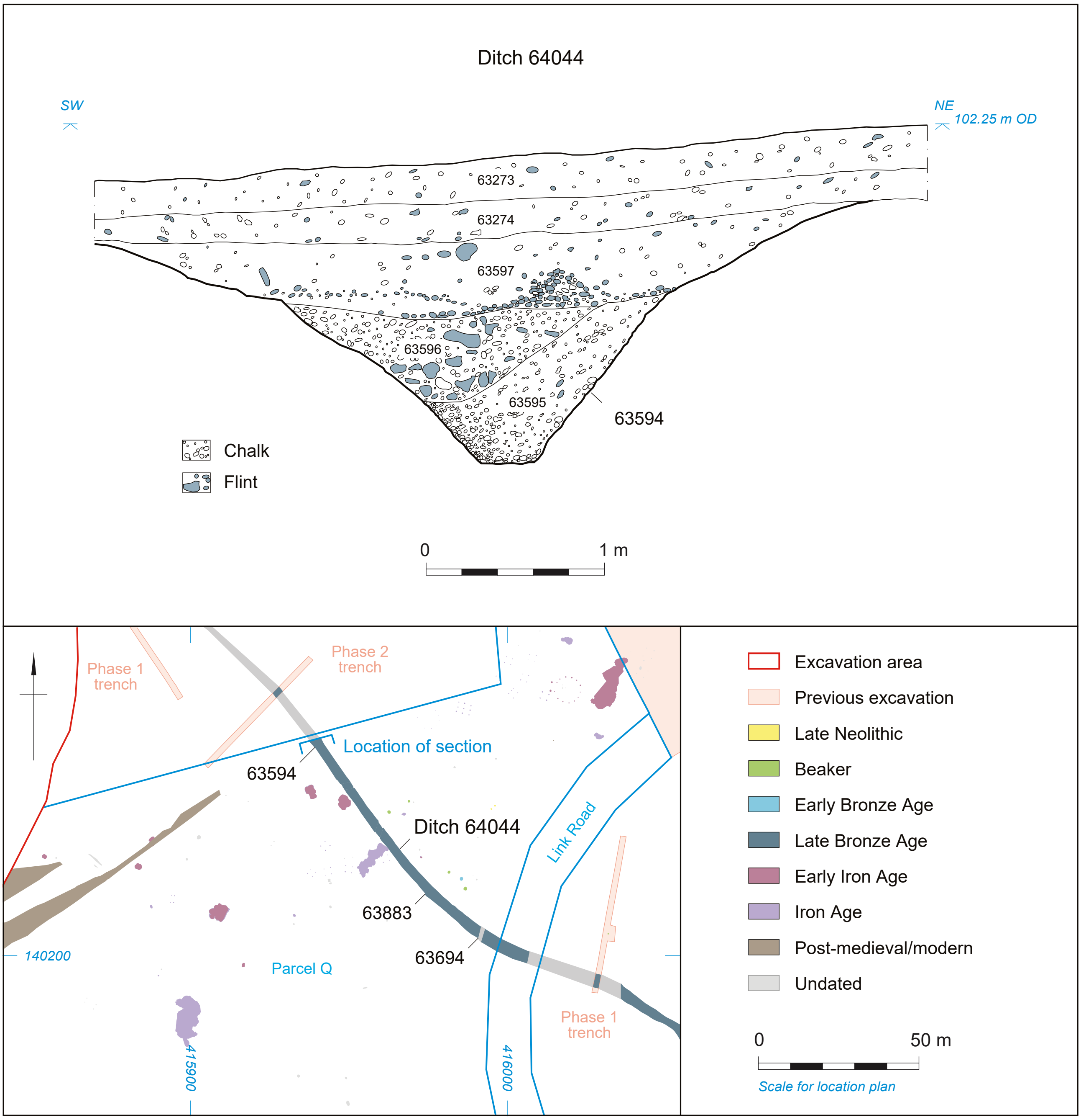

Figure 2.5 Wessex Linear ditch section 63594

Two full ditch sections (63594 and 63694) and a number of partial interventions (e.g., 63883) were excavated. In section 63594 (Fig. 2.5 – note slightly oblique view) at the north edge of the excavation, it was 3.6 m wide and 1.4 m deep, with a moderately steep V-shaped profile and narrow, flat base; this is comparable to previously excavated sections. It had three fills; the basal fill was a light brown, chalky deposit (63595), up to 0.9 m thick, derived from the eastern (up-slope) side, perhaps indicating a bank (no comparable deposit was noted in section 63694). This was overlain, to the same level within the ditch, by a fill of similar colour (63596) but containing numerous large flint nodules, above which, filling the upper part of the ditch, was a dark brown tertiary fill (63597).

The finds from ditch 64044 comprised 27 sherds (244 g) of Iron Age pottery – two from fill 63596 in section 63594, the rest, including 14 Early Iron Age sherds (187 g), from the upper fills in section 63694 and partial section 63883 – as well as 23 pieces of struck flint, burnt flint (731 g), animal bone (146 g) and a piece of non-local stone (161 g), possibly part of a quern.

As in the earlier investigations (where the only finds recovered were two sherds of Romano-British pottery from the tertiary fill; *ibid.*), there was nothing to indicate the date of the ditch's construction.

Such ditches are frequently presumed to be of Late Bronze Age date (Bradley *et al.* 1994), in which case it would still have been a significant feature in the landscape during the occupation of the Early Iron Age settlement on the site, which extended across its line (see below). While it appears to have marked some form of division within the settlement, with all the roundhouses, for instance, lying to its north-east, other structures (such as four-post 'granaries') and features (such as clusters of intercutting pits) were located on both sides.

Although this Wessex Linear ditch has not been identified beyond the limits of the wider development area, the two ditches together, whose lines converge on the ridge of Southmill Hill overlooking the River Avon, appear to represent the large-scale division of the downland landscape. A small Late Bronze Age settlement lay between the two ditches on the south-facing slope of the central ridge, approximately 150 m north-west of Parcel P (Powell and Barclay, forthcoming).

Pit 66027 (Pl. 2.7; Fig. 2.6) was located near the northern edge of the School Site, close to the southern extent (10 m south-east) of the Middle Iron Age settlement at Southmill Hill (Fig. 2.7). The oval feature measured 2.52 m by 1.96 m and 0.78 m deep, and contained 26 distinct fills or deposits, including 18 pieces of charred wood from near the base, overlying a deposit containing charred plant remains from the latter stages of crop-processing. The charred wood fragments were 0.09–0.90 m in length, 0.04–0.27 m wide and 0.01–0.08 m thick and derive from timber cut from common ash and field maple. The silty-clay matrix (66043) surrounding the charred wood fragments exhibited signs of post-depositional colour change that might indicate that the charred fragments were still hot when they were deposited. An edge-derived slumping event (66046) occurred during or relatively soon after the deposition of the charred wood fragments and was followed by various dumping events before the pit was backfilled (66028). Together the fills contained 249 (2354 g) sherds of Late Bronze Age pottery, 101 pieces (826 g) of struck flint, 1134 pieces (7249 g) of burnt flint, 161 fragments (276 g) of animal bone, 70 pieces (22 g) of vesicular fuel ash slag, nine pieces (1548 g) of stone, including two hones and a piece of sandstone quern or rubstone, two bone tools (including ON 16015), and three possible beads adapted from fossils found in the local chalk. Two samples of charred plant remains from the base of the pit provided a modelled radiocarbon date of *1120–930 cal BC (95.5%)* (UBA-41599, 2858±25 BP; UBA-41600, 2863±36 BP) (Table 6.5).

A pair of undated postholes (66075 and 66077) next to the south-eastern edge of pit 66027 (Fig. 2.7)are likely to have been contemporary with this feature. The postholes were 0.50 m apart and between 0.25–0.32 m in diameter and 0.08–0.11 m deep. Two further pairs of undated postholes (66007, 66010, 66060 and 66062) were situated approximately 4 m to the south and east of pit 66027, and an isolated undated posthole (66013) and pit (66025) further to the west. These features might also be Late Bronze Age

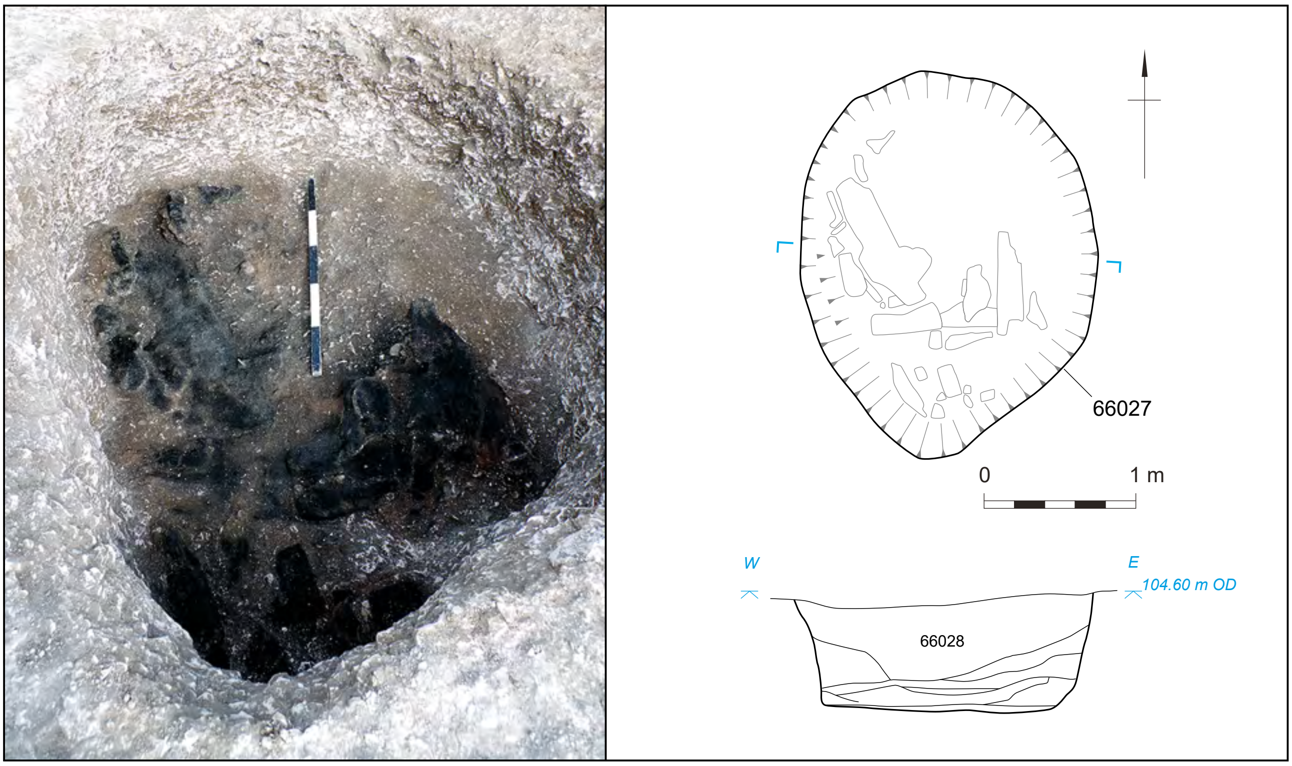

Figure 2.6 Late Bronze Age pit 66027 showing charred wood

but could equally be later in date given their proximity to the Middle Iron Age settlement at Southmill Hill.

Iron Age

Extensive Early Iron Age settlement features were recorded during the excavation of Parcel Q (Fig. 2.7). These were concentrated in the north-eastern part of the excavation and represent a continuation of the settlement features previously excavated (in King's Gate Phase 1) to the immediate north-east (Powell and Barclay, forthcoming). The settlement as exposed occupied the north-west-facing slope of the central ridge, not extending into the base of the north-western dry valley. However, as a large area to the east of Parcel Q (and south of the King's Gate Phase 1 excavation) remains unexcavated, preserved below the landscaping for a playing field, it is uncertain to what extent the settlement may have extended onto the spine of the central ridge, although two clusters of intercutting pits have previously been recorded in that area. The structures associated with this settlement extend over an area of at least 280 m (north-east to south-west). These continued to the south-west of the Wessex Linear ditch, suggesting that it may no longer have been a significant boundary, although both of the roundhouses and the square nine-post structure lay to its north-east.

Structures

A range of post-built structures was identified (Fig. 2.8 and Pl. 2.7), including two roundhouses (in addition to the two previously recorded in King's Gate Phase 1), at least 10 square four-post structures (in addition to the previous 18 or more) and one square nine-post structure.

The two roundhouses (63410 and 63361) were spaced 36 m apart, the eastern and more substantial (63410) lying 95 m west-south-west of the nearest recorded on the King's Gate Phase 1 site. Roundhouse 63410 consisted of a ring of 13 postholes, 8 m in diameter, with two larger postholes to the west, indicating the location of a porch. This is not the usual orientation for Iron Age roundhouses, which typically face eastwards, but probably reflects the

Plate 2.7 Aerial view of main area of Iron Age post-built structures, top of image at WNW (© Adam Stanford)

immediate topography and setting of the settlement, with the main prospect being westward into the dry valley and down towards the River Avon; one of the roundhouses on the King's Gate Phase 1 site faced in the same direction. The postholes in the circle were up to 0.5 m in diameter and 0.3 m deep and spaced 1.4–2.2 m apart (centre to centre, average 1.9 m), with the two flanking the entrance being 2.9 m apart. One posthole (63349) on the south-east side contained a near-complete Early Iron Age ceramic vessel (ON 15314, Pl. 2.8), which must have been placed in the posthole after the building had fallen out of use and the post removed, possibly as some form of abandonment ritual. The two porch postholes were up to 0.7 m in diameter and 0.3 m deep, and 2.5 m apart. There was a group of four small

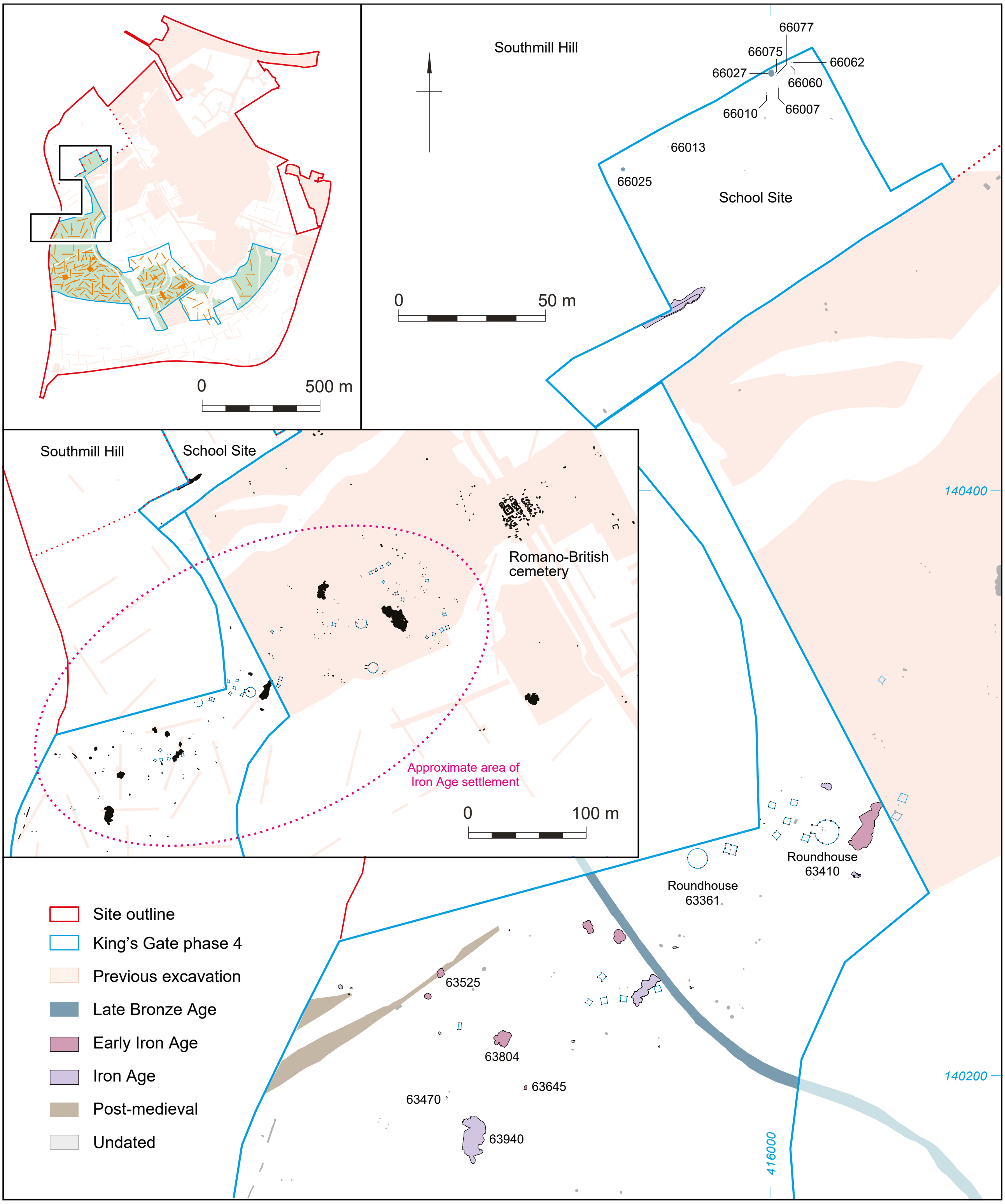

Figure 2.7 Iron Age features

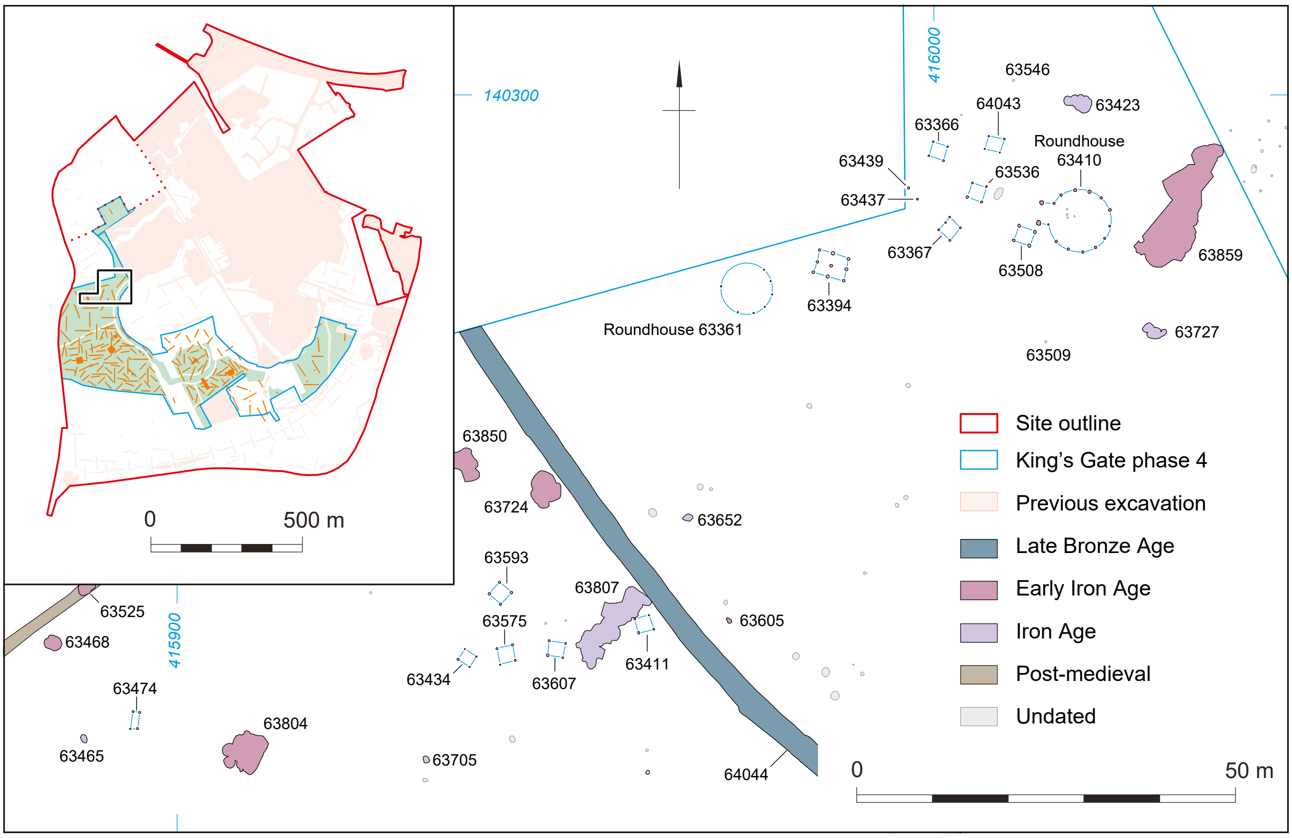

Figure 2.8 Early Iron Age settlement

possible postholes just inside the entrance, which may have been associated with the building, and within the roundhouse were several shallow features that appeared to be more postholes and possibly a central pit. In addition to vessel ON 15314, finds from the roundhouse comprised two further sherds (39 g) of Iron Age pottery, 14 pieces of struck flint, and burnt flint (656 g); there was also an intrusive fragment of ceramic building material (CBM).

Plate 2.8 Iron Age vessel ON 15314 in posthole 63349 of roundhouse 63410 (0.2 m scale)

Roundhouse 63361 was more heavily truncated, being represented by an arc of six postholes in the east and south and another in the west, with a diameter of 6.8 m. The postholes were up to 0.4 m in diameter and 0.1 m deep, with those in the arc spaced 1.7–2.1 m apart. If the building had an entrance porch there were no traces of it on the eastern side, so this building too may have faced westward. No finds were recovered.

Between the two roundhouses was a structure represented by a grid of nine postholes (63394; Pl. 2.10) measuring approximately 4.5 m by 3.5 m, the longer axis lying WNW–ESE. The postholes averaged 0.43 m in diameter and 0.21 m deep. Four of them produced finds, comprising 11 sherds (27 g) of Iron Age pottery, three pieces of struck flint, and animal bone (4 g).

In addition, at least 10 square four-post structures, of a type usually interpreted as granaries, were identified, with others possibly represented by similarly spaced posthole pairs or triples. These were found in two main groups, neither of which displayed the clear linear arrangement shown by some of the similar structures on the King's Gate Phase 1 excavation. One group (63508, 63536, 63366, 63367 and 64043) lay to the west and north-west of roundhouse 63410. They were all between 3 m and 5 m apart, although one of them (63508) lay to the immediate south-west of the porch of roundhouse 63410, suggesting that these two structures were probably not contemporary. The only find from this group was a single piece of struck flint. The second group (63411, 63434, 63575, 63593 and 63607) lay some 65 m to the south-west, beyond the line of the Wessex Linear ditch. Apart from the most westerly

Plate 2.9 Iron Age square nine-post structure 63394, viewed from the ESE (1 m scale)

(63434), which was noticeably smaller than the rest, these were of comparable size to those in the north-eastern group. All but 63593 lay in a rough east–west line, but with variable orientations. Finds from this group comprised four sherds (13 g) of Iron Age pottery (from structures 63411 and 63575), and six pieces of struck flint (from 63607).

There were other postholes distributed across the site, some possibly representing further, but truncated, four-post structures. The majority of them were undated, and while some are likely to have been Iron Age, others, particularly those recorded during the trial trenching, and at a greater distance from the focus of Iron Age settlement, may have been of earlier or later date. Four postholes in a rectangular arrangement (63474), measuring 2.3 m by 0.9 m, which lay 45 m west of the south-west group of four-post structures, would appear to be too narrow for a structurally stable granary. However, it is similar to the arrangement of porch postholes of one of the roundhouses on the King's Gate Phase 1 site, 240 m to the ENE. It is possible that an accompanying ring of postholes had been completely truncated, or that this group represents a structure with some other function. One of the postholes contained five sherds (16 g) of Iron Age pottery, two pieces of struck flint, and animal bone (4 g). A similar, although rather less regular rectangular arrangement lay a further 40 m to the south-west (not illus).

Pits

Seven discrete Iron Age pits were recorded in Parcel Q (summarised in Table 2.1), varying considerably in size, shape and contents, and hence likely function. Even the deepest pit (63468) was too shallow to have been for grain storage, and this matches the pattern of Early Iron Age pits recorded on the adjoining Kings Gate Phase 1 site. Some of the other undated pits may also be of this date but given the presence of both Neolithic and Bronze Age pits on the site, this cannot be assumed.

Two of the pits (63320 and 63468, see Fig. 2.9) were notable for the quantities of finds they contained. Pit 63320 lay in the northwest corner of parcel Q and, therefore, at a considerable distance from the apparent focus of settlement. It was subcircular in shape with a shallow U-shaped profile, but as it lay immediately downslope of a lynchet it was possibly originally significantly deeper than its recorded depth of 0.3 m. The pit contained a basal fill (63325), shallow on the bottom but thicker against the sides, but most of the finds (91% by weight) came from the upper fill (63321). The finds included 1258 g of Early Iron Age pottery, a dump of animal butchery waste, and a flint assemblage that included reused pieces from an earlier technology. Two postholes (63333 and 63335), 2.3 m apart, lay less than 3 m to the south-east and east and may have been associated with the pit; posthole 63333 contained one sherd of Iron Age pottery.

Pit 63468, which lay 30 m east of pit 63320 and also, therefore, some distance from the focus of settlement, was subcircular in shape and the largest of the discrete pits, measuring over 2 m wide and 0.55 m deep, with steep sides and an irregular base. Its single fill (63469) contained three concentrations of pottery, comprising sherds from at least five

Table 2.1 Summary of discrete Iron Age pits

Pit	*Width (m)*	*Depth (m)*	*No. fills*	*Pottery (no./g)*	*Animal bone (g)*	*Flint (no.)*	*Burnt flint (g)*	*Other*	*Objects*
63320	1.2 x 1.5	0.30	2	85/1258	377	59	1108	-	-
63465	0.7 x 1.1	0.25	2	3/20	85	10	405	-	-
63468	2.1 x 2.3	0.55	1	*/4364	1883	41	3884	CBM (34 g), stone (27 g)	*vessels: ONs 15316, 15317, 15319
63605	0.5 x 0.9	0.10	1	47/444	-	6	15	-	-
63645	1.0 x 1.5	0.30	3	45/189	127	15	2173	stone (33.7 kg)	stone: ONs 15327–30, 15332, 15338, 15341–2, 15357
63652	1.1 x 1.9	0.45	2	2/2	-	2	8	-	-
63705	0.85	0.13	1	1/2	-	-	-	-	-

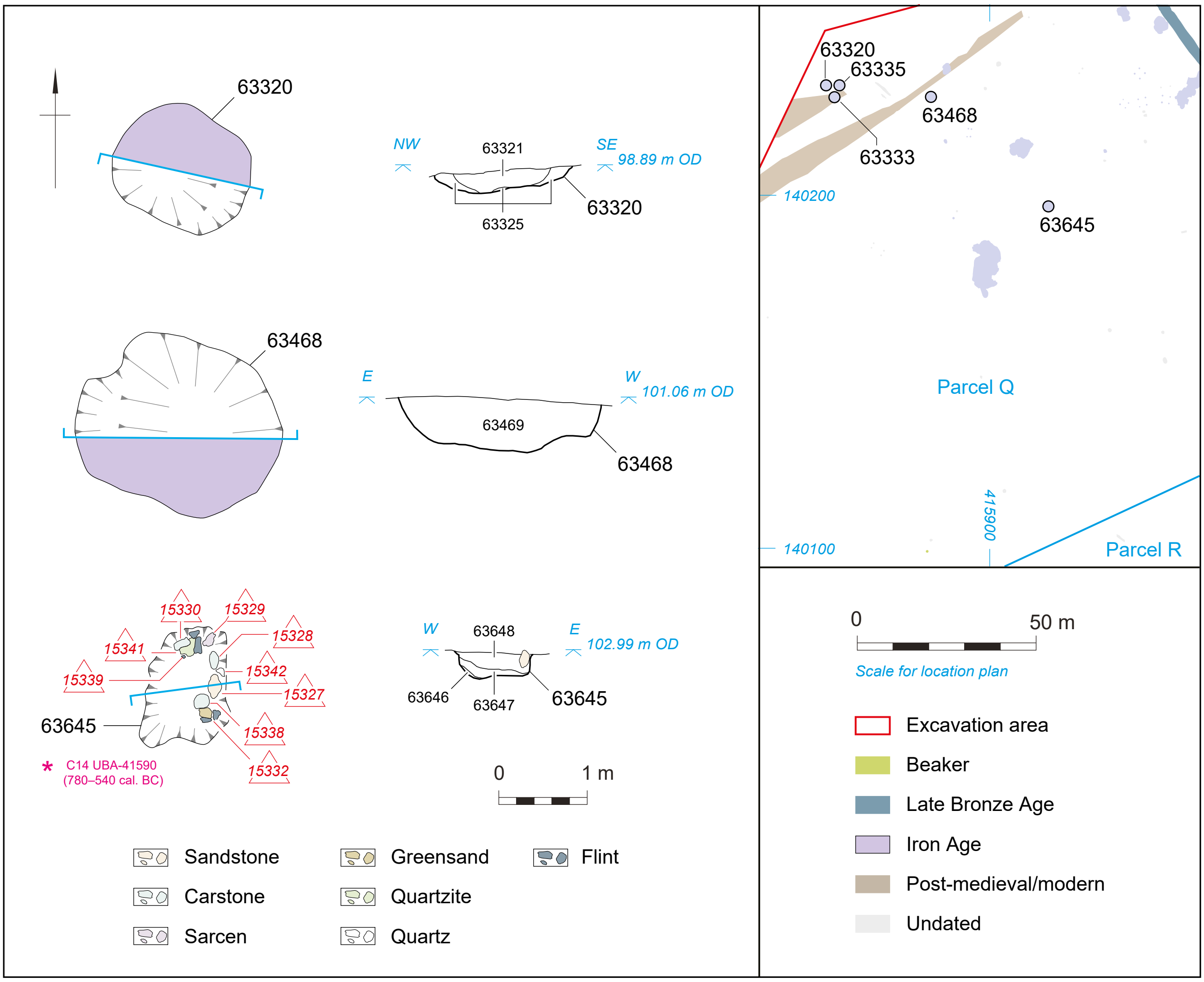

Figure 2.9 Early Iron Age pits

vessels. One vessel (ON 15317) was associated with an animal scapula close to its north-western edge and another (ON 15319) was close to the south-east edge, these possibly representing placed deposits; other finds, including animal bone, struck flint, burnt flint, a piece of quern and an intrusive piece of CBM were distributed throughout the fill.

A third feature described as a pit (63645, Fig. 2.9) is also of note, although its form and contents may indicate some more specific function. It too lay at a distance from the settlement focus, over 90 m south-west of the nearest roundhouse (63361). It was subrectangular in shape with mostly near-vertical sides and a flat base but was distinguished by the placement around its northern and eastern sides of a number of large pieces of stone, including pieces from six querns in five different lithologies (some burnt), and several flint nodules (Fig. 2.9; Pl. 2.10). The two lower fills (63646 and 63647) contained flecks of charcoal (although no signs of *in situ* burning) but no finds. The pieces of stone, which have the appearance of having been used as packing stones, had been placed above these layers, and were recorded within the upper fill (63648) rather than resting on the base of the feature. All the other finds, comprising pottery, animal bone, struck flint (including a flint core) and burnt flint, were also recovered from the upper fill, with charred plant remains providing a modelled radiocarbon date of *780–540 cal BC (95.5%)* (UBA-41590, 2486±26 BP) (Table 6.5).

Plate 2.10 Iron Age pit 63645 with quern fragments in situ*, viewed from the south (0.5 m scale)*

Pit Clusters

There were nine clusters of mostly intercutting Iron Age pits recorded in Parcel Q. Three (eastern cluster: 63423, 63727 and 63859) were in the vicinity of roundhouse 63410 (Fig. 2.8), and three (central cluster: 63724, 63807 and 63850) were to the immediate west of the Wessex Linear ditch; a further three (western cluster: 63525, 63804 and 63940) were 40–70 m to the west and south-west of the ditch (see Fig. 2.7). Four similar clusters of varying size have previously been recorded – two in King's Gate Phase 1, one in King's Gate Phase 2, and one on the Playing Field site (Powell and Barclay, forthcoming).

The larger clusters were investigated by means of 1 m-wide slots running along their longer axes, with additional interventions as necessary; the smaller clusters were excavated in opposing quadrants. All the clusters comprised an indeterminate number of pits, additional to those that could be individually identified and excavated. They contained variable sequences of fills, although similarities in some of the fills (particularly the upper fills) made it hard to determine the order in which the pits had been dug.

Parcel Q eastern cluster

Pit cluster 63423, which lay 10 m north of roundhouse 63410, measured 3.7 m by 2.2 m (see Fig. 2.8). At least six pits, up to 1 m wide, were identified by excavation, of which the deepest was 0.63 m deep, but others were suggested by the shape of the cluster. Most of the finds recovered, including 21 sherds (91 g) of Iron Age pottery, animal bone (14 g) and 13 pieces of struck flint, were relatively evenly distributed between the excavated pits; however, of the burnt flint (over 10 kg), 95% was recovered from the lower fill (63387) in a single pit (63393), which appeared to be one of the later cuts in the cluster.

Pit cluster 63727, which lay 12 m south-south-east of roundhouse 63410, measured 3.1 m by 1.7 m (see Fig. 2.8). Four pits, up to at least 1 m wide and each with a single fill, were identified, of which the deepest was 0.4 m deep. Most of the relatively small assemblage of finds, which together comprised seven sherds (127 g) of Iron Age pottery, animal bone (47 g), three pieces of struck flint, and burnt flint (17 g), were recovered from a single pit (63670); also recovered from this pit was a coin (ON 15345) of possible late Romano-British date, presumably intrusive.

Pit cluster 63859 (see Fig. 2.8; Pl. 2.11) lay to the immediate east of roundhouse 63410, between it and two four-post structures recorded in the King's Gate Phase 1 excavation. It had been partly exposed at the north-eastern end of evaluation trench 456, where it had been interpreted as a tree-throw hole; however, the Parcel Q excavation revealed this feature to belong to an extensive pit cluster measuring at least 18 m by 6 m. In addition to the sondage excavated during the evaluation, four further interventions, including a 9 m long slot, were excavated, and a total of 19 pits identified, up to 1.7 m wide and

Plate 2.11 Pit cluster 63859, viewed from the south (2 m scale)

0.75 m deep. Together they produced 57 sherds (636 g) of Early Iron Age (and Iron Age) pottery (as well as single residual Beaker and early prehistoric sherds), animal bone (676 g), 55 pieces of struck flint, and burnt flint (1037 g). There were also three fragments (19 g) of CBM and an unidentified piece of iron, these finds possibly being intrusive. While a few of the pits produced no finds, the material was relatively evenly distributed across the rest with no noticeable concentrations.

Parcel Q central cluster

Pit cluster 63724 lay less than 0.5 m west of the Wessex Linear ditch (see Fig. 2.8). It measured 5 m by 3.8 m and was investigated by means of a central slot. At least nine pit cuts were identified, up to 2 m wide and 0.7 m deep. Together, five of the pits produced 11 sherds (63 g) of Iron Age (including Early Iron Age) pottery (as well as two Beaker sherds), animal bone (287 g), three pieces of struck flint, and a fragment of CBM (probably intrusive), with the bulk of the pottery (96% by weight) and animal bone (54%) coming from a single pit (63685), which appeared to be in the middle of the stratigraphical sequence.

Pit cluster 63807 lay to the immediate west of the Wessex Linear ditch (see Fig. 2.8), its north-eastern end impinging on the edge of the ditch, although their stratigraphical relationship could not be clearly determined in section. It measured 12 m by 4 m and had been partly exposed in evaluation trench 459. At least 16 pits were identified, of variable size and up to 0.7 m deep, which together produced 27 sherds (269 g) of Early Iron Age (and Iron Age) pottery (as well as single Beaker, early prehistoric and Romano-British sherds), animal bone (332 g), 73 pieces of worked flint, and burnt flint (314 g). The bulk of the assemblage (69% by weight) came from a largely homogeneous layer (63658) sealing many of the individual pits.

Pit cluster 63850 lay 7 m west of the Wessex Linear ditch and 7 m north-west of pit cluster 63724 (see Fig. 2.8). It measured approximately 4 m by 3 m and had been partly exposed in evaluation trench 455. At least seven pits, up to 0.75 m deep, were identified in opposing quadrants, which together produced 168 sherds (1621 g) of Early Iron Age (and Iron Age) pottery and animal bone (1336 g), relatively evenly distributed between the pits. Among the bone from pit 63835 were a dog skull and the skeleton of a raven. Samples of animal bone from pits 63835 and 63845 provided radiocarbon dates of 810–560 cal BC (SUERC-82846, 2561±25 BP) and 760–410 cal BC (SUERC-82844, 2445±25 BP) (Table 6.6).

Parcel Q western cluster

A small pit cluster (63525), which lay in the north-western part of site, 60 m south-west of the Wessex Linear ditch, was fully excavated, with five pits identified within it (see Fig. 2.8). It measured only 3.5 m by 2.2 m, and the deepest pit was 0.4 m deep, but as this cluster had been cut by a negative lynchet (64058, below), it is likely that it was originally more extensive, and deeper. Together, the pits produced 115 sherds (1156 g) of Early Iron Age pottery, animal bone (732 g), 29 pieces of struck flint, and burnt flint (935 g), with no obvious pattern to their distribution within the pits.

Pit cluster 63804 lay 30 m south-east of cluster 63525 (see Fig. 2.8). It measured 6.8 m by 5.5 m and had been partly exposed in evaluation trench 454. A slot was excavated along its eastern side, and a number of discernible pit cuts in its western side also sectioned. At least 12 pits were identified, up to 0.37 m deep, together containing 33 sherds (912 g) of Early Iron Age pottery, 48 pieces of struck flint, burnt flint (153 g) and animal bone (482 g), as well as an intrusive fragment of CBM, these being relatively evenly distributed between pits. A sample of disarticulated human bone from one of the pits (63698) provided a radiocarbon date of *410–210 cal BC (95.4%)* (SUERC-74033, 2289±31 BP) (Table 6.7).

Pit cluster 63940 (Fig. 2.7, 2.10 and Pl. 2.12), which lay 80 m south-west of the Wessex Linear ditch, measured 16 m by 7 m. Although it had been crossed by trench 243 (during the 2004–5 evaluation) no evidence for it was recorded. Some 46 pits, up to 1 m deep, were identified in a central slot and four other interventions around its edge, and as a whole the cluster produced 198 sherds (1167 g) of Early Iron Age (and Iron Age) pottery (with single Bronze Age and Romano-British sherds), 192 pieces of struck flint, burnt flint (409 g), three pieces of quern (591 g, including ON 15358) and a bone tool (ON 15359). The pits at the northern end of the cluster were sealed by an extensive deposit of almost 23 kg of animal bone (see below), but the other identifiable pits within the cluster produced only a relatively small quantity (2101 g) of bone, including an antler (associated bone group (hereafter ABG) 15350) on the base of pit 63904, possibly placed. A sample from the antler provided a modelled radiocarbon date of *820–570 cal BC (95.4%)* (SUERC-73565 (2577±31 BP) (Table 6.6).

Animal bone deposit in pit cluster 63940

At the northern end of pit cluster 63940, a number of pits were sealed by a large deposit of animal bone beneath the uppermost deposit (Figs 2.11 and 2.12, Pls 2.13–2.14). This could be divided into two areas, the larger measuring 3.0 m by 2.8 m covering several pits, and the smaller measuring 1.1 m by 1 m within the upper part of pit 63963 (not illus.). The larger area, recorded as two spits (63911 – upper; 63964 – lower), contained 24 ABGs and the smaller deposit (63912, also excavated in two spits) contained 11, most from sub-adult and adult cattle. These do not contain whole animals, but rather comprise articulated limbs, skulls, vertebrae and ribs, thought to represent deposits of feasting debris.

While it is possible that the two areas of bone could represent different events, their proximity and similarity in appearance suggest that such events may not have been widely separated in time. Moreover, there were no physical indications in either deposit to suggest any significant hiatus in their process of accumulation. The radiocarbon dates obtained on samples from six ABGs (from contexts 63911,

Plate 2.12 Pit cluster 63940, viewed from the NNW (2 m scale)

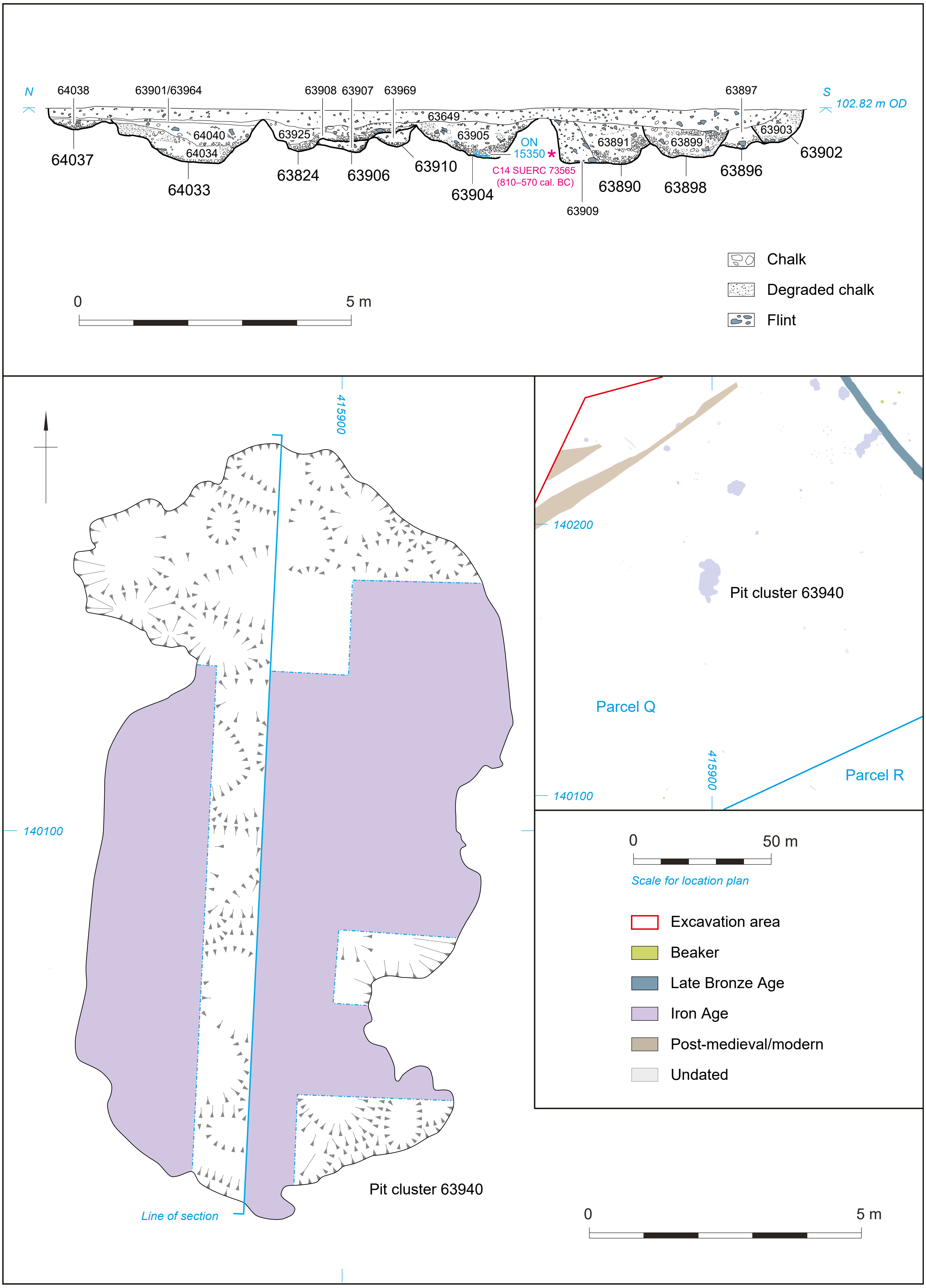

Figure 2.10 Early Iron Age pit cluster 63940

Figure 2.11 Animal bone deposit in pit cluster 63940

63912 and 63964) (Table 6.6) are not conclusive in establishing whether the animal bones were deposited over a short time span, or over a longer period (see Radiocarbon Dating, Chapter 6).

Amongst the ABGs were found 124 sherds (857 g) of pottery (including ONs 15347–9, 15351–6), 73 pieces of struck flint, burnt flint (260 g), and non-local stone (75 g) (these are included in the total for the pit cluster, above).

Parcel R

In addition to the pit clusters revealed during the excavation of Parcel Q, an irregular feature (63138), measuring 5.3 m by 2.5 m and up to 0.5 m deep, was recorded in trial trench 603 in Parcel R (Fig. 1.4), and appeared to comprise at least two large intercutting pits with very similar fills, although it was possibly a natural feature. It contained nine sherds (42 g) of pottery identifiable only as late prehistoric and seven pieces of worked flint. As noted above (see Early Bronze Age), two other features in Parcel R (feature 63221 and pit cluster 63131) were of similar form but insecurely dated, the five sherds (6 g) of early prehistoric pottery in feature 63221 being perhaps residual. It is possible that these features are also of Iron Age date.

A posthole (63089), 0.6 m in diameter and 0.3 m deep, was recorded in trench 532 in the south-west of Parcel R. Its single fill contained four sherds (15 g) of Iron Age pottery, four pieces of struck flint, and burnt flint (43 g).

Ditches

In the south-western part of the School Site was a group of intercutting ditches (Fig. 2.13), aligned north-east to south-west and measuring up to 24 m in length. The earliest ditch (66095, not visible in section) was 1.23 m wide and 0.37 m deep, with shallow, concave sides and a flat base. The ditch was re-cut (66096) along part of its length to form a wider (1.43–1.80 m) and deeper (0.57–1.02 m) boundary feature with steep, straight sides and a flat base, containing a sequence of six fills; a sherd (9 g) of Iron Age pottery, some animal bone (120 g, burnt remains of a sheep/goat) and burnt flint (53 g) came from the lower fill, with further pieces of burnt flint (50 g) from the upper fill. Five sherds (15 g) of Iron Age pottery came from the upper of two fills of a second re-cut (66097) on its southern edge, together with three pieces (9 g) of struck flint, burnt flint

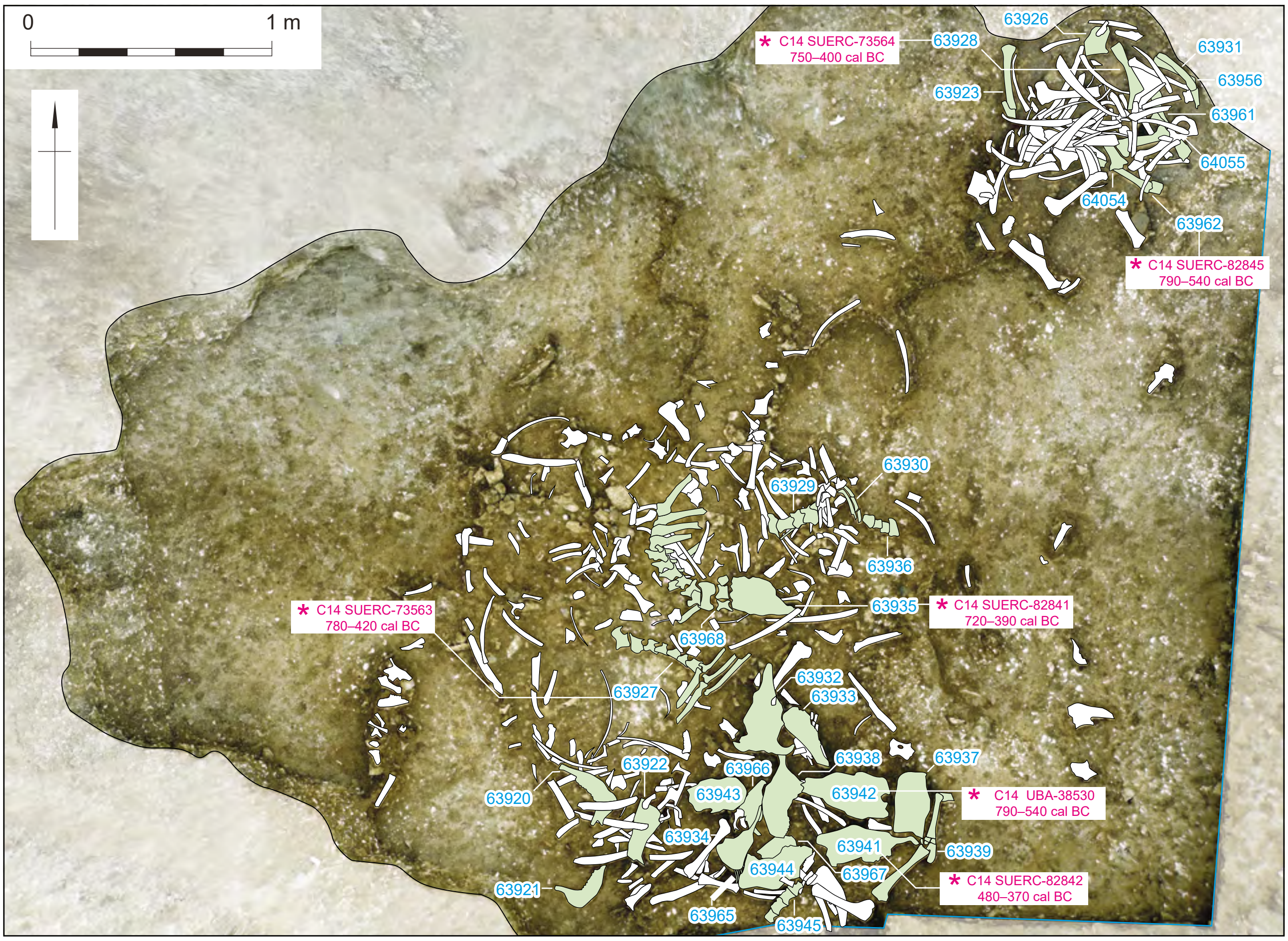

Figure 2.12 Details of animal bone deposit in pit cluster 63940

Plate 2.13 Early Iron Age animal bone deposit during excavation, viewed from the NNW

Plate 2.14 Part of the animal bone deposit above pit cluster 63940, during excavation, viewed from the north (2 m scale)

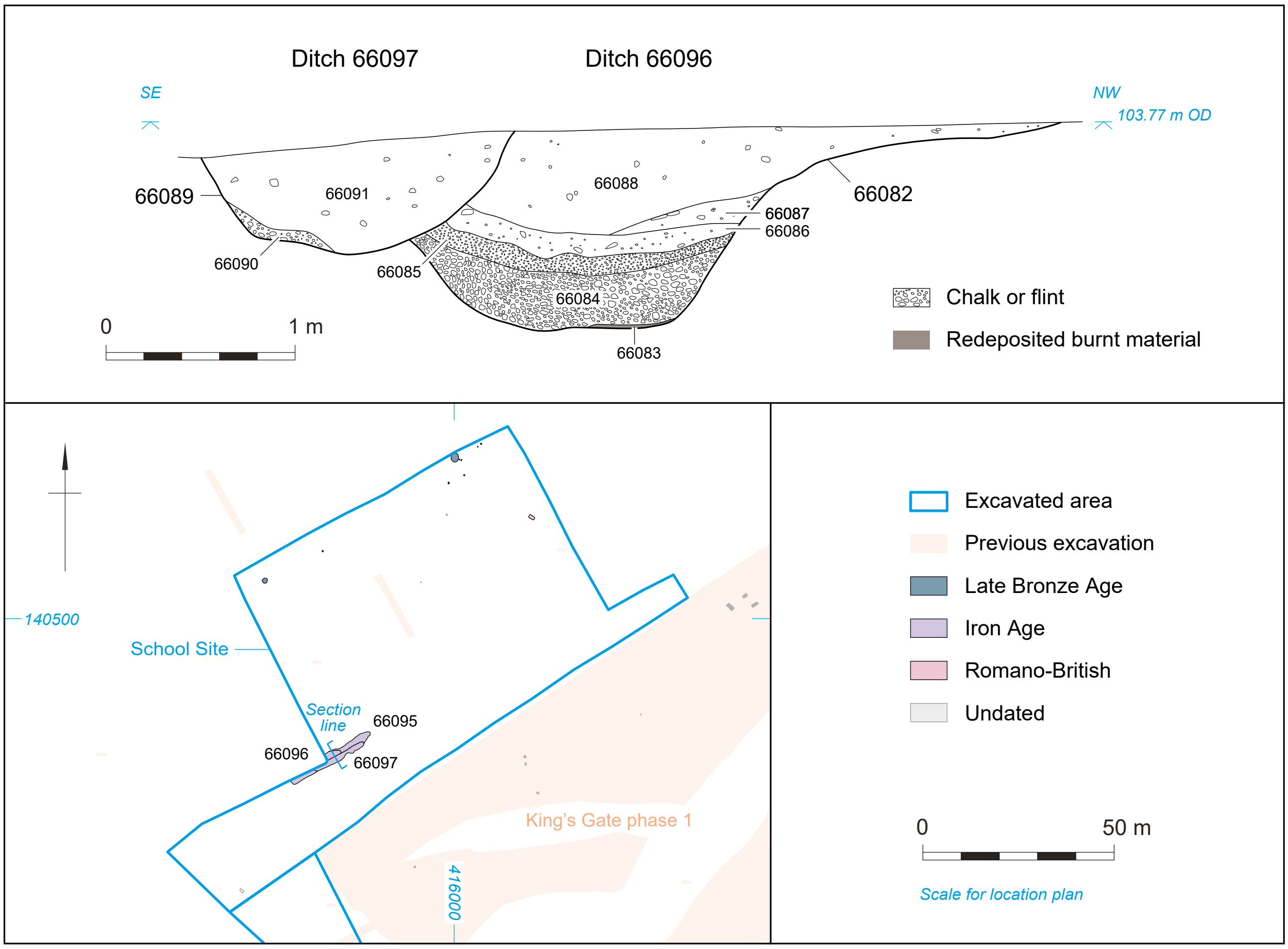

Figure 2.13 Iron Age ditches 66095–7

(64 g), two possible beads adapted from fossils found in the local chalk, and an intrusive piece (5 g) of CBM.

Romano-British and Later

The absence of Romano-British features from the Phase 4 works appears to confirm the pattern of landscape organisation recorded across the wider development area. A multiple sheep burial, a lynchet (64058) and a rectilinear array of truncated undated ditches/gullies were recorded in the Phase 4 area and are likely to be of post-medieval/modern date.

Chapter 3
Finds

Pottery

by Elina Brook

Introduction

The assemblage comprises 2446 sherds weighing 22,103 kg and enhances that which has previously been documented from the development area (Leivers, forthcoming; Brook, forthcoming a). The majority (77% by sherd count) dates to the later prehistoric period, particularly the Early Iron Age, although there are also key groups of Late Neolithic, Beaker and Early Bronze Age date. Small quantities of Romano-British (18 sherds, 88 g) and post-medieval (4 sherds, 18 g) material were also identified. Overall, the condition of the assemblage is poor, with a mean sherd weight of 9.0 g, although there is some variation between the different chronological periods, with the early prehistoric material in particular characterised by a high degree of fragmentation and a mean sherd weight of 6.6 g.

Methodology

The collection has been recorded in accordance with Wessex Archaeology's recording system (Morris 1994). The prehistoric material was subjected to detailed fabric (see Appendix 1) and form analyses. Sherds were examined using a x20 power binocular microscope and assigned to fabric groups based on the most dominant inclusion type. Featured sherds were allocated a form type, and other variables including surface treatment, decoration, firing and evidence of use (e.g., carbonised residues) were also recorded. Where possible, this follows the work undertaken by Leivers (forthcoming) and Brook (forthcoming a) on material from adjacent parts of the development area, with the addition of new fabric and form codes defined where necessary. This level of analysis falls between a Basic and Detailed Record as defined by the national guidelines (Barclay *et al.* 2016). No petrological analysis has been undertaken. The Romano-British and post-medieval sherds were assigned to broad ware groups or known fabric types (e.g., Verwood ware) and forms briefly described.

Early Prehistoric Pottery

Late Neolithic

A small quantity (Table 3.1) of pottery dating to this period came from two adjacent pits (63537 and 63539) in Parcel Q and fits within the Durrington Walls sub-style of Grooved Ware. Most sherds are in grog and flint-tempered fabric GF1, with smaller quantities in grog-tempered fabrics G2 and G6, while four sherds contain grog and sand (fabric GQ1).

Table 3.1 Quantification of early prehistoric pottery by fabric and period (no./wt in grammes)

Fabric code	*Late Neolithic*	*Beaker*	*Early Bronze Age*	*Late Neo–EBA uncertain*	*Total*
G1	-	-	7/111	-	7/111
G2	21/61	9/19	38/286	2/1	70/367
G5	-	19/124	3/14	-	22/138
G6	6/16	15/61	250/2174	-	271/2251
G9	-	26/152	7/46	-	33/198
G10	-	9/140	-	-	9/140
GF1	50/94	30/162	-	9/23	89/279
GQ1	4/15	11/44	2/3	2/3	19/65
G99	-	16/11	-	-	16/11
Total	81/186	135/713	307/2634	13/27	536/3560

Rim fragments from at least three vessels came from pit 63537, with the majority of the assemblage (50 sherds, 94 g) deriving from a single, fragmentary, undecorated vessel with a pointed, inturned rim. Similar undecorated vessels are present within the assemblage from Durrington Walls (Wainwright and Longworth 1971, 143, fig. 60, P485–6 and fig. 61, 496). The pit also contained single pieces from a rounded, upright rim and a rounded, inturned rim with horizontal grooved lines on the exterior. The 20 sherds from pit 63539 are likely to come from a single vessel of neutral profile with an upright rim and a shallow internal bevel. The exterior is decorated below the rim with two horizontal rows of twisted cord impressions (Fig. 3.1, 1). The range of fabrics, forms and decorative techniques and

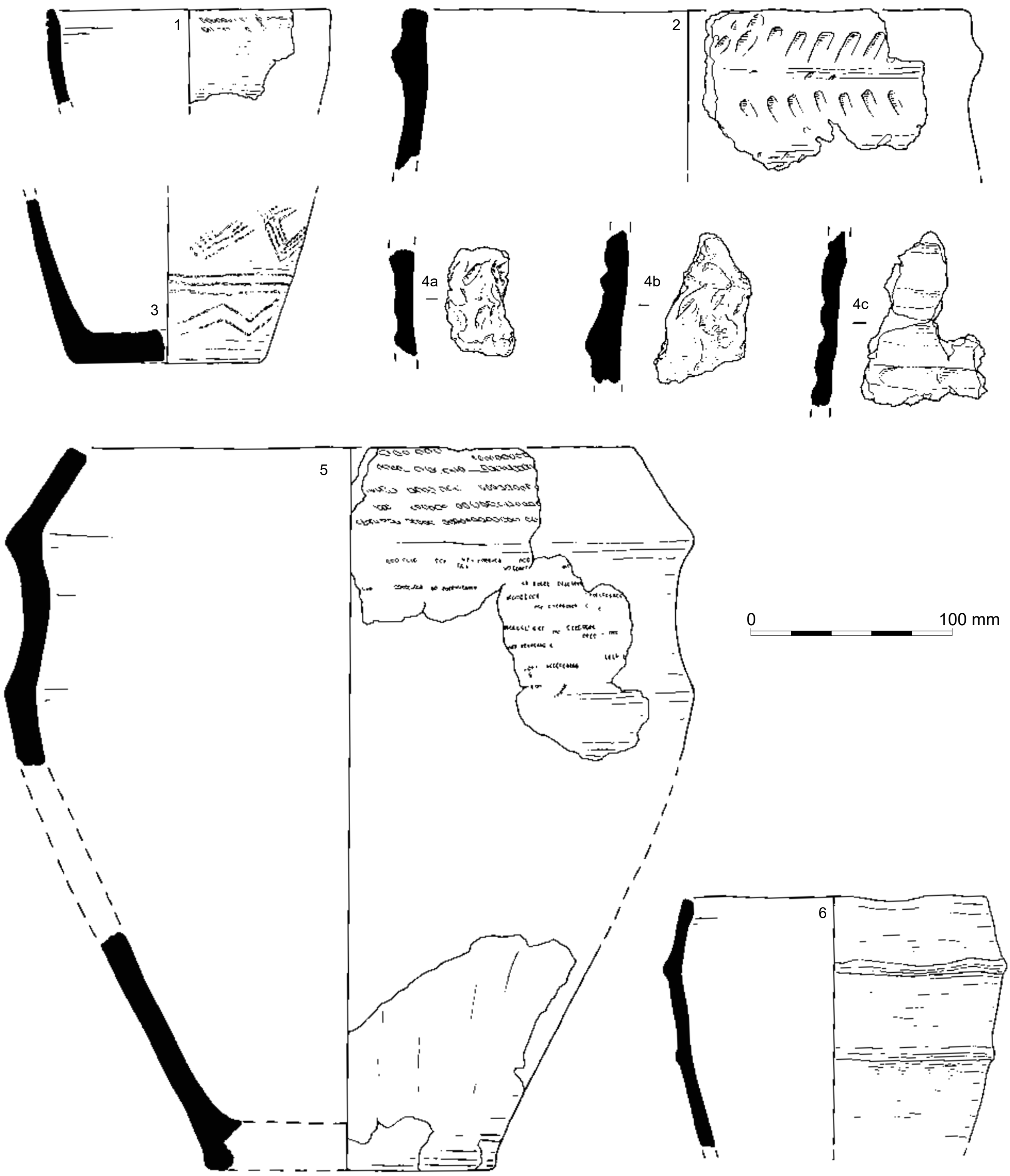

Figure 3.1 Late Neolithic, Beaker and Early Bronze Age pottery (1–6)

motifs present are comparable to those found during the previous phases of work at Amesbury Down (Leivers forthcoming).

Beaker

The small quantity of Beaker pottery (Table 3.1) comprises both the typically thin-walled, highly decorated, fine vessels along with a small component of coarse Beaker. This material is in a very fragmented condition (mean sherd weight is 5.3 g) and, as a result, no complete profiles were reconstructable. The majority of this material (124 sherds, 647 g) came from six pits and a posthole, with the remainder found residually within features of later Early Bronze Age and Iron Age date.

The sherds are present in a range of predominantly grog-tempered fabrics with varying amounts and combinations of quartz sand and flint. One very distinct fabric (G10) tempered with grog and pieces of burnt bone is particularly coarse, while 16 sherds could only be broadly assigned to a miscellaneous grog-tempered category (fabric G99). With the exception of coarse fabric G10, this range is entirely consistent with Beaker fabrics previously recorded from the development area (Leivers, forthcoming).

Five rejoining fragments from a large, thick-walled coarse Beaker (Fig. 3.1, 2) were found in pit 63550 located in Parcel Q. The vessel is in a coarse fabric tempered with grog and burnt bone (fabric G10) and has an upright, flattened rim with a slightly concave profile to the neck. Decoration consists of rows of crude, sub-rectangular diagonal impressions in opposing directions above and below a horizontally applied cordon. Due to the poor surface condition, it is not possible to determine whether these impressions were tooled or made by coarse impressed twisted or whipped cord. A single plain body sherd from pit 63544 is also made in the same grog and bone-tempered fabric, and given the close proximity of the two pits to each other (6 m apart) may derive from the same vessel. Other diagnostic pieces within pit 63550 include an upright, rounded rim and a body sherd with multiple rows of toothed-comb decoration, while pit 63544 contained a body sherd decorated with horizontal lines infilled with diagonal lines of toothed-comb impressions; all are from fine Beakers. A radiocarbon date of 2460–2200 cal BC (SUERC-82843, 3840±22 BP) was obtained on a cattle mandible from the same deposit containing the pottery in pit 63550, placing this material within the earlier part of the Beaker period.

The largest group of Beaker material (48 sherds weighing 283 g) came from pit 60780 in Parcel R and includes conjoining fragments from the base of a vessel (Fig. 3.1, 3) found in deposits 60781 and 60824. The surviving lower part of the vessel is decorated with toothed-comb impressions in a horizontal lozenge motif with a blank central zone and three rows of continuous horizontal toothed-comb impressions below; immediately above the base is a further zone of decoration comprising a double zig-zag motif. These are similar to motifs seen on Beakers within Clarke's Developed Southern British Group (Clarke 1970, 379, fig. 824 and 389, fig. 896). Four body sherds in grog-tempered fabric G6 are from a second Beaker; some have fingernail impressions and others have toothed-comb impressions. The pit also contained fragments from a Beaker with rusticated decoration. Several pieces have raised ribs with finger-pinched and fingernail impressions (Fig. 3.1, 4a), one fragment has a large boss adjacent to finger-pinched rustication (Fig. 3.1, 4b), and a further section has a series of wide, shallow, horizontal grooves/furrows (Fig. 3.1, 4c). Although the sections do not join, the fabric and firing indicate that they are from the same vessel and the curvature of the sherds suggests that it would have been large. The grooved/furrowed sections are similar to that seen on coarse Beaker vessels from Downton, approximately 19 km to the south of Boscombe (ApSimon 1962, 137, figs. 13, 19 and 14, 23).

Other pieces of note include fragments from a Beaker with a rounded rim and convex neck from pit 63816. The surface condition is poor, but the exterior appears to be decorated with bands of multiple horizontal lines alternating with bands of short diagonal lines, both possibly made with a toothed comb, and short stabbed impressions. The convex neck profile shares affinities with both Needham's Long- and Short-Necked Beakers, which have a potential date range of the 23rd–19th centuries BC (2005, 206, fig. 13). Toothed-comb impressed decoration was also present on body sherds found in pits 63602, 63619 and 63816, as well as among the residual material found within Early Bronze Age pit 63027, Bronze Age grave 63254 and Early Iron Age pit clusters 63807 and 63859. Two fragments with randomly dispersed fingernail impressions were also found residually within Early Iron Age pit cluster 63724.

Although a small collection, the Beaker assemblage from King's Gate broadly parallels the range of vessels previously found within the area (Leivers, forthcoming). It is noteworthy that this assemblage comes almost exclusively from pits, compared to the previously published Beaker assemblage (*ibid.*; Barclay 2011; Cleal 2011) of which a large proportion was found in graves. This source of the King's Gate material also explains the poor condition of the assemblage and the absence of many reconstructable profiles.

Early Bronze Age

A total of 307 sherds (2634 g) date to the Early Bronze Age (Table 3.1); 200 of these pieces (1916 g) derive from a single Collared Urn from pit 63218.

With the exception of 11 sherds found within a possible cairn above grave 63254, all of this material came from pits. As with the Beaker assemblage, these sherds occur in a broad range of predominantly grog-tempered fabrics (fabrics G2, G5 and G6), with the occasional addition of shell (fabric G1), flint (fabric G9) or sand (fabric GQ1) inclusions.

Food Vessel

Twelve sherds are from Food Vessels. Eleven of these are in grog-tempered fabric G2 and are likely to be from a single vessel found within a possible cairn covering Middle Bronze Age inhumation grave 63254. The rim is pointed and internally bevelled and there are faint tooled lines on the exterior. The other fragment is a flat, externally expanded rim in grog-tempered fabric G5, with possible impressed twisted or whipped cord decoration on the top, that came from a spread of soil (63086) to the immediate south-east of a group of Early Bronze Age features. It is similar to the rim of a Food Vessel found within a cremation grave previously excavated within the Amesbury Down area (Leivers, forthcoming, fig. 4.16, 44).

Collared Urn

The majority of sherds dating to the Early Bronze Age derive from parts of a Collared Urn (Fig. 3.1, 5) in a moderately coarse, grog-tempered fabric (G6) found in pit 63218. Although a complete profile was not reconstructable, enough diagnostic sections are present to establish it was of tripartite form of Longworth form 1A or C (Longworth 1984, 7). The vessel has a simple, flattened rim, straight collar and slightly concave neck; the sharpness of the shoulder angle varies around the vessel's circumference. The decoration consists of horizontal lines of twisted cord impressions on the collar and irregularly placed horizontal toothed-comb impressions on the neck. Vertical coarse wipe marks are visible on the lower parts of the exterior surface. The base is thick (23 mm) in comparison to the general wall thickness. This vessel probably belongs to Longworth's Primary Series (1984, 21) as it has at least two traits that are required for inclusion in the series. The vessel also has none of the features identified by Burgess as Late in his reassessment of Collared Urn chronology (1986), so it is more likely to belong to his Early or Middle Phase (*ibid.*, 345 and fig. 1).

Two plain body sherds from pit 63255 are very similar in appearance to the Collared Urn described above and may possibly derive from it. Two radiocarbon dates, one from cereal grain and the other from hazelnut shell, were obtained from the deposit containing these body sherds and have provided a combined date of 1900–1740 cal BC (95.5%) (UBA-41596, 3540±32 BP; UBA-41597, 3466±32 BP). Other fragments of possible Collared Urn include a rounded, upright rim fragment (fabric G6) decorated with toothed-comb horizontal lines and a chevron motif, and a shoulder fragment with fingertip impressed decoration in grog-tempered fabric G1, both from pit 63045.

Other Early Bronze Age

A total of 21 sherds (221 g) in a moderately fine grog-tempered fabric (G2) found in pit 63027 are from a single vessel (Fig. 3.1, 6) with a slightly biconical profile and a simple plain rim (variably rounded in places and flattened in others). Two horizontal cordons decorate the exterior, one positioned 30 mm below the rim and a second approximately 70 mm below the rim. Stylistically, the simple decorative traits share affinities with the Cordoned Urn tradition of the Early Bronze Age (Waddell 1995), with similar vessels known from Killyneill, Co. Tyrone (*ibid.*, 117, fig. 11.1:3) and Balneil, Wigtownshire (Beck and Stone 1936, 219, fig. 2.1). However, the slight biconical profile is also akin to Early/Middle Bronze Age biconical urns (Calkin 1962, 35). The vessel is, therefore, likely to date to the later part of the Early Bronze Age, possibly into the earlier part of the Middle Bronze Age. It is worth noting that on fabric grounds it would sit more comfortably within the Early Bronze Age period, as there appears to be a notable change to the use of flint-tempering in the Middle Bronze Age (see below).

A small quantity of sherds (70 pieces, 385 g) have been tentatively dated to the Early Bronze Age on the basis of fabric or general oxidised appearance in comparison with the more diagnostic vessels outlined above. Featured sherds include rounded rim fragments from pits 63178 and 63616 in grog and flint tempered fabric G9 and grog and sand tempered fabric GQ1 respectively; other pieces have traces of twisted cord impressions (pit 63259), whipped cord maggot impressions (pit 63268, not illus.) and tooled/incised line decoration (pits 63027, 63045 and 63180). A radiocarbon date of 2020–1750 cal BC (UBA-41594, 3544±35 BP) was obtained on a hazelnut shell fragment from pit 63180, supporting a suggested Early Bronze Age date for the ceramics.

Late Neolithic to Early Bronze Age

Thirteen fragments (27 g) in a range of grog-tempered fabrics (Table 3.1) could date from anywhere between the Late Neolithic to the Early Bronze Age. With the exception of one footed base fragment from Early Iron Age pit cluster 63807, all are featureless body sherds found residually within soil spread 63086 and tree-throw hole 63221.

List of early prehistoric illustrated sherds (Fig. 3.1)

Late Neolithic

1. Durrington Walls-style Grooved Ware; upright, rounded rim (form R1) from vessel of neutral profile with twisted cord impressed decoration, fabric G2. Pottery Record Number (PRN) 2, context 63540, pit 63539

Beaker

2. Coarse Beaker with upright flattened rim (form R16), fabric G10. PRN 37, context 63551, pit 63550
3. Beaker, lower part of vessel with toothed-comb impressed decoration, fabric G5. PRN 47/48, contexts 60781 and 60824, pit 60780
4. Coarse Beaker, body sherds with rusticated decoration, fabric G9. PRN 38/42, contexts 60781 and 60824, pit 60780

Early Bronze Age

5. Collared Urn, fabric G6. PRN 77, context 63219, pit 63218
6. Vessel with plain rim (form R1) and multiple horizontal cordons, fabric G2. PRN 49, context 63029, pit 63027

Later Prehistoric Pottery

The later prehistoric pottery amounts to 1813 sherds (18,285 kg). This assemblage falls into three groups – sherds that date to the Middle to Late Bronze Age; a collection of Late Bronze Age pottery mostly found within pit 66027; and the majority of Iron Age date.

Fabrics

A total of 24 fabric groups were defined. A quantification of fabrics by period is presented in Table 3.2. However, not all fabrics are exclusive to one particular period, with six fabrics (F3, F4, Q1, Q5, Q8 and S2) represented in more than one. This is most likely a reflection of the reliance on using locally available resources for pottery manufacture. The majority belong to three key fabric groups – those containing flint inclusions (F3, F4, F9, F10 and FG1), sandy wares (Q1–3, Q5–12, QVes1) and shell-tempered wares (S1–2, S4–5). A very small number of sherds contain calcareous inclusions, possibly limestone (fabric C2) and one sherd contained igneous rock inclusions (fabric R1). In comparison with the later prehistoric material previously analysed from Amesbury Down (Brook, forthcoming a), the larger average sherd size/weight meant that several additional fabrics could be identified. This is particularly the case with the Iron Age sandy wares.

Sandy wares are, by far, the most numerous (62% by count). Two fabrics (Q5 and Q7) contain fossil shell in varying quantities and coarseness, with Q7

Table 3.2 Quantification of later prehistoric pottery by fabric and period

Period	*Fabric code*	*No.*	*Weight (g)*	*MSW (g)*	*% sherds (by no.)*
Middle/Late Bronze Age	F4	24	171	-	-
	F9	144	1615	-	-
M/LBA sub-total	-	*168*	*1786*	*10.6*	*9.3*
Late Bronze Age	F3	38	221	-	-
	F4	7	29	-	-
	F10	38	559	-	-
	Q1	1	1	-	-
	Q5	11	57	-	-
	Q8	6	98	-	-
	S2	151	1378	-	-
LBA sub-total	-	*252*	*2343*	*9.3*	*13.9*
Iron Age	C2	4	38	-	-
	F3	112	2011	-	-
	FG1	2	18	-	-
	Q1	230	1177	-	-
	Q2	31	135	-	-
	Q3	36	148	-	-
	Q5	406	4367	-	-
	Q6	141	2127	-	-
	Q7	19	68	-	-
	Q8	59	438	-	-
	Q9	18	67	-	-
	Q10	21	206	-	-
	Q11	66	253	-	-
	Q12	44	356	-	-
	QVes1	31	164	-	-
	R1	1	14	-	-
	S1	1	1	-	-
	S2	6	51	-	-
	S4	152	2098	-	-
	S5	13	419	-	-
IA sub-total		*1393*	*14,156*	*10.2*	*76.8*
Total		1813	18,285	10.1	-

containing additional small amounts of burnt organic inclusions. Fabric Q5 accounts for 23% of the later prehistoric assemblage. Similar shell-tempered fabrics have been identified from sites on Salisbury Plain (Raymond 2006, 94, table 5.1 and 110, group 10A) where they were used for vessels dating from the Late Bronze Age through to the Middle Iron Age. Fabrics containing sand and flint (Q1, Q8, Q9 and Q11) represent 20% (by sherd count) of the later prehistoric assemblage, while fabric Q12 contains both shell and flint in a sandy matrix. Fabric QVes1 is characterised by numerous platey and linear voids which may have derived from leached or burnt-out shell and organics respectively. Fabric Q6 is a distinctive sandy ware containing rare, currently unidentified, black streaky inclusions. As with the previously analysed material (Brook, forthcoming a), this fabric was used for the production of finewares, often carinated bowls and occasionally jars of Early Iron Age date; these vessels are frequently oxidised to a bright reddish/orange colour. Sherds in a similar fabric have been identified among the Iron Age assemblage from outside Little Woodbury, Salisbury (Leivers 2015, 66). The remaining sandy wares (Q2, Q3 and Q10) are present in far smaller quantities (Table 3.2). Fabrics Q2 and Q10 are fine sandy wares; Q2 contains sparse iron minerals, while Q10 is particularly micaceous. Sandy ware Q3 contains no other obvious inclusions.

Flint-tempered fabrics comprise 20% of the later prehistoric assemblage; with the exception of fabric FG1 the flint is moderately sorted but varies in its quantities and coarseness. Fabrics F4 and F9 are only represented in the Middle and Late Bronze Age periods, while fabric F3 is present in both the Late Bronze Age and Iron Age periods. Fabric F10 contains additional shell and FG1 is tempered with fine flint and grog.

Shell-tempered fabrics account for 18% of the assemblage. With the exception of fine shell and flint-tempered fabric S1, all of the shelly wares contain coarse fossil shell in varying quantities. Fabric S4 is characterised by the presence of soft, sub-rounded black/brown grains that could possibly be glauconite, while fabric S5 is in a particularly coarse sandy matrix. Shelly fabrics are well represented within assemblages of Late Bronze Age and Iron Age date in the region, such as those from Potterne (Morris 2000, 144) and High Post (Jones 2011, 49), for example. Four sherds contain sub-angular calcareous inclusions, possibly limestone (fabric C2).

Most of these wares, particularly the sandy wares and flint-tempered fabrics, are likely to have been produced relatively locally (within a 10 km radius of the site) as the site lies on the Upper Chalk, close to deposits of clay-with-flints, which could provide suitable sandy clays for potting and flint for tempering. The shelly wares are likely to derive from a Jurassic source, possibly the Kimmeridge Clay which outcrops between Tisbury and Gillingham, Dorset, approximately 12 km to the west. The single sherd in an igneous rock-tempered fabric R1 is likely to have a south-western, possibly granitic source.

Middle to Late Bronze Age

Sherds datable to this period are present in fine and moderately coarse flint-tempered fabrics F4 and F9 respectively (Table 3.2). Featured sherds are limited to two very fragmentary bases, one from cremation grave 63085 (ON 15310) and one (ON 15309) found on the surface of the natural 1 m to the south of the cremation grave, and an upright, rounded rim fragment and body sherd with fingernail impressed decoration, both from soil spread 63086. Although the diagnostic parts of the vessel from cremation grave 63085 are missing, it is likely that this represents the remains of a bucket-shaped Deverel-Rimbury vessel. It is in flint-tempered fabric F9 and the base measures approximately 240 mm in diameter; there is irregular coarse wiping on the exterior. The vessel contained the cremated remains of an adult, possibly a male, for which a radiocarbon date of 1510–1320 cal BC (SUERC-74091, 3160±29 BP) has been obtained on the bone. The second base (ON 15309) is in the finer flint-tempered fabric F4 and measured approximately 120 mm in diameter. Given the proximity of these vessels to one another, it is likely that they are broadly contemporary.

The remainder of the assemblage consists of featureless body sherds from the soil spread 63086, overlying Bronze Age grave 63267, and a single residual piece found within Early Iron Age pit cluster 63940. Small quantities of Middle Bronze Age pottery have previously been found within the development area (Leivers, forthcoming), but they are few in number.

Late Bronze Age

Fabric

A fairly limited range of fabrics are represented (Table 3.2) among the Late Bronze Age material and these are dominated by coarse shell-tempered fabric S2. Of the flint-tempered fabrics F3 and F10 are moderately represented, with sherds in fine flint-tempered fabric and sandy wares Q1, Q5 and Q8 present in far smaller numbers. This indicates a continuity in the use of flint-tempered wares from the Middle Bronze Age but also the introduction of a broader range of ware types, including shelly and sandy wares.

Forms, surface treatment and evidence of use

A total of 14 rim fragments were present including rounded, flattened and out-turned forms. Short, out-turned rims are the most numerous (six fragments)

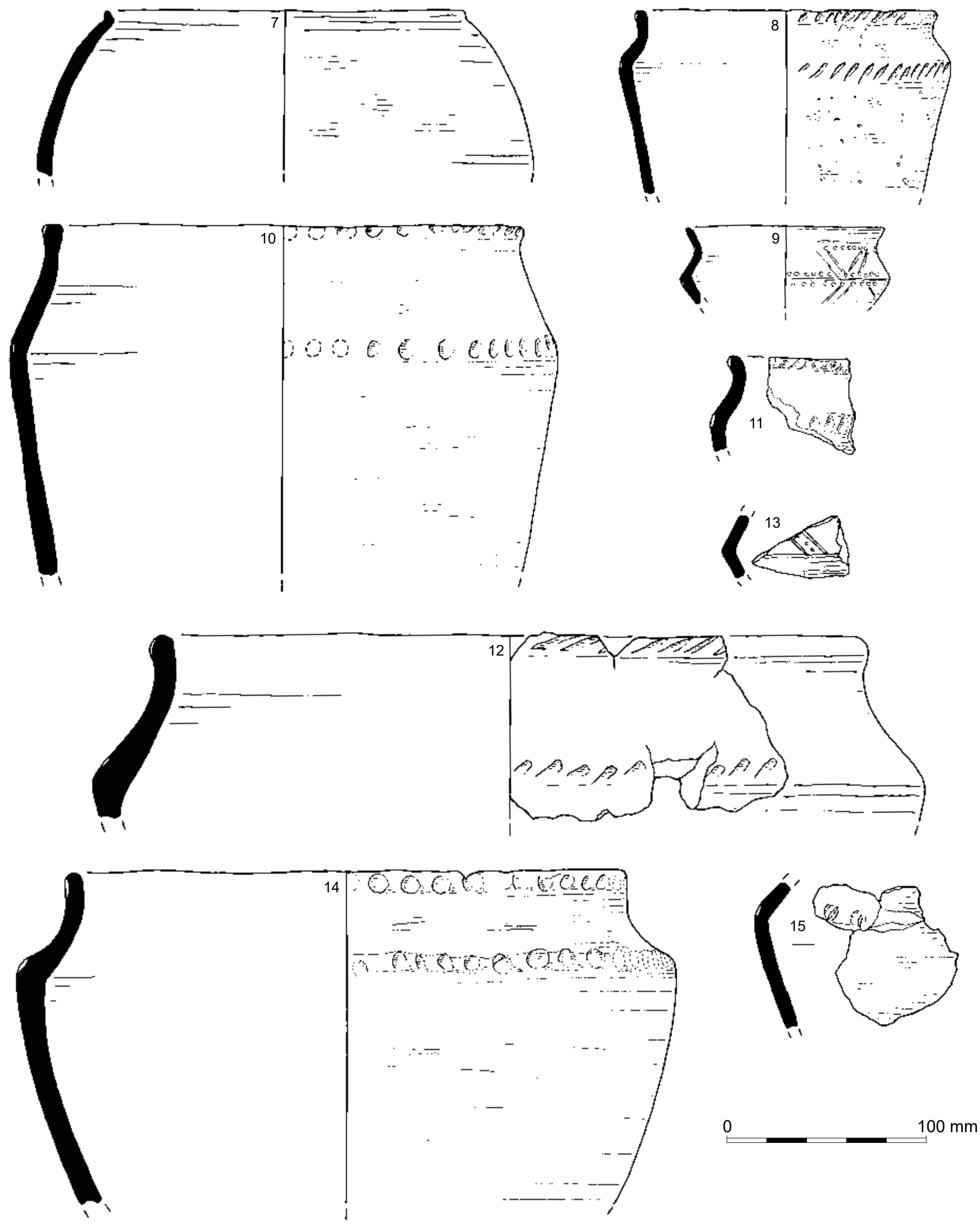

Figure 3.2 Late Bronze Age and Iron Age pottery (7–15)

and are similar to those seen among Late Bronze Age assemblages from The Deanery, Wichelstowe (Brook, forthcoming b, form R6) and Burderop Down (Gingell 1992, 96 and fig. 75, 3). These rims derive from at least two vessels, one of which has a high, rounded shoulder (Fig. 3.2, 7) comparable to a jar from Farnham Green Lane (Barrett 1980, 304, fig. 5, 6). Rounded rims (five examples) are upright or flared and one may have had an inturned profile. Two rim fragments are flattened, including one slightly externally expanded piece, and the other is inturned and from a probable ovoid jar. A single rim of uncertain form is from a vessel with a large diameter. Other indicators of vessel form consist of two angular shoulder fragments in coarse shell-tempered fabric S2, one pinched base angle (sand and flint-tempered fabric Q8) and three plain base angle fragments. One of these has abundant, burnt-out linear voids all over the underside, indicating that it may have been stood on a surface covered in organic material during manufacture. A similar instance was observed on the base of a vessel of Middle or Late Bronze Age date from Parmiter Drive, Wimborne (Wessex Archaeology 2019).

Surface treatments comprise finger-smearing and vertical fluting on exterior surfaces, as well as both internal and external coarse wiping. Burnishing was recorded twice, once on the outer surface of sherds from a possible shouldered vessel in shell-tempered fabric S2, and once on the inner and outer surfaces of body sherds in flint-tempered fabric F3. There are no instances of decoration. Evidence for use is limited to burnt/sooted residues on the interior of three sherds from context 66028.

Distribution, dating and affinities

The majority (98% by count, 99% by weight) of the Late Bronze Age pottery was found within pit 66027, with the remainder comprising six thin-walled body sherds from soil spread 63086 and a flat-topped, slightly externally thickened rim found residually within Early Iron Age pit cluster 63940. Of the sherds from pit 66027, the largest quantity (201 sherds, 1902 g) came from upper fill 66028, with smaller numbers present throughout the sequence of fills. Some refitting pieces from adjacent backfills 66028 and 66033 suggest that the material may have been deposited elsewhere prior to finally being discarded in the pit. The range of fabrics, forms and surface treatments present within this assemblage are typical of the Late Bronze Age Post-Deverel-Rimbury (PDR) ceramic tradition as defined by Barrett (1980). Given the complete absence of decoration, this material is likely to belong to the Plain Ware phase of the PDR tradition, with a possible date range of the 11th to 10th centuries BC. Some PDR ceramics have previously been recovered from the development area (Leivers, forthcoming), although the decorative elements indicate that some may be of slightly later date – perhaps extending into the 9th or even 8th centuries BC – than the collection from pit 66027. Combined radiocarbon dates of *1120–930 cal BC (95.5%)* (UBA-41599, 2858±25 BP and UBA-41600, 2863±36 BP), obtained on charred plant remains found in deposit 66052 within the pit, support the suggested 11th–10th century BC date for the ceramics.

Further assemblages of comparable date in Wiltshire include surface collections from the Stonehenge area (Raymond 1990, 205–6) and elsewhere on Salisbury Plain (Every 2008, 171; Powell *et al.* 2018, 14–8; Raymond 2006, 93 and 105–6), as well as from the north of the county from The Deanery, Wichelstowe (Brook, forthcoming b) and Rockley and Burderop Downs (Gingell 1992).

Iron Age

The Iron Age pottery amounts to 76.8% (by count) of the total later prehistoric assemblage (Table 3.2). Of this material, 911 sherds (11,917 g) date to the Early Iron Age (broadly 8th–6th centuries BC) and 482 sherds (2239 g) are more broadly dated to the Iron Age.

Fabrics

A total of 20 fabrics are represented among the assemblage (Tables 3.2 and 3.3). During this period there appears to be a notable change in the range of fabrics utilised for pottery manufacture in comparison to the preceding periods. The sandy ware group is, by far, the most dominant, accounting from more than three-quarters of the Iron Age assemblage. Although two flint-tempered fabrics are present within the Iron Age assemblage (8% by count), this is a significant reduction from 33% for flint-tempered wares during the Late Bronze Age. Likewise, the percentage of shelly wares also drops from 60% within the Late Bronze Age assemblage to 12% for the Iron Age material. The presence of non-local rock-tempered fabric R1 is not unexpected and reflects expanding systems of trade and exchange.

Table 3.3 Iron Age pottery quantification by broad fabric group

Fabric group	*No.*	*Wt (g)*	*% no.*	*% wt (g)*
Calcareous wares	4	38	0.3	0.3
Flint-tempered	114	2029	8.2	14.3
Sandy wares	1102	9506	79.1	67.2
Rock-tempered	1	14	< 0.1	< 0.1
Shell-tempered	172	2569	12.3	18.1
Total	1393	14,156	100.0	100.0

Forms

Eight rim forms are present; minimum numbers of vessels by fabric are quantified in Table 3.4. These include simple upright forms (R1, R14 and R16), everted, flared and out-turned profiles (R11, R13 and R21 respectively), and inturned forms (R12). A total of nine rims were rounded, but the orientation was uncertain because of the small size of the pieces (form R20). Of the 42 vessels identified, 28 have profiles sufficiently reconstructable to indicate more of the vessel form. These include 11 carinated bowls, one possible cup and 16 that can be broadly

Table 3.4 Iron Age pottery: numbers of vessels by rim form and fabric

Form		*F3*	*Q1*	*Q3*	*Q5*	*Q6*	*Q8*	*Q9*	*Q11*	*Q12*	*S1*	*S2*	*S4*	*Total*
R1	Rounded, upright	1	2	-	4	1	-	1	2	1	-	-	2	14
R11	Slightly everted	-	2	-	2	1	-	-	2	-	-	-	-	7
R12	Rounded, inturned	-	-	-	1	-	-	-	-	-	-	-	-	1
R13	Rounded, flared	-	-	-	-	2	-	-	1	-	-	1	-	4
R14	Short, upright	-	-	-	2	-	-	-	1	-	-	-	-	3
R16	Flat, upright	1	1	-	-	-	-	-	-	-	-	-	-	2
R20	Rounded, uncertain angle	-	2	1	1	3	1	-	-	-	1	-	-	9
R21	Short, out-turned	1	-	-	-	-	1	-	-	-	-	-	-	2
Total		3	7	1	10	7	2	1	6	1	1	1	2	42

described as shouldered jars. The remaining 14 are of uncertain jar or bowl form. Correlation of rims and vessel forms are presented in Table 3.5. The bowls have a fairly limited range of rim forms, with slightly everted form R11 the most common. These include two carinated bowls with short, upright rims similar to Potterne bowl Type 3.1 (Gingell and Morris 2000, 150), five tripartite carinated bowls comparable to Potterne Type 3.3 (*ibid.*) and one carinated bowl with flared rim comparable to Potterne Type 3.4 (*ibid.*). Three additional bowls are of carinated form but are not diagnostic enough to assign to any specific Potterne category. The diameters of four bowls are measurable; they range from 140–240 mm. One tripartite vessel (Fig. 3.2, 9) with a small diameter (95 mm) could possibly be classified as a cup.

At least seven shouldered jars (e.g., Fig. 3.2, 10–12 and Fig. 3.3, 22) are similar to jar Type 51 from Potterne (Gingell and Morris 2000, 151) and comparable to others from All Cannings Cross (Cunnington 1923, pl. 39, 4 and 6; pl. 40, 2). A further three jars with either rounded, upright or short, out-turned rims (forms R1 and R21) are similar to jars previously found on the development area (Brook, forthcoming a, fig. 4.15, 15) and are comparable to Potterne Type 31 carinated jars (Gingell and Morris 2000, 151). The one example of an inturned rim (form R12) is likely to derive from a bipartite jar (see Potterne Type 33, *ibid.*). Vessel diameters range from 160–340 mm.

Table 3.5 Iron Age pottery: correlation of vessel form and rim form

Vessel form	*R1*	*R11*	*R12*	*R13*	*R14*	*R16*	*R20*	*R21*	*Total*
Bowls									
Potterne Type 3.1	-	-	-	-	2	-	-	-	2
Potterne Type 3.3	-	4	-	1	-	-	-	-	5
Potterne Type 3.4	-	-	-	1	-	-	-	-	1
Other carinated bowl	2	-	-	-	1	-	-	-	3
Sub-total bowls	*2*	*4*	-	*2*	*3*	-	-	-	*11*
Cups	-	1	-	-	-	-	-	-	1
Shouldered jars									
Potterne Type 31	1	-	-	-	-	-	-	2	3
Potterne Type 33	-	-	1	-	-	-	-	-	1
Potterne Type 51	5	-	-	1	-	1	-	-	7
Other shouldered jar	1	1	-	1	-	1	1	-	5
Sub-total jars	*7*	*1*	*1*	*2*	-	*2*	*1*	*2*	*16*
Uncertain form	5	1	-	-	-	-	8	-	14
Total	14	7	1	4	3	2	9	2	42

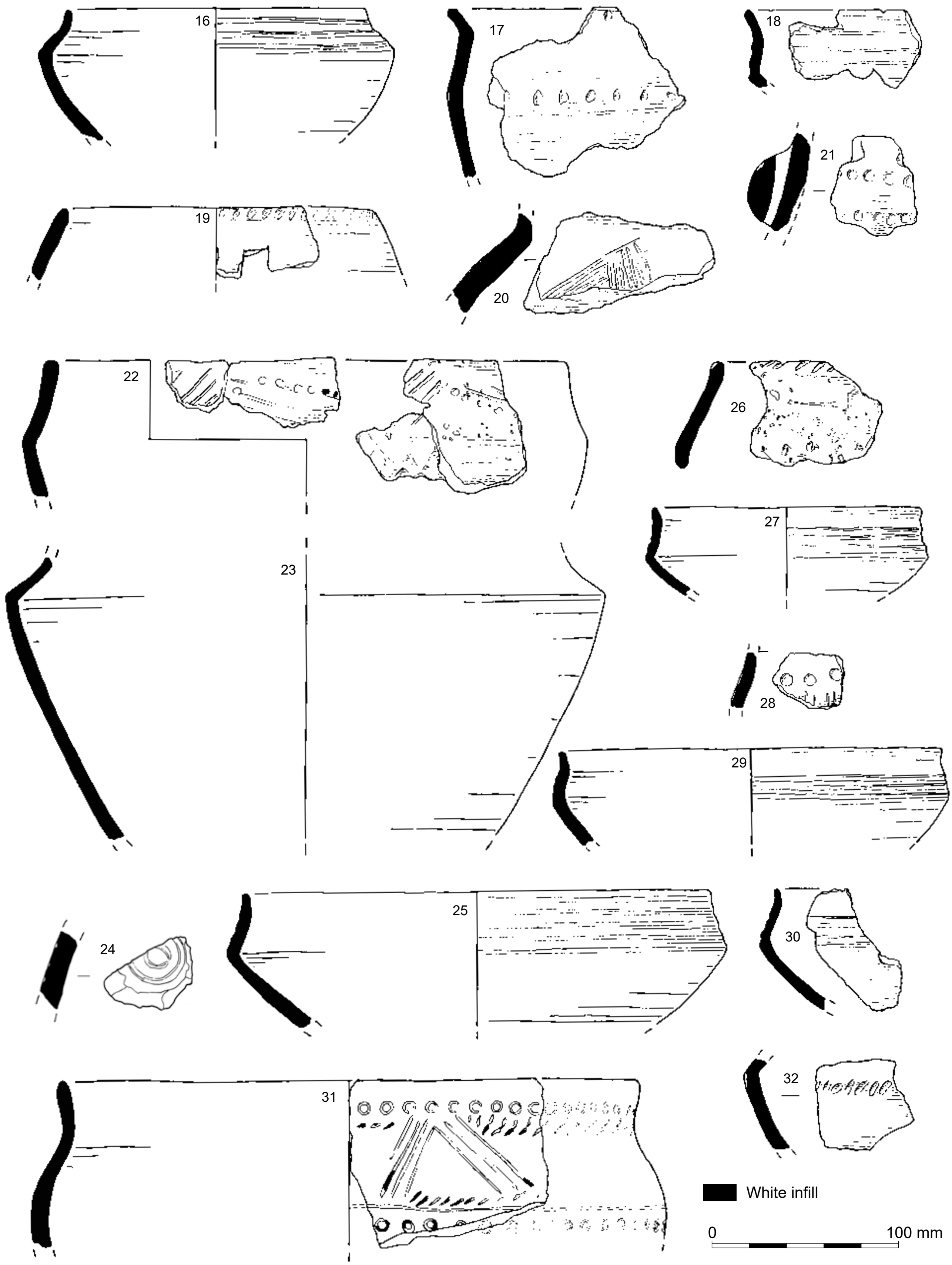

Figure 3.3 Iron Age pottery (16–32)

Of the 14 vessels of uncertain form, one in fine sand and flint-tempered fabric Q9 has a long neck with a rounded upright rim. This could derive from a long-necked carinated bowl, which at Potterne were most common during the late 8th–early 6th centuries BC (*ibid.*, 150, Type 2).

The assemblage also includes 125 angled body sherds; all the key fabric groups are represented. The majority are shoulder fragments ranging from sharply angular to rounded profiles, although there appears to be an emphasis on more angular profiles. All would fit into the range of vessel forms outlined above. A total of 95 base fragments were recorded, 92 of which have a simple, plain angle (form B2), while three have a slightly pinched angle (form B1).

Surface treatment

Burnishing is the most common form of surface treatment, with 54 recorded instances of burnishing on both the interior and exterior surfaces of sherds, 35 on the exterior surfaces alone and six on the interior surface only. Bowls were more often burnished on both surfaces than jars, which is to be expected. Coarse wiping is not particularly common, but where it does occur it is more often on the outer surfaces of vessels, including at least two shouldered jars (e.g., Fig. 3.3, 17) and one jar/bowl (Fig. 3.4, 34), which was horizontally wiped on the interior and vertically wiped on the exterior below the shoulder. Smoothing of internal and external surfaces was noted on three groups of body sherds (probably from jars) and on fragments from a large, shouldered jar (Fig. 3.2, 14).

Fragments from two carinated jar/bowls have remnants of a possible red finish on their outer surfaces; both are in sandy fabric Q1. This type of surface treatment has been noted on vessels from the development area before (Brook, forthcoming a) and is a result of either the application of a ferruginous slip/clay coating or by burnishing fine-grained iron oxide into the surface of the vessel (Gingell and Morris 2000, 155). The use of a white (possibly chalk) paste to infill incised and impressed designs in order to enhance the decorative motifs is present on two groups of sherds including the possible cup (Fig. 3.2, 9) and a shoulder/neck fragment from pit 63645. White infilling is known from other sites of comparable date in the region, including East Chisenbury (McOmish 1996; Raymond 2010), All Cannings Cross (Cunnington 1923) and Potterne (Gingell and Morris 2000).

Decoration and evidence for use

Decoration is common and was noted on 29% of the sherds. This includes a variety of applied, furrowed, incised, infilled, impressed, slashed, stabbed and tooled techniques (Table 3.6). Furrowed decoration, predominantly in horizontal lines but occasionally in diagonal lines, is the most common. It is present mainly on the shoulders of carinated bowls, particularly those in sandy fabric Q6, although

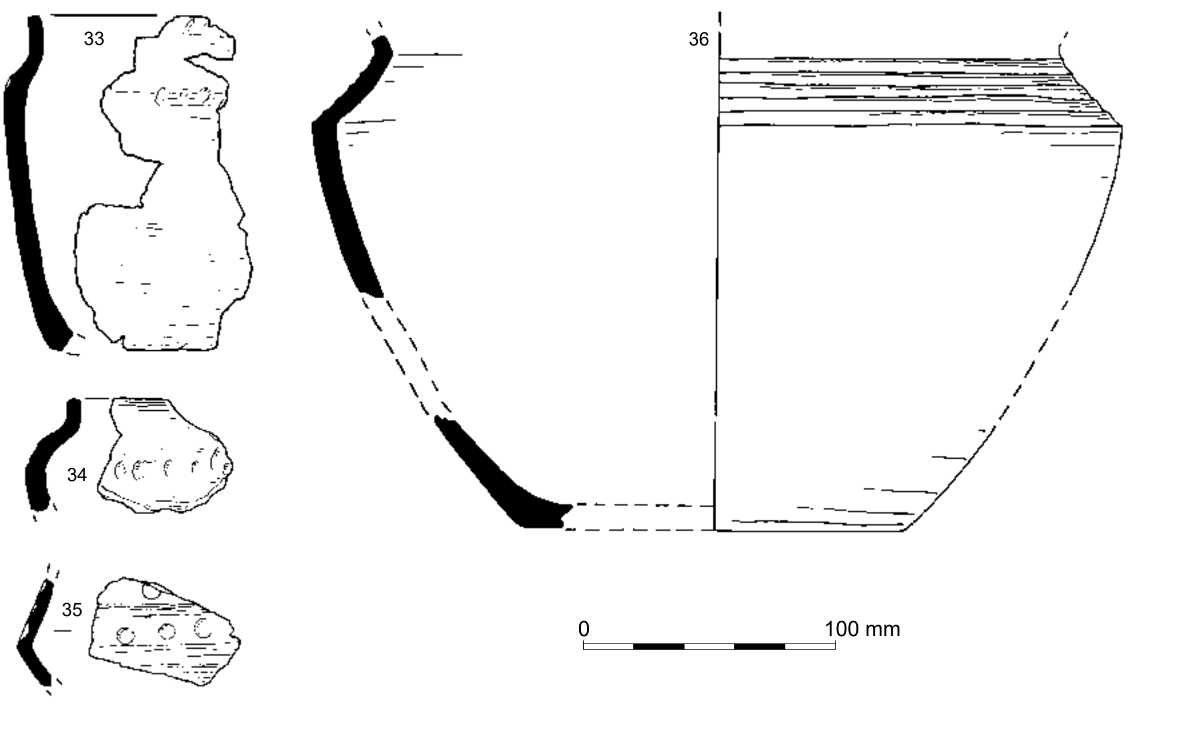

Figure 3.4 Iron Age pottery (33–36)

Table 3.6 Iron Age pottery: techniques of decoration

Decorative technique	*No. records*
Applied	1
Furrowed	43
Incised	6
Infilled	3
Impressed	37
Slashed	15
Stabbed	1
Tooled	15

other fabrics are represented. Impressed decoration is also relatively common and consists of fingernail and fingertip impressions on the rims and shoulders of jars in particular, as well as impressed dots and dimples and impressed rings on the shoulders and necks of jars/bowls. Slashed decoration is present as short lines on the rims and shoulders of jars, while combinations of tooled lines are utilised to create varying motifs, including interlocking triangles, chevrons and, in one instance, concentric circles on jars and bowls. Multiple combinations of techniques and motifs are used on individual vessels, including tooled and incised lines infilled with a white paste (see surface treatment above), while one shoulder fragment in sand and vesicular fabric QVes1 has an applied cordon with fingertip impressed decoration. Varying combinations of these techniques and motifs are known from the large Early Iron Age assemblages from Potterne (Gingell and Morris 2000, 331–7, figs 102–108), East Chisenbury (McOmish 1996; Raymond 2010) and All Cannings Cross (Cunnington 1923).

Evidence for the use of vessels is limited to soot/burnt residues on the interior of 34 sherds and the exterior of 10 sherds, suggesting that some shouldered jars had been used for the cooking or preparation of foodstuffs or other materials. One sherd from pit 63605 in sand and shell-tempered fabric Q5 has a partial post-firing perforation, which may indicate that the vessel has been repaired or that it underwent a change in use.

Distribution

The Iron Age pottery came from 95 contexts within 40 features/feature groups including pits, postholes, ditches, a lynchet, a layer and natural features (including tree-throw holes). As with the previously excavated Iron Age pottery from Amesbury Down (Brook, forthcoming a), the majority (85% by sherd count) of this material was found within several discrete and intercutting pits on the north-west-facing slope of the central ridge.

Structures

The largest group of sherds found within features associated with structures came from posthole 63349 forming part of roundhouse 63410 (54 sherds, 392 g). Forty-four of these sherds (356 g) derive from an Early Iron Age shouldered jar (Fig. 3.2, 8) with an upright to slightly everted rim (ON 15314). The rim and shoulder are decorated with short, slashed lines. The jar is badly burnt and as a result is quite distorted, with some sherds almost vitrified. The profile is similar to a vessel previously found within the development area (Brook, forthcoming a, fig. 4.15, 15). The remaining sherds from this structure are undiagnostic.

Small numbers of featureless body sherds more broadly datable to the Iron Age were also found in postholes forming four-post structures 63394, 63411, 63474 and 63575, and discrete postholes 63089, 63333, 63470 and 63879 (not all illus.).

Pits

Two isolated pits (63320 and 63468) in Parcel Q contained notable groups of pottery. A total of 247 sherds (weighing 4297 g) came from pit 63468, including rims from at least five vessels comprising one bowl, a possible cup/small bowl (Fig. 3.2, 9) and three shouldered jars (Fig. 3.2, 10–12). The fineware bowl and possible cup are both of tripartite form with slightly everted rims. Although the bowl fragments are too small to illustrate, they have the typical horizontal furrowed decoration on the shoulder that is characteristic of the Early Iron Age in the area. The cup is decorated above and below the carination with incised lines and adjacent rows of dots infilled with a white paste. The shouldered jars are similar to Potterne Types 51 and are decorated on the rims and shoulders with either slashes or fingernail/tip impressions. Bases from an additional two vessels are present – one in coarse, shell-tempered fabric Q5 (ON 15317) and the other in finer sandy fabric Q6. The pit also contains 18 decorated sherds, several of which are from fineware bowls, including one piece from a sharply carinated vessel (probably a bowl) with tooled lines and dot decoration (Fig. 3.2, 13) and another from a carinated body with a row of shallow dimples comparable to Potterne decorative motif type 3 (Gingell and Morris 2000, 331, fig. 102, 3). Other decorated pieces of note consist of a probable neck fragment in sand and shell-tempered fabric Q5 with an impressed ring and dot motif also present within the Potterne assemblage (*ibid.*, 335, 9.3). The remaining decorated pieces include a range of fingernail impressions, multiple incised or tooled lines and slashed shoulders. The full range of surface treatments (burnishing, wiping and smoothing) are represented among this large group; they include several thin-walled body sherds in flint-tempered fabric F3 with lumpy, almost leathery internal and external surfaces resulting from crude smoothing. Burnt residues were noted on pieces from two vessels – on the exterior of one shouldered jar and on the interior of a decorated body sherd.

Of the 82 sherds (1223 g) found in pit 63320, 46 are probably from a large, shouldered jar/bowl (Fig. 3.2, 14) decorated with fingertip impressions on the outer edge of the rim and shoulder. The surfaces have been horizontally smoothed and there are traces of burnt residues on the shoulder. Additional decorated sherds include the neck of a bowl with furrowed lines in sandy fabric Q6, a curved shoulder fragment with fingertip impressions in flint-tempered fabric F3, and a probable jar shoulder with fingernail/tip impressions (Fig. 3.2, 15) and burnt residues adhering to the interior surface. Seven pieces in sandy ware fabric Q1 are from the base and lower wall of a small, thin-walled vessel; its base diameter measures just 60 mm.

Two further discrete pits (63605 and 63645) contain material of note. Pit 63605 contained fragments from a fineware bowl (Fig. 3.3, 16) and a weakly shouldered vessel with fingernail/tip impressed decoration on the rim and shoulder (Fig. 3.3, 17). The interior surface of the bowl is well worn and a body sherd with a post-firing perforation indicates that it may have been repaired. With a mean sherd weight of 4.2 g, the material from pit 63645 is in poor condition. However, despite this, several diagnostic pieces parallel those in the two larger groups discussed above. They include a fragment from a shouldered vessel in sand and shell-tempered fabric Q5 with fingernail/tip impressions on the rim, and an angled body sherd with two parallel rows of fine impressed dots, some of which may have remnant white paste infill. The motif is comparable to one from Potterne (Gingell and Morris 2000, 336, fig. 11.8). A radiocarbon date of *780–540 cal BC (95.5%)* (UBA-41590, 2486±26 BP) was obtained on charred plant remains from the same deposit, confirming an Early Iron Age date for this material.

Pit clusters

Several key groups of material came from three groups of pit clusters within Parcel Q. Among the eastern group, a total of 61 sherds (567 g) came from pit cluster 63859. Rims from vessels are poorly represented but include one from a fineware tripartite decorated bowl (Fig. 3.3, 18) and the single example of a decorated inturned rim (form R12; Fig. 3.3, 19) from a possible bipartite jar. The joining fragments from this rim came from different pits within the cluster (pits 63760 and 63789, not illus.), indicating that some reworking/redeposition of the material has taken place and that the vessel has not broken *in situ*. Decorated body sherds from several other vessels are present, including shoulders from three jars or bowls; one with fingertip impressions on the shoulder in sandy fabric Q1, one with tooled slashes in shell-tempered fabric S4, and one from a large vessel (Fig. 3.3, 20) decorated with interlocking tooled lines forming a triangular motif comparable to one from Potterne (Gingell and Morris 2000, 333, fig. 104, motif 7.5). Another fragment in the same sandy fabric with traces of red finish below the shoulder and a similar interlocking motif may derive from the same vessel. One distinct fragment is a body sherd with a partial double-perforated lug decorated with impressed dots (Fig. 3.3, 21); the form is comparable to lug type 2 at Potterne (*ibid*., 153, fig. 52, 52) on vessels of 7th–early 6th century BC date, as well as on vessels from All Cannings Cross (Cunnington 1923, pl. 37, 4).

Within the central group, pit cluster 63850 contained the largest quantity of sherds (168 pieces, 1615 g). At least 21 pieces derive from a shouldered jar (comparable to Potterne Type 51) decorated with zig-zag lines and impressed dots, some of which are infilled with a white paste (Fig. 3.3, 22). Both internal and external surfaces are burnished. The combination of tooled lines and impressed dots has been noted on the shoulders of jars previously found within the area (Brook, forthcoming a, fig. 4.15, 10). A short, slightly everted rim with fingernail impressed decoration in sandy fabric Q1 was found in pit 63835, which also contained fragments from a very hard fired, carinated jar (Fig. 3.3, 23) with a high shoulder and burnished surfaces. Although the rim is missing, it is comparable to carinated jar Type 31 from Potterne (Gingell and Morris 2000, 151, fig. 53, 57). A radiocarbon date of 810–560 cal BC (SUERC-82846, 2561±25 BP) was obtained from animal bone found within the same deposit. Other sherds of note from the pit cluster include a body sherd decorated with double concentric rings (Fig. 3.3, 24) similar to those from Potterne (Gingell and Morris 2000, 335, fig. 106, motif 9.2), a decorated shoulder with fingertip impressions (sand and organic-tempered fabric Q7), plain base angle fragments in sand- and shell-tempered fabrics Q5 and S5 respectively, and body sherds with furrowed decoration (sandy ware Q3).

Pit clusters 63724 (11 sherds, 62 g) and 63807 (26 sherds, 266 g) were also located within the central group, and although only small quantities of pottery were recovered from them their contents still reflect the decorative nature of the assemblage. A combination of tooled lines and impressed dots (*cf.* Brook, forthcoming a, fig. 4.15, 10) was used to decorate the shoulder of a burnished jar/bowl from pit cluster 63724, while fragments from two fineware carinated bowls came from pit cluster 63807 (e.g., Fig. 3.3, 25), as well as a shouldered jar with slashed decoration on the rim and fingernail/tip impressions on the shoulder (Fig. 3.3, 26). A further neck fragment in sand and shell-tempered fabric Q5 is decorated with horizontal rows of stabbed short lines.

The largest quantity of Iron Age sherds came from pit cluster 63940 (291 sherds, 1557 g) within the western group. Rim fragments from at least seven vessels are represented, including four carinated bowls with furrowed decoration in sandy fabrics Q1, Q5 and Q11 (e.g., Fig. 3.3, 27) and three uncertain jar/bowl forms, one with fingernail impressions on the outer edge of the rim. Base fragments with both plain and pinched angles are present (sandy fabrics Q1, Q7 and Q10), although it is uncertain how many vessels they derive from. Thirty-one of the remaining sherds are decorated, most commonly with furrowed lines, but other decoration comprises fingernail impressions, slashes and zig-zag and chevron motifs. A shoulder fragment in fine sandy fabric Q3 has a combination of impressed dots and incised lines (Fig. 3.3, 28). Radiocarbon dates obtained on animal bone from contexts 63911, 63912 and 63964 (all containing ceramics) produced results of 540–380 cal BC (95.4%) (SUERC-82842, 2340±25 BP), 760–510 cal BC (95.4%) (SUERC-82845, 2518±25 BP) and 550–390 cal BC (95.4%) (SUERC-82841, 2398±25 BP) respectively.

Also situated within the western group of pit clusters were 63525 (115 sherds, 1286 g) and 63804 (33 sherds, 910 g). These contained a similar range of vessel forms and decorative techniques to that seen in pit cluster 63940, including carinated bowls (e.g., Fig. 3.3, 29 and 30) and shouldered jar/bowls (Fig. 3.3, 31–32 and Fig. 3.4, 33–34). One jar/bowl is decorated with a combination of impressed rings, short, stabbed lines and diagonal and horizontal lines, some of which have a white infill (Fig. 3.3, 31), while the decoration on a sharply carinated vessel combines furrowed lines with rows of dimples (Fig. 3.4, 35). Also illustrated is a large vessel with horizontal furrowed decoration that shows the size range for vessels with this type of decoration within the assemblage (Fig. 3.4, 36). As with pit cluster 63859, joining sherds from different contexts were recorded (Fig. 3.3, 30), suggesting some level of redeposition or reworking of the material.

Discussion

Overall, this collection further enhances that which has been previously documented from the development area (Brook, forthcoming a) and fits within the Earliest Iron Age ceramic traditions of the 8th–6th centuries BC for the region, which were to 'persist ... for several centuries' (Cunliffe 2005, 90). This is supported by several radiocarbon dates obtained on associated materials including animal bone and charred plant remains (see López-Dóriga, Chapter 6). However, although there is a suggestion from some radiocarbon dates that activity may have extended into the 4th century BC, ceramically there is an absence of diagnostic forms dating to the Middle Iron Age. This is in contrast to Iron Age material previously recorded from the development area, where small quantities of Middle Iron Age pottery including proto-saucepan pots or more round-bodied jars (Brook, forthcoming a, fig. 4.17 and 4.20) were found. This indicates that the current assemblage spans a shorter, more restricted chronological period. The assemblage is also in a slightly better condition to that previously reported on, which has enabled better comparisons with other collections to be made regarding vessel form, particularly the fineware bowl and shouldered jar forms from Potterne.

In general, the assemblage is characterised by a range of shouldered jars with both angular and more weakly shouldered profiles, carinated bowls and a possible cup. Decoration is relatively common, particularly the use of horizontal furrows and fingernail/tip impressions, with less common techniques including white infilling and red finishing. Although these are comparable to the range of decorative techniques previously recorded on the Iron Age material from the development area, the number of instances of decoration are higher – it is possible that this may also be related to the slightly earlier chronological range. Although the number of identifiable vessels is not high enough to allow any detailed statistical assessment, a few observations may be made. Although jars dominate the assemblage (comprising 57% of identifiable vessel forms), the proportion of fineware bowls/cups (43%) is relatively high, suggesting that the presentation and consumption of food and drink in these finer vessels formed a significant element of the activities taking place on site and which are characterised by the notable feasting deposits of animal bone that much of this pottery was found with. However, the relatively high fragmentation of this material, with only parts of vessels being incorporated into the backfills of the pits, also indicates that some selective deposition was taking place.

Parallels can be found with a number of assemblages of Early Iron Age date in Wiltshire. Most notable are those to the north, or within the northern parts of Salisbury Plain, including the midden sites of Potterne (Gingell and Morris 2000), All Cannings Cross (Cunnington 1923) and East Chisenbury (McOmish 1996; Raymond 2010), as well as elements of the collection from the open settlement of Strawberry Hill, West Lavington (Morris and Powell 2011). Comparable material is also present among the pottery of Ceramic Phase 1 from the pre-hillfort settlement at Battlesbury Bowl (Every and Mepham 2008, 51–53, Bowl 1 and Jar 1), as well as smaller collections from other sites on Salisbury Plain (Raymond 2006, 95), and from further afield with Phase 3 ceramics from Old Down Farm, Andover (Davies 1981).

Prehistoric Unspecified

A total of 75 sherds (152 g) could only be broadly, and somewhat tentatively, assigned to the prehistoric period. These mostly consist of abraded, plain body fragments in flint-, grog-, sand- and calcareous-tempered fabrics broadly comparable with those from all of the chronological periods discussed so far. The majority of this material (57 sherds, 88 g) came from soil spread 63086, among which are several thin-walled fragments that may possibly belong to the Late Bronze Age or the Iron Age.

List of later prehistoric illustrated sherds

(Fig. 3.2)

Late Bronze Age

7. Shouldered jar with short, out-turned rim (form R21), fabric Q8. PRN 114/124, contexts 66028 and 66033, pit 66027

Iron Age

8. Decorated, shouldered jar with upright rim (form R1), fabric Q12. PRN 389, context 63350, posthole 63349, roundhouse 63410
9. Decorated cup/small bowl with slightly everted rim (form R11), fabric Q11. PRN 539, context 63469, pit 63468
10. Decorated shouldered jar with flat-topped rim (form R16), fabric F3. PRN 262, ON 15319, context 63469, pit 63468
11. Decorated shouldered jar with upright, rounded rim (form R1), fabric F3. PRN 261, context 63469, pit 63468
12. Decorated shouldered jar with upright rim (form R1), fabric S4. PRN 244, context 63469, pit 63468
13. Decorated carinated body sherd, fabric Q1. PRN 269, context 63469, pit 63468
14. Decorated shouldered jar with upright, rounded rim, fabric Q5. PRN 295, context 63321, pit 63320
15. Decorated shoulder fragment, fabric Q2. PRN 303, context 63321, pit 63320

(Fig. 3.3)

16. Decorated fineware bowl with short, upright rim (form R14), fabric Q5. PRN 374, context 63606, pit 63605
17. Decorated shouldered jar with short, out-turned rim (form R21), fabric F3. PRN 373, context 63606, pit 63605
18. Decorated carinated bowl with slightly flared rim (form R13), fabric Q6. PRN 346, context 63543, pit 63541, pit cluster 63859
19. Decorated inturned rim (form R12), fabric Q5. PRN 379, contexts 63762 and 63790, pits 63760 and 63789, pit cluster 63859
20. Decorated shoulder fragment, fabric Q1. PRN 378, context 63781, pit 63779, pit cluster 63859
21. Body sherd with decorated double-perforated lug, fabric Q5. PRN 376, context 63780, pit 63779, pit cluster 63859
22. Shouldered jar with rounded, upright rim (form R1), some remnants of white infill present within impressed dots, fabric Q5. PRN 149, context 63848, pit 63845, pit cluster 63850
23. Shouldered jar, fabric Q8. PRN 141, context 63851, pit 63835, pit cluster 63850
24. Decorated body sherd, fabric S5. PRN 139, context 63870, pit 63867, pit cluster 63850
25. Decorated carinated bowl with short, upright rim (form R14), fabric Q5. PRN 432, context 63658, pit 63659, pit cluster 63807
26. Decorated shouldered jar with rounded, upright rim (form R1), fabric S4. PRN 438, context 60795, pit 60794, pit cluster 63807
27. Decorated carinated bowl with slightly everted rim (form R11), fabric Q11. PRN 164, ON 15353, Grid C2, context 63964, pit cluster 63940
28. Decorated shoulder fragment, fabric Q3. PRN 286, context 63911, pit cluster 63940
29. Decorated carinated bowl with slightly everted rim (form R11), fabric Q6. PRN 318, context 63515, pit 63516, pit cluster 63525
30. Decorated carinated bowl with flared rim (form R13), fabric S2. PRNs 330 and 342, contexts 63521 and 63523, pits 63522 and 63524, pit cluster 63525
31. Shouldered jar with flared rim (form R13), traces of white infill visible within the tooled and impressed decoration, fabric Q6. PRN 329, context 63521, pit 63522, pit cluster 63525
32. Decorated shoulder fragment, fabric C2. PRN 338, context 63521, pit 63522, pit cluster 63525

(Fig. 3.4)

33. Decorated jar/bowl with rounded, flared rim (form R13), fabric Q11. PRN 321, context 63515, pit 63516, pit cluster 63525
34. Decorated jar/bowl with flat, upright rim (form R16), fabric Q1. PRN 307, context 63699, pit 63698, pit cluster 63804
35. Decorated carinated fragment, fabric Q1. PRN 306, context 63699, pit 63698, pit cluster 63804
36. Decorated jar/bowl shoulder and base, fabric Q6. PRN 308, context 63699, pit 63698, pit cluster 63804

Romano-British and Later Pottery

Eighteen Romano-British sherds (88 g) were recovered, comprising abraded, undiagnostic, featureless fragments in sandy greywares, and oxidised and grog-tempered fabrics that predominantly derive from topsoil and subsoil deposits (10 sherds, 35 g). With the exception of two greyware sherds from natural feature 63854, the remaining sherds are intrusive within the tops of Early Iron Age pit clusters (63468, 63807, 63850 and 63940).

Three sherds of post-medieval/modern glazed redware were also recovered (13 g). Two pieces came from posthole 62509 (not illus.), while a bowl/dish rim came from lynchet 64058 along with a body sherd of 18th century Verwood ware.

Burnt Flint

by Elina Brook

Burnt, unworked flint (8136 pieces, 82.6 kg) was found in 88 contexts across the site, mostly occurring in small quantities, with only 12 contexts of feature groups containing more than 1 kg. Burnt flint is intrinsically undatable but is generally interpreted as indicative of prehistoric activity. By far the largest quantities came from Iron Age pit cluster 63423 (10.7 kg) and pit 63259 (10.4 kg), which is tentatively phased to the Early Bronze Age. Other features containing more than 1 kg of burnt flint include Early Bronze Age pits 63257 (5.3 kg, not illus.), 63268 (2.6 kg) and 63027 (1.8 kg), Late Bronze Age pit 66027 (7.2 kg), Early Iron Age pits/pit clusters 63468 (3.9 kg), 63645 (2.2 kg), 63320 (1.1 kg) and 63859 (1.0 kg), as well as post-medieval lynchet 64058 (1.4 kg). The mean weight for pieces found within features of Early Iron Age date is notably higher, ranging from 29 g to 43 g, than that from features of Early and Late Bronze Age date, which have an average weight between 4 and 10 g. This pattern is consistent with that observed for this material type previously (Brook, forthcoming c) and may indicate different burning processes within the different periods.

Metalwork

by Elina Brook, with contribution from Katie Marsden

Copper Alloy

Two pieces of copper alloy were recovered. One is a wire fragment found within the tertiary deposit of Early Iron Age pit cluster 63940. It measures 3 mm in diameter and is bent into a loop. The second is an intrusive coin (ON 15345) of late Romano-British date from Iron Age pit cluster 63727. It is an issue of Allectus, dated from AD 293 to 296. The reverse depicts the goddess Pax holding a sceptre and branch.

Iron

Five iron objects were found. Two are fragments from flat, round-headed nails with square-sectioned tapering shanks found in Early Iron Age pit cluster 63859 and Iron Age pit 62030 (not illus.). A further possible nail shank fragment and a sub-rectangular flat piece came from tertiary deposit 63649 within Early Iron Age pit cluster 63940. The fifth fragment is a narrow, rectangular-sectioned strip/thin bar from post-medieval lynchet 64058.

Worked Bone

by Elina Brook and Grace Jones

A total of three fragments of worked bone were found, all of which reflect the range of items previously found at Amesbury Down (Seager Smith, forthcoming). Two pieces (3 g) came from Late Bronze Age pit 66027. One (ON 16015; Fig. 3.5, 1) is a bone point made from the shaft of a sheep/goat metatarsal. The point is extremely fine, and the surface is highly polished from repeated use. A second bone point (Fig. 3.5, 2), probably also made from the shaft of a sheep/goat bone, is much finer; the tip is missing. It has a triangular head that merges into the shank and exhibits a high degree of surface polish. Based on criteria put forward by Barclay *et al.* (1999, 235), ON 16015 can be classified as an awl and the other point as a pin. The third fragment (Fig. 3.5, 3) was recovered from feasting deposit 63911 within Early Iron Age pit cluster 63940. It is made from a cattle metatarsal and although the distal end is missing, it is possible to see that an oblique, diagonal cut has been made across the shaft in a longitudinal direction. The exterior surface is smooth and polished in places, suggesting it has been well used, possibly as a pointed tool. Such items are common among Iron Age worked bone assemblages in Wiltshire, with examples from Early Iron Age deposits at Potterne (Seager Smith 2000) and All Cannings Cross (Cunnington 1923), for instance.

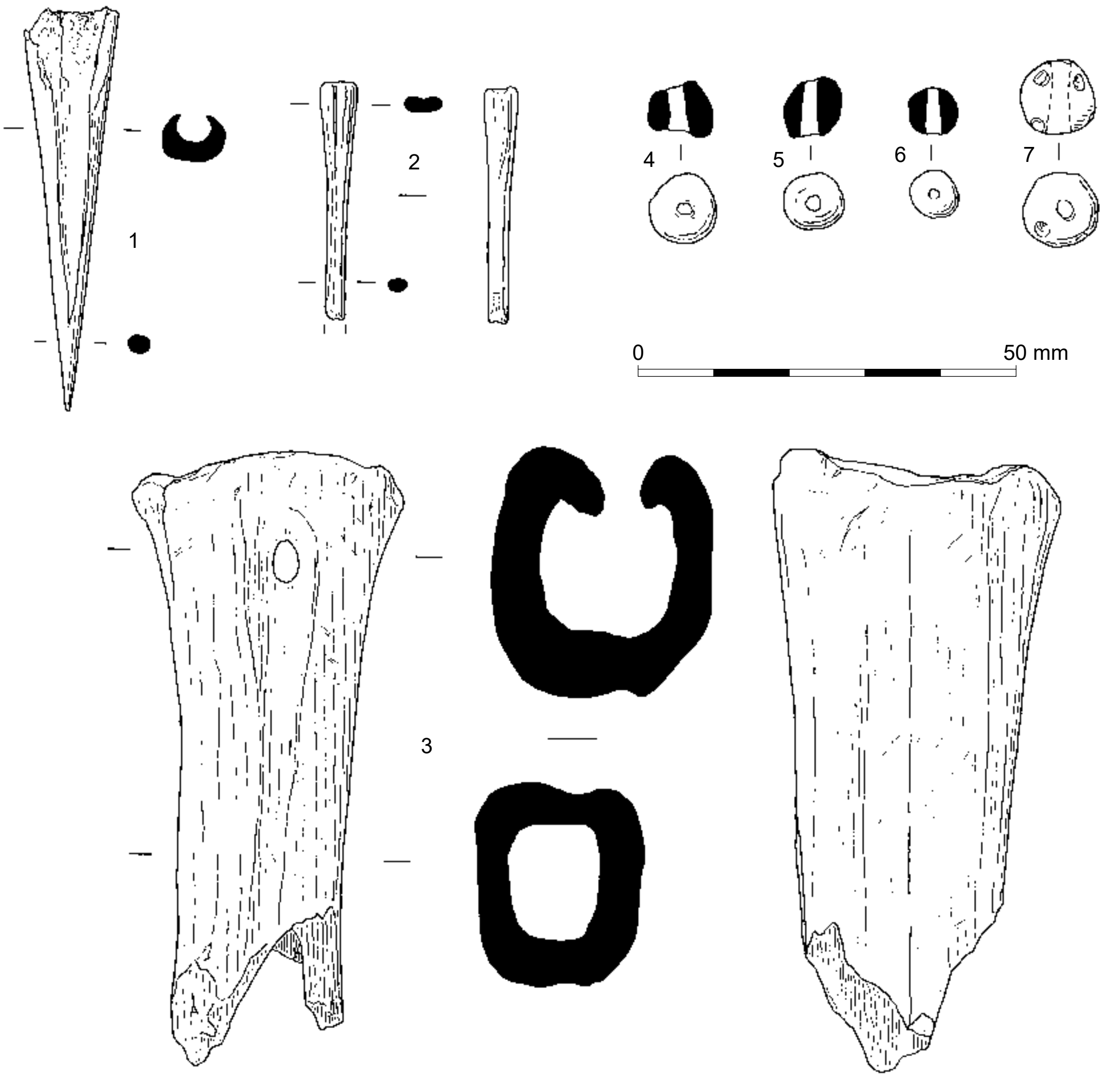

Figure 3.5 Worked bone (1–3) and fossil beads (4–7)

List of illustrated worked bone
(Fig. 3.5)

1. Awl, ON 16015, context 66028, Late Bronze Age pit 66027
2. Possible pin, sample 12017, context 66047, Late Bronze Age pit 66027
3. Possible pointed tool, ON 15359, context 63911 (grid B2), Early Iron Age pit cluster 63940

Fossil Beads

by Phil Harding

Three unbroken, spherical, perforated fossil sponges were found in Late Bronze Age pit 66027 (Fig. 3.5, 4 and 5), with two more of virtually identical form and similar size from the secondary fill of Late Bronze Age ditch 66097 (Fig. 3.5, 6 and 7). All examples were extracted from soil sample residues. Four measured between 6 mm and 9 mm in diameter, with a larger example, which is not completely perforated, measuring 16 mm in diameter.

Very similar examples were found in Late Neolithic pits at Bulford (Wessex Archaeology 2020) and were identified by Prof Rory Mortimore as naturally occurring globular or biconical fossils of the Porosphaera globularis family. These relatively small fossils, which frequently exist as examples 9 mm across, but do occur in larger forms, have central holes that naturally extend three-quarters of the way through the fossil as a tube, which could be expanded to produce a bead. Bulford and King's Gate are both located on or close to the Newhaven Chalk (crinoid zones and Offaster pilula zone) in which these fossils are common.

Mortimore's comments confirmed that these distinctive fossils occur naturally within the local Chalk, but conceded that Neolithic communities, who undoubtedly shared an affinity with geology, may have collected and modified them as beads. It remains possible that this might be equally applicable to Late Bronze Age communities. Fossil sea urchins have accompanied inhumation burials (Andrews *et al.* 2019, 40, 114–5; McNamara 2007) from many periods in prehistory, but may also have been collected for their distinctive character, in the case of the biconical examples, to be adapted for use as beads.

Faience Bead

by Alison Sheridan

The intact small, quoit-shaped faience bead (Fig. 3.6) from Middle Bronze Age grave 63263 is roughly circular in plan and roughly symmetrical in profile, with a gently pointed triangular hoop and a central, approximately circular transverse hole through which the thread for suspending it would have passed; its diameter is 15.5–15.7 mm, its maximum thickness 4.4 mm, and its hole diameter 6.8–7.1 mm. The hole is slightly lipped, and this relates to the bead's mode of manufacture: faience paste would have been wrapped around an organic object (such as a wide twig); its hoop would then be shaped by moulding with the tips of a finger and thumb; and when dry enough to fire, the bead was probably slipped off its support so as to prevent the burning support from damaging the bead during firing. The lipping, and the very slight unevenness of the hoop surface, could have occurred as the bead was shaped on the twig. The shallow grooving running down the interior of the hole probably also relates to the manufacture process, at the point when the bead was pulled off its support.

The bead is a variegated pale greenish-blue and creamy colour; adherent light brown sediment from the grave obscures the colour over part of the surface. The material is fine-grained, with only a few minute vesicles (from where gas had escaped during the firing process). The surface is matte rather than glossy. Since none of the bead's sub-surface is visible, it is impossible to prove whether the bead's glaze had been mixed in with the paste, or applied as a slurry. However, since the latter process often leaves traces in the form of drip-lines and/or a thin glassy layer (if well enough fired) – sometimes with uneven coverage by the glaze – it seems more likely that the glaze had been mixed in with the paste, rather than applied. The paleness of the colour in comparison to that of some other faience beads from Wessex and elsewhere (Sheridan and Shortland 2004, figs 21.3, 6, 8 and 10) may be due to the fact that there had not been a great deal of glaze colourant present in the first place; additionally, there may well have been some leaching from groundwater percolation.

Semi-quantitative compositional analysis by X-ray fluorescence spectrometry of part of the surface where the greenish-blue colour is clearest (using an ELIO spectrometer in the XG Laboratory, Milan) confirmed the presence of silicon – unsurprisingly, since the groundmass of faience is usually sand – and also copper, tin, iron and a trace of arsenic. The copper relates to a copper-based colourant, used to give the glaze its bluish colour, and the iron – possibly present in the sand groundmass – accounts for the bead's slight greenish tinge. The small amount of tin could have derived from the glaze colourant if the latter material had been bronze, rather than just copper, and the arsenic will have been present in the copper. Calcium was also detected, and this will have derived from the skeleton: the bead was found behind the knee.

Figure 3.6 Faience bead

Discussion

Faience is a glass-like substance, and the know-how for its manufacture appears to have been acquired in Britain, almost certainly from contact with tin-importing metalworkers in central Europe, during the first quarter of the second millennium BC (Sheridan and Shortland 2004, 275–6). It remained in use until around the middle of the second millennium BC (*ibid.*, fig. 21.1; cf. Bayliss and O'Sullivan 2013, fig. 36 for Bayesian modelling of most of the dates for faience in Ireland). In Britain and Ireland, over 300 extant faience beads and over 50 further lost examples are known, with Wessex being the epicentre for the distribution of segmented beads, the commonest form of faience bead (Sheridan and Shortland 2004, figs 21.4, 21.7).

Quoit-shaped beads and quoit pendants (i.e., beads with projecting suspension loops) of faience are, however, rare in Wessex: one example (long since lost) was found in Winterbourne St Martin barrow 5a, Dorset (Beck and Stone 1936) while a relatively large example was found at Net Down, Shrewton barrow 5L (Green *et al.* 1984). Further afield, a small but significant cluster of faience quoit-shaped beads and quoit pendants is known from east Hampshire and Sussex. One pendant was found with a fragmentary segmented faience bead, associated with a Biconical Urn, on Petersfield Heath, Hampshire (Sheridan 2021; see fig. 13.53 in that publication for a distribution map of quoit-shaped beads and pendants in southern Britain), while in Sussex, three relatively large examples were found at Oxsettle Bottom, Clayton Hill and Varley Halls – of which the first two are quoit pendants and the third a possible quoit pendant (Beck and Stone 1936; Bowman and Stapleton 1997). As with segmented and possibly also star-shaped faience beads, examples of small quoit-shaped beads are known from Bohemia, Moravia and Slovakia (Venclovà 1990, pl. 59) and Hungary (Stone and Thomas 1956, pl. V upper, 5), but whether those central and eastern European examples were the ultimate source of inspiration for this specific form of faience ornament in Britain and Ireland remains a matter for debate (Sheridan and Shortland 2004, 273).

The discovery of a faience bead in a grave containing unburnt human remains is a markedly rare occurrence: in the overwhelming majority of cases, these beads are associated with the rite of cremation, with the beads sometimes passing through the funeral pyre (Sheridan 2021; Sheridan and Shortland 2004; Sheridan *et al.* 2005). It is unclear what significance should be assigned to the fact that the King's Gate bead was found behind the knee of the individual; normally faience beads appear to have been worn as necklaces or pendants, and the knee is arguably not a likely location for a pouch, had the bead been carried around within a container. It is clear from the number of occurrences of faience in composite necklaces – e.g., at Amesbury Solstice Park (Sheridan 2012) or Aldbourne 280, burial 1 (G6) (Woodward and Hunter 2015, 450–3) – that faience beads would have been passed between individuals and restrung, possibly several times, over the course of their use-life. They have been found in graves as single beads, as small numbers of beads, as parts of composite necklaces and in all-faience necklaces – the last including an example from Long Ash Lane, Dorset (Sheridan and Shortland 2004).

That faience had been regarded as a precious and prestigious substance is clear from the overall rarity of finds and their association with other artefacts deemed to denote high status; that they may also have been accorded an amuletic property, protecting the deceased in a form of 'supernatural power dressing', has also been suggested (Sheridan and Shortland 2003; 2004). As the first example of turquoise jewellery in north-west Europe, and as a material whose manufacture involved a seemingly miraculous transformation of the raw materials, faience would certainly have been prized as a special material.

Where the sex of the deceased associated with faience beads has been reliably identified, it has almost invariably been female, and this is the case with the King's Gate individual (McKinley *et al.*, Chapter 4). The results of strontium and oxygen isotope analysis of her remains (*ibid.*) indicate that this young adult woman, who died aged around 20–25 years, could have grown up locally, as the isotope results are consistent with those for the Chalk-dominated area of central southern England.

In her discussion of Wessex faience-associated graves, Sabine Gerloff (1975, 197–234) grouped all but one of these into her 'Aldbourne' series of elite female graves, ascribed to the 'Wessex II' phase and deemed to be slightly more poorly equipped than her 'Wilsford Series' of 'Wessex I' female graves. The validity of the 'Wessex I/II' classification system has since been challenged (e.g., by Garwood 1999, 284–6) and it is now clear that the currency of faience use extends beyond the conventional range of 1750–1450 BC proposed for 'Wessex II graves' (Sheridan and Shortland 2004), but here is not the place to revisit the debate over Wessex grave periodisation. (Moreover, the form of the King's Gate grave does not conform with those in Gerloff's 'Aldbourne' series of graves.)

The radiocarbon date of *1510–1410 cal BC (95.5%)* (SUERC-74039, 3212±29 BP; see Chapter 6 for details) for the woman associated with the quoit-shaped bead falls at the end of the currency of faience use in Britain and Ireland (Sheridan and Shortland 2004, fig. 21.1). It is comparable with the date of 1612–1428 cal BC (GrA-22371, 3240±40) for calcined human bone associated with a composite necklace including a spherical bead and eight segmented beads of faience found at Solstice Park, Amesbury, Wiltshire (Sheridan 2012). As far as the dating of other quoit-shaped faience beads and pendants is concerned, the aforementioned Petersfield Heath example appears to be a little earlier, being associated with a radiocarbon date (from oak sapwood charcoal) of 1735–1715 cal BC (6%) or 1695–1610 cal BC (89%) (SUERC-77887, 3353±24 BP: Needham and Anelay 2021, table 15.1). Other quoit-shaped beads and pendants, from Findhorn (Moray) and Longniddry (East Lothian) in Scotland, have radiocarbon dates – from associated short-lived species charcoal and calcined human bone respectively – of 1879–1544 cal BC (95.4%) (OxA-7622, 3410±50 BP) and 1729–1499 cal BC (95.4%) (GrA-18016, 3305±40 BP), respectively.

List of illustrated beads

Fossil ?beads
(Fig. 3.5)

4. Perforated fossil sponge, sample 12010, context 66028, Late Bronze Age pit 66027
5. Perforated fossil sponge, sample 12011, context 66033, Late Bronze Age pit 66027

6–7. Perforated fossil sponges, sample 12008, context 66031, Late Bronze Age ditch 66097

Faience bead
(Fig. 3.6)

Faience quoit bead, ON 15313, context 63261, Middle Bronze Age grave 63263

Worked Flint

by Erica Gittins

Introduction

A total of 2714 pieces of worked flint were recovered (Table 3.7), 104 of these from 11 contexts at the School Site, the other 2610 pieces from King's Gate Phase 4.

Raw Material

Most of the flint is light grey to dark grey in colour, with a cortex that is generally thin and a dirty buff to grey colour. Although there are some instances of darker, better-quality flint, much of the material is flawed, and a greater amount contains cherty inclusions which have led to some lack of control of flaking, creating a reasonable quantity of irregular debitage in the assemblage. The flint is most likely derived from the local chalk downlands, and the quality and condition of the raw material suggests that it came both directly from the Upper Chalk (as seen in the larger assemblage retrieved from earlier phases of work on Amesbury Down: Harding and Leivers, forthcoming) and from secondary contexts.

Condition

The condition of the flint is generally good, with minimal indicators of rolling or crushing. Much of the assemblage is, however, patinated, and a few pieces have clearly derived from ploughzone contexts, showing considerable damage and the orange staining typical of such material.

A number of pieces from the School Site show significant patina, ploughzone damage, rolling and concretions. There are some fresher pieces mixed in within fill 66028 of Late Bronze Age pit 66027.

Table 3.7 Composition of the worked flint assemblage

Flint types	*No.*	*% of assemblage*
Retouched tools:		
Miscellaneous retouch	7	0.25
Scrapers	21	0.77
Denticulates	1	0.04
Fabricators	1	0.04
Knives	2	0.07
Choppers	1	0.04
Sub-total	*33*	*1.21*
Debitage:		
Flakes (incl. broken)	2150	79.22
Blades (incl. broken)	12	0.44
Bladelets (incl. broken)	15	0.55
Chips	412	15.18
Cores (incl. broken)	46	1.69
Irregular debitage	42	1.55
Rejuvenation tablets	1	0.04
Axe thinning flakes	1	0.04
Sub-total	*2679*	*98.71*
Hammerstones	2	0.07
Total	2714	100

Chronology

Much of the assemblage derives from later prehistoric features and spreads. Given that 98% of the assemblage consists of debitage, this limits the number of reliable chronological indicators. However, identifiable pieces include an Early Neolithic scraper, cores and scrapers of Late Neolithic and/or Early Bronze Age type (see metrical analysis, below), multidirectional irregular cores and cores reused as hammers that appear typical of the Early Bronze Age, and irregular and reused pieces which are common in later prehistory. Although some of these diagnostic pieces occur in features with which they are likely contemporary (see below), most are in chronologically mixed assemblages.

Blades, bladelets and indications of blades and bladelets as scars on flake surfaces do not occur in sufficient numbers to suggest a blade-based technology. This material is inherently undatable but would not look out of place in a Neolithic assemblage.

Distribution

Significant groups were recovered from features and spreads of Late Neolithic, Beaker, Bronze Age and Iron Age date.

Early Neolithic

The only indications of Early Neolithic activity were a single scraper from tree-throw hole 63072, in evaluation trench 564, and two possible projectile point blanks from fill 66028 of Late Bronze Age pit 66027, which might be considered as attempted leaf points, but this is not secure dating.

Late Neolithic

Late Neolithic pits 63537 and 63539 contained twelve and seven pieces respectively, all debitage that would not be out of place in Late Neolithic assemblages. Similar pits elsewhere on Amesbury Down with small collections of Late Neolithic debitage had Durrington Walls-style Grooved Ware within them, as is the case with both 63537 and 63539.

Geological feature 63162, in evaluation trench 596, contained 181 pieces, including a discoidal flake core with alternating removals subsequently used as a hammer stone; one axe thinning flake; five bladelets; and evidence of blade removals from scars on some flakes. Chips and microdebitage were present, and many of the flakes were made on the same raw material, clearly deriving from one core (or a limited number of cores). The material in fill 63159 (156 pieces) is typically Late Neolithic, and appears to be knapping waste, although the rest of the material is less diagnostic.

Beaker

Beaker pit 63544 contained 55 pieces including a core reused as a hammer, a scraper, and one piece with miscellaneous retouch. Pit 63550 contained 53 pieces including two scrapers. Pit 63619 contained 70 pieces including two scrapers, at least one of which may be a residual Late Neolithic example.

Early Bronze Age

Early Bronze Age pit 63180 contained 194 pieces including 44 chips. This debitage is typical of an Early Bronze Age assemblage, showing a mixture of less careful outer core reduction with squat flakes, with more attention given to the later stages of reduction. Pit 63218 contained 32 pieces of indeterminate debitage. Pit 63255 contained 166 pieces, 153 of which were chips, and pit 63257 contained 19 pieces of debitage; neither pit has any chronologically distinctive material. Pit 63616 likewise also contained 17 pieces of debitage, all chronologically indeterminate.

Middle Bronze Age

Soil spread 63086 (Fig. 2.3), excavated in 1 m square test pits, contained 1040 pieces, 984 of which were flakes and chips. The retouched component consisted of five scrapers, a denticulate, and three pieces with miscellaneous retouch. The assemblage is clearly mixed, containing Neolithic and Bronze Age material (see metrical analysis, below), but also knapping waste which yielded two separate instances of two refitting flakes (63086/30 and 63086/50).

Although of mixed date, the material from 63086 may represent material relatively undisturbed within a preserved ground surface. As well as the two refits, groups of flakes apparently from single cores in individual test pits (from, for instance, 63086/2) suggest only limited post-depositional movement.

An axe thinning flake came from 63086/14. Although not closely datable, this piece is likely to be Neolithic.

Late Neolithic and/or Early Bronze Age knapping is suggested by one flake with a faceted butt from 63086/1, flakes with negative flake scars on dorsal surfaces indicating core face maintenance (63086/2, /8, /13, /27 and /30), long narrow removals from dorsal surfaces (63086/5, /8, /13, /22 and /46), a core rejuvenation tablet (63086/12), flakes from a multidirectional core (63086/21), a core with two platforms at 90 degrees (63086/54), and a flake with platform preparation (63086/63).

Middle Bronze Age flintwork is represented by crude, thick, directionless knapping without apparent end products in mind. Flakes of this type, often on very poor-quality raw materials, came from 63086/9, /31, /32, /34 and /56. Test pit 63086/34 also contained a crude core made on the end of a naturally broken nodule, with possible earlier removals indicating reuse.

Iron Age

Of the numerous Iron Age features containing flint, only four are worthy of note. Pit 63320 contained 54 pieces including several apparently from the same core; in addition, a scraper shows reuse, the patina suggesting Iron Age use of an earlier tool (probably Late Neolithic, see metrical analysis, below), and a single patinated flake shows platform preparation clearly from a different, more skilled technology. Pit 63659 (in pit cluster 63807) contained 30 pieces including probable Iron Age and earlier debitage. Pit 63904 (in pit cluster 63940) contained 20 pieces including a backed knife in a different flint to the rest of the debitage, the bulk of which appears Iron Age; the backed knife could be Late Neolithic or Bronze Age and is not a particularly chronologically distinctive form. Pit 64039 (in the same pit cluster) contained 20 pieces including a scraper of Late Neolithic type and a well-made fabricator, probably of a similar date.

Also from pit cluster 63940, feasting deposit 63911 contained 30 pieces of mixed date, while 63912 contained 22 pieces of mixed date, and 63964 contained four cores and four flakes; one of these cores is possibly Late Bronze Age, the rest are likely to be Iron Age. In addition, layer 63925 (in pit cluster 63940) contained 19 pieces of debitage, and one small scraper which may be Late Neolithic, while layer 63649 overlying the feasting deposit contained 98 pieces including a Late Neolithic scraper, although the majority is of later prehistoric type.

Metrical Analysis

The scraper assemblage was analysed in detail to allow for the identification of chronologically distinctive types, as identified in earlier phases of work on Amesbury Down and elsewhere (Harding and Leivers, forthcoming). Eighteen complete examples were recorded, and the quantification was by length, breadth and thickness (Table 3.8).

The results of the metrical analysis demonstrate the selection of blanks between 20 and 59 mm long, a much broader range than that from the Late Neolithic pits at Amesbury Down. The latter clustered very strongly between 40 and 49 mm (Harding and Leivers, forthcoming), although without a significant number of the much longer examples (up to 67 mm) which typify Early Neolithic assemblages at, for example, Poundbury (Harding 2010).

Table 3.8 Flint scraper metrical analysis

Length (mm)		*Breadth (mm)*		*Thickness (mm)*	
0–9	-	0–9	-	0–3	-
10–19	-	10–19	1	4–6	5
20–29	3	20–29	2	7–9	2
30–39	4	30–39	7	10–12	6
40–49	4	40–49	7	13–15	4
50–59	4	50–59	-	16–18	-
60–69	2	60–69	1	19+	1
70+	1	70+	-	-	-

Breadth of blanks, however, was more restricted, at between 30 and 49 mm, this being the same as the Amesbury Down assemblage. Thickness was more varied, with a small cluster of thin examples between 4 and 6 mm thick, but more falling in the 10–15 mm range.

In terms of breadth and thickness, the scrapers fall within the observed distributions for Late Neolithic implements of this type elsewhere around Amesbury (Harding 1990; Harding and Leivers, forthcoming), where the tools tend to be shorter, narrower and thinner than Early Neolithic examples. Wainwright and Longworth (1971, 168) calculated the regularity with which scrapers of 9–13 mm thickness occurred at Durrington Walls as 40% of the total, suggesting that thickness was a recurrent factor in blank selection. This has been observed more widely: later Neolithic scrapers tend to be thinner than earlier Neolithic examples in the Stonehenge environs, at Windmill Hill, and at the West Kennet Avenue, as well as at Durrington Walls (Pollard 1999, 335; Riley 1990, 226). However, two examples from a Beaker pit exhibit notably finer, more acute retouch and, while not particularly diagnostic, would not contradict a Late Neolithic/Early Bronze Age date.

In terms of individual scrapers, those analysed include Late Neolithic examples from topsoil 63040 (two pieces, one invasively retouched, Pl. 3.1, 1), Iron Age pit 63320 (Pl. 3.1, 2), Beaker pit 63554 and Beaker pit 63619, (Pl. 3.1, 3–4), Iron Age layer 63649 overlying the feasting deposit (Pl. 3.1, 5–6), Iron Age pit 63756, Iron Age pit cluster 63940, Iron Age pit 64039 (Pl. 3.1, 7) and Middle Bronze Age soil spread 63086 (four examples, one each from test pits 1, 22, 34 and 59). A long, broad, thick example from tree-throw hole 63072 represents the only (possible) Early Neolithic scraper (Pl. 3.2, 8), and two examples from Beaker pit 63550 are both very probably contemporary with the feature (Pl. 3.2, 9–10).

Technologically, all butts of measured examples were plain, with no faceted butts observed. Cortical cover was not observed to cluster significantly: of the measured examples, 33% were tertiary flakes with no surviving cortex, 28% had up to 25% cortex, and 22% had up to 50% cortex, while only 17% were primary flakes and had up to 100% cortex. This again may be chronologically significant: at the Coneybury Anomaly, for example, 27% of the Early Neolithic scrapers had 75% cortical cover, suggesting that suitable blanks were removed during core preparation stages (Harding 1990, 222).

Plate 3.1 Worked flint (1–7)

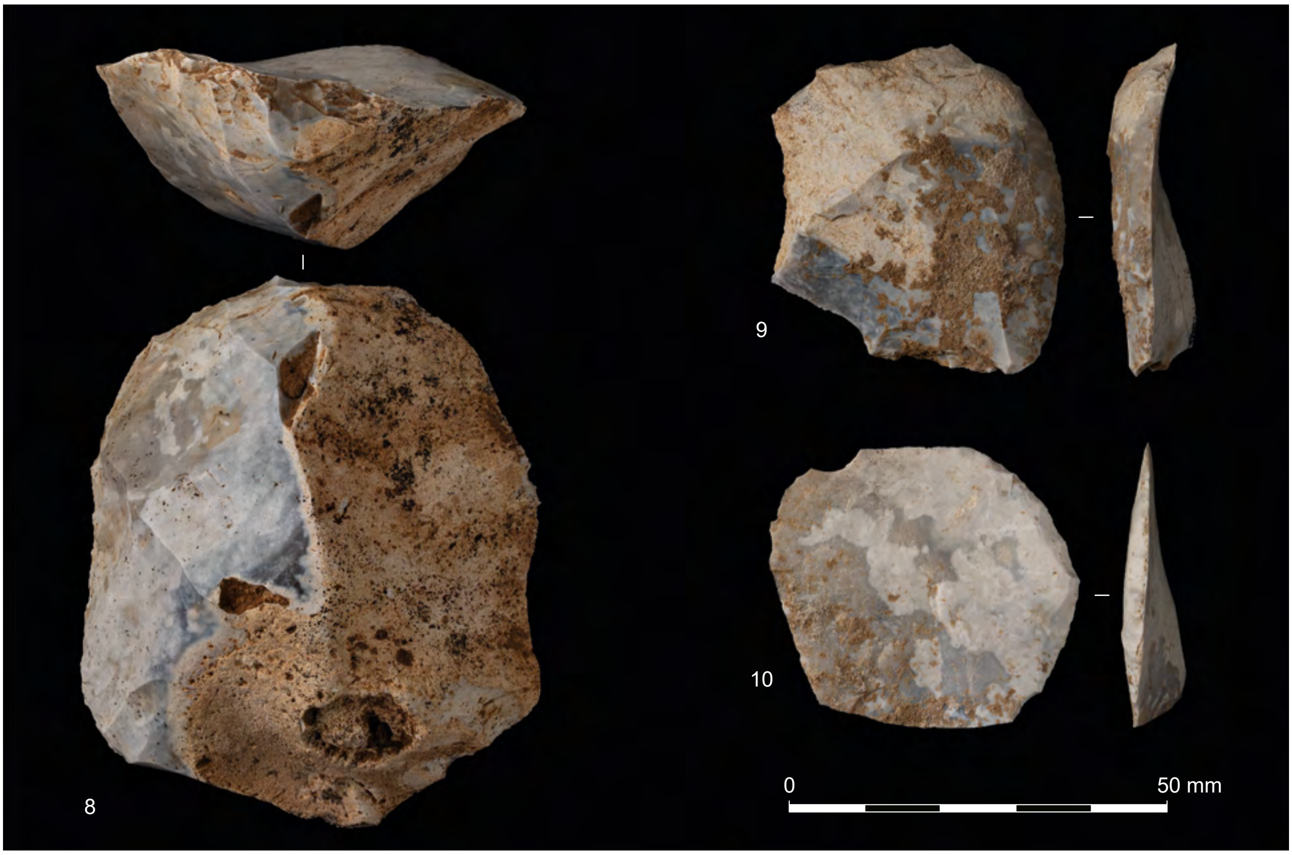

Plate 3.2 Worked flint (8–10)

List of illustrated worked flint

(Pl. 3.1)

1. Late Neolithic, invasively retouched sub-discoidal scraper, topsoil 63040
2. Late Neolithic end scraper, context 63321, Iron Age pit 63320
3. Late Neolithic end scraper, context 63621, undated pit 63619
4. Late Neolithic end scraper, context 63621, undated pit 63619
5. Late Neolithic end scraper, context 63649 (Iron Age layer)
6. Late Neolithic end scraper, context 63649 (Iron Age layer)
7. Late Neolithic end scraper, context 64040, Iron Age pit 64039

(Pl. 3.2)

8. Early Neolithic end scraper, context 63073, tree-throw hole 63072
9. Late Neolithic/Early Bronze Age side scraper, context 63351, Beaker pit 63350
10. Late Neolithic/Early Bronze Age side scraper, context 63351, Beaker pit 63350

Worked Stone

by Ruth Shaffrey

The excavations produced an assemblage of querns, rubbers and hones, which are itemised below. Full details can be found in Appendix 2.

The earliest find is a small fragment of possible quern from Beaker pit 63544 (63552, ON 15325). This fragment has part of a flat, pecked surface and could be from either a saddle quern or a rubber. A fragment of fine-grained ferruginous sandstone (Carstone) was found in the basal fill of Late Bronze Age Wessex Linear ditch 64044 (slot 63594, 63595). It has two worn faces, and one of these retains traces of pecking, suggesting use as a quern. A further four items of interest were recovered from the final backfill (66028) of Late Bronze Age pit 66027. This fill included one fragment of sandstone quern, one nodule of (unworked) marcasite and two flat sandstone cobbles with wear to the faces consistent with rubbing, or possibly sharpening.

The rest of the stone objects were recovered from features phased as Early Iron Age. The most significant group was found in pit 63645. Fill 63548 contained a complete rubber (ON 15338), a complete saddle quern (ON 15332) and fragments from four, possibly five others (ONs 15329, 15330, 15328, 15341, 15342/37). The complete sarsen rubber (ON

15338, Fig. 3.7, 1) has a curved, pecked, grinding surface that is unusually convex in all directions, suggesting circular grinding rather than a to-and-fro motion. Such wear is rare and perhaps indicates a function other than the processing of grain. Another fragment of sarsen is from a quern of indeterminate form with a flat, pecked, grinding surface and pecked outer edge (ON 15329).

The complete saddle quern from this fill (ON 15332, Fig. 3.7, 2) is of a neat, rectangular form with a pecked grinding surface that is flat across the width but dished along its length. It does not form a working pair with ON 15338. This saddle quern is made from a gritty Greensand with distinctive polished grains and rare bivalve fossils (see below).

A third saddle quern from this fill has three adjoining fragments (Fig. 3.7, 3). As with ON 15332, ON 15330 is of roughly rectangular form with a neatly pecked and slightly dished grinding surface. It is made of medium-grained ferruginous sandstone (Carstone) from the Upper Greensand. Another small fragment of the same stone type was also found in this context: it retains no worked surfaces but could also be from a quern. A large block of Carstone has

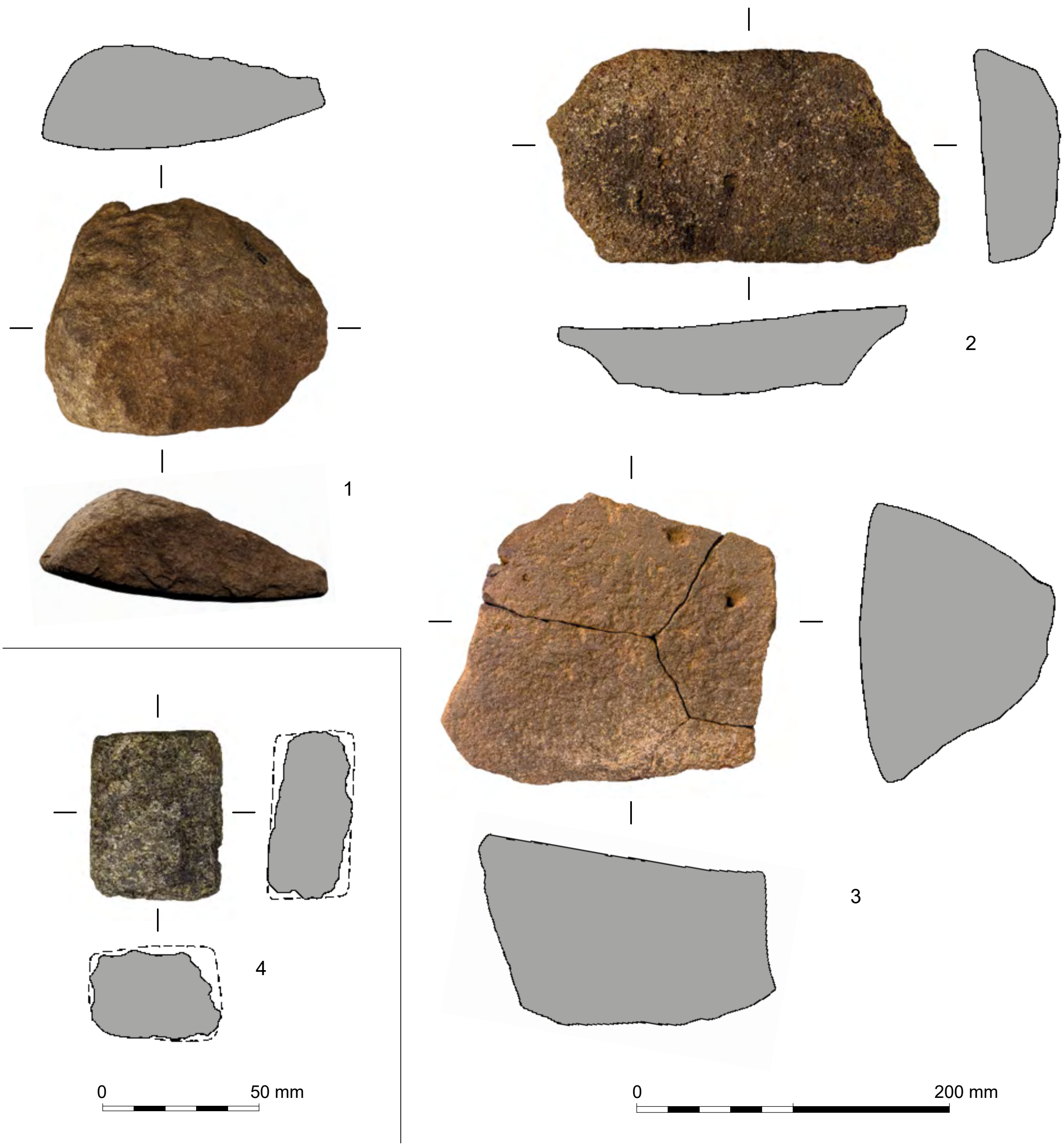

Figure 3.7 Worked stone (1–4)

some pecking on two faces but has not been worked to a quern shape (ON 15328). It is not clear if it is an unfinished quern or whether, because it is roughly oblong, it has been shaped for use as building stone.

Saddle querns in this feature were also made from quartzite and quartz. A small quartzite boulder (ON 15341) has been chipped around the upper edges and given a flat, pecked, grinding surface, while another example is very unusually made of a quartz/quartzite (ON 15342/37) with a flat, pecked grinding surface.

A second object group was recovered from pit cluster 63940 (63911, 64021). This includes one quern fragment of fine-grained ferruginous sandstone with a flat, pecked grinding surface (ON 15358) and a smaller fragment of the same stone type which, although lacking worked surfaces, seems likely to be from a quern, possibly the same one. A third fragment is certainly from a quern, with a flat, pecked and worn grinding surface. Although it is too small to determine what form of quern it is from, it seems likely, given the date of the pit, that it is from a saddle quern. The fragment is of a medium-grained Greensand with obvious frequent black glauconite (see below).

A final object of interest was recovered from undated pit 63861 (63860, Fig. 3.7, 4). It is an approximately rectangular stone with wear to one face. The precise function of this object is uncertain, but it was possibly a hone stone.

Discussion

Provenance of the querns

Most of the querns are made of stone types which it would have been possible to source fairly locally, in particular the Carstone, sarsen and quartzite. All of these were typically used to make querns during the Iron Age in this area.

The Greensand quern fragment from pit cluster 63940 is a different stone type to any other querns found at King's Gate. It is not comparable with stone from the quern quarry at Pen Pits in Somerset, nor from the possible quern production source at Potterne in Wiltshire (Shaffrey 2019). It is reminiscent of Lodsworth stone in Sussex but it does not have any of the cherty swirls typical of Lodsworth stone (although they might be absent from such a small fragment). Thanks to Lyn Cutler's extensive fieldwork in the Wessex area, we now know that most of the Greensand that outcropped in the region was simply not hard enough to be used for quern production, but the survey did record good material at Ansty, some 25 km south-west of Amesbury, which is another possible source (Cutler 2012, 279).

The Greensand used for saddle quern ON 15332 is completely different. It is reminiscent of a gritty Greensand used to make querns in the south Oxfordshire area around Culham. The gritty Culham Greensand is similar to some varieties of Greensand from eastern Kent and in Lincolnshire around Spilsby. As a search for similar sources in the Amesbury area has not been carried out, it is not possible to say whether a nearer source of this gritty Greensand variant was available in the harder doggers around Stoke Wake or Ansty, but we cannot rule out the possibility that this quern was transported from much further afield.

Significance of deposits

Quern ON 15330 is in three adjoining fragments, and ON 15342 and 15337 are almost certainly from the same quern, while one or two small undiagnostic fragments may have originally joined larger surviving fragments in the same features. All other fragments are from different querns, and the group in pit 63645 is of particular interest because it comprises a complete rubber and complete saddle quern (which do not form a matching pair), along with substantial fragments from four other querns. The inclusion of complete querns in particular is indicative of placed deposition because normal practice was to fragment querns prior to discard. It may also be of relevance that the six querns are of five different lithologies: sarsen, Greensand, Carstone, quartzite and quartz, because this suggests a range of the different available materials was selected. In addition, querns usually comprised pairs of the same stone type, so the selection of six querns, probably not of matching pairs, suggests the querns originated from different households.

The deposition of multiple querns in a single pit was an unusual occurrence during the Iron Age, whether that be fragments or complete querns. Occasionally fragments of two querns may be found, for example at Segsbury in Oxfordshire (Roe 2005, 122) and the East Kent Access Road (Shaffrey 2015). Larger groups are rare, but parallels can be drawn with a group of one saddle quern and four beehive querns found in a pit associated with an Early to Middle Iron Age roundhouse at Fairfield Park in Bedfordshire (Shaffrey 2007, 91). Multiple quern depositions appear slightly more commonly in pits of Middle Iron Age date. Such assemblages have been observed at a small number of sites across southern England where these pits feature either rotary querns, for example at Ipplepen in Devon (Shaffrey 2025, 184) and Dartford in Kent (Shaffrey 2011, 145–6), or saddle querns, for instance at Mingies Ditch or Yarnton, both in Oxfordshire (Allen and Robinson 1993, table T1; Roe 2011; Shaffrey pers obs).

List of illustrated worked stone

(Fig. 3.7)

1. Rubber, ON 15338, context 63648, Early Iron Age pit 63645

2. Saddle quern, ON 15332, context 63648, Early Iron Age pit 63645
3. Saddle quern, ON 15330, context 63648, Early Iron Age pit 63645
4. Worked stone, possible hone stone, context 63860, undated pit 63861

Miscellaneous Finds

By Elina Brook

A very limited range of other materials was found, including 70 pieces (22 g) of vesicular fuel ash slag from Late Bronze Age pit 66027. This derives from a high-temperature activity of unspecified type. The remaining material is of far later date and includes 16 pieces (227 g) of CBM, eleven of which are flat fragments of probable medieval roof tile, and five undatable featureless fragments. With the exception of two fragments from modern animal burial 63441 and one unstratified fragment, the majority are intrusive within the tops of Early Iron Age features. Two plain stem fragments of clay tobacco pipe came from post-medieval lynchet 63514.

Chapter 4
Human Bone and Isotope Analysis

Human Bone and Aspects of the Mortuary Rites

by Jacqueline I. McKinley

Introduction

Human bone was recovered from six contexts situated in two areas of the site: Parcel S Area 6 and Parcel Q (Fig. 1.4). In the former, a tight (approximately 2.6 m diameter) group of four graves, lying towards the base of the slope falling southwards from the central ridge, contained the remains of three crouched inhumation burials and one urned cremation burial (Figs 2.3 and 2.4). The ceramic vessel – a bucket urn (see Brook, Chapter 3) – which functioned as the burial container in grave 63085 is of Middle Bronze Age date and a faience bead from inhumation grave 63263 is of Early/Middle Bronze Age date. Bone samples from each of the four graves were subject to radiocarbon dating and the resulting tight Middle Bronze Age sequence suggests the burial in grave 63263 might have formed the earliest interment and that in grave 63267 the latest; however, all four could have been made in relatively close succession (see López-Dóriga, Chapter 6).

A substantial proportion of a redeposited human tibia was recovered during the evaluation trial trenching in Parcel Q. The location of these remains was believed to coincide with a pit in one of the Early Iron Age pit clusters (cluster 63804; pit 63698) lying on the south-west margins of the similarly dated settlement which was subject to more detailed investigation in the excavation stage of the project (Fig. 1.4). The precise location of the human bone is unclear, however, and no further human remains were found at the excavation stage; it seems probable that, as with pit cluster 63940 situated a short distance to the south, the uppermost surviving fill overlying all the pits in the cluster comprised a general accumulation of surface material which had survived following 'settling' of the individual pit fills. A radiocarbon date obtained from a sample of the bone placed it in the Middle Iron Age (see López-Dóriga, Chapter 6), a temporal period for which there is little other evidence for activity on the site. It is possible that this find relates to activity associated with what is believed to have comprised a Middle Iron Age enclosed settlement at Southmill Hill (Powell and Barclay, forthcoming) some 400 m to the north (Fig. 1.2).

Methods

The urned burial remains were excavated under laboratory conditions by the writer, using quadranted spits (each 20 mm in depth) to enable a detailed consideration of the burial formation process in analysis. Recording and analysis of the cremated bone followed the writer's customary procedures (McKinley 1994a, 5–21; 2004a).

The age and sex of individuals (unburnt and cremated) was assessed using standard methods (Beek 1983; Buikstra and Ubelaker 1994; Gejvall 1981; Scheuer and Black 2000; Wahl 1982); levels of confidence include probable ('?'), most likely ('??') and unquestioned. A standard set of measurements was taken on the unburnt bone where possible to facilitate the calculation of skeletal indices, though the latter were limited due to the condition of the bone (Bass 1987; Brothwell 1972, 88). A suite of non-metric traits was recorded (Berry and Berry 1967; Brothwell and Zakrzewski 2004; Finnegan 1978), the more common of which feature in Table 4.1, with other details held in the archive. The degree of erosion to the unburnt bone was scored following McKinley (2004b, fig. 6). Animal bone species identifications were undertaken by Lorrain Higbee. A summary of the results from the Middle Bronze Age graves is presented in Table 4.1; further details are held in the archive.

Results and Discussion

Taphonomy

The inhumation graves had survived to a relatively shallow depth (0.22–0.25 m) but there is no evidence for bone loss due to horizontal truncation. The bone is, however, heavily fragmented, exhibiting both

Table 4.1 Summary of results of Middle Bronze Age graves

Context	*Feature*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*	*Comment*
unburnt bone						
63252	63254 (0.22 m)	crouched burial (left)	c. 47%	adult 20–30 yr ??male	dental caries; dental calculus; MV – shovelled maxillary I2s, mandibular M3 large multi-cusped, maxillary left M3 large with accessory root	4–5+, heavily fragmented, dark staining limb bones (?fungal)
63262	63263 (0.25 m)	1) crouched burial (right)	1) *c.* 93%	1) adult 20–25 yr female	1) dental calculus; periodontal disease; Schmorl's node – 1T; osteophytes – C1; MV – slight shovelled maxillary I2s, mandibular M1 4-cusp variant, maxillary left M3 undersized & single root	1) 4–5+; fragmented; 2g burnt bone (?human) from various locations within the grave
		2) R	2) 5 frags. s.u.	2) subadult/adult >12 yr	-	2) 3–4
63266	63267 (0.24 m)	flexed burial (right)	c. 95%	subadult 14–16 yr	dental calculus; MV – heavy mesial groove maxillary I2s, maxillary M3 narrowed, mandibular M3 small multi-cusped variants	4–5+; heavily fragmented, dark staining some bone; 7.9g cremated bone from various locations within the grave
cremated bone						
63249	63085	crd in grave fill	111.3g	64047		SW side of grave
64047	63085	urned burial	1764.4g	1) juvenile 5–7 yr	exostoses – humerus shaft	Pyre goods – 52.6 g animal/ probable animal bone: dog (forelimb & spine frags), cattle (long bone shaft frags)
				2) adult 20–35 yr ??female		
				3) adult 18–50 yr ??male		

KEY: crd – cremation-related deposit; MV – morphological variation; I/M – incisor/molar teeth; C/T – cervical/thoracic vertebrae; R – redeposited; s.a.u.l. – areas of skeleton represented where not all are presented (skull; axial skeleton; upper/lower limb)

old and fresh breaks, with the remains from grave 63254 (Pl. 2.5) being particularly heavily affected, resulting in marked destruction of the bone. The skeletal remains from the latter were confined to the lower 80 mm depth of the grave and overlain by a substantial depth (approximately 0.30 m) of flint nodules which would originally have formed a cairn above the grave, possibly placed over a 'lid' of wooden planking (Fig. 2.4). The pressure exerted by the flint nodules following their collapse into the underlying void is undoubtably largely responsible for the extensive damage to the skeletal remains. The low percentage of skeletal recovery from grave 63254 (Table 4.1) is probably chiefly due the effects of this fragmentation together with the generally observed poor bone preservation, with heavy erosion of the cortical bone (grades 4–5+; root and fungal etching) and structural collapse of the trabecular bone. The dark staining observed on some of the bone (mostly long bone shafts) might also be an artefact of fungal activity, possibly exacerbated by the presence of some specific form of organic material covering these skeletal areas.

The redeposited bone from Parcel Q is heavily eroded, the dry-bone broken ends showing both old and fresh margins. Although eroded, there is no abrasion suggestive of repeated episodes of deposition or weathering indicative of extended periods of surface exposure.

In contrast, despite the heavy truncation of cremation grave 63085 (Pl. 2.2), in which the slightly displaced (?by ploughing) vessel survived to between 0.03 m (south-east side) and 0.16 m (north-west side) in depth with the undoubted loss of some bone, the cremated bone itself is in good visual condition. Both compact and trabecular bone are present and the latter, often subject to preferential loss in an aggressive burial environment, is relatively well represented by fragments of extra-spinal skeletal elements (see below).

Demographic data

A minimum of eight individuals was identified: seven Middle Bronze Age and one Middle Iron Age. Each of the Middle Bronze Age inhumation graves contained the *in situ* remains of one individual: a subadult and two young adults, one of the latter female and the other probably male (Table 4.1). The young woman's grave contained a few additional fragments of upper limb and cranium from a second, more robust individual, which were found amongst the *in situ* elements of the skull and axial skeleton. The burial remains from grave 63254 are missing these elements, some of which were recorded on site but were not present for analysis, potentially because they did not survive lifting. The possibility of some mis-allocation of elements in post-excavation processing can be discounted since the site photographs and the excavation record sheets clearly show the right clavicle and part of the left scapula to have been present, whereas the additional elements recovered from grave 63263 comprise the left clavicle and parts of both scapulae. It must, therefore, be concluded that these remains derived from another individual (>12 years of age) not represented amongst the *in situ* remains.

A minimum of three individuals was identified amongst the remains from cremation grave 63085, from which it is clear that a substantial amount of bone must have been lost through truncation. Most of that which survived seems to represent the remains of the juvenile and the smaller, more gracile of the two adults for which there is evidence (Table 4.1). The relatively substantial quantity of bone recovered from the grave fill to the south-west of the urn was obviously displaced from inside the vessel, and several bone fragments from here joined others recovered from within.

Small quantities of cremated bone were found in the fills of two of the inhumation graves 0.6 m to south and 0.4 m to the east of cremation grave 63085 (Table 4.1; Fig. 2.4). Given the high level of damage to the burial remains in grave 63085 it is likely that this small quantity of material, recovered from various locations within these two shallow inhumation graves, is intrusive and derived from 63085 (a few pot sherds recovered from the fill of grave 63267 could also have derived from the burial urn). However, other possible origins – related to the same or a different cremation to those from which the remains buried in grave 63085 derived – cannot be wholly discounted.

The potential one-time presence of one, or possibly even two other graves in the immediate area, physical traces of which have been eradicated, is highlighted by the recovery of fragments of Beaker pottery from grave 63254 and part of the base of a Middle Bronze Age ceramic vessel (ON 15309) found on the surface of the natural approximately 0.7 m to the south of cremation grave 63085. The former could have derived from a grave, potentially one from which the redeposited unburnt bone in grave 63263 also originated. The recovery of Beaker pottery is far from unique to graves, however, and several pits in the north-western portion of Parcel R – some 150–180 m to the west of the grave group – contained sherds of Beaker vessels, with fragments found in only one pit closer to the graves, pit 60780 some 30 m to the south-west (see Brook, Chapter 3). The Middle Bronze Age vessel found on the surface of the natural is unlikely to have derived from any of the excavated inhumation graves given that the burial remains were undisturbed. It is possible that it might have functioned as an accessory vessel in the highly disturbed cremation grave, though its survival in the absence of the rest of the damaged Bucket Urn – which presumably sat at a lower level in the grave – seems out of kilter. Alternatively, it might represent the sole survivor from another heavily truncated grave – cremation or inhumation.

This small grave group appears to form part of a Middle Bronze Age mortuary landscape with singletons and similarly small groups of inhumation graves dispersed across the south-west-facing slopes of Amesbury Down. The nearest known graves comprised two singletons, some 500 m to the north and 750 m to the north-east, located further upslope towards the 'plateau' on which, approximately 1 km to the north-east, lay a group of three inhumation graves (Powell and Barclay, forthcoming). All but one of the five individuals identified was adult, the others being juveniles or subadults and, with one exception (a subadult), all were male (McKinley, forthcoming). Inhumation of the unburnt corpse also featured at West Amesbury, some 2.5 km to the west, where inhumation graves had been cut through ditch fills (two mature adult males and a neonate; Mays *et al.* 2018). This wider assemblage from across/around Amesbury Down is intriguing for several reasons, one being the apparent predominance – at least in terms of the number of graves – of inhumation of the unburnt corpse over cremation, but also in the contemporaneous use of both mortuary rites. Burial remains of this date have been recovered from four sites in the Stonehenge Environs to the north-west, where cremation predominated: MNI 21, 15 cremated and six unburnt (Mays *et al.* 2018; McKinley, forthcoming table 6). Cremation also formed the major rite at a number of sites in the wider vicinity (around 70%) and most assemblages featured a single rite. As here, the numbers are generally small, but larger cemeteries have been recorded, such as that in Area 1 of the Salisbury Plain investigations undertaken in 2009–12 which featured a potential 51 graves and a demographic profile covering neonate–adult and inclusive of both sexes (McKinley 2018). Cremation is generally considered to be the predominant mortuary rite in the Middle Bronze Age, Caswell and Roberts (2018) stating that less than 3% of burials of this date involved inhumation of the unburnt corpse; it is then perhaps of note that most burials – albeit relatively few – in this small area around Amesbury Down seem to favour the latter rite. The mixed-rite status of the small grave group at King's Gate also places it amongst the 10% minority of such cemeteries reported in the Caswell and Roberts study.

The remains of four Middle Iron Age graves were recovered during the investigations at Amesbury Down, some 700–800 m to the south-west (Powell and Barclay, forthcoming), so it is possible that the tibia redeposited in pit cluster 63804 could have directly derived from a neighbouring grave disturbed and eradicated by later activity in the area. Given its position, apparently close to the surface, this could offer the most likely interpretation. However, the recovery of redeposited elements of human bone from settlement locations may be less than fortuitous and indicate a continuation in the mortuary process extending the link between the living and the dead, and reflecting a functional transformation attached to the latter; 'archaeological deposits of human remains are never simply to do with treatment of the dead ...' (Hill 1995, 177).

Skeletal indices and non-metric traits

Insufficient bone survived for the calculation of other than the platymeric (demonstrating the degree of anterior-posterior flattening of the proximal femur) and platycnemic (meso-lateral flattening of the tibia) indices of two individuals: the adult female from grave 63263 and the unsexed subadult from grave 63267. The female's right and left femora showed markedly different platymeric indices at 71.8 (platymeric: broad/flat from front to back) and 85.5 (eurymeric) respectively, suggesting different bending forces affected the two sides, probably associated with some specific occupational activity. Only the right femur of the subadult could be measured, at 87.6 (eurymeric). Two of the Middle Bronze Age individuals from Amesbury Down for whom measurements could be taken also had femora in the eurymeric range (McKinley, forthcoming), as did one of the individuals from West Amesbury Farm, with a second individual from the site having a lower index almost identical to that of the King's Gate female's right femur (Mays *et al.* 2018, table 2).

The platycnemic indices were more closely aligned in the female's tibiae (right 74.0; left 71.3), both falling in the eurycnemic range, as did the subadult's left tibia (76.2). The two Middle Bronze Age individuals from Amesbury Down for whom a cnemic index was calculated also fell in the eurycnemic range (mean 73.0), and it was observed that there was an increase from a mesocnemic mean of 69.2 recorded within the Early Bronze Age assemblage from the site (McKinley, forthcoming). Data from two of the Middle Bronze Age individuals from West Amesbury Farm show closer similarities with the Early Bronze Age data from Amesbury Down than their contemporaries (Mays *et al.* 2018, table 2), suggesting if there was, as is implied, a shift in 'lifestyle mobility' between the periods in the area, then it was far from a universal trend.

Numerous variations in dental morphology were observed in all three of the inhumed individuals, including shovelling in the maxillary incisors of the two adults – a common variant seen in 24–100% of populations (Hillson 1986, 259). Variations in cusp form, particularly in the third molars, also comprise a relatively frequently observed anomaly, and none of the variations in this class were duplicated between the King's Gate individuals such as might be taken as indicative of a genetic link between them.

Pathology

Few pathological lesions were observed, possibly in part due to the very poor condition of the bone resulting in extensive damage to the articular surfaces and loss or obscuring of the cortical bone surface morphology. The lesions observed within the unburnt bone assemblage were largely limited to those affecting the teeth and supportive structures.

Dental calculus (calcified plaque/tartar) harbours the bacteria which predispose to periodontal disease and the development of dental caries. The condition was observed in all three dentitions, with slight–moderate deposits (Brothwell 1972, fig. 58) in the adult ??male dentition except in the maxillary molars where deposits extend to the occlusal surfaces. Moderate–heavy deposits were observed in the subadult and adult female dentitions; in both cases the lingual sides of the teeth were most heavily affected, with accumulations extending almost to the occlusal surface in both the anterior and distal teeth. Such heavy deposits, particularly in such relatively young individuals, suggests a diet heavily dependent on carbohydrates and lacking in 'self-cleaning' foods, combined with poor oral hygiene (Hillson 1986, 286–99; 1996, 259–60). Slight periodontal disease (*ibid.*, 261–9) was observed in the female's dentition, affecting the buccal alveolus adjacent to the mandibular third molars. Dental caries, resulting from destruction of the tooth by the acids produced by oral bacteria present in dental plaque, was recorded in only one tooth, the right maxillary second molar of the adult ??male (1/91 teeth; True Prevalence Rate (TPR) 1%; 1/31 molars).

All three dentitions show quite marked laterally angled wear in the incisors. The common link here is unclear as this does not seem to reflect 'occupational' abrasion – i.e., the teeth being used as a 'tool' – but it is possible that there might have been some link with the diet of these individuals causing a distinctive form of masticatory wear. There are some indications, in the form of chips in the subadult's maxillary left second incisor and the female's maxillary right first molar, that these individuals might have used their teeth as a 'third hand' on occasions; however, such damage could also have been affected by a minor trauma (accidental blow or biting down on gritty food).

Schmorl's nodes (pressure defects resulting from a rupture in the intervertebral disc; Rogers and Waldron 1995, 27) were observed in one vertebra (1/66 vertebrae, TPR 1.5%), a central thoracic in the adult female's spine (TPR 2.7% thoracic vertebrae). Such lesions are most frequently seen in the lower thoracic and lumbar vertebrae with stress-related trauma – e.g., heavy lifting – implicated as a major cause of the condition (Roberts and Manchester 1997, 107). This young female also had slight osteophyte formation on the anterior facet of the first cervical/atlas vertebra.

The skeletal location of a fragment of cremated humerus shaft with a small area of new bone suggestive of an exostosis could not be defined with any precision, but is likely to have been from the central–proximal half of the shaft. Such lesions are commonly associated with injury or damage to the muscle as a result of strenuous exertion causing bleeding in the tissue, with subsequent ossification of the haematoma (Rogers and Waldron 1995, 23–5).

Pyre technology and cremation ritual

The cremated bone is almost universally white in colour, indicative of full oxidation of bone (Holden *et al.* 1995a and b). Only five fragments of adult bone – two femoral shaft fragments and fragments of proximal ulna, skull vault and navicular – show any variation from this norm, being slightly blue (one fragment) or grey in colour. The variations are so minor and limited in extent that no specific problems with the cremation process are implied. These remains stand in contrast to those from the Salisbury Plain Middle Bronze Age cemetery (McKinley 2018), where more extensive variations in levels of oxidation were observed in half the of the 16 burial remains. The apparent marked efficiency of the cremation process at King's Gate could have been a reflection of the size of the pyre, extended to fully and effectively accommodate more than one corpse. However, it could also simply reflect a serendipitous culmination of a variety of efficacious factors related to fuel, weather, layout on the pyre and the absence of any insulating materials inhibiting the effects of the fire on the corpse (McKinley 1994a, 76–8; 2004c, 293–5; 2008). One other potential factor could be how well oxidised those undertaking the cremation considered the bone itself needed to be to fulfil the 'transformation' process (*ibid.*).

The quantity of bone recovered from the grave (1875.7 g) is comparatively high – particularly in view of the fact that several hundred grams (potentially up to 400 g) is likely to have been lost due to truncation – rendering it amongst the upper echelons of bone weights recovered from burial remains of this date; upper range average 1525.7 g (McKinley 1997; undisturbed older subadult/adult singletons) or around 3% of the 859 deposits – all deposit types (McKinley 2013a), age categories, levels of disturbance/taphonomic condition, singletons and multiples – presented by Caswell and Roberts in their 2018 review (fig. 7, >1500 g). It did, however, comprise the remains of three individuals, the remains of each of which cannot readily be fully separated. Although it is well above both the mean (728.7 g) and the maximum (947.7 g) weights recorded for the dual burials from the Salisbury Plain cemetery, they all comprised the remains of an adult and infant (McKinley 2018). Dual (or occasionally higher multiples) burial remains will not necessarily contain more bone than those of one individual, but the majority of such deposits comprise those of an adult with an immature individual (McKinley 1997; 2000a; 2006; Petersen 1981), with the latter often represented by <50 g of bone, as at the Salisbury Plain cemetery (McKinley 2018). The one confidently identified multiple burial from the large Middle Bronze Age cemetery (minimum 63 burials) at Longham Lakes, Dorset, contained 583.9 g of bone which, while above the average was less than that found in some singletons (McKinley 2013b), the same observation applying to the 825.0 g dual burial from Whitemoor Haye, Staffordshire (26 burials; McKinley 2017).

Although it might be anticipated that the dual burial (and potentially cremation) of more than one adult would result in larger quantities of bone being recovered from the grave – e.g., the 3433.3 g from burial 664 at Twyford Down, Hampshire (McKinley 2000a) – it is still dependent on how much of the remains of each individual were included in the burial. While the presence of the two adults as well as a juvenile in the King's Gate example probably does represent a major contributory factor to the weight of bone recorded, it is clear that far from all the remains of these three individuals made it into the grave, even including the full weight of bone potentially lost to disturbance (average weight of adult bone from a modern cremation being around 1600g; McKinley 1993). The majority of the bone is adult, with clear duplication of elements indicative of two individuals, but despite some indications of variation in size and robusticity, the remains of each cannot readily be fully distinguished; the juvenile is relatively well represented but is unlikely to account for more than a few hundred grams of the bone.

A variety of intrinsic and extrinsic factors may influence the weight of bone included in and recovered from a burial and wide ranges in bone weights are common (Caswell and Roberts 2018; McKinley 1993; 1997; 2000a). These variations cannot be explained purely by differences in preservation and disturbance, mode of burial or the sex of the buried individual, and are likely to be linked to idiosyncratic local influences. Cremated bone, being intrinsically divisible and portable, becomes a potentially 'curatable' commodity, and the social and cultural factors surrounding the distribution and deposition of the remains from any one cremation in one or more locations could have varied in relation to the deceased individual(s) and the community from which they derived.

The maximum recorded fragment size was 60 mm and the majority of the bone (53% by weight) was recovered from the 10 mm sieve fraction. There was some variation throughout the eight excavated spits, with both the maximum fragment sizes and the proportions in the 10 mm sieve fraction being slightly lower in the upper – more disturbed – spit levels. Despite the obvious disturbance to the deposit, the figures are within the upper ranges of those recorded at the Salisbury Plain cemetery (McKinley 2018), Longham Lakes and amongst the urned burial remains from Whitemoor Haye (McKinley 2013b; 2017; 2018). There are a number of factors which may affect the size of cremated bone fragments, the majority of which are exclusive of any deliberate human action other than that of cremation itself (McKinley 1993; 1994b), and there is no evidence in this case to suggest any deliberate additional fragmentation of the bone prior to burial.

Approximately 41% by weight of the bone was identifiable to skeletal element (the proportion is usually between 30–50%; pers. obs.). As is generally the case, identifiable elements from all four areas of the skeleton were recorded, with the commonly observed over-representation of the readily distinguishable skull elements (44% by weight of identifiable elements) at the expense of the taphonomically fragile axial skeletal elements (3%); the proportions of upper and lower limb elements were close to 'normal' (McKinley 1994a, 6). There were no marked variations in the distribution of these elements within different parts of the vessel fill such as to suggest any particular order of deposition. Fragments derived from the juvenile and – apparently – both adults were also distributed throughout, with joins between fragments of the adult skeletal elements recovered from different parts of the deposits (e.g., spits 3 and 8, 3 and 5, 5 and 7, and spit 6 and bone from the grave fill). These observations indicate that the remains of all three individuals were thoroughly mixed throughout the burial deposit, suggesting all might have been cremated together (see below regarding mode of recovery) or, if separately, that their remains were deliberately mixed prior to inclusion in the burial container.

The small bones of the hands and feet and tooth crowns/roots no longer *in situ* are routinely recovered from cremation burials, and the writer has discussed elsewhere how their frequency of occurrence may indicate the mode of recovery of bone from the pyre site for burial (McKinley 2004c). A substantial number of these elements were observed (67 small bones and eight lone tooth crowns/roots), suggesting the bone was recovered by raking-off and winnowing of the cremated remains from the pyre site (increasing the recovery of the smaller skeletal elements and – if the three individuals were cremated together – mixing the skeletal elements) rather than the more laborious and potentially discriminatory hand recovery of bone fragments (McKinley 2000b; 2004c). Comparative data from elsewhere are variable – for example, both techniques seem likely to have been employed for the Salisbury Plain cremations (McKinley 2018) – providing no consistent temporal, geographic or socio-cultural pattern and, as with other aspects of the rite, idiosyncratic local influences are likely to have played their part.

Fragments of cremated animal bone – representing approximately 3% by weight of the total recovered from the grave – were distributed throughout the vessel fill in a similar fashion to the remains of the three human individuals. Since it was a characteristic of the rite across the temporal range that not all the human remains were routinely included in the burial (see above), it is probable that the remains of pyre goods were also overlooked (accidentally or deliberately) in this secondary part of the mortuary rite. Consequently, the animal bone recovered might not be fully representative of all the species or body parts/corpses placed on the pyre.

The two species identified (Table 4.1) are suggestive of different functions, one as food (cattle) and the other as 'working status' or 'companion' (dog). The inclusion of animal remains on the pyre is a recognised feature of the rite across the temporal range (McKinley 1997; 2000a; 2006). Frequency of occurrence seems to be very variable; no cremated animal bone was identified in the burials from the Dorset cemeteries of Knighton Heath (Denston 1981) and Simons Ground (Hazzledine 1982), and only 4% of those from Eye Kettleby included animal bone (Chapman 2011); elsewhere, a greater proportion of the burials incorporated pyre goods of this form, e.g., 16% at Twyford Down, 17% at Longham Lakes and 21% in the Salisbury Plain cemetery (McKinley 2000a; 2013b; 2018). The quantities identified tend to be very small, which can render species identification difficult, but the most commonly recorded species from the Middle Bronze Age appear to comprise sheep/goat, pig and bird. This suggests that both species seen at King's Gate were somewhat out of the ordinary; rare examples of dog remains have been recorded from Early Bronze Age cremation burials from Meriden Quarry, Worcestershire (McKinley 2020a) and Doveridge, Derbyshire (McKinley 2022), the latter found with the remains of a juvenile of similar age to that from grave 63085.

Small fragments of burnt flint formed a relatively common inclusion within two of the upper spits within the vessel, where they were confined to the north-west (least damaged) side; fine-particle fuel ash was also noted in one of these spits (spit 3). Both inclusions probably represent elements of pyre debris, originally deposited above the burial in the grave fill and infiltrating the vessel subsequent to the loss of the ?organic seal/cover (see McKinley 2006) and disturbance of the remains. The frequency of the burnt flint – derived from the natural soil matrix – suggests some level of deliberation, with the flint fragments from below, and heated by the pyre, possibly gathered to form a small 'cairn' above the grave. The presence of this material suggests the cremation was undertaken in the vicinity of the place of burial.

Concluding Remarks

A close relationship between the three individuals from grave 63085 is implied by their apparent communal cremation and burial. The nature of that relationship can only be surmised, however, and could have comprised that of relatives (parents and child, siblings, or second/third removes) or close friends/neighbours who might all have succumbed to the same acute and fatal illness.

The close spatial proximity of all four surviving graves, coupled with the commensurate relatively tight temporal range obtained from the radiocarbon dating (230 years maximum), implies a relationship or link of some form between the individuals interred here, with each burial being undertaken at least within living memory of one other; but if so, why were different mortuary rites employed? The distinction does not appear to have been made on the basis of age or sex of the individual, which implies a broader variation in belief systems, which in turn raises the question as to whether both rites were well established in the vicinity by the Middle Bronze Age or if one was 'imported' from outside the region. Strontium and (in the case of the unburnt remains) oxygen isotopic analyses ('mobility isotopes') were undertaken on tooth enamel or bone (cremated remains) samples from each of the four graves in an attempt to help clarify this possibility, but the results were of limited assistance. The strontium isotope data from the cremated bone proved to be undiagnostic; the data from the inhumation graves were of some interest in that the individual from the north-easterly grave 63263 (Fig. 2.4), was likely to have originated from central southern England, while the individuals in the two adjacent south-western graves (63254 and 63267) were unlikely to have been from this area of the country (see Evans, below). Similar analyses undertaken on the two Middle Bronze Age adults – buried in a commensurate fashion in intercutting graves – from West Amesbury also suggest disparate origins, with one potentially originating from central Europe and the other from 'the Chalk of southern Britain'. Analyses undertaken on two of the Middle Bronze Age individuals from Amesbury Down (Evans *et al.*, forthcoming) concluded '…childhood origins … from different parts of the Chalk, within Britain'.

Strontium and Oxygen Isotope Analysis

by J. Evans with contributions from H. Sloane, N. Atkinson and D. Wagner

Four samples, one from each of the graves within the small Middle Bronze Age cemetery, were submitted for strontium (Sr) and oxygen (O) isotope analysis, three of tooth enamel and one of cremated bone.

Sample Preparation

The enamel surface of each tooth was abraded down to a depth of >100 microns, using a tungsten carbide dental bur, and the removed material discarded. Enamel was cut from the cleaned area using a flexible diamond-edged rotary dental saw. All surfaces were mechanically cleaned with a diamond bur to remove adhering dentine. About 30 mg of enamel was taken for Sr and O isotope analysis, 3 mg of which was ground to a powder in an agate mortar and pestle for carbonate oxygen analysis, with the rest used for Sr isotope determination. The surface of the cremated bone was abraded off and about 30 mg of material was sampled for Sr only.

The samples for Sr were transferred to a class 100 clean suite for further preparation. They were rinsed twice in de-ionised water and left to soak in water for an hour on a hot plate set at 60°C. Subsequently, the tooth enamel samples were placed in dilute 1% Teflon© distilled HNO_3 for five minutes and then rinsed twice using de-ionised water, dried and weighed into a pre-cleaned Teflon© beaker.

Sample Chemistry for Sr Isotope and Concentration Analysis

The enamel samples were mixed with ^{84}Sr tracer solution and dissolved in Teflon© distilled 16M

HNO_3; the sample of cremated bone was not spiked. After evaporation to dryness, the samples were converted to chloride form by addition of Teflon© distilled 6MCl and taken up in 2.5MHCl. Strontium was collected using Eichrom© AG50 X8 resin (Dickin 2018) and loaded onto a single Re Filament following the method of Birck (1986), and the isotope composition and strontium concentrations determined by Thermal Ionisation Mass spectroscopy (TIMS) using a Thermo Triton multi-collector mass spectrometer. The international standard for $^{87}Sr/^{86}Sr$, NBS987, gave a value of 0.710262 ± .000020 (2SD, n=8) during the analysis of these samples, and the data are corrected to the accepted value of 0.710250. Data are presented in Table 4.2.

Chemical Preparation and Isotope Analysis of Oxygen in Structural Carbonate

For the isotope analysis of phosphate carbonate oxygen, approximately 3 mg of prepared enamel was loaded into a glass vial and sealed with septa. The vials were transferred to a hot block at 90°C on the GV Multiprep system. The vials were evacuated and four drops of anhydrous phosphoric acid were added. The resultant CO_2 was collected cryogenically for 15 minutes and transferred to a GV IsoPrime dual inlet mass spectrometer. $\delta^{18}O$ is reported as per mil (‰) ($^{18}O/^{16}O$) normalised to the PDB scale using a within-run calcite laboratory standard (KCM), calibrated against NBS-19 IAEA reference material. Values were converted to the SMOW scale using the published conversion equation of Coplen (1988): SMOW = (1.03091 x $\delta^{18}O$ VPDB) + 30.91. Analytical reproducibility for the laboratory standard calcite (KCM) is: $\delta^{18}O_{SMOW}$ = ± 0.05‰ (1σ, n=36) and $\delta^{13}C_{PDB}$ is ± 0.04‰ (1σ, n=36). The external reproducibly is estimated from the duplicate sample pairs run during the analysis, whose average reproducibility was ± 0.18‰ (2SD, n=7). Data are presented in Table 4.2.

Results

The oxygen isotope composition of the sample from inhumation burial 63262 (grave 63263) does not exclude it from originating in the south-central area of England. However, the samples from the other two inhumation burials (63252 and 63266; graves 63254 and 63267 respectively) have lower values that are more problematic. The oxygen isotope compositions of these two enamel samples are shown in Figure 4.1 alongside reference datasets including that from the 'Amesbury Archer', an Early Bronze Age male (burial 1291) excavated from a grave situated approximately 550 m to the north-east (Fitzpatrick 2011), whose oxygen isotope values are beyond the 2SD range of the British human enamel data and whose probability of a British origin, based on current datasets (Evans *et al*. 2012), is only 2.5%. The second reference dataset is considered a reasonable estimate of the oxygen isotope value displayed by individuals from south-central England for whom there is no evidence of remote origins ('locals'). These individuals (BD25049 PM2 and M3, GF36F, ND50538, SH 1983.7, 25001 and 25007) give an average $\delta^{18}O$ (‰)carbVSMOW = 26.43+- 0.17, which is consistent with the data for the area in which they were found (Evans *et al*. 2018a). The two enamel samples from this study have considerably lower

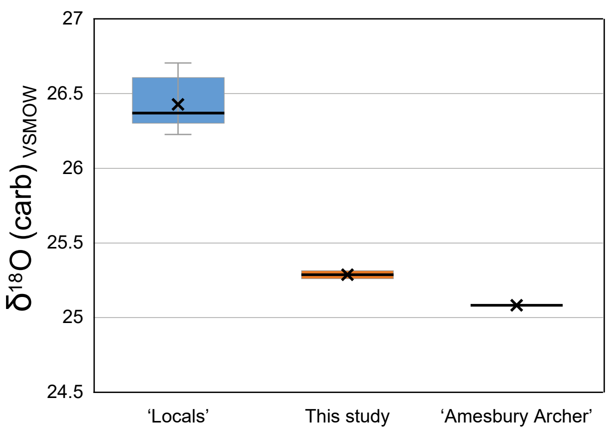

Figure 4.1 Oxygen isotope compositions of samples from burials 63252 and 63266 with reference datasets

Table 4.2 Strontium and oxygen isotope results

Sample (burial context)	*Batch*	*No.*	*Material*	*Sr ppm*	*$^{87}Sr/^{86}Sr$*	*$\delta^{13}C$ (‰) VPDB*	*$\delta^{18}O$ (‰) VSMOW*
64047	P934	5	bone cremated	-	0.70934	-	-
63262	P934	10	tooth enamel P2	149	0.70887	-14.05	26.88
63252	P934	11	tooth enamel RM3	61	0.70919	-13.92	25.31
63266	P934	12	tooth enamel RP2	36	0.71031	-14.87	25.26

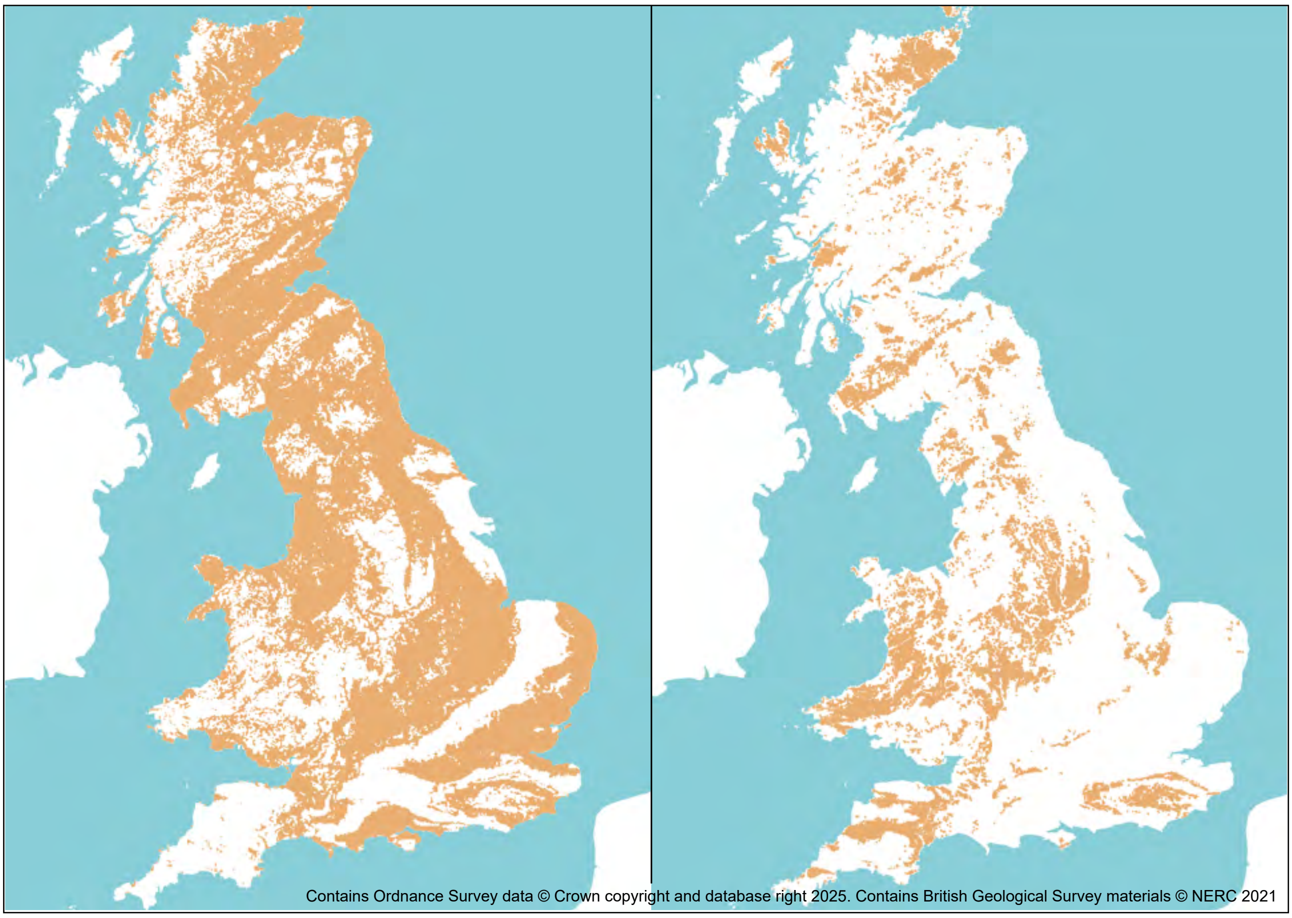

Figure 4.2 Sr isotope distribution across Great Britain of the values 0.7092 and 0.7103, respectively. The orange areas are where the designate values fall within the interquartile range (IQR) for data defining a domain. Note such values are equally common on continental Europe (Willmes et al. *2018).*

oxygen isotope composition than the latter set, with values close to the data from the 'Amesbury Archer'. While they cannot be excluded from a British origin, their values are unlikely to be generated in the south-central area of England and fall outside the 1SD range, but within the 2SD range of data for eastern Britain (Evans *et al*. 2012).

The Sr isotope data from the sample of cremated bone (Table 4.2) is a very common value in Britain and is hence undiagnostic. The sample from burial 63262 has an $^{87}Sr/^{86}Sr$ value which is consistent with a Chalk-founded origin and supports/cannot exclude an origin in the Chalk-dominated area of central-southern England. As the oxygen isotopes obtained for 63252 and 63266 probably preclude a childhood in the Wiltshire area, their Sr isotope values do not provide much childhood provenance constraint as these are common values in Britain and continental Europe. The distribution of these two Sr isotope values is given in Figure 4.2.

Concluding Remarks

In summary, the Sr isotope composition of all the samples is common in Britain. The lowest value, 0.7088 from burial 63262, is consistent with a Chalk-based origin. The oxygen values from burials 63252 and 63266 are in the lower 33% of data from Britain (Evans *et al*. 2012), and are unlikely to have an origin in central-southern England.

Chapter 5
Animal Bone and Isotope Analysis

Animal Bone

by Lorrain Higbee

Introduction

The assemblage comprises 10,406 fragments (or 39.628 kg) of animal bone and includes hand-recovered (98%) and sieved material. Once refits and associated bone groups (hereafter ABGs; for definition see Grant 1984a, 533; Hambleton 2008, 80–1; Morris 2008, 34–5; 2010, 12; 2011, 12–13) are accounted for the total count falls to 2760 fragments (Table 5.1). Bone was recovered from features of Late Neolithic, Beaker, Early and Late Bronze Age, Early Iron Age, post-medieval and modern date.

Methods

The following information was recorded where applicable: species, element, anatomical zone (after Cohen and Serjeantson 1996, 110–12; Serjeantson 1996, 195–200), anatomical position, fusion state (after O'Connor 1989; Silver 1969), tooth eruption/wear (after Grant 1982; Halstead 1985; Hambleton 1999; Payne 1973), butchery marks (after Lauwerier 1988; Sykes 2007), metrical data (after Payne and Bull 1988; von den Driesch 1976;), gnawing, burning, surface condition, pathology (after Vann and Thomas 2006) and non-metric traits. This information was directly recorded into a relational database (in MS Access) and cross-referenced with relevant contextual information.

The entire assemblage has been quantified in terms of the number of identified specimens present (or NISP). The minimum number of individuals (or MNI), minimum number of elements (or MNE) and meat weight estimates (or MWE; following Boessneck *et al.* 1971; Bourdillon and Coy 1980; Dobney *et al.* 2007; O'Connor 1991) are presented for the animal bone deposit from pit cluster 63940. The live weights used to estimate MNE are 275 kg for cattle, 37.5 kg for sheep and 85 kg for pig.

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

Table 5.1 Animal bone: number of identified specimens present (NISP) by period

Species	*Late Neolithic, Beaker & Bronze Age*	*Early Iron Age*	*Post-medieval, modern & undated*	*Total*
Cattle	19	368	7	394
Sheep/goat	22	92	9	123
Pig	4	66	1	71
Horse	1	11	-	12
Dog	-	3	-	3
?Aurochs	1	-	-	1
Red deer	-	4	1	5
Roe deer	-	2	-	2
Deer	-	1	-	1
Raven	-	1	-	1
Total identified	47	548	18	613
Large mammal	68	639	26	733
Medium mammal	21	712	-	733
Small mammal	18	1	-	19
Mammal	207	444	3	654
Bird	2	2	-	4
Amphibian	4	-	-	4
Total unidentified	320	1798	29	2147
Overall total	367	2346	47	2760

Results

Preservation and fragmentation

Bone preservation is generally good across the excavation area. Minor root etching was recorded on most fragments but was not severe enough to efface surface details such as fine cut marks. There is general consistency in the preservation condition of fragments from individual contexts and this indicates that most bones came from secure contexts, a statement that is especially true for the large, well-preserved bone deposit from Early Iron Age pit cluster 63940. Gnaw marks were apparent on less than 2% of post-cranial bones. This is a very low occurrence and indicates that the assemblage has not been significantly biased by the bone chewing habit of scavenging carnivores.

Late Neolithic

A sheep/goat tooth and a few unidentifiable fragments came from pit 63537 in Parcel Q. Material of this date is better represented in the wider development area and general environs (Higbee, forthcoming).

Beaker

A total of 165 fragments of animal bone came from three Beaker pits. Most came from a pair of pits (63544 and 63550) on the north-west side of Parcel Q. The identified bones from 63544 are all from cattle and include a scapula, femur, tibia, calcaneus and rib fragments. Amongst the other fragments from this feature was a piece of long bone shaft, the thickness of which suggests that it could be from an aurochs. Most of the bones from 63550 also belong to cattle. They include bones from both the fore- (humerus and metacarpal) and hindquarters (pelvis, femur, tibia, metatarsal and calcaneus), a mandible from a young adult animal aged 30–36 months (mandible wear stage (hereafter MWS) E, after Halstead 1985), and a few phalanges. The mandible provided a radiocarbon date of 2460–2200 cal BC (SUERC-82843, 3840±22 BP). A sheep/goat incisor tooth and a female pig canine tooth also came from this feature. There was evidence that some of the cattle bones from 63544 and 63550 had been processed for marrow using the burn and smash technique (Serjeantson 2011, 62). A fragment of sheep/goat radius and a few burnt bone fragments came from pit 60780 in Parcel R.

Early Bronze Age

A few fragments of bone came from pits 63180 (part of pit cluster 63213 in Parcel R) and 63616 (Parcel Q). A fragment of distal cattle femur was identified from 63180 but the rest of the fragments are unidentifiable. Butchery marks are apparent on the cattle femur and these are consistent with disarticulation above the knee joint and secondary reduction of the hindquarter.

Table 5.2 Distribution of animal bones from Early Iron Age pits

Isolated pits	*NISP*
63320	157
63465	12
63468	219
63645	38
Total isolated pits	*426*
Pit groups	
63423	3
63525	133
63724	12
63727	2
63804	20
63807	31
63850	102
63859	72
63940	936
Total pit groups	*1311*
Layers assoc. with 63940 (incl. in pit group total)	
Tertiary fill 63649	122
Feasting deposit 63911	328
Feasting deposit 63912	233
Feasting deposit 63964	194
Total layers	*877*

Table 5.3 Relative importance of livestock species by NISP, MNE, MNI and MWE. Note that the calculation of MNE includes teeth retained in mandibles as well as loose teeth, therefore the total might be higher than the NISP count

	Cattle	*Sheep*	*Pig*
NISP	368	91	66
% NISP	70	17	13
MNE	291	98	47
% MNE	67	22.5	10.5
MNI	*16*	*8*	*3*
% MNI	59	30	11
MWE	4400	300	255
% MWE	89	6	5

Late Bronze Age

Bone came from two Late Bronze Age features, Wessex Linear ditch 64044 in Parcel Q and pit 66027 on the School Site. The identified fragments from the Wessex Linear ditch include a cattle lumbar vertebra, a sheep/goat metatarsal and a horse tooth. The identified bones from the pit are mostly from sheep and include several ankle and foot bones, fragments of pelvis, femur, tibia and vertebra. Butchery marks consistent with disarticulation at the ankle joint and division of the carcass were noted. A few cattle and pig bones were also identified from this feature. Some burnt bone fragments are present; these include several sheep/goat bones and a cattle metatarsal.

Early Iron Age

Spatial distribution

A total of 1741 fragments of animal bone came from Early Iron Age features located in Parcel Q and a further 605 from ditch 66096 on the south-west side of the School Site. Most of the Parcel Q animal bones came from pits including several clusters, with negligible amounts from nine-post structure 63394 and four-post structure 63474. The pit assemblages include a significant amount of detailed information relating to the age, biometry and butchery of livestock, while the bone fragments recovered from structures are unidentifiable.

The number of fragments from isolated pits ranges from 12 to 219 fragments, and from pit clusters from 3 to 133 fragments, with one large outlier, pit cluster 63940, which contained 936 fragments (Table 5.2). Most (94%) of the fragments from 63940 came from a dense bone deposit overlying intercutting pits on the north side of the cluster, particularly pits 64033 and 63963.

The highest concentrations of animal bones came from pits (63320 and 63468) and pit clusters (63525, 63850 and 63940) located in the west and south-west parts of the excavation area, away from the nearest domestic structures (roundhouses 63361 and 63410) and the small outlying settlements on the central ridge to the north-east (Powell and Barclay, forthcoming).

Relative importance of species

A total of 548 fragments of animal bone (31% of the total) recovered from Early Iron Age features are identifiable to species and skeletal element (Table 5.1). Most (96% NISP) are from livestock species, particularly cattle, which dominates the assemblage at 67% NISP, followed by sheep at 17% and then pig at 12%. Rarer elements include horse, dog, red deer, roe deer and raven.

Cattle and sheep dominate the identified bones from individual pits and pit clusters, with the highest concentrations from the animal bone deposit in cluster 63940. Most of the pig and horse bones are also from this deposit. Deer antler came from pit clusters 63850, 63859 and 63940, dog bones from the first two of these features and a raven skeleton from 63850.

Table 5.4 Body part representation for Early Iron Age livestock by MNE and MNI

	Cattle		*Sheep*		*Pig*	
	MNE	MNI	MNE	MNI	MNE	MNI
Skull	16	16	1	1	3	3
Horn core	2	1	-	-	-	-
Mandible	18	13	11	6	3	3
Incisor	*22*	*3*	*2*	*1*	*1*	*1*
Dp4/P4	12	2	9	2	3	1
M1/M2	22	6	18	3	5	2
M3	9	5	6	2	-	-
Atlas	9	9	1	1	2	2
Axis	6	6	1	1	1	1
Cervical vertebra	16	3	-	-	-	-
Thoracic vertebra	19	2	3	1	7	1
Lumbar vertebra	4	1	3	1	2	1
Caudal vertebra	4	1	-	-	-	-
Scapula	10	6	1	1	2	2
Humerus	7	4	8	5	3	2
Radius	5	4	2	1	1	1
Ulna	7	5	-	-	3	2
Metacarpal	7	4	3	2	1	1
Pelvis	7	6	1	1	-	-
Sacrum	3	3	-	-	-	-
Femur	11	7	2	1	3	2
Tibia	12	7	16	8	4	2
Metatarsal	16	8	5	3	1	1
Astragalus	8	4	1	1	-	-
Calcaneus	13	8	-	-	1	1
1st phalanx	17	2	3	1	1	1
2nd phalanx	7	1	1	1	-	-
3rd phalanx	2	1	-	-	-	-

Livestock economy

In terms of the relative importance of livestock, cattle bones account for 70% NISP, followed by sheep at just 17% and pig at 13% (Table 5.3). The MNE and MNI results show a similar basic pattern with cattle dominating (67% MNE and 59% MNI) but an increase in the relative importance of sheep (22% MNE and 30% MNI), while pig numbers remain low at 11% MNE and MNI. Comparison between the results for the different quantification methods indicates that cattle bones are significantly more fragmented than sheep and pig bones. This is perhaps unsurprising given that cattle carcasses are larger and therefore require more butchery to reduce them to manageable joints for the purposes of transportation, storage and cooking. The results also indicate that the body part distribution for sheep is skewed towards one or two common components. The effect of this is an increase in the MNI value for sheep relative to the NISP and MNE values.

These discrepancies aside, cattle, by virtue of their greater size, provided most (89%) of the meat consumed at King's Gate during the Early Iron Age. The estimated 16 cattle carcasses provided 4400 kg of beef, compared to 300 kg of mutton from eight sheep and 255 kg of pork from three pigs.

Livestock body part representation

Most (71%) of the Early Iron Age assemblage came from the extensive animal bone deposit in pit cluster 63940. This deposit originated from a single consumption event involving whole carcasses, particularly of beef and pork, and this is reflected in the overall body part representation. Body part data are presented in Table 5.4 by MNE and MNI, and in Figs 5.1–5.2 as a percentage of MNI in relation to the most common element.

The most common cattle elements according to MNE, are teeth, mandibles, skulls, vertebrae, ankle and foot bones. However, MNI, which takes account of the numbers of individual elements present, indicates that skulls are the most common element overall, followed closely by mandibles, and then the first cervical vertebra (or atlas). Most of these cattle elements are from the animal bone deposit in 63940, and were deposited as articulated units (or ABGs) with other vertebrae. The most common postcranial elements are all from the hindquarters, and again these were often deposited as ABGs. The scapula is the only bone from the forequarters that is present in significant numbers.

Based on MNE, common sheep skeletal elements include teeth, tibiae and mandibles, while MNI indicates that tibiae are the most common element, followed by mandibles and humeri (Fig. 5.2). Almost a third of the sheep bones came from the deposit in pit cluster 63940 but all are disarticulated elements. The only sheep ABG came from deposit 66083 at the base of ditch 66096 on the School Site. The 29 identified fragments are charred and calcined bones from the carcass of a young adult animal.

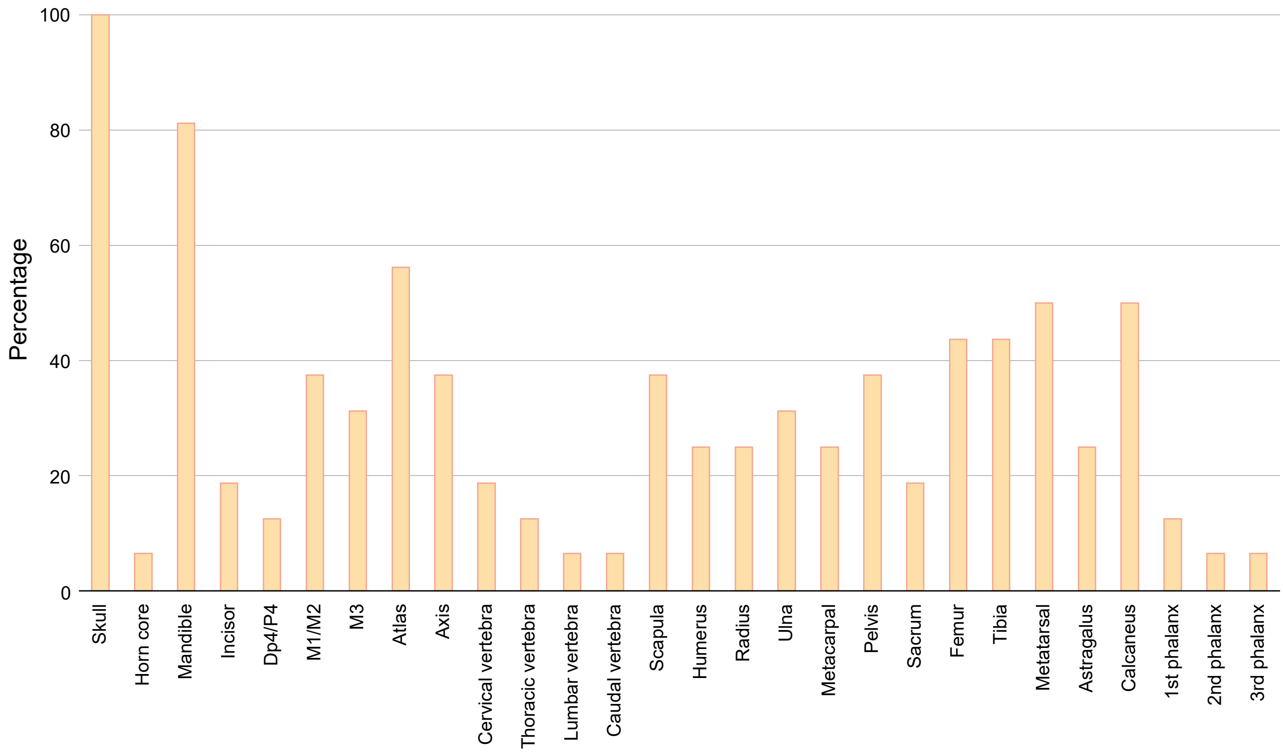

Figure 5.1 Early Iron Age cattle body part representation

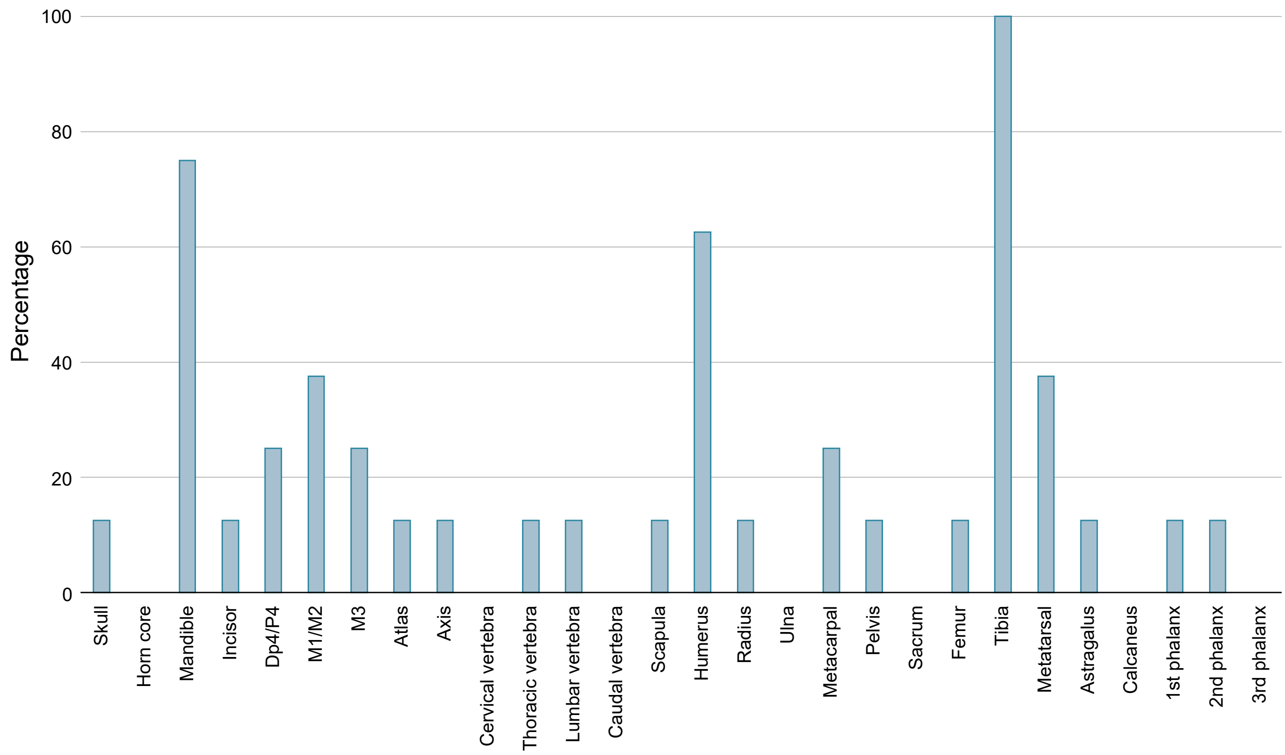

Figure 5.2 Early Iron Age sheep body part representation

According to MNE, teeth and vertebrae are common elements in the small pig bone assemblage, and one articulated section of vertebrae came from the deposit in 63940. Skulls and mandibles are the most common pig elements overall, according to MNI.

Livestock mortality patterns

The Early Iron Age assemblage includes only a small number of mandibles that retain teeth with recordable wear, and the majority (71%) are from the deposit in pit cluster 63940. There are 15 cattle mandibles – nearly half from animals culled before the age of three years, a further 33% culled as adults and the rest as old adult and senile animals (Fig. 5.3). This basic mortality pattern is supported by the age information gathered from the epiphyseal fusion state of cattle postcranial bones (Table 5.5). The numbers of postcranial bones with unfused

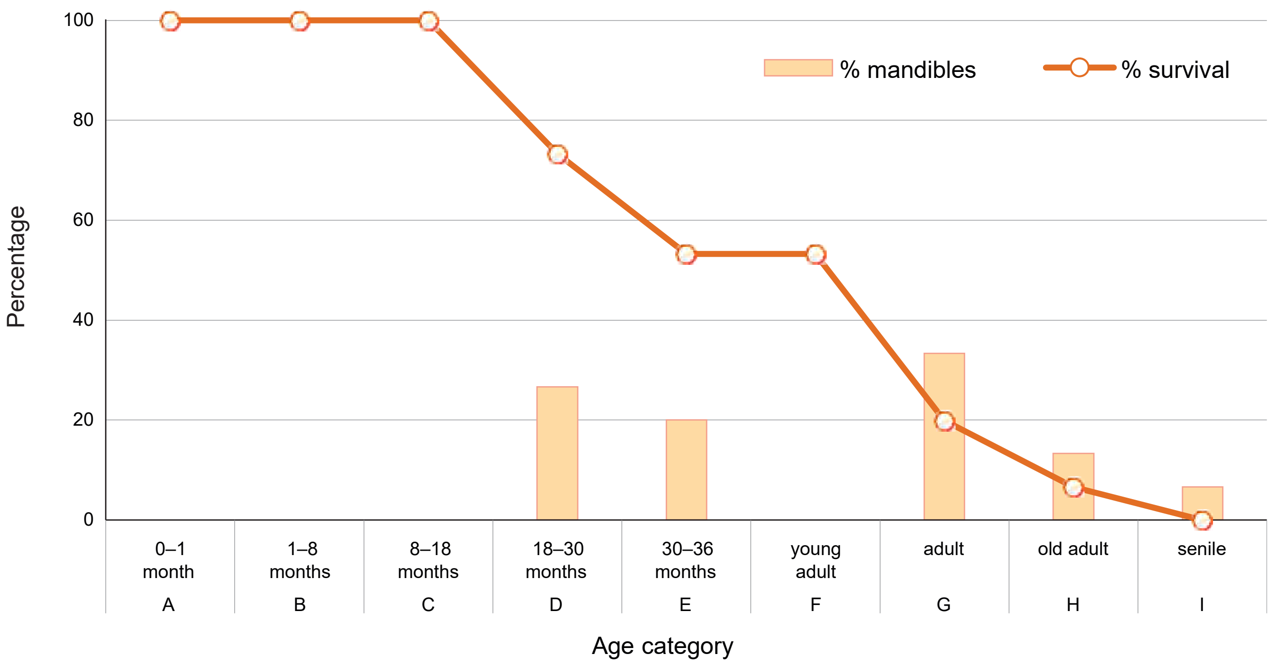

Figure 5.3 Early Iron Age cattle mortality pattern based on mandibles retaining 2+ teeth with recordable wear

Table 5.5 Epiphyseal fusion of postcranial elements. Fusion categories after O'Connor (1989). Fused and fusing epiphyses are amalgamated. Only unfused diaphyses, not epiphyses, are counted

Species	*Fusion category*	*F*	*UF*	*%F*
Cattle	early: 12–18 months	27	2	93
	intermediate: 2–2½ years	17	1	94
	late: 3½–4 years	24	2	92
	final: 5 years+	34	6	85
Sheep	*early: 10 months*	*4*	*2*	*67*
	intermediate I: 13–16 months	2	-	100
	intermediate II: 1½–2 years	1	2	33.3
	late: 3 years	2	1	67
	final: 4 years+	5		100

epiphyses are extremely low at between 6% and 15% per fusion category.

The mortality pattern suggests a husbandry strategy primarily geared towards beef production, particularly from animals in their prime (MWS D and E); however, the main peak in mortality at MWS G suggests that the wider husbandry strategy required some older animals for breeding and use as traction animals. It is unlikely that dairying played a significant part in the strategy given the lack of evidence for calves and immature or juvenile cattle. Animal husbandry strategies in Iron Age Britain are thought to have been closely linked with arable cultivation, and the presence of older cattle is in keeping with this and the evidence for grain storage structures found during the excavation.

The sheep mortality profile is based on only nine mandibles (Fig. 5.4). This indicates that most (67%) sheep were culled aged 2–3 years (MWS E), which is consistent with a husbandry strategy primarily focused on meat production. A few mandibles from younger and older sheep are also present (MWS D and F–G). Age information from epiphyseal fusion is extremely limited (Table 5.5) but a few lamb bones were noted. The presence of these remains suggests that pregnant ewes are likely to have been kept in fields close to the settlement during the spring lambing season.

Only four pig mandibles were recovered, two from young animals aged 2–7 months and two are from animals aged 7–14 months (MWS B and C). Most pig postcranial bones have unfused epiphyses and are therefore from immature animals; a few neonate bones were also recovered.

Butchery evidence

Chop and/or cut marks are present on only 26 cattle bones and two sheep bones. Most (69%) of the butchery evidence is on elements recovered from the deposit in pit cluster 63940; the other butchered bones came from pits 63468 and 63525, and pit cluster 63850.

Chop marks account for 85% of the butchery evidence on cattle bones and were present on a range of skeletal elements, but occurred most frequently on

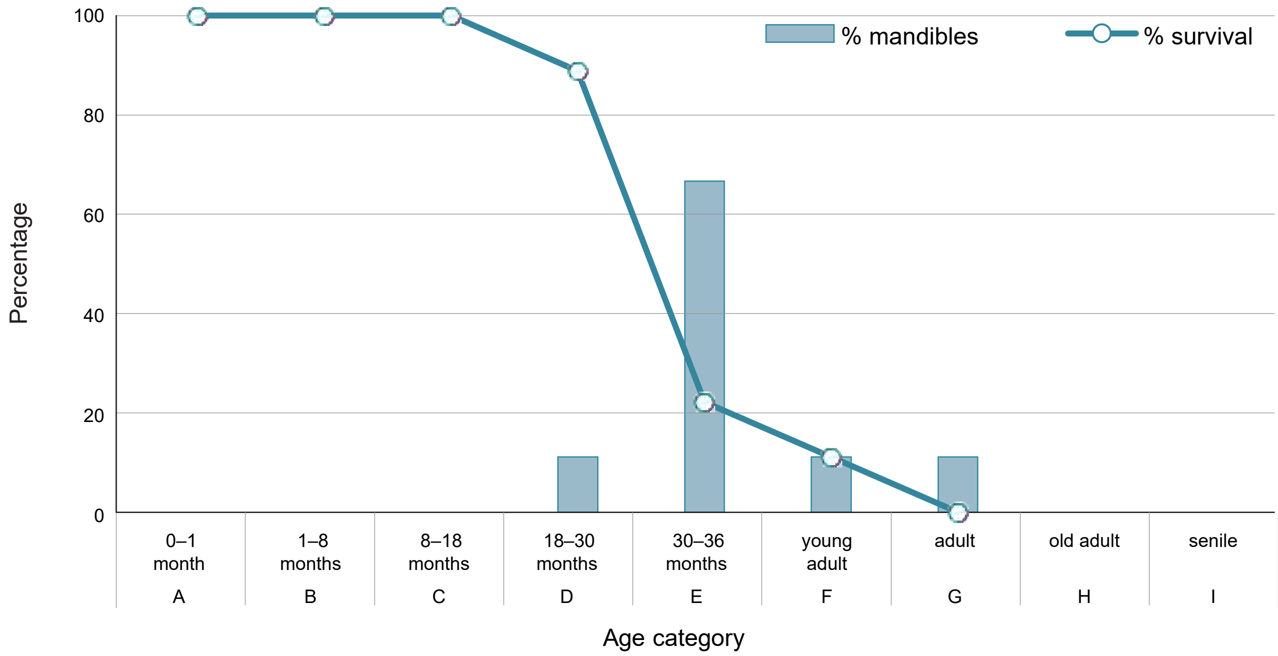

Figure 5.4 Early Iron Age sheep mortality profile based on mandibles retaining 2+ teeth with recordable wear

the proximal and midshaft of metapodials, relating to disarticulation of the foot. Several other elements were chopped midshaft, including the humerus, ulna, femur and tibia, a pattern consistent with secondary reduction and possibly marrow extraction (Serjeantson 2011, 62). Further evidence that some post-cranial bones were processed for marrow include a few axially split long bones, two from pit 63468 and one from the bone deposit in pit cluster 63940. Chop marks were also recorded around the acetabulum and relate to disarticulation of the hindquarters. A scapula from pit 63468 shows evidence of a processing technique associated with the curing of shoulder joints (see for example Dobney 2001, 39–41; Dobney *et al.* 1996, 24–8). The evidence includes trimming of the spine, shave marks along the cervical margin of the blade, and a hole through the caudal side of the blade.

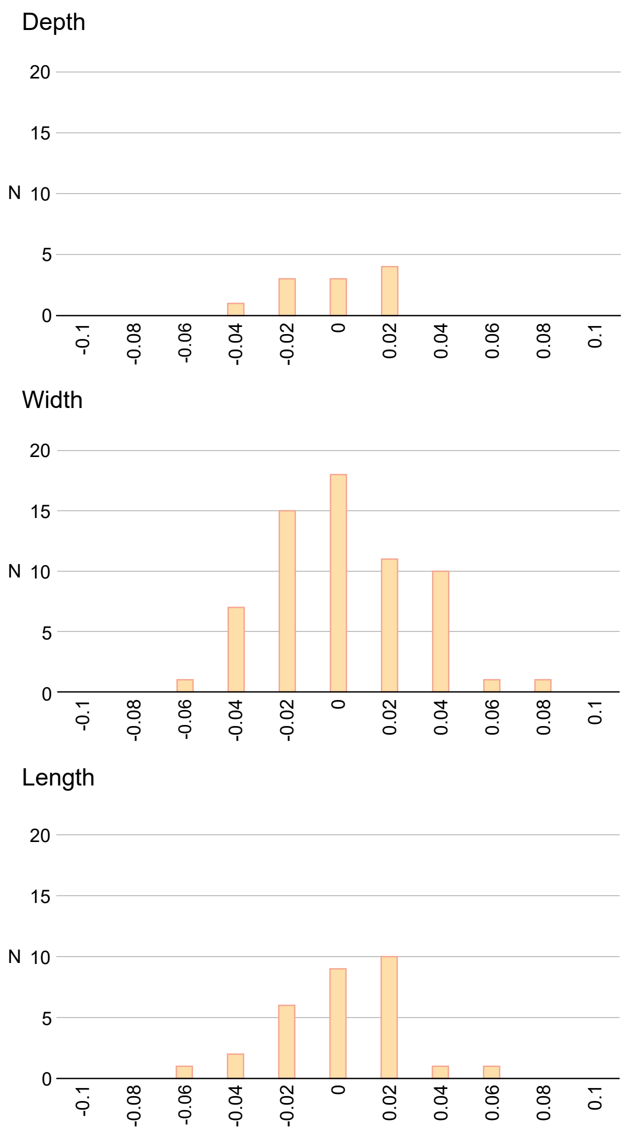

Figure 5.5 Log ratio diagrams for depth, width and length measurements on cattle bones

Knife cuts were noted on only four cattle bones. This would appear to be a genuine absence rather than the result of poor preservation. Cut marks are present on the cranial side of the distal trochlea of a humerus from pit cluster 63850 and skinning marks on the frontal, temporal and nasal areas of three skulls (ABGs 63935, 63938 and 63944) from the deposit in pit cluster 63940. One of the skulls (ABG 63944) also has a small fracture on the aboral part of the frontal bone and is consistent with use of a poleaxe to stun the animal prior to slaughter.

There is also some, albeit limited, evidence for possible horn-working in the form of a sawn cattle horn core from pit 63468, and the modification of cattle bones to form rudimentary tools (ON 15359 from pit cluster 63940). Butchery marks are also evident on a few sheep and horse bones.

Size and shape of livestock

There are limited biometric data available for detailed analysis and much of this was obtained from cattle bones recovered from the deposit in pit cluster 63940. The problem of small sample size has, to some extent, been overcome by using the log ratio technique proposed by Davis (1996) which allows measurements taken on the same plane (i.e. length, width and depth) to be grouped and compared to a known standard. In this instance the mean values chosen are for cattle bones from Early Iron Age deposits at High Post (Higbee 2011).

The log ratio results are presented in Figure 5.5. Depth measurements show the least variation but represent the smallest sample. Length and width measurements show a normal distribution around the standard. Most measurements fall close to the standard, indicating that the cattle from King's Gate are similar in size and shape to those from High Post. This is perhaps unsurprising given its proximity both geographically and chronologically.

Measurements taken on intact horn cores indicate that the King's Gate cattle were short-horned breeds, with shoulder (or withers) heights of 1.17 m–1.39 m.

Other species

The Early Iron Age assemblage includes a small number of horse bones. Most (64%) came from the deposit in pit cluster 63940, with single elements from pit 63468 (skull) and pit clusters 63804 (pelvis), 63850 and 63859 (teeth). The horse bones from 63940 comprise a skull (ABG 63922), two right mandibles, an atlas vertebra, pelvis and femur. Skinning marks are evident on the skull from 63468, and butchery marks are also present on the atlas vertebra and femur from 63940.

Dog skulls came from the upper fill of pit 63835, one of the earliest in pit cluster 63850 and from pit 63541 in cluster 63859. The skull from 63835 is near-

Table 5.6 Distribution and type of cattle and other ABGs from Early Iron Age animal bone deposit in pit cluster 63940

Pit	*Context*	*Spit*	*Skull or mandible*	*Vertebrae & ribs*	*Forequarter*	*Hindquarter*	*Other*
63963	63912	1	63936	-	63928	63923, 63931	-
		2	-	-	63961, 64055	63956, 63962, 64054, 64056, 64057	-
64033	63911	1	63920, 63921, 63932, 63934, 63937, 63938, 63941, 63942, 63943, 63944	63927, 63929, 63930, 63936, 63945	-	63939	Horse skull 63922, pig skull 63933
	63964	2	63935, 63966, 63967	63968	-	-	pig vertebrae 63965 & pair mandibles 64059

complete and retains the molars, which are slightly worn and indicate that the skull is from a young adult. A sample of bone from the skull provided a radiocarbon date of 810–560 cal BC (SUERC-82846, 2561±25 BP). The fill also contained a fragment of dog ulna, the complete skeleton of a raven and a few disarticulated cattle bones, mostly from the left-side of the carcass, some of which showing signs of butchery.

The assemblage also includes antler from both red and roe deer. Three shed pieces came from pit cluster 63940, comprising a near-complete red deer antler (ABG 15350), which provided a radiocarbon date of 820–570 cal BC (95.4%) (SUERC-73565, 2577±31 BP) from the base of pit 63904, and two roe deer antlers, one from pit 64022 and the other deposit 63911. Smaller pieces of red deer antler came from pit 63845 in cluster 63850 and pits 63774 and 63811 in cluster 63859. There is no indication that any of the antler pieces had been utilised, but it seems likely that they would have been collected for this purpose.

Animal bone deposit from pit cluster 63940

Sealed beneath tertiary fill 63649 and overlaying several pits at the north end of cluster 63940 was an extensive deposit (c. 23 kg) of animal bones (Figs 2.11 and 2.12). The deposit was spread over an area of approximately 4.1 m by 3.8 m, with the densest concentrations sealing pit 63963 on the northern edge of the cluster and pit 64033 at its southern extent. It includes 35 ABGs (Table 5.6 and Appendix 3) and large amounts of disarticulated bones. Cattle bones dominate, accounting for 73% NISP, followed by pig (18%), sheep (7.5%), horse (1.5%) and roe deer (antler). Based on preservation condition, the homogeneous nature of the deposit and the lack of

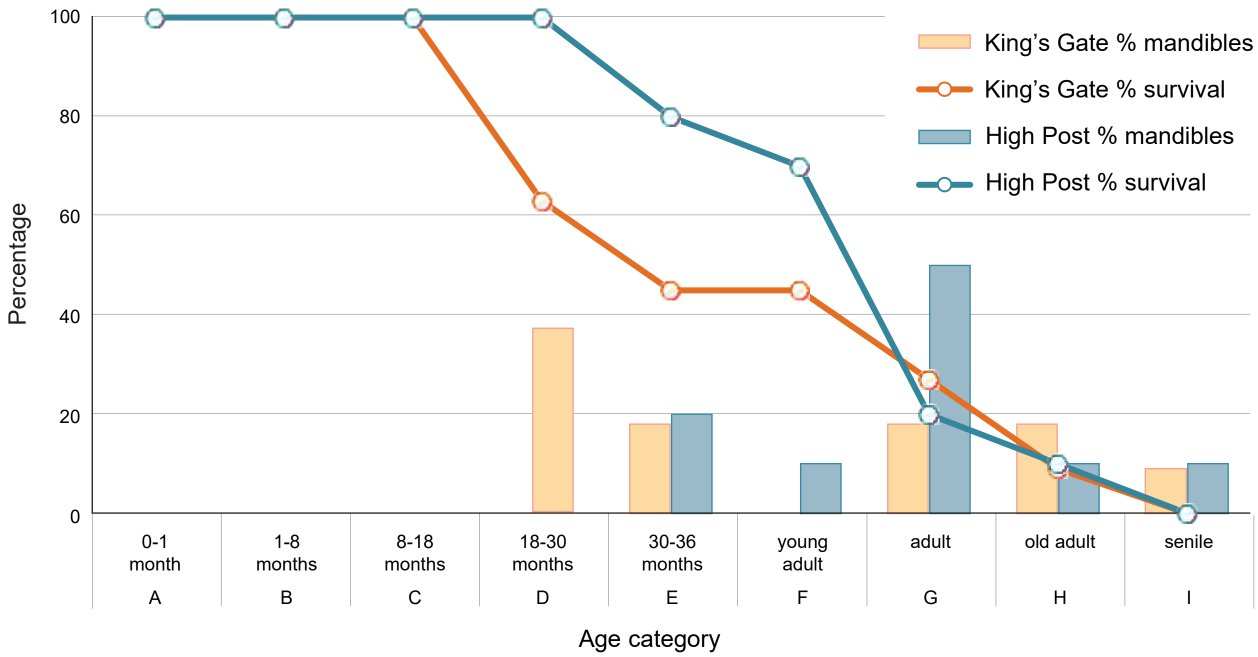

Figure 5.6 Comparison between mortality patterns for Early Iron Age cattle mandibles from King's Gate and High Post animal bone deposits

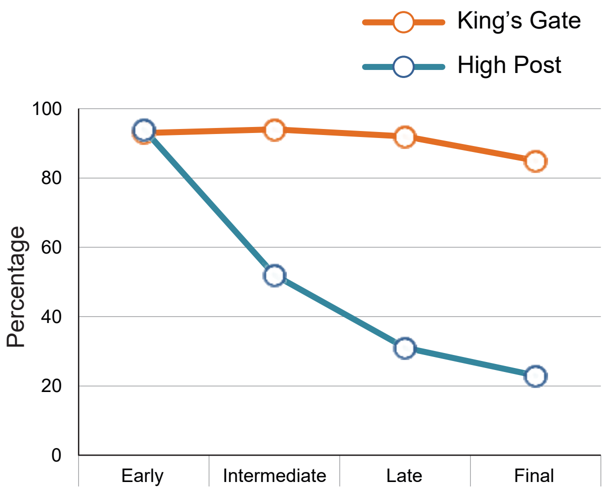

Figure 5.7 Category and percentage of fused cattle bone epiphyses from King's Gate and High Post animal bone deposits

Table 5.7 Summary of Early Iron Age butchery evidence on cattle bones from King's Gate and High Post by implement type and technique

	King's Gate		*High Post*	
Butchery implement	N	%	N	%
Cleaver	23	88	4	2.3
Knife	3	12	167	97.7
Total	*26*	*100*	*171*	*100*
Butchery type	N	%	N	%
Disarticulation	21	81	42	25
Filleting	-	-	74	43
Skinning	2	8	55	32
Marrow	3	11	-	-
Total	*26*	*100*	*171*	*100*

physical evidence for separate soil horizons or recuts, it would seem that the bones were deposited over a short time span, possibly in one or two episodes. However, the radiocarbon results (see Table 6.6) are not conclusive in establishing the length of time over which this occurred.

The animal bones from the upper spit of deposit 63912, which sealed pit 63963, include four cattle ABGs comprising a fragmented skull, the lower part of a left forequarter, and the left and right lower parts of two hindquarters. It has not been possible to directly associate any of the disarticulated long bones with ABGs. The spit also included several cattle-sized rib fragments. The lower spit included seven cattle ABGs comprising the forequarters from one animal, and five articulated groups from the hindquarters of at least three animals. Cattle-sized rib fragments also came from this level and were concentrated in the north-west part of the pit overlying ABG 63962. The other bones from deposit 63912 included a few neonatal pig vertebrae and a tibia, a sheep first phalanx and the left pelvis from a horse.

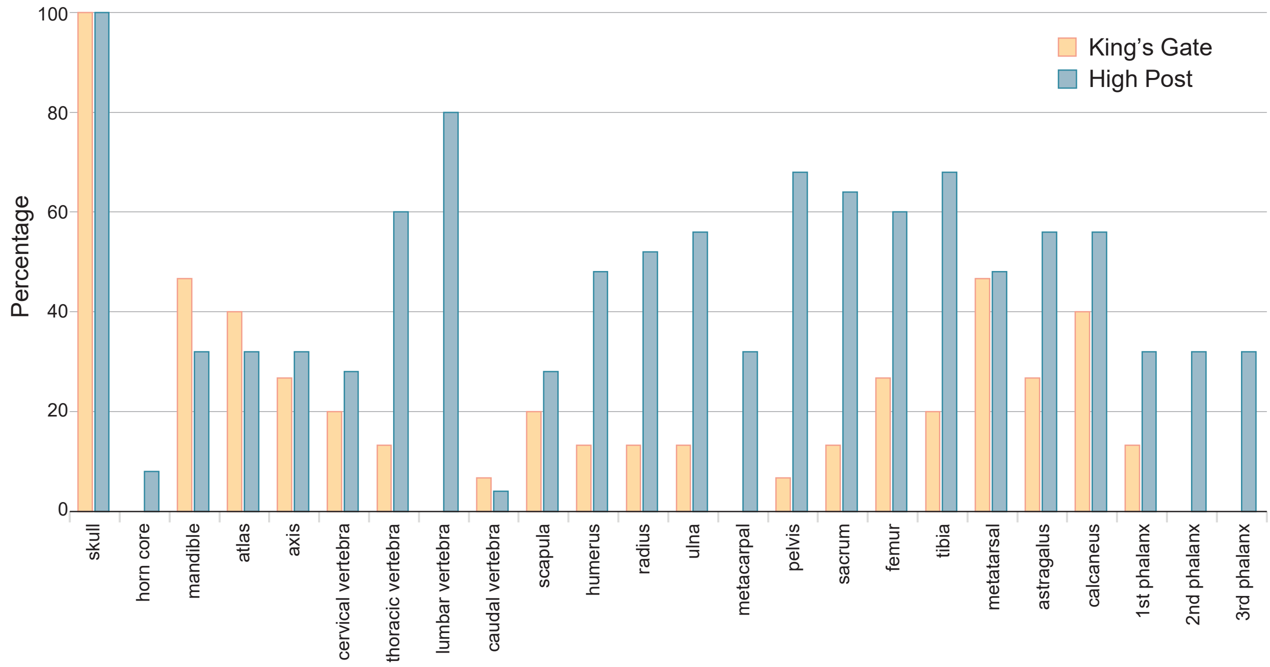

Figure 5.8 Comparison between cattle body part representation for Early Iron Age animal bone deposits from King's Gate and High Post

The southern part of the animal bone deposit was also excavated in two spits. The upper spit (63911) included 16 cattle ABGs comprising eight skulls, two left mandibles, five groups of vertebrae and ribs, and the hindquarters from a single animal. The other bones from this deposit include the skulls from a male horse and a young sow. The skulls formed a loose pile that sealed pit 64033 and extended over adjacent pits to the north and west, mingled with long bones, vertebrae and ribs. Away from the pile of skulls, the upper deposit is characterised by sections of articulated vertebrae and ribs, and the occasional long bone from the hindquarters. The lower spit (63964) included four cattle ABGs comprising three skulls, one associated with an articulated group of vertebrae and ribs. A pair of pig mandibles and a section of pig vertebrae were also recovered from this level.

The cattle skulls from the deposit have suffered damage prior to and as a result of excavation, and consequently they are generally incomplete and highly fragmented. The aboral part of the frontal bone is intact on four skulls, and these are all from small/short-horned cattle. Seven of the skulls retain teeth, allowing the age of the animal to be estimated, and these are from four subadults and three adults. Eleven cattle mandibles came from the southern part of the deposit (63911 and 63964). Most (37%, see Fig. 5.6) are from subadult animals aged 18–30 months (MWS D) and the rest are from older cattle (MWS E, and G–I). The mortality pattern differs slightly from the overall picture (Fig. 5.3) and is at odds with the epiphyseal fusion data (see Fig. 5.7), indicating that while the skulls of young cattle were incorporated into the deposit, many of the post-cranial elements were not (see Fig. 5.8). If the deposit represents a single large-scale butchery event, then the beef joints obtained from young cattle were more widely distributed than those from older cattle.

The few pig mandibles recovered from the deposit are from young animals less than one year of age (MWS B and C), while the sheep mandibles are from animals aged 1–6 years (MWS D–E and G).

Butchery marks are scarce; the evidence is outlined above and is consistent with several different processes including skinning, disarticulation at the hip and ankle joints, secondary reduction and marrow extraction (see Table 5.7). There is also evidence on one skull for the method by which cattle were stunned before they were slaughtered. Patches of charring were noted on a few bones, including horse skull ABG 63922, the first phalanges of hindquarter ABG 63956 and a cattle ulna. The charring noted around the midshaft break on the ulna is accompanied by a larger area of cracking, erosion and discolouration, the general character of which is like that seen on bones processed for marrow (see for example Serjeantson 2011, 62–3, fig. 4.7).

Dating

Six radiocarbon dates were obtained on samples of animal bones from across, and at different levels within, the deposit, and while these confirmed its Early Iron Age date, they also raised the possibility that, despite the appearance of the deposit being the result of a single event (or near-contemporaneous events), it could have been the result of more than one phase of deposition significantly separated in time (see López-Dóriga, Chapter 6, Table 6.6). However, these apparent inconsistencies potentially

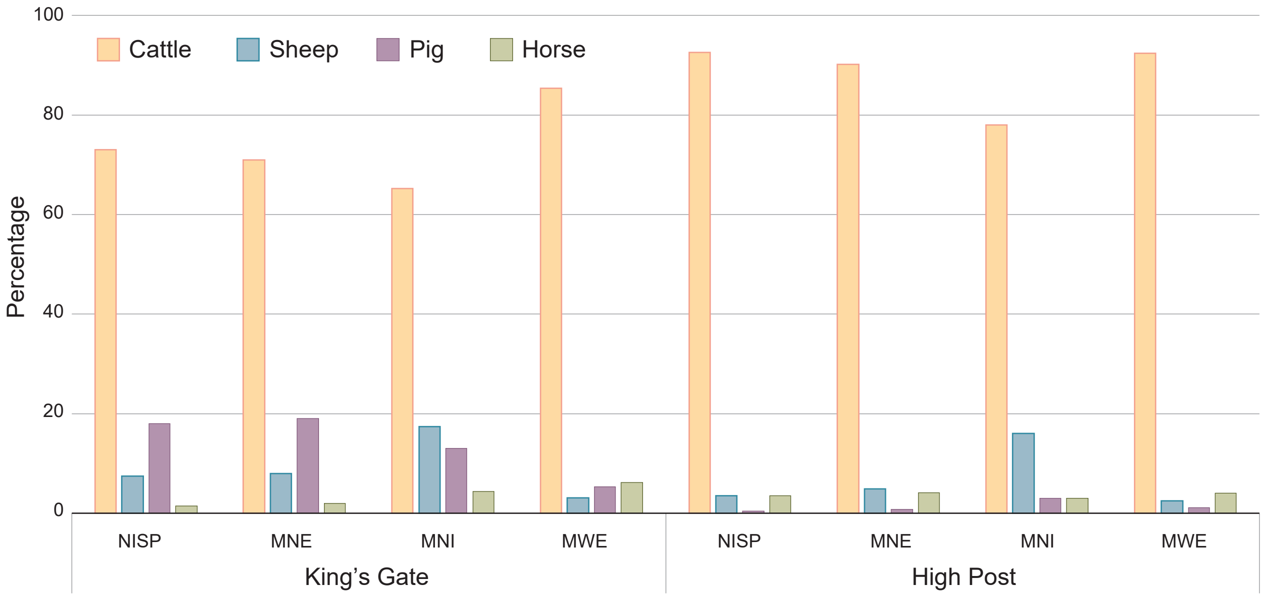

Figure 5.9 Composition (by NISP, MNE, MNI and MWE) of the animal bone deposits from King's Gate and High Post

result from the well-known plateau in the calibration curve which tends to spread out dates falling within the period 800–400 cal BC.

While these issues have to some extent been refined by Bayesian modelling (Fig. 6.2), discrepancies in the dating persist that cannot easily be accounted for in terms of the archaeological evidence. For example, the radiocarbon dates could be interpreted as evidence that ABG 63935 was a later insertion to a lower level, although no disturbance to ABG 63927, from the upper spit, or a cut was evident. Similarly, cattle skull ABG 63941, one of several in a discrete concentration on the south-east side of the deposit, appears to be a 'later outlier' from the main spread of dates; however, the adjacent skull ABG 63942 provided one of the earliest dates from the entire deposit.

Based on the archaeological evidence alone, there were clearly two discrete deposits, one overlying pit 63963 on the north side, and a more extensive spread of bones to the south, with the contents of each broadly contemporary, although conceivably with differences in date between the two groups. Despite the inconsistencies, however, the radiocarbon dates and model provide a firm indication that the animal bones were deposited within the last two centuries of the Early Iron Age, at some time (or times) between approximately 600 and 400 BC. The precise tempo of this activity remains elusive. If, for example, the deposit represents more than one feasting event then it probably formed over a relatively short period, possibly within a single generation. If, however, it formed over a longer period, this would have required cross-generational knowledge, a kind of folk memory, of where to bury the waste, which is not impossible, merely less likely.

Summary

The deposit includes 31 cattle ABGs and a further 426 disarticulated bones from at least 15 animals. This would have provided approximately 4125 kg of beef, most of it from animals in their prime. The meat joints from young cattle were taken elsewhere, perhaps to outlying settlements, but the skulls from these animals were deposited together with the remnants of meat joints from older cattle. There was minimal subdivision of the beef carcass, as is evident from the number of ABGs from the axial and appendicular skeleton, and the scarcity of butchery marks on disarticulated bones. The evidence indicates that beef carcasses were processed into large joints of meat and that some bones were processed for fresh marrow. The fact that beef carcasses were not extensively exploited suggests that the availability of meat was not an issue.

The deposit also includes a high proportion of pig bones, including three ABGs and 43 disarticulated bones from at least three animals, or 255 kg of pork from young, succulent animals. The few disarticulated horse bones scattered through the deposit probably also represent food waste and would have provided an additional 300 kg of meat, assuming the bones are all from the same animal. In addition, there are 26 disarticulated sheep bones from four animals, the majority from upper spit 63911.

Comparison with High Post

High Post lies approximately 5 km to the south of King's Gate and the excavations during 2008 revealed an extensive deposit of animal bones (1383 fragments) that shares similarities with the deposit in pit cluster 63940. The High Post deposit (2536) survived as two adjacent east–west-aligned spreads (1373 and 2602) that skirted the internal edge of a large Early Iron Age enclosure (Powell 2011, 9–11). The deposit is thought to have survived because it was sealed beneath an internal bank formed from up-cast from the digging of the ditch. Radiocarbon dating confirms that the deposit is broadly contemporary with the enclosure (Powell 2011, 9–10, table 1), but slightly later than the King's Gate deposit. It included 155 ABGs from a minimum of 32 animals (25 cattle, 5 sheep, a pig and a horse) and a quantity of disarticulated bones, and has been interpreted as a foundation/'feasting deposit' associated with the construction phase of the enclosure.

The composition of the deposits is broadly similar, albeit with some minor differences. Both are dominated by cattle bones; the relative proportion is higher for High Post where cattle accounts for 78%–92%, compared to 65%–85% for King's Gate (Fig. 5.9). Pigs and sheep are better represented in the King's Gate deposit than at High Post, although the meat contribution of these species is less than for horse. The MNI values obtained for sheep are close and this is because both deposits include a restricted range of complete or near-complete bones.

Both deposits also include cattle bones from all parts of the beef carcass, with skulls being the most common elements (Fig. 5.8). Most of the High Post skulls are intact and include at least the basal part of the horn core. The correlation between skulls and other body parts is more balanced in the High Post deposit, with the relative proportions of major bones generally in the range of 50%–80%, while in the King's Gate deposit postcranial elements are below 50%. Indeed, comparison indicates that the King's Gate deposit includes more heads and feet than the High Post deposit, which has high numbers of prime meat joints from the fore- and hindquarters.

The mortality patterns indicate that the most frequent (37%) age category of the cattle in the King's Gate deposit was young animals culled at 18–30 months (MWS D), while at High Post most (50%) were adult animals (MWS G, Fig. 5.6). However, the fusion data (Fig. 5.7) suggest that the proportion of younger (High Post) and older (King's Gate) cattle is higher than suggested by the mortality patterns based on mandibles.

At High Post, most of the cattle were males past their prime. These animals were probably kept as breeding stock, and to provide manure and traction in support of arable farming (Hambleton 1999, 87–8; Higbee 2011, 74). By contrast, the preferential selection of younger cattle at King's Gate indicates an emphasis on the provision of prime beef, most probably from males that were surplus to requirement as breeding stock. The discrepancy between the mortality profiles established from mandibles (mostly young cattle) and the epiphyseal fusion state of postcranial bones (mostly older cattle) for the King's Gate deposit requires explanation and needs to be viewed in conjunction with the body part data, which indicate that half of the beef joints, presumably from cattle in their prime, were consumed elsewhere, perhaps gifted or traded with outlying settlements.

The butchery evidence on cattle bones from both deposits (Table 5.7) is reasonably rare and this reflects the fact that cattle carcasses were not extensively exploited or broken down into small units. At King's Gate most of the evidence relates to the use of cleavers to chop through bones in order to disarticulate or reduce joints and process bones for marrow. This contrasts with the evidence from High Post, where knives were used to skin and disarticulate carcasses and fillet meat off-the-bone.

Post-medieval, modern and undated

A few cattle, sheep/goat and pig bones came from post-medieval lynchet 64058, together with the proximal end of a red deer antler. The lower tines and a longitudinal section of beam had been removed to provide raw material for object manufacture.

Modern pit 63441 contained the articulated remains of three adult sheep aged between three and four years (mandible wear stage F, after Payne 1973) and three lambs aged between one and four months (Jones 2006, 161, fig. 4). Natural mortalities amongst lambs are to be expected and disease or complications during lambing (assuming the sheep are ewes) might have resulted in the deaths of the adult animals. In addition, part of a cattle mandible came from natural sinkhole 63854 (Parcel Q) and two cattle teeth from tree throw-hole 66048 (School Site).

Discussion

The animal bones from Late Neolithic, Beaker and Bronze Age features are mostly from cattle and other livestock, but also include one bone from an aurochs. The composition of the animal bones, the age profiles and butchery are comparable with material recovered from prehistoric features in the Salisbury area including those from the immediate vicinity (Higbee, forthcoming).

The large Early Iron Age assemblage is dominated by the animal bone deposit from pit cluster 63940. The deposit, which consists of skulls, articulated limbs, articulated vertebrae and ribs, and a significant quantity of disarticulated bones, appears to represent a single episode of dumping. In the archaeological literature, deposits containing ABGs have received much attention and there has been considerable debate over their interpretation, specifically whether they represent 'special' events resulting from ritual activities, or more prosaic deposits resulting from normal rubbish disposal practices that are only unusual because they have survived undisturbed and intact (Cunliffe 1992; Grant 1984b; Hill 1995; Morris 2011).

On most Iron Age sites cattle are usually slaughtered in peripheral areas, away from domestic occupation, and the meat transported the short distance back to the settlement, either as dressed joints on-the-bone, or after further trimming and filleting to remove the bones (Maltby 1981, 152; Wilson 1996, 23). Butchery sites therefore generate waste that is typically composed of skulls and limb extremities and, depending upon whether joints were deboned or not, they will also include articulated vertebrae and limbs. If the waste is then deposited directly into open features, or immediately sealed beneath a protective layer of soil or other midden material, then it will remain in articulation if undisturbed. These types of deposits are not unusual and have been recorded from many Iron Age sites, including regional examples at Mount Farm in Oxfordshire (*ibid.*, 32), Suddern Farm in Hampshire (Poole 2000, 146, pl. 3.13), Battlesbury Hillfort near Warminster in Wiltshire (Hambleton and Maltby 2008, 91–2), and High Post (Higbee 2011, 77), a short distance to the south of King's Gate. Most of these deposits are small or moderate in size and include ABGs from just one or a few animals, as for example at Mount Farm and Battlesbury. More substantial deposits such as those from Suddern Farm and High Post are rarer but formed from the same set of actions. At Suddern Farm, one pit (197) contained 15 ABGs, mostly parts of the axial skeleton including skulls, but also some appendicular elements, and these came from at least five cattle, five horses, four sheep/goat and a pig. The excellent preservation condition of the bones indicated that the deposit had formed over a short period and probably derived from the same butchery and consumption event (Morris 2011, 55 and 174–6). The extensive animal bone deposit recorded at High Post (described above) was sealed beneath a bank and can be directly associated with a consumption event connected to the construction phase of a large enclosure.

At King's Gate, pit cluster 63940 lay some distance away from the nearest roundhouses and the small outlying settlements on the central ridge to the north-east (Powell and Barclay, forthcoming). The animal bone deposit from this feature included a significant quantity of disarticulated bones and ABGs from the axial and appendicular skeletons of at least 15 cattle, four sheep, three pigs and a horse, and together this would have provided an estimated 4830 kg of meat. This is a substantial amount of meat to process at one time, and butchery techniques are likely to have varied depending upon whether the meat was for immediate consumption or was to be preserved by drying, smoking or salting and stored for longer-term usage (Maltby 1981, 152). There is some, albeit limited, evidence that shoulders of beef were cured, as indicated by the tell-tale signs observed on a cattle scapula from pit 63468, and that some meat joints were deboned. This does not, however, appear to have been systematically undertaken as is the case at other sites, for example High Post (Higbee 2011, 75), but it is worth noting that deboning can be achieved without leaving any marks on bones (Maltby 1981, 152). In situations where large numbers of animals are slaughtered at one time and meat is plentiful, profligate practices are likely to prevail, resulting in less intensive exploitation of carcasses than at other times. Some meat joints are underrepresented in the animal bone deposit, mostly the forequarters from young cattle, and it seems likely that these were distributed more widely as dressed joints on-the-bone.

Accumulations of animal bones with the same general characteristics as the King's Gate deposit – i.e., large amounts of bone, the presence of joints still in articulation, and a predominance of certain species – are typical of the waste generated from large-scale butchery events. The quantity of meat that such events produce is likely to be substantial and more than can be consumed immediately by the local inhabitants of most Iron Age settlements. Meat can of course be preserved by various methods and stored for use over the leaner months of the year, and this undoubtedly took place at many settlements, but the scale is uncertain. Iron Age animal husbandry strategies were closely linked to arable cultivation (Cunliffe 2005, chapter 15; Hambleton 1999, 70 and 78) and the natural rhythm of the seasons, and this undoubtedly dictates when certain activities are undertaken.

Logically, the ideal time to slaughter large numbers of livestock is before the onset of winter. At this point in the annual cycle, cattle and sheep are likely to have been brought closer to settlements and turned out to graze on the stubble left after crops had been harvested. This strategy has the added benefit of directly adding manure to cultivated land. Livestock can also be checked for injuries and diseases, and an assessment made to establish the numbers of pregnant livestock and, therefore, the future potential of the herd or flock. These factors will inevitably influence decisions about which and how many animals to cull, with a view towards the coming winter and the need to reduce the herd or flock to relieve potential pressures on the availability of fodder (*ibid.*, 70). Livestock can of course be culled at any time, and large-scale butchery events can be triggered by special occasions (Hambleton and Maltby 2008, 90) or circumstances such as the completion of ditch-digging to defend a community (Higbee 2011, 70; Powell 2011, 92–4).

Feasting has long been an essential custom that promotes social, economic and political relations (Madgwick and Mulville 2015, 639). Deposits of feasting waste are difficult to define (Rowley-Conwy 2018) but are generally based on criteria such as the quantity of bones, the parts of the carcass present, the presence of joints in articulation and a predominance of animals most appropriate for feasts (Serjeantson 2011, 62–6), and depending upon the date of the deposit, the degree of processing (Madgwick and Mulville 2015, 629). There is significant evidence in the archaeological record that large-scale feasting took place throughout prehistory (see, for example, Albarella and Serjeantson 2002; Serjeantson 1991) and extensive Early Iron Age midden deposits have been identified from various sites. These include several sites in Wiltshire, such as East Chisenbury (Andrews 2021; McOmish *et al.* 2010), All Cannings Cross (Cunnington 1923), Potterne (Lawson 2000) and Stanton St Bernard (Barrett and McOmish 2009). Midden deposits have also been recorded from Llanmaes in South Wales (Madgwick and Mulville 2015). It is likely that these midden deposits represent sites of competitive feasting, where profligate resource use (so-called conspicuous consumption) was encouraged to demonstrate the prestige, status and power of individuals and clans (*ibid.*, 639). The preliminary results of isotope analysis on bones from Potterne demonstrates that livestock were brought in from beyond the local environs.

The evidence for feasting activity at King's Gate is more modest but in context it represents a relatively large-scale butchery event that generated substantial quantities of meat, more than could be consumed by those living in the immediate area, even if some was cured for longer-term storage or more widely distributed to outlying villages. Isotope analysis (see Faillace and Madgwick, below) on cattle bones from the deposit suggests that these animals derived from a single herd, probably reared locally but potentially in a chalkland coastal area. This raises the possibility that even small-scale feasting events such as this drew animals (and therefore people) from afar, perhaps, as has been suggested elsewhere, to establish ties through marriage or trade, or reaffirm existing connections by gifting livestock for a communal feast.

Other significant deposits include the one from pit 63835, in cluster 63850. Similar deposits have been recorded at Danebury (Grant 1984a), where the skeletons of ravens were found in association with dog skulls and disarticulated meat joints thought to represent feasting debris (Serjeantson and Morris 2011, 89). It has been suggested that the key factors in determining whether these deposits are deliberate in nature is their context within a pit and their degree of completeness (*ibid.*, 103). In this regard, the King's Gate example, which includes the complete skeleton of a raven from the upper fill, can be viewed as a placed deposit to close the pit.

Exploring Animal Management and Site Catchment Through Multi-Isotope Analysis

by Katie Faillace and Richard Madgwick with contributions from Morten Andersen, Marc-Alban Millet, Alexandra J. Nederbragt and Angela L. Lamb

Introduction

Cattle remains (n=11) from King's Gate, Amesbury were subject to multi-isotope analysis at Cardiff University BioArchaeology Laboratory. The cattle remains examined here are part of the large Early Iron Age assemblage from pit cluster 63940, which contains a high proportion of cattle skulls and articulated limbs. It is thought that these deposits were formed in a single episode, probably from a meat-heavy feast. The aim of this study is to examine geographical origin and animal management strategies through multi-isotope ($^{87}Sr/^{86}Sr$, $\delta^{34}S$, $\delta^{13}C$, $\delta^{15}N$) analysis of dental enamel and bone collagen. The data also provide a useful faunal baseline for exploring human diet in the area. Specifically, geographical investigation will be targeted to examine whether the supposed feasting deposits were from a single local herd or multiple regional herds brought to the site for a specific event.

For exploring geographic origins, isotope ratios of strontium and sulfur were used. Oxygen was excluded due to the effects of seasonality on values. Variation in strontium ($^{87}Sr/^{86}Sr$) ratios reflect the underlying bedrock from where the food was sourced, with older lithologies providing more radiogenic values (Evans *et al.* 2022). As strontium is analysed in dental enamel, it represents a snapshot of location at the time the enamel was formed. In an attempt to take samples from consistent developmental periods, M2s were sampled close to the root–enamel junction (REJ), which forms around 12 to 13 months of age, and M3s were sampled as close to the occlusal surface as possible, which forms around 9 to 10 months. These samples should therefore indicate origins around the end of the first year of life (Brown *et al.* 1960), though limited understanding of incorporation and mineralisation means it is difficult to be precise on the timing of the isotope values. Sulfur ($\delta^{34}S$) values have generally been considered to reflect coastal proximity, with individuals residing less than 50 kilometres from the coast typically having sulfur isotope values of >14‰ (Nehlich 2015). However, this is not straightforward and sheltered coasts can produce lower sulfur values (Hemer *et al.* 2017). There is also a growing body of evidence that wetland environments produce low and negative values (Guiry *et al.* 2022; Stevens *et al.* 2023). In addition, there is some evidence that chalklands such as those surrounding the site may produce higher (coastal-like) values due to being marine carbonates (Hamilton *et al.* 2019), though evidence for this remains mixed (Madgwick *et al.* 2023). While sulfur isotope mapping is improving, resolution is still not optimal, but the proxy provides a useful additional discriminant as part of a multi-isotope strategy (Madgwick *et al.* 2019a, 2019b). Sulfur isotopes are analysed from bone or dentine collagen, and represent an average based on remodelling rates of the sampled element. In these relatively short-lived cattle, it is likely that the values from the crania will represent an average for the life course of the animals.

Table 5.8 Isotope sample information

Sample ID	*Context ID*	*Assoc. bone group*	*Grid*	*Side*	*Tooth*
KG01	63911	63937	C1	L	M2
KG02	63911	63941	C1	L	M2
KG03	63911	63942	C1	L	M2
KG04	63911	63943	C1	L	M2
KG05	63911	63944	C1	L	M2
KG06	63911	-	-	L	M2
KG07	63911	-	B2	L	M3
KG08	63911	-	C3	L	M3
KG09	63912	63926	D4	R	M3
KG10	63964	63935	C2	R	M2
KG11	63964	63966	C1	R	M2

Collagen was also analysed to investigate diet and husbandry regimes. Carbon ($\delta^{13}C$) values are influenced by landscape carbon baselines, the consumption of plants with different photosynthetic pathways, and the consumption of marine (e.g., sea-spray) affected plants. Nitrogen ($\delta^{15}N$) values

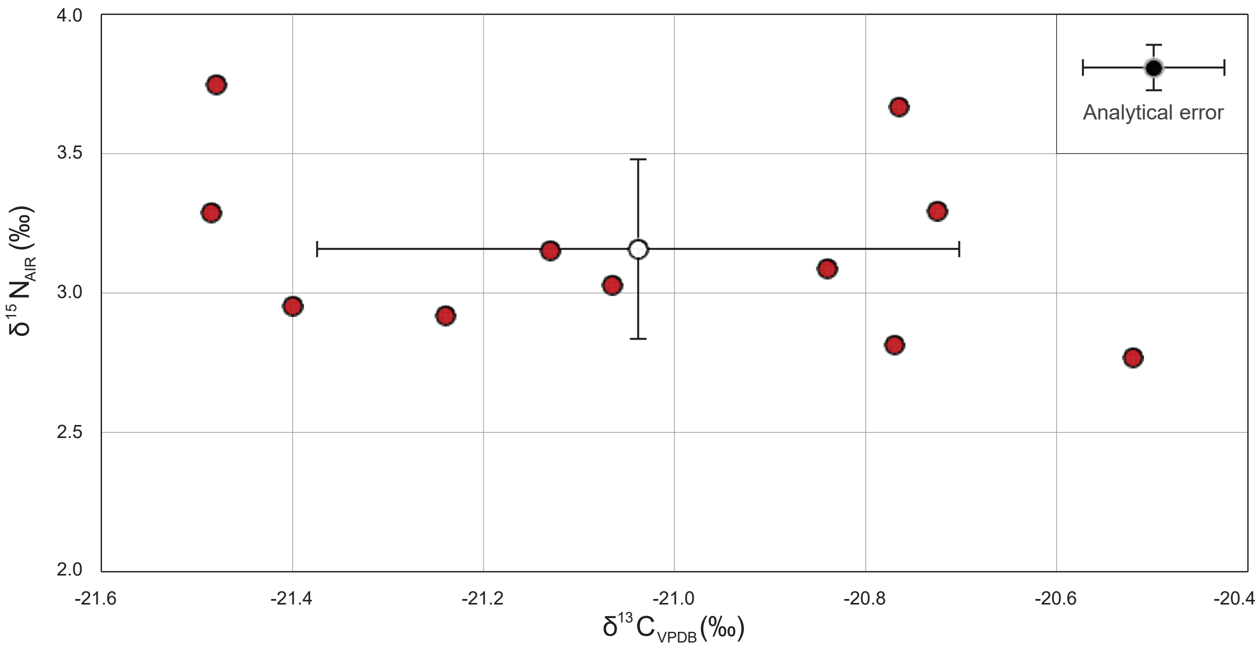

Figure 5.10 $\delta^{13}C$ and $\delta^{15}N$ results for King's Gate cattle, with the mean value for the sample represented by the hollow point (error bars = 1SD)

indicate the trophic level at which an individual feeds, with the lowest values in animals being characteristic of herbivores. Nitrogen isotope values can also be enriched through animals being managed on manured landscapes (Fraser *et al.* 2011). These dietary isotope systems are vital in providing a backdrop for the interpretation of the provenancing isotope data, as diet can influence all other proxies, especially if there is evidence of the consumption of marine-affected plants. These summaries represent a simplification of the complex range of variables that impact isotope values but provide an overview of some of the principal processes driving variation.

Table 5.9 $\delta^{13}C$ and $\delta^{15}N$ results, representing the mean of duplicate analyses (except KG03 which could only be analysed once)

Sample ID	*δ13C*	*δ15N*	*%C*	*%N*	*C:N*
KG01	-21.1	3.2	44.7	15.5	3.4
KG02	-21.5	3.3	45.0	15.5	3.4
KG03	-20.8	3.1	46.6	16.2	3.4
KG04	-20.7	3.3	36.9	13.3	3.2
KG05	-20.8	3.7	39.8	14.3	3.2
KG06	-20.8	2.8	43.1	15.4	3.3
KG07	-21.5	3.8	43.1	15.5	3.3
KG08	-21.2	2.9	44.3	16.0	3.2
KG09	-21.4	3.0	44.4	15.9	3.3
KG10	-20.5	2.8	43.4	15.6	3.2
KG11	-21.1	3.0	41.6	14.7	3.3

Methods

Collagen and enamel were extracted from 11 domestic cattle (*Bos taurus*) (Table 5.8), recovered from King's Gate. Specimens were selected by Wessex Archaeology and transported to Cardiff University, where the destructive sampling took place. Enamel was selected from M2s or M3s; collagen was extracted from the zygomatics of the same individuals and the same side as the tooth.

Enamel ($^{87}Sr/^{86}Sr$)

Enamel was extracted at the root–enamel junction (REJ) from left second molars, preferentially, for strontium ($^{87}Sr/^{86}Sr$) isotope analysis, although third molars and right-sided teeth were substituted as required. The lingual surface of the enamel was first abraded using a diamond-coated burr. Then, a slice of enamel was extracted using a precision dental drill and all dentine abraded away.

Enamel was cleaned in an ultrasonic bath, rinsed and dried. A clean enamel fragment weighing approximately 30 mg was stored in a microcentrifuge tube and transferred to a clean working area (class 100, laminar flow) for further sample preparation and $^{87}Sr/^{86}Sr$ isotope analysis at Cardiff Earth Laboratory for Trace Element and Isotope Chemistry (CELTIC). Samples were digested in 8M HNO3 and heated overnight at 120°C. Strontium extraction from enamel samples used Sr.Spec™ resin using a revised version of the protocol of Font *et al.* (2007). Samples were loaded into resin columns in 1ml 8M HNO3. Matrix elements (including Ca and traces of Rb) were then eluted in several washes of 8M HNO3 and the samples placed on a hotplate (120°C) overnight.

Table 5.10 $\delta^{34}S$ and $^{87}Sr/^{86}Sr$ results ($\delta^{34}S$ 1SD shows the 1SD of the replicate analyses)

Sample ID	δ34S	%S	%C	%N	N:S	C:S	$\delta^{34}S$ 1SD	$^{87}Sr/^{86}Sr$	2SE $^{87}Sr/^{86}Sr$
KG01	14.2	0.19	44.7	15.5	186	627	0.2	0.7083	0.00000996
KG02	14.8	0.21	45.0	15.5	169	571	0.3	0.7086	0.0000122
KG03	15.1	0.22	46.6	16.2	168	565	0.2	0.7081	0.00000764
KG04	14.0	0.17	36.9	13.3	179	579	<0.1	0.7081	0.00000668
KG05	14.0	0.20	39.8	14.3	163	531	0.3	0.7090	0.0000137
KG06	15.8	0.18	43.1	15.4	196	639	0.6	0.7080	0.00001312
KG07	13.1	0.18	43.1	15.5	197	639	0.1	0.7083	0.00000658
KG08	14.6	0.18	44.3	16.0	203	656	0.2	0.7081	0.00001178
KG09	14.0	0.21	44.4	15.9	173	564	0.1	0.7081	0.0000094
KG10	14.8	0.15	43.4	15.6	238	772	0.1	0.7080	0.00000774
KG11	14.3	0.19	41.6	14.7	177	584	0.1	0.7083	0.00000622

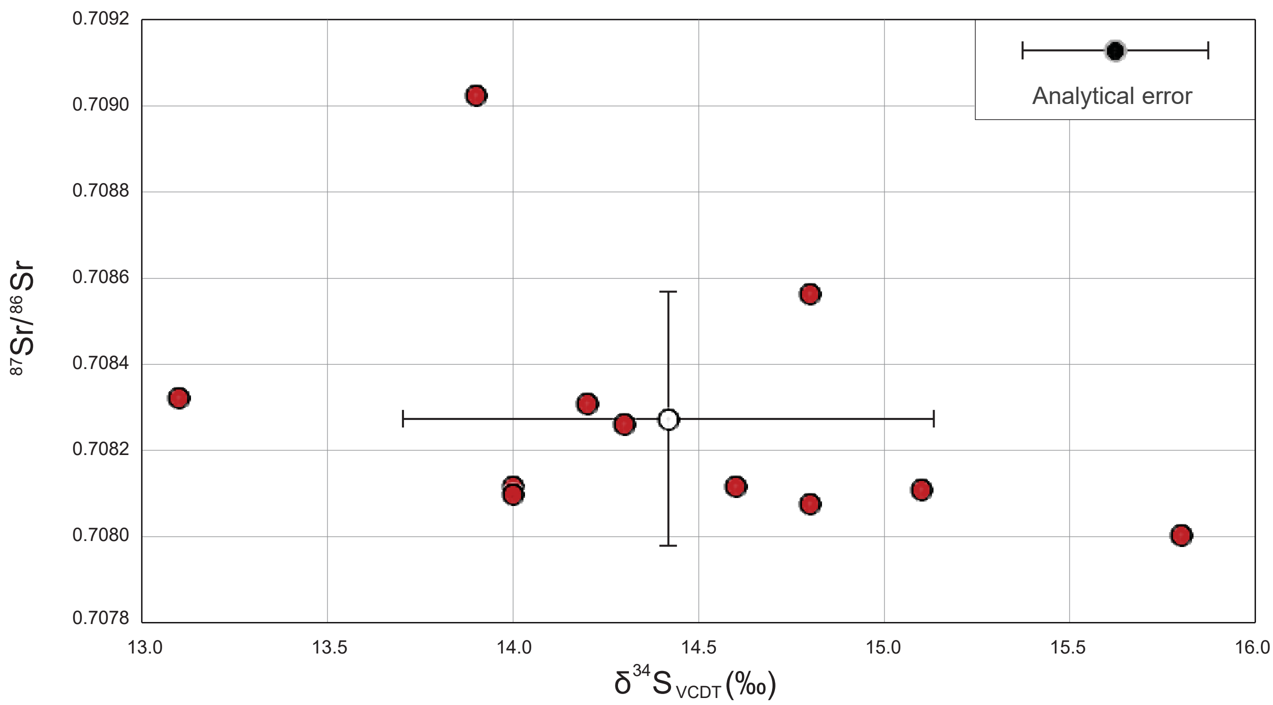

Figure 5.11 $\delta^{34}S$ results of King's Gate presented against $^{87}Sr/^{86}Sr$, with the mean value for the sample represented by the hollow point with one standard deviation error bars

This process was then repeated for a second pass to remove all remaining Ca. Once the purified samples were dry, they were re-dissolved in 2% HNO3. Strontium isotope ratios were measured using a Nu Instruments Multi-Collector Inductively Coupled Plasma mass spectrometer (MC-ICP-MS) at Cardiff University. All data were first corrected for on-peak blank intensities, then mass bias corrected using exponential law and a normalisation ratio of 8.375209 for $^{88}Sr/^{86}Sr$ (Nier 1938). Residual krypton (Kr) and rubidium (87Rb) interferences were monitored and corrected for using ^{82}Kr and ^{83}Kr ($^{83}Kr/^{84}Kr = 0.20175$ and $^{83}Kr/^{86}Kr = 0.66474$; without normalisation) and ^{85}Rb ($^{85}Rb/^{87}Rb = 2.5926$), respectively. Analysis of NIST SRM 987 during the analytical session gave a $^{87}Sr/^{86}Sr$ value of 0.710292 ± 0.000007 (2σ n=11) and all data is corrected at NIST SRM 987 values of 0.710248 (Avanzinelli *et al.* 2005). Total procedural blanks are typically less than 20pg of Sr, which is negligible relative to the amount of Sr contained in each sample. Accuracy of the method was assessed by measurement of $^{87}Sr/^{86}Sr$ in NIST SRM 1400 (bone

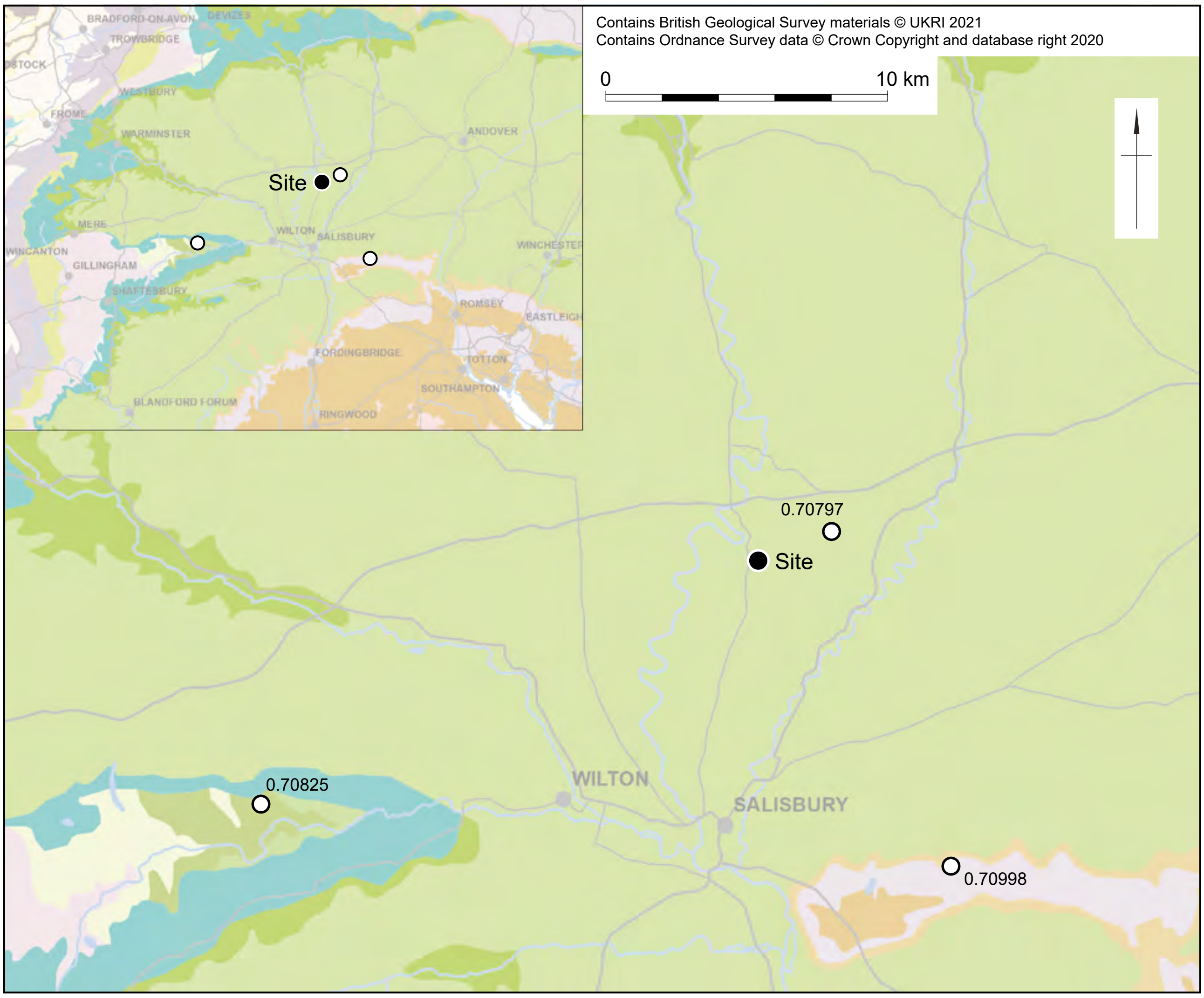

Figure 5.12 Map showing locations of plant samples analysed for $^{87}Sr/^{86}Sr$, marked by their ratios. For lithologies of sample locations, see Table 5.11

ash), giving a $^{87}Sr/^{86}Sr$ value of 0.713129±0.000019, which is consistent with 0.713126±0.000017, as published for this material (Romaniello *et al.* 2015).

Collagen ($\delta^{13}C$, $\delta^{15}N$, $\delta^{34}S$)

Collagen was extracted from zygomatic bones for carbon ($\delta^{13}C$), nitrogen ($\delta^{15}N$), and sulfur ($\delta^{34}S$) isotope analysis. Collagen extraction was undertaken following a modified Longin (1971) method (Brown *et al.* 1988). The surface of the bone was gently abraded with a tungsten burr to remove adhering contaminants and the outer approximate 5–10 μm, then samples weighing between 0.5 and 1.0 gram were extracted using a diamond wheel. The samples were demineralised in 0.5M HCl until soft, then washed with de-ionised water and gelatinised in pH3 H2O on a hot block at 70°C. After 48 hours, the samples were removed from the hot block, filtered using Ezee™ filters, transferred to polypropylene test tubes and frozen overnight. Samples were then lyophilised, leaving dry gelatinised collagen. Collagen samples were measured for $\delta^{13}C$ and $\delta^{15}N$ isotope analysis in duplicate to a weight of 0.9+/-0.2 mg. Samples were measured for $\delta^{34}S$ analysis in duplicate to a weight of 2.25+/-0.25 mg. Carbon and nitrogen isotope analysis was undertaken using continuous flow mass spectrometry at Cardiff University Stable Isotope Facility using a Flash 1105 elemental analyser coupled to a ThermoFinigan Delta V Advantage. Analytical error (one standard deviation) of the supermarket gelatine standard was 0.074 and 0.082 for $\delta^{15}N$ and $\delta^{13}C$, respectively. Extracted collagen had C:N atomic ratios between 3.2 and 3.4, well within the range (2.9 to 3.6) considered indicative of good collagen preservation (DeNiro 1985). Isotope ratios of sulfur were measured by CF-EA-IRMS at the NERC Isotope Geosciences Laboratory, Keyworth, Nottinghamshire. The instrumentation consists of an elemental analyser (Flash/EA) coupled to a ThermoFinnigan Delta Plus XL isotope ratio mass spectrometer via a ConFlo III interface. Analytical error (one standard deviation) of the M1360p

Table 5.11 $^{87}Sr/^{86}Sr$ results of the plant samples taken from the surrounding area

Sample	*$^{87}Sr/^{86}Sr$*	*Description*
A	0.70998	London Clay
B	0.70797	Seaford Chalk
G	0.70825	Bordering Durlston Sandstone and Gault

gelatine standards was 0.3. The N:S and C:S ratios were also within quality control criteria (Nehlich and Richards 2009).

Results

Carbon and nitrogen

The mean $\delta^{13}C$ value is -21.0‰, with a median of -21.1‰ (Table 5.9, Fig. 5.10). The range is -21.5‰ to -20.5‰ and the standard deviation is 0.3. All values are within two standard deviations of the mean and there are no outliers. The average $\delta^{15}N$ value is 3.2‰, with a median of 3.1‰ (Table 5.9, Fig. 5.10). The range is 2.8‰ to 3.8‰ and the standard deviation is 0.3. All values are within two standard deviations of the mean and there are no marked outliers.

Sulfur and strontium

The mean $\delta^{34}S$ value is 14.4‰, with a median of 14.3‰ (Table 5.10, Fig. 5.11). The range is 13.1‰ to 15.8‰ and the standard deviation is 0.7‰. All values are within two standard deviations of the mean and there are no marked outliers. The average $^{87}Sr/^{86}Sr$ is 0.7082, with a median of 0.7081 (Table 5.10, Fig. 5.12). The range is 0.7080 to 0.7090, and standard deviation is 0.0003.

Discussion

Management: carbon and nitrogen

As expected from cattle, carbon and nitrogen isotope values are consistent with terrestrial herbivorous diets. A $\delta^{13}C$ value of -20.0‰ is typically considered the boundary for a completely terrestrial diet in a C_3 ecosystem such as Britain (Richards *et al.* 2006), and all values from this sample fall below that boundary. The nitrogen isotope values are very low (<4‰), providing clear evidence that the animals were not habitually grazed on manured land. Low values such as this are common in animals raised on chalkland, which tend to be ^{15}N depleted. This is consistent with the underlying geology of the site and suggests that the animals may have been raised locally. The very limited range in both carbon and nitrogen isotope data also suggests that the animals were all raised in the same location and that the landscape provided limited carbon and nitrogen isotope variation. This is again consistent with the local chalkland.

Origins: sulfur and strontium

Sulfur isotope values lower than 14‰ are typically considered consistent with origins in an inland location (Nehlich 2015), but values between 8‰ and 14‰ are undiagnostic and more difficult to interpret in terms of coastal proximity (see Zazzo *et al.* 2011). Sulfur isotope values are far more diverse in the biosphere and can range from approximately -20‰ to +20‰ (Nehlich 2015). Therefore, the limited range in the sample aligns with the carbon and nitrogen isotopes and is suggestive of a single origin for the animals. However, the values are higher than would conventionally be expected for an inland chalk environment such as around King's Gate and suggest that the animals were reared in a location within approximately 50 kilometres of the coast. Sulfur mapping remains in its infancy and the resolution for the British biosphere is poor. Evans *et al.* (2018a) suggest values between 5.2‰ and 6.3‰ would be expected for animals raised on the Wiltshire chalkland. This is an estimation based on limited analyses of plants from British chalk lithologies and cannot be considered precise, but it is distant from the range in the dataset (13.1–15.8‰) and suggests that these animals are not locally raised. However, research on fauna from Iron Age chalkland sites in Hampshire and Wiltshire suggests that local ranges may be higher (>13‰) than the current biosphere map suggests (Madgwick *et al.* 2023; and modern plants may not be the best proxy for past biospheres), in which case the values observed from the King's Gate cattle would be considered consistent with the local environment.

Strontium isotope analysis is arguably the most informative proxy for exploring origins. It is first necessary to characterise the local range in bioavailable strontium. The site of King's Gate is situated on the Seaford Chalk Formation (chalk with superficial deposits of clay, silt, sand and gravel), with expected $^{87}Sr/^{86}Sr$ values of 0.7079 to 0.7086 (Evans *et al.* 2018a). Chalk is one of the best understood lithologies in terms of strontium biosphere values, but it remains prudent to characterise the local biosphere using primary analysis of plants (Table 5.11, Fig. 5.12). Though King's Gate itself is on Seaford Chalk (B), the wider landscape is more variable, with nearby regions of London Clay (A), Durlston Sandstone and Gault (G). As with the other isotope proxies, the cattle strontium dataset shows very little variation. Ten of the eleven samples have values between 0.7080 and 0.7086, all of which are consistent with being raised on cretaceous chalkland. This is consistent with a local origin, but substantial areas of chalk are present across southern and eastern England and therefore provide alternative areas of provenance.

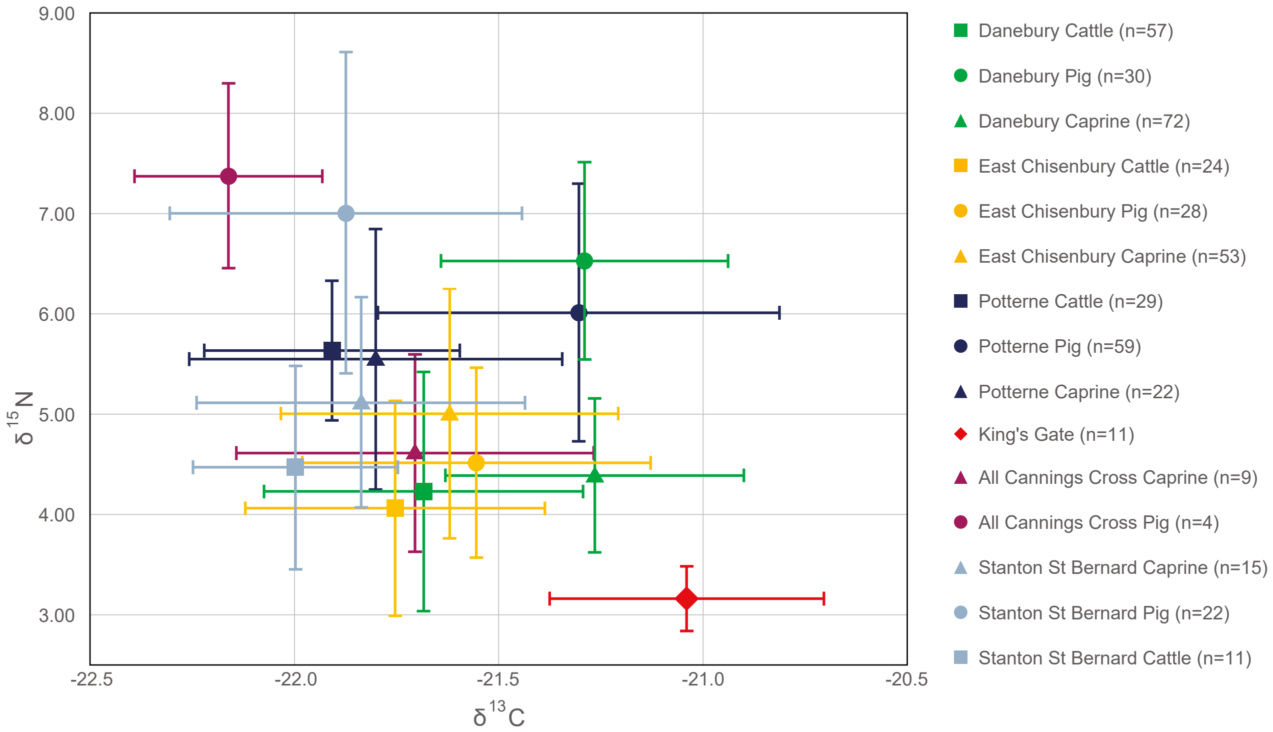

Figure 5.13 $\delta^{13}C$ and $\delta^{15}N$ data at King's Gate compared to Danebury, East Chisenbury, Stanton St Bernard, All Cannings Cross and Potterne, separated by site and taxon with one standard deviation error bars (Hamilton et al. 2019; Stevens et al. 2010; 2013; Madgwick et al. 2012; 2023)

One animal had a slightly elevated value of 0.7090. This indicates an origin on an older lithology, but the value is undiagnostic. A wide range of landscapes across the British Isles produce values such as this (see Evans *et al.* 2018a), leading Montgomery *et al.* (2014) to describe it as 'the strontium of doom'. Although mapping resolution in Britain requires improvement, most lithological zones that surround the Wessex chalkland would be expected to produce ratios such as this. Therefore, there is no reason to interpret this animal as having been brought over a substantial distance and areas such as the Greensand of the Vale of Pewsey provide plausible areas of origin. The analysis of plant samples locally shows that markedly higher values (up to 0.7100) can be found in the local biosphere. The more radiogenic plant came from east of King's Gate, on a London Clay lithology. The lower value of 0.7090 in the animal could result from a mixed grazing pattern on pasturage overlying this lithology and the Chalk. However, this is one of several potential scenarios and equifinality remains a hindrance to confident interpretation of undiagnostic values such as this.

The multi-isotope approach employed in this study has the advantage of providing supporting data for more confident interpretation and multiple proxies to disentangle issues of equifinality. The strontium and sulfur isotope systems work at different timescales: sulfur isotope analysis of bone collagen is likely to provide an averaged signal for most of the animals' lives due to bone consistently remodelling; strontium isotope analysis of dental enamel provides a more time-limited snapshot for early-life origins during the development and mineralisation of the sampled enamel. While this must be borne in mind in interpretation, it is much less problematic in animals than humans, as they have shorter lives and (generally) reduced diversity of lifetime mobility.

Both isotope proxies are strongly suggestive of most animals coming from the same location. Although the one animal with a higher strontium isotope ratio must have grazed off the Chalk, there is no evidence that it came from far away, as ratios such as this can be attained locally. This is by no means certain but is the most prudent interpretation of the data. The strontium isotope data is consistent with a Wiltshire origin for all the animals. However, the sulfur isotope data casts doubt on this assertion and suggests an origin nearer to the coast. This is supported by the relatively high carbon values compared to contemporaneous inland sites (see below). The closest chalkland coastal area is a small lithological zone in Dorset, around Dorchester. However, more substantial zones are present in Sussex and Kent and further afield in Norfolk and around the Humber. These cannot be isotopically differentiated using these proxies at present, but an origin in Dorset seems more likely given its proximity. However, sulfur mapping remains at a relatively low resolution in Britain and it may be that the Wessex chalkland can produce higher values than has currently been evidenced through biosphere mapping. Archaeological values from the Danebury Environs and from Wiltshire chalkland middens suggest that this could be the case and the potential for the animals to all be local cannot be excluded (Hamilton *et al.* 2019; Madgwick *et al.* 2023).

Comparisons

Isotope data for $\delta^{13}C$ and $\delta^{15}N$ are presented for comparable sites to King's Gate, being broadly contemporaneous and in relatively close proximity: Potterne, East Chisenbury, All Cannings Cross, Stanton St Bernard and Danebury. Potterne is a midden site in the Vale of Pewsey, Wiltshire, of monumental proportion; the site appears to have formed rapidly during the Late Bronze Age/Early Iron Age and is dominated by caprines, pigs and cattle (in order of % NISP) (Madgwick *et al.* 2012a). East Chisenbury, also in the Vale of Pewsey, is another midden site dating to the Late Bronze Age/Early Iron Age, dominated by caprines, cattle and pigs (in order of % NISP) (Andrews 2021; Serjeantson *et al.* 2010). Stanton St Bernard and All Cannings Cross are also contemporaneous middens on the Wiltshire chalkland (Madgwick *et al.* 2023). Danebury had a longer occupation than the other two sites and was a focal point in Hampshire hillforts throughout the Iron Age. Faunal remains from Danebury also include caprines, cattle and pigs, in varying percentages in different phases (Stevens *et al.* 2013). Unfortunately, the only strontium data comparable to King's Gate are from Potterne and the only comparable sulfur data from the Iron Age are from Danebury (Hamilton *et al.* 2019), but comparisons are briefly made to Neolithic West Amesbury Farm (Worley *et al.* 2019) and Durrington Walls (Madgwick *et al.* 2019a).

When compared to other sites, the King's Gate dietary isotopes are distinct, particularly the nitrogen isotope values (Fig. 5.13). The low nitrogen isotope values from the King's Gate cattle suggest that they were not grazed on a manured landscape. Although sulfur isotope values are high, which could suggest a coastal origin, the animals do not appear to have been grazed on salt marsh, as this produces elevated nitrogen isotope values, as has been evidenced at Bronze Age/Iron Age Brean Down, Somerset (Britton *et al.* 2008). The low nitrogen isotope values compared to other chalkland sites hint that these animals may have been raised in an area with a different landscape nitrogen baseline than Wessex, providing further evidence that they may be from elsewhere. Low nitrogen isotope values have commonly been found in herbivores raised on chalk, with fallow deer from Sparsholt Roman Villa, Hampshire, all having values of 2–3‰ (Sykes *et al.* 2016). However, they were also characterised by very low carbon isotope values (<-22.3‰) and are therefore not consistent with the King's Gate fauna. Cattle from the Iron Age chalkland sites of Segsbury and Alfred's Castle on the Oxford Ridgeway provide comparable mean carbon and nitrogen isotope values, suggesting other chalklands may provide consistent landscape baselines, though values are more variable – Segsbury: $\delta^{15}N$ 3.1‰, $\delta^{13}C$ -21.3‰, n=3; Alfred's Castle: $\delta^{15}N$ 4.4‰, $\delta^{13}C$ -21.4‰, n=24 (Schulting *et al.* 2019).

The very low variation in nitrogen isotope values compared to the other sites provides additional support for the assertion that these animals were raised in a single location. The slightly higher carbon isotope values of the King's Gate sample compared to the other Wiltshire sites could be influenced by the potential coastal origin of the King's Gate cattle, as pastureland near the coast can have higher baseline carbon values as a result of ocean-affected rainfall. However, carbon and nitrogen isotopes are weak provenancing proxies. The homogeneity of values and the low nitrogen suggests a common management regime in the same landscape, one that remained largely unmanured.

The sulfur isotope data from Danebury is much more varied compared to the values from King's Gate. The combined cattle and caprine sample (n=33) has a sulfur range of 3.2‰ to 18.6‰, although most (n=30) are within the range of 11.3‰ to 18.6‰. In contrast, King's Gate values (n=11) range from 13.1‰ to 15.8‰. This again supports the conclusion that the King's Gate cattle were raised in the same region, whereas those at Danebury had more diverse origins. The same is true for the aforementioned Wiltshire midden sites (Esposito *et al.* 2025). As discussed above, the relatively high sulfur isotope values (most above 14‰) suggest a coastal environment, but the high values in later prehistoric Hampshire and Wiltshire chalk sites raise the possibility of a local origin (Hamilton *et al.* 2019; Madgwick *et al.* 2023). The higher mean at Danebury suggests coastally raised animals were also common at the hillfort. Sulfur isotope values from cattle and pigs from Neolithic West Amesbury Farm (n=8) also produced higher values than would be expected based on Evans *et al.* (2018a), from 10.9‰ to 13.2‰, while producing strontium isotope values consistent with local origin (Worley *et al.* 2019). However, these only just overlap with the lowest values from King's Gate and the values are thus still suggestive of coastal origins. The diversity in sulfur values from Wiltshire highlights the issue of the poor resolution of sulfur mapping in the UK, as none of the reported sites have animals that fall within the local range defined by Evans *et al.* (2018a) for the Wessex chalkland. High sulfur values have also been found in pigs from nearby Neolithic Durrington Walls, though many of these are likely to be raised away from Wessex, based on other isotope proxies

(Madgwick *et al.* 2019a), but primary sulfur mapping for this area remains very sparse. It is rare that sulfur analysis for the purposes of mapping is incorporated in single site isotope projects, and this represents a profitable future avenue for research (see Madgwick *et al.* 2019b), though the efficacy of using modern plants is questionable (see Lamb *et al.* 2023).

Comparative strontium isotope data from Potterne is drawn from six pig samples and is much more varied than the data from the King's Gate cattle, ranging from 0.7079 to 0.7126 (Madgwick *et al.* 2012b). This suggests that the pigs at Potterne were brought to the site from multiple regions, whereas the cattle at King's Gate seem to come from the same region, or at least the same lithology. A larger dataset for pigs from nearby Late Neolithic Durrington Walls, though not contemporaneous, provides a far wider range of 0.7080 to 0.7172 (Madgwick *et al.* 2019a), similar to cattle from that site (Evans *et al.* 2019), again emphasising that the King's Gate animals appear to derive from a single chalkland origin (with possible grazing on nearby carboniferous lithologies). A larger study on the Bronze Age–Early Iron Age middens from Wiltshire also showed markedly more diversity in strontium isotope ratios than was present at King's Gate (Esposito *et al.* 2025). Fauna from broadly contemporaneous chalkland sites from the Oxford Ridgeway, Alfred's Castle and Segsbury, had limited variability similar to King's Gate (0.7078–0.7093, n=23), but nearby Vale sites (Watchfield and Marcham) were more variable (0.7081–0.7122, n=30) (Schulting *et al.* 2019). The range at King's Gate (0.7080–0.7090) is consistent with the immediate locality of the site and other areas in southeast England (Evans *et al.* 2018a). The Middle Neolithic site of West Amesbury Farm produced a very similar strontium range to King's Gate (Worley *et al.* 2019). Strontium isotopes alone would suggest local fauna at both sites, but the high sulfur makes this questionable, although certainly still plausible.

Conclusions

Considering the narrow ranges for each of the isotope systems examined, it is probable that the King's Gate cattle were sourced from the same region, possibly even the same population. When the range of strontium and sulfur isotopes values are compared to the British Geographical Survey Biosphere Isotope Domains map (Evans *et al.* 2018a), three broad areas are identified as potential regions of origin, including southern coastal England, the east coast of the English Midlands, and western coastal Scotland. However, the isotope mapping data for sulfur remain limited and it is sulfur isotope data that exclude the possibility of a local origin, based on the mapping. Given the common occurrence of high values at other Wessex chalkland sites (Hamilton *et al.* 2019; Madgwick 2019a; Madgwick *et al.* 2023) and the homogeneity of values, it is probable that the animals were locally raised, but a coastal origin in the southern chalklands is an alternative possibility. Only improved mapping will clarify this. Returning to the aims of the report, the multi-isotope analysis cannot exclude the possibility that the cattle were reared in the immediate vicinity of the site. As the cattle data are consistent with a single origin, and on the basis of the zooarchaeological analysis, the results suggest a single herd, whether local or not, was slaughtered and feasted upon over a short period.

Feasting was clearly an important practice in Early Iron Age southern England and the evidence for this is strongest in Wiltshire. Major middens such as East Chisenbury and Potterne, as well as smaller middens including All Cannings Cross and Stanton St Bernard (Simms 2019), all show evidence of feasting. Preliminary isotope analysis at Potterne also demonstrates that animals were brought in from well beyond the local environs. While King's Gate is not directly comparable on the basis of size and longevity, it does provide insights into smaller-scale feasting events that potentially drew animals (and therefore people) from afar. In the context of feasting sites in Wiltshire, King's Gate has a very local signature, setting it apart from various other sites. Refining the origins of animals is complex, and improved sulfur mapping should enhance the resolution with which these data can be interpreted in the future. Other isotope proxies such as lead may also prove useful (Evans *et al.* 2018b, 2022).

Chapter 6
Environmental Evidence and Radiocarbon Dating

Charred Plant Remains

by Inés López-Dóriga

Introduction

Approximately 200 samples were taken during the various phases of the King's Gate project, including bulk sediment flotation samples, charcoal samples and wet-sieving samples from graves and flint scatters. This report focuses on the samples from prehistoric deposits (Beaker to Iron Age), but also considers the results from some earlier excavations at Amesbury Down (Wyles *et al.*, forthcoming).

Materials and Methods

The flotation samples were taken from a range of features, including pits, postholes and cremation burials, and were processed for the recovery and assessment of environmental evidence, primarily charred plant remains and charcoal. The volume of these samples varied between 0.5 and 60 litres and processing was carried out following two techniques.

Processing consisted of initial wet-sieving on a 0.5 mm mesh and subsequent bucket flotation, with the flots retained on a 0.5 mm mesh. The bulk samples were processed by standard flotation methods in a Siraf-type flotation tank with the flot retained on a 0.25 mm mesh. Dried residues were fractionated into 5.6/4 mm and 1 mm fractions. The coarse fractions (>5.6/4 mm) were sorted by eye, weighed and discarded. The fine (<5.6/4 mm) residue fractions of the samples selected for analysis were sorted under the microscope.

Environmental material extracted from the residues was added to the flots. All identifiable charred plant remains were extracted from the flot and fine residue fractions examined using stereo incident light microscopy at magnifications of up to x40. Identifications follow the nomenclature of Stace (1997) for wild plants, and traditional nomenclature as provided by Zohary *et al.* (2012) for cereals, and were made with reference to specialised atlases and modern reference collections where appropriate. For the assessment, preliminary identifications of dominant or important taxa were noted with their abundance qualitatively quantified (A*** = exceptional, A** = 100+, A* = 99–30, A = >10, B = 9–5, C = <5).

On the basis of the assessment results, a selection of samples for further analysis was made, focusing on well-preserved assemblages of charred plant macroremains and early deposits. Quantifications are given as MNI (minimum number of individuals) and are based on whole items or the highest type of anatomical fragments (cereals, based on Antolín and Buxó 2011; legume cotyledons divided by two, or size; and hazelnut pericarp fragments, based on Antolín and Jacomet 2015). Remains of possible charred food were described following the methodology of González Carretero *et al.* (2017). The analysis data have been exported into the software ArboDat (Kreuz and Schäfer 2002) for the purpose of data sharing.

A fragmentation index has been calculated by dividing the number of remains (NR) by the minimum number of individuals (MNI). The density of remains in a sample has been calculated by dividing the MNI by the volume of the processed sample (I).

Results

While most of the samples were not rich in charred remains, some of those from Beaker and Bronze Age features contained reasonable quantities of cereals, particularly in comparison to what is usually encountered for the period (see Tables 6.1–6.3). In contrast, most of the Iron Age samples are generally poor in charred plant remains. The types of charred plant remains retrieved include seeds of a variety of wild and domestic plants (notably cereals), tubers and fruit/nut remains.

Where identified, remains of hulled wheat (*Triticum dicoccum/spelta*) and barley (*Hordeum vulgare*) were recorded. The hulled wheat species was mostly *T. dicoccum*, emmer (there is only one example of possible spelt, *T. spelta*, tentatively identified from Late Bronze Age pit 66027), and both hulled and naked barley were also present: *Hordeum vulgare* var. *nudum* was tentatively identified from Beaker pit 60780 at the assessment stage, with hulled two-rowed barley (*Hordeum vulgare* var. *vulgare*) from Late Bronze Age pit 66027. Free-threshing wheat (*Triticum aestivum/turgidum*) was sometimes present but assumed to be intrusive because of its preservation condition (preserving epidermis) and

Table 6.1 Charred plant remains from Beaker pits

		Pit	*63550*	*63544*	*63619*	*63619*
63963	63912	Context	63551	63552	63620	63621
		Sample	11398	11393	11394	11395
64033	63911	Size (l)	20	34	3	26
	63964	Flot size (ml)	50	75	15	60
		Fragmentation index (MNI/NR)	0.07	0.2	0.08	0.07
		Density (MNI/l)	0.47	1.15	1.19	0.61
Nut	*Corylus avellana*	Hazelnut whole shell	5	3	2	5
Cereals	*Hordeum vulgare*	Barley grain	2	22	2	9
	Triticum sp.	Wheat grain	3	12	-	1
	Triticum sp.	Wheat glume base	-	1	-	-
	Triticeae	Cereal grain/grain fragment	28	82	14	113
	Triticeae	Cereal detached embryo	1	-	-	-
Wild plants	Vicieae	Vetch/grass pea seed	-	1	-	-
	NR		144	192	45	223
	MNI		9	39	4	16

Table 6.2 Charred plant remains from Early Bronze Age pits

		Group			*63213*				*63270*		
		Pit	*63027*	*63061*	*63180*	*63180*	*63185*	*63257*	*63255*	*63259*	*63257*
		Context	63028/ 63029	63062	63182	63182	63186	63258	63256	63260	63258
		Sample	11222	11301	11305	11306	11308	11354	11353	11355	11356
		Size (l)	10	9	8	9	9	40	50	31	36
		Flot size (ml)	200	30	35	35	20	125	300	120	125
		Fragmentation index (MNI/NR)	1	0.06	0.09	0.07	0.13	0.08	0.05	0.14	0.09
		Density (MNI/l)	0.2	0.5	0.25	0.75	0.17	0.09	0.13	0.04	0.09
Nut	*Corylus avellana*	Hazelnut whole shell	-	4	1	4	1	1	6	1	1
Cereals	*Hordeum vulgare*	Barley grain	1	-	-	-	-	1	1	-	2
	Triticum sp.	Wheat grain	-	-	-	-	-	-	-	-	1
	Triticeae	Cereal grain fragment	-	-	2	-	-	27	13	5	18
	Triticeae	Cereal grain	-	1	1	3	1	-	-	-	-
Wild plants	Polygonaceae	Dock/knotgrass family seed	-	-	-	-	-	1	-	-	-
	Vicieae	Vetch/grass pea seed	1	-	-	-	-	-	-	1	-
	Arrhenatherum elatius var. bulbosum	False oat-grass or onion-couch bulb	-	-	-	-	-	1	-	-	-
Other	Indeterminate	fragment	-	-	-	-	-	1	-	-	4
	NR		2	81	22	92	12	43	121	8	38
	MNI		2	5	2	7	2	3	6	1	3

Table 6.3 Charred plant remains from Late Bronze Age and Early Iron Age pits

			Late Bronze Age			Early Iron Age
		Pit		66027		63645
		Context	66059	66043	66052	63648
		Sample	12071	12070	12013	11397
		Size (l)	39	5	60	38
		Flot size (ml)	60	60	175	100
		Fragmentation index (MNI/NR)	0.92	0.92	0.91	0.19
		Density (MNI/I)	13.56	27.00	5.67	0.27
Nut	*Corylus avellana*	Hazelnut whole shell	-	-	-	1
Cereals	*Hordeum vulgare*	Barley grain	-	-	-	2
	Hordeum vulgare var. vulgare	Hulled barley grain	35	17	24	-
	Triticum aestivum/turgidum	Bread wheat grain	1	-	-	-
	Triticum dicoccum	Emmer grain	2	2	3	-
	Triticum sp.	Wheat grain	-	-	3	6
	Triticeae	Cereal grain fragment	1		13	35
	Triticeae	Cereal grain	-	2	2	2
Wild plants	*Ranunculus* sp.	Buttercup seed	-	-	1	-
	Fumaria sp.	Fumitory seed	-	-	1	-
	Papaver somniferum	Opium poppy seed	4	-	-	-
Other	*Atriplex* sp.	Orache seed	15	26	22	-
	Chenopodium sp.	Goosefoot seed	13	6	28	-
	Chenopodiaceae	Goosefoot family seed	219	32	135	-
	Persicaria lapathifolia	Pale persicaria seed	2	-	-	-
	Polygonum sp.	Knotgrass seed	48	5	16	-
	Rumex sp.	Docks/sorrel seed	-	-	2	-
	Polygonaceae	Dock/knotgrass family seed	-	-	10	-
	Malva sp.	Mallow seed	-	1	-	-
	Trifoliae	Trefoil/medick/clover seed	36	-	8	-
	Vicieae	Vetch/grass pea seed	3	-	3	-
	Plantago lanceolata	Ribwort plantain seed	1	-	-	-
	Veronica sp.	Speedwell seed	-	1	-	-
	Odontites vernus	Red bartsia seed	5	-	-	-
	Sherardia arvensis	Field madder seed	-	2	1	-
	Galium cf. *aparine*	Cleavers seed	119	40	80	-
	Artemisia sp.	Mugwort seed	2	1	-	-
	Anthemis cotula	Stinking mayweed seed	1	-	-	-
	Asteraceae	Daisy family seed	4	-	-	-
	Carex sp.	Sedge seed	8	-	-	-
	Cyperaceae	Sedge seed	4	-	-	-
	Poaceae	Grasses grain	11	-	2	-
	Indeterminate	Seed	12	3	7	-
	NR		572	146	373	54
	MNI		529	135	340	10

the known cultivation of this type of cereal in post-Roman times.

Small quantities of cereal chaff were recovered from a few samples. Other minor taxa are represented by small numbers of seeds in ruderal/weedy taxa (Tables 6.1–6.3). Additional remains include hazel (*Corylus avellana*) nut shell, possible kernel parenchymatic tissue fragments, fragments of sloe (*Prunus spinosa*) and other *Prunus* sp. stones, false oat-grass or onion-couch (*Arrhenatherum elatius* var. *bulbosum*) bulbs and possible food fragments (flat, thin (1 mm), small (<16 mm) fragments, crust on one side, heterogeneous pores other side, with some shiny areas).

Relatively rich assemblages of charred plant remains include fragments of hazelnut shells from Beaker pit 60780, cereal grains and hazelnut shells from Beaker and Early Bronze Age pits 63544, 63550, 63619 and pit group 63270, and cereal grains from the basal fill (66043) of Late Bronze Age pit 66027, below a substantial deposit of charred timbers (see below). Several radiocarbon measurements were directly obtained on charred plant remains (see Radiocarbon Dating, below).

Discussion

Relatively well-preserved and informative environmental assemblages, particularly of charred plant remains, were recovered from the site. The information provided by these samples complements and expands that previously obtained (Wyles *et al.*, forthcoming) about the landscape history and plant exploitation activities carried out in the area in prehistoric times.

The most significant environmental evidence is that of the charred plant remains, dominated by cereal grains and hazelnut shell fragments. Furthermore, several elements of this assemblage have been radiocarbon dated, showing that, although there are some instances of intrusion (as expected, López-Dóriga 2025; Pelling *et al.* 2015), the majority of the assemblage is consistent with the ceramic evidence. This type of assemblage found in pits bears similarities with other prehistoric deposits at Amesbury Down (Wyles *et al.*, forthcoming) and the wider region, to the point where it raises the question of whether the by-products from processing the plant resources are simply the most likely to be preserved (Jones and Fairbairn 2000) or, in some cases, represent deliberate structured depositional practices in pits (Garrow 2012).

Large deposits of hazelnut shell fragments have long been argued as possibly overrepresented in comparison to other carbonised evidence because of the durability of their shell and widespread availability. However, this has been contested on a number of occasions (see, for example, McComb and Simpson 1999). In addition, experimental work (Bishop 2019) has highlighted that this possible overrepresentation has actually been overestimated and only very specific charring conditions are conducive to the preservation of nutshell, as well as the kernel (López-Dóriga 2015; Score and Mithen 2000). Therefore, although sparse hazelnut shell fragments may be found in any type of deposit of any chronology, there seems to be a particular association of hazelnuts, sometimes complete with kernels (López-Dóriga 2020; Stevens 2019) with cereal grains in pit deposits of Neolithic date. Hazelnuts only played a key subsistence role in the Mesolithic (Carruthers 2000; Holst 2010), and although wild plant resources have always maintained a role in any society and only become of minor importance in recent times (Mason and Hather 2002), it is likely that hazelnuts continued to play a particularly important role in early farming communities.

Cereals, on the contrary, may not have had a sustained role throughout prehistory and the evidence (or rather the rarity of evidence) suggests to some authors that the cultivation of crops could have experienced an interruption from the Middle to Late Neolithic, or were not continued after the initial early farming attempts (Stevens and Fuller 2012). However, other authors have attributed this rarity to a research bias (Bishop 2015). The evidence from Boscombe contributes some information to this debate, with sparse cereal evidence in most earlier Neolithic deposits, none of which is positively dated and therefore potentially intrusive (Pelling *et al.* 2015); cereals are only directly radiocarbon dated and increasingly abundant in Late Neolithic/Beaker deposits (Wyles *et al.*, forthcoming) or in the Late Bronze Age (e.g. pit 66027, this volume). Other sites in the Salisbury Plain area with comparable evidence are the Beaker pits at Coneybury (Carruthers 1990). Barley, of both hulled and naked varieties, was exploited on site, together with hulled wheat. This is consistent with current knowledge about early prehistoric agriculture in Britain. Although naked or free-threshing wheat was also present in several of the samples, and was part of the 'crop package' of the Neolithic in continental Europe, there is no convincing evidence for its cultivation at this time in southern Britain (Moffett 1991). It is considered intrusive at the site, and several such grains have been radiocarbon dated to the medieval period (see Table 6.5). Unfortunately, the evidence from King's Gate and Amesbury Down is too sparse to determine whether barley and hulled wheat were grown together as a method of buffering risk, or were mixed for food preparation, or even grown and prepared for different products but became mixed after deposition.

Although much of the discussion about prehistoric farming focuses on cereals, these were not the only domesticates, nor necessarily the most important, and other crops could have played a substantial role. The greater presence of cereals in the archaeobotanical record is probably due to their overrepresentation for taphonomic reasons (more chances of becoming carbonised because of their structure and the way in which they are turned into food) in comparison to other resources (Tarongi *et al.* 2020). The site has also produced some evidence of pulses, and although a radiocarbon date on a pea showed this particular specimen was intrusive, not all the pulses (vetches, broad bean) need be (Wyles *et al.*, forthcoming). Several species of pulse and flax are recognised crops of the Neolithic 'crop package' and have been successfully dated at other sites (Treasure and Church 2017). Small-seeded pulses could have also played a part in the plant resource exploitation system (Butler 1995).

In general, very little cereal chaff has been recovered from King's Gate or Amesbury Down. It is not possible to explain this fact with certainty as several factors might contribute to it, such as predepositional formation processes (i.e., the grain arrived clean at the site or processing activities did not involve the use of fire; see Hillman 1981; Jones 1984; van der Veen 2007), or poor preservation might have destroyed fragile items such as chaff (Boardman and Jones 1990). Weed seeds are also associated with the processing of cereal crops and are often encountered at sites where these activities took place. These have the best potential for interpreting landscape use as some taxa only grow in very specific environmental conditions. Unfortunately, only three of the prehistoric samples have rich assemblages of weeds: Beaker grave 62004 and possible Late Bronze Age pit 13473, both from the earlier excavations (Wyles *et al.*, forthcoming), and Late Bronze Age pit 66027.

The charred plant remains from pit 66027 are a typical by-product of the latter stages of crop-processing, dominated by clean, dehusked grains and wild plant seeds, most of which can be identified as persistent crop weeds. Although chaff is more susceptible to destruction by fire in comparison to grains (Boardman and Jones 1990), the good preservation of other easily destroyed wild plant seeds suggests that the absence (of spikelet forks, glume bases, culm nodes) in this case probably reflects a true absence from the original depositional assemblage, rather than a preservation bias. This absence of chaff in turn allows the ruling out of one possible formation process for the assemblage: if the grains had been part of a crop store for future processing and consumption but were accidentally burnt, some chaff would have been found in the assemblage, as hulled wheats are better stored within their glumes to avoid spoilage (Hillman 1981). The composition of the assemblage – dehusked cereal grains and weed seeds – suggests perhaps that the remains originated in the last stages of crop-processing after winnowing (which would have removed the chaff) and before cooking; cleaning the crop would have involved removing coarse seeds by hand and fine seeds by screening (Hillman 1981; Jones 1984; van der Veen 2007). This deposit is likely, therefore, to simply represent the disposal of waste from processing activities in secondary deposits (Fuller *et al.* 2014).

In addition to fruits (sloe and possibly other *Prunus* sp.) and hazelnuts, other edible products present in the samples are onion-couch tubers, which may have been intentionally consumed (López-Dóriga 2021).

The wild plants, many of which may have been present as weeds (although some could be exploitable for different uses; see Fern 1996–2012), are richer and more diverse in the better-preserved Late Bronze Age samples from pit 66027. They are informative of local growing conditions (wet and heavy soils). There are also some interesting taxa, such as opium poppy, an archaeophyte (Preston *et al.* 2004) that spread with Neolithic crops across Europe and may have been domesticated in some parts (Salavert et al. 2020), but which is not often found in this area, and cleavers, whose abundance may be due to their mode of dispersal – for example, attached to clothes and fur.

The sparsity of later Iron Age evidence may be due to taphonomic biases; features superficially associated with the disposal of domestic waste seem not have been present, and it is difficult to infer the role played by the different products because of the small number of remains and their poor preservation.

Wood Charcoal from Pit 63255

by Dana Challinor

Charcoal from a single sample from Early Bronze Age pit 63255 was analysed. This feature is one of a group of three pits in Parcel T.

Methods

Standard identification procedures were followed using identification keys (Hather 2000; Schweingruber 1990a) and modern reference material. The charcoal was fractured and examined at low magnification (up to x45), with representative fragments examined in longitudinal sections at high magnification (up to x400). Observations on maturity and other features were made where appropriate. Classification and nomenclature follow Stace (1997).

Results

Charcoal was abundantly preserved in the sample from context 63256, with good-sized fragments (up to 10 mm). Condition was generally fair, though some moderately high levels of vitrification were noted. Vitrification is thought to relate to the condition of the wood prior to burning, rather than being indicative of high-temperature burns (McParland *et al.* 2010). Four taxa were positively identified; *Quercus* sp. (oak) – one fragment; *Prunus spinosa* (blackthorn) – 27 fragments (occasional roundwood); Maloideae (hawthorn, apple, rowan/whitebeam, etc.) – one fragment; and *Rhamnus cathartica* (purging buckthorn) – 21 fragments (occasional roundwood). The differentiation of *Prunus spinosa* from other native *Prunus* species was made on the basis of consistently wide rays (4–6 seriate). No complete roundwood stems were recorded, with only occasional fragments exhibiting moderate ring curvature. The sole fragment of oak was comminuted with <1 growth ring and maturity could not be determined.

Discussion

The charcoal assemblage from pit 63255 is characterised by scrub types: spiny shrubs, blackthorn and purging buckthorn (along with several species of hawthorn group), which are typical of hedgerows and open scrub habitats. Blackthorn produces a dense hardwood, providing high-quality firewood (with a pleasant odour) and is commonly found in Bronze Age fuel residues. Purging buckthorn, however, was not commonly used for fuel and anthracological finds tend to be sporadic. The shrub itself is not as ubiquitous as blackthorn, though it grows well in most soil conditions, preferring moist but well-draining soils. Purging buckthorn was clearly growing in the area, since there have been small quantities of the charcoal found in Neolithic and Early Bronze Age assemblages from nearby sites on Amesbury Down (Barnett and Gale, forthcoming) and further afield at Hambledon Hill (Austin *et al.* 2008). The leaves have some medicinal qualities as a laxative (hence the name 'purging') and the wood has been used for turnery (Gale and Cutler 2000). It is possible that the charcoal represents the remains of a burnt artefact, but there is no particular evidence for this, and the domestic debris found in association with the charcoal suggests that it represents spent fuelwood. The use of buckthorn for fuel seems to have been only when other, preferred fuels were unavailable (Austin *et al.* 2008).

The quantity of purging buckthorn charcoal found in pit 63255 is somewhat unusual for a species that was not usually valued for fuel. However, this record (albeit limited) complements earlier charcoal studies at Amesbury Down and contributes to the hypothesis that woodland clearance by the Early Bronze Age led to an increased reliance on scrub taxa for fuelwood (Barnett and Gale, forthcoming), predominately blackthorn and hawthorn group, supplemented with purging buckthorn when required.

Wood Charcoal from Pit 66027

by Lucy Allott

Large pieces of charcoal (presumed to be charred timbers, possibly planks) were extracted from Late Bronze Age pit 66027. Analysis aimed to identify whether the charred timbers are of a single species or whether multiple taxa are represented, as well as provide information regarding wood morphology (the presence of roundwood, bark, pith, etc.) and possible evidence for wood technology.

Methods

During excavation, 46 samples were taken from known locations along the charred timbers as they were too fragile to be block lifted. A total of 19 samples were submitted for identification and analysis. The samples comprised bags of sediment and/or fine charcoal flecks with larger pieces of charcoal. Several of the larger and better-preserved pieces were extracted from each sample for identification and to establish whether the sample was homogenous regarding taxon representation.

Preparation and examination of fragments followed standard procedures for the analysis of wood charcoal as described in Hather (2000). The fragments were fractured along three planes to reveal transverse, tangential longitudinal and radial longitudinal surfaces, and then viewed under a stereozoom microscope for initial sorting and a metallurgical incident light microscope (at x50, x100, x200 and x500) for identification. Specimens were identified to the highest taxonomic level possible through comparison with reference texts (Hather 2000; Schoch *et al.* 2004; Schweingruber 1990b).

Results

Charcoal in several samples displayed poor preservation. In some instances, the fragments were very friable and difficult to fracture to produce clean sections. Sediment percolation was also moderately common and occasionally the charcoal fragments were held together by the sediment. Woodworm holes were prevalent, particularly in samples from the western section of the pit, and many of the charcoals were also penetrated by fine roots, further contributing to their instability. Despite their fragility, taxonomic identifications were obtained for all but one of the samples and are shown in Table 6.4. Sample 12053 consisted primarily of sediment with only very small, friable fragments of charcoal present; these were too small to obtain clear sections for identification.

Analysis identified two different taxa, *Fraxinus excelsior* (common ash) and *Acer campestre* (field maple). Their distribution within the cluster of charcoal is interesting and, together with information regarding their preservation, it is possible to suggest that several of the apparently disjointed pieces may originate from the same original wood.

Samples (12018, 12019, 12021, 12022, 12025, 12026 and 12034) located in the eastern part of the pit were all identified as field maple. With the exception of 12034, which was taken from the largest charred timber, all of these samples contained charcoal that was extremely friable and most displayed extensive woodworm damage as well as sediment percolation and rooting. No roundwood was recorded and growth rings were relatively flat, suggesting the pieces derived from large mature wood suited to use

Table 6.4 Charcoal from Late Bronze Age pit 66027

Taxonomic ID/ common name	*Context/Sample*	*W*	*RW*	*Condition*		*Working or usewear*	*Growth ring description*
	66034 12051	-	*N*	*2*	Moderately hard	Possibly worked or naturally weathered surface	-
	66035 12044	-	?	2	-	Smoothed edges, not running along the grain	-
	66054 12025	?	N	4–5	Very soft and friable	-	-
Acer campestre, Field maple	66054 12026	?	N	4–5	Very soft and friable	-	-
	66066 12060	-	N	2–3	Large, wedge-shaped piece (70 x 40 mm)	Possible evidence	-
	66069 12034	Y	N	2	-	-	-
	66070 12022	Y	N	4–5	Very friable	-	-
	66071 12021	Y	N	4–5	Very friable	-	-
	66072 12019	Y	N	3–4	Moderately friable	-	-
	66073 12018	Y	N	4	Various sizes, some friable	-	-
Fraxinus excelsior, Ash	66036 12063	-	N	2	-	Larger fragment, possibly worked object? No tool marks but possible usewear or weathering	Tightly spaced, slow grown
	66037 12067	-	N	3–4	Quite soft	-	Tightly spaced, slow grown
	66053 12064	-	N	2–3	-	-	Tightly spaced, slow grown
	66064 12057	Y	N	4–5	Very soft and friable	-	Tightly spaced
	66065 12040	Y	N	3	-	-	Very little ring curvature evident, from large mature, slow-grown pieces
	66067 12062	-	N	5	-	-	Tightly spaced
	66068 12037	Y	N	3–4	Quite friable	-	Tightly spaced
	66074 12054	-	N	5	Very small friable fragments	-	Fragments too small to determine
Unidentifiable	66038 12053	-	N	5	Very small friable fragments	-	-

Key: W = woodworm, RW = roundwood

as timber, rather than smaller stems or branches.

Several of the other samples (12037, 12057, 12040 and 12054) were identified as ash and ran east–west across the pit. It is possible that at least some of these derived from the same original piece. They display poor preservation, with woodworm and roots common. Better-preserved fragments display tightly spaced growth rings and very little ring curvature, suggesting they are from slow-grown, large original pieces suited to use as timber. These samples were too poorly preserved to retain any indication of worked, weathered or worn surfaces.

Three further examples of field maple were recorded, two of which (12044 and 12051) overlie the ash group considered above, and the third example (12060) derived from the southern part of the pit. They were all moderately well preserved with no evidence of woodworm recorded. Some of the edges appear smoothed and do not coincide with the natural grain of the wood. Such surfaces may represent worked, weathered or worn edges, although no tool marks were apparent. Unfortunately, the original alignment of individual fragments within the pit has not been retained and it is, therefore, not possible to determine the orientation of the smoothed edges. Sample 12044 was the only example displaying some ring curvature and as such may derive from large roundwood.

The final group of samples (12062, 12063, 12064 and 12067), located in the southern part of the pit, comprised ash with tightly spaced growth rings and very little ring curvature; variable preservation was observed. It is not clear whether any of these derive from the same original piece, although their growth forms are similar. Sample 12063 contained a large piece of charcoal that retained smoothed surfaces that may result from weathering, wear or shaping, and although no tool marks were discerned it could form part of a larger, worked object.

Discussion

Analysis revealed that the charcoal fragments derived from mature slow-grown ash wood and similarly large field maple (although the growth form of field maple was a little more variable). It is not clear whether the pieces were deposited in the pit once charred or whether they became charred *in situ*, although in both instances they appear to have retained much of their original morphology, rather than becoming broken down or being subject to significant movement once charred. The presence of extensive woodworm in some of the pieces of field maple suggests the wood was in poor condition prior to charring. Analysis also revealed some evidence for possible wear, weathering or perhaps shaping to form the possible planks. Based on the available evidence, the interpretation of these pieces deriving from timber rather than fuelwood appears valid, although it has not been possible to identify how the wood was converted, and no formal tool marks were observed.

Radiocarbon Dating

by Inés López-Dóriga

Introduction

A total of 34 radiocarbon dating samples of charred plant remains, animal bone and human bone were submitted for measurement to gain a better understanding of the chronology of the different human activities (funerary, agricultural, etc.) on the site. The dataset complements the larger corpus of radiocarbon measurements from the wider landscape (Fitzpatrick 2011; Marshall *et al.* 2020; Powell and Barclay, forthcoming).

Methods

The samples were submitted to the ^{14}CHRONO Centre, Queen's University, Belfast, and the Scottish Universities Environmental Research Centre (SUERC), University of Glasgow. Reporting of the radiocarbon dating results follows international conventions (Bayliss and Marshall 2022; Millard 2014). The macrofossil samples were treated with acid and the measurement corrected using AMS δ^{13}C values. Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar *et al.* (2016).

The calibrated age ranges were calculated with OxCal 4.2.3 (Bronk Ramsey and Lee 2013) using the IntCal20 curve (Reimer *et al.* 2020). All radiocarbon dates are quoted as uncalibrated years before present (BP), followed by the laboratory code and the calibrated date-range (cal BC) at the 2σ (95.4%) confidence, with the end points rounded out to the nearest 10 years. The ranges in plain type in Tables 6.5–6.7 have been calculated according to the maximum intercept method (Stuiver and Reimer 1986), and modelled dates are given in italics (Bayliss and Marshall 2022). The degree of reliability of the radiocarbon date and the event which is aimed to be dated is assessed following Waterbolk (1971).

Results

All but two of the submitted samples were successfully measured. Of the 14 charred plant remain samples, one failed (UB41599-1) but a substitute was successfully measured. The radiocarbon measurements obtained on charred plant remains provide results in the Late Neolithic/Beaker period, Early Bronze Age, Late Bronze Age and Early Iron Age, with some medieval and modern outliers (Table 6.5). Ten radiocarbon measurements were obtained from animal bone (Table 6.6), most of which are from the Early Iron Age, with one being Beaker. Five radiocarbon dates were obtained on samples of human bone (Table 6.7), with the measurements falling into two main periods: Middle Bronze Age and Middle Iron Age.

Table 6.5 Radiocarbon measurements on charred plant remains

Lab. Ref.	*Feature*	*Context*	*Material*	*Date BP*	*Calibrated date range (95% probability)*	*Modelled date range 95% probability*
UBA-41591	Pit 63544	63552	Charred grain *Hordeum vulgare*	3825±31	2460–2140 cal BC	*2300–2140 cal BC*
UBA-41592	Pit 63544	63552	Charred nutshell *Corylus avellana*	3764±29	2290–2040 cal BC	
UBA-41594	Pit 63180	63182	Charred nutshell *Corylus avellana*	3544±35	2020–1750 cal BC	-
UBA-41596	Pit 63255	63256	Charred grain *Hordeum vulgare*	3540±32	1960–1750 cal BC	*1900–1740 cal BC*
UBA-41597	Pit 63255	63256	Charred nutshell *Corylus avellana*	3466±32	1890–1680 cal BC	
UBA-41600	Pit 66027	66052	Charred grain *Triticum* sp.	2863±36	1200–920 cal BC	*1120–930 cal BC*
UBA-41599	Pit 66027	66052	Charred grain *Hordeum vulgare*	2858±25	1120–930 cal BC	
UBA-41590	Pit 63645	63648	Charred grain *Hordeum vulgare*	2486±26	780–510 cal BC	*780–540 cal BC*
UBA-41598	Pit 63320	63321	Charred grain *Triticum* sp.	761±27	cal AD 1220–1290	*Medieval (outlier)*
UBA-41595	Pit 63660	63764	Charred seed cf. *Pisum sativum*	591±33	cal AD 1300–1420	*Medieval (outlier)*
UBA-41593	Pit 63180	63182	Charred grain *Hordeum vulgare*	63±24	-	*Medieval (outlier)*
UBA-41599-1	Pit 66027	66052	Charred grain *Hordeum vulgare*	Failed	-	-

Table 6.6 Radiocarbon measurements on animal bone

Lab. Ref.	*Feature*	*Context*	*Material*	*Date BP*	*δC13‰*	*δN15‰*	*Calibrated date range (95% probability)*	*Modelled date range 95% probability*
SUERC-82843	Pit 63550	63551	Cattle mandible	3840±22	-22.4	*4.8*	2460–2200 cal BC	-
SUERC-73565	Pit 63904, cluster 63940	63905	Red deer antler	2577±31	-20.7	*3.5*	810–570 cal BC	*820–570 cal BC*
SUERC-82846	Pit 63835, cluster 63850	63851	Dog skull	2561±25	-20.3	*7.5*	810–560 cal BC	-
SUERC-82845	Pit cluster 63940, ABG 63962	63912	Cattle tarsal from an articulated limb	2518±25	-21.5	*4.1*	790–540 cal BC	*760–510 cal BC*
UBA-38530	Pit cluster 63940, ABG 63942	63911	Cattle skull	2516±30	-	-	790–540 cal BC	*780–510 cal BC*
SUERC-73563	Pit cluster 63940, ABG 63927	63911	Cattle rib from an articulated group	2476±31	-21.1	*4*	780–420 cal BC	*760–420 cal BC*
SUERC-82844	Pit 63468	63469	Cattle mandible	2445±25	-21.8	*5.1*	760–410 cal BC	-
SUERC-73564	Pit cluster 63940, ABG 63928	63912	Cattle ulna from an articulated limb	2427±31	-21.2	*3.4*	750–400 cal BC	*740–400 cal BC*
SUERC-82841	Pit cluster 63940, ABG 63935	63964	Cattle skull	2398±25	-21	*4.5*	720–390 cal BC	*550–390 cal BC*
SUERC-82842	Pit cluster 63940, ABG 63941	63911	Cattle skull	2340±25	-21.2	*4.7*	480–370 cal BC	*540–380 cal BC*

Table 6.7 Radiocarbon measurements on human bone

Lab. Ref.	*Feature*	*Context*	*Material*	*Date BP*	*δC13‰*	*δN15‰*	*Calibrated date range (95% probability)*	*Modelled date range 95% probability*
SUERC-74039	Inhumation grave 63263, group 63271	63262	Human tibia (left)	3212±29	-20.7	*8.6*	1520–1420 cal BC	*1510–1410 cal BC*
SUERC-74091	Urned cremation grave 63085, group 63271	64047	Cremated human femur and humerus	3160±29	-22.5	-	1510–1320 cal BC	
SUERC-74035	Inhumation grave 63254, group 63271	63252	Human femur (side)	3132±31	-20.5	*10*	1500–1290 cal BC	*1450–1330 cal BC*
SUERC-74034	Inhumation grave 63267, group 63271	63266	Human femur (right)	3091±29	-20.6	*8.8*	1430–1270 cal BC	
SUERC-74033	Pit 63698, group 63804	60830	Human tibia (left)	2289±31	-21.6	*4*	410–200 cal BC	*410–210 cal BC*

Discussion

Agriculture

Deposits with cereal grain are important for addressing questions of early farming practices, especially in areas where information is not abundant and may be subject to complex taphonomic issues. In the Salisbury Plain area, the problems surrounding intrusive grain have been highlighted before (Pelling *et al.* 2015) and have hampered discussions about the domestic/ritual nature of scatters of Neolithic pits.

Several pairs of dates from charred plant remains from prehistoric assemblages were obtained to assess and better understand the contemporaneity of cereal cultivation and wild plant exploitation activities in the area, providing results for the Late Neolithic/ Beaker period, Early Bronze Age, Late Bronze Age and Early Iron Age (Fig. 6.1). There are two cases of medieval intrusions (pits 63320 and 63660), which reflect medieval agricultural activity in the area, and a pit (63180) where modern grain was found.

Unusual assemblages of charred plant remains were radiocarbon dated to verify their chronology. One was a naked wheat grain from Early Iron Age pit 63320, to confirm whether it was intrusive or could otherwise represent an alternative crop tradition in the area during the period (since hulled wheats are widespread). The other was a possible garden pea; since prehistoric pulses are not abundant in the general locality it had the potential of being one of the earliest examples of the cultivation of these crops in the area. Both measurements proved to be medieval, highlighting the importance of directly dating charred plant remains (Pelling *et al.* 2015). Interestingly, no other evidence of medieval activity was identified at the site. In addition, the dates corroborated the chronology of the deposit below the concentration of charred timbers in pit 66027 as around the turn of the 1st millennium BC.

Animal husbandry and mass deposition

The cattle mandible associated with the Beaker pottery from pit 63550 confirmed the chronology of the deposit (2460–2200 cal BC; SUERC-82843, 3840±22 BP), which is consistent with the other Beaker results obtained on charred plant remains.

Early Iron Age results were obtained for a cattle mandible from pit 63468 (760–410 cal BC; SUERC-82844, 2445±25 BP) and the dog skull from pit 63835 in pit cluster 63850 (810–560 cal BC; SUERC-82846, 2561±25 BP). Due to the well-known plateau in the calibration, the date on the cattle mandible has an imprecise range of 8th–5th century BC; for the dog skull the highest density of the probability distribution concentrates on the late 9th and first half of the 8th centuries BC (810–740 cal BC, 72% at 2σ).

Radiocarbon dates were obtained at the assessment stage for ABGs 63927 (SUERC-73563, 2476±31 BP) and 63928 (SUERC-73564, 2427±31 BP) from the mass deposits and for the red deer antler (SUERC-73565, 2577±31 BP) from the base of pit 63904, under the mass deposits. Due to the plateau in the calibration curve (IntCal13) for the Early Iron Age period, it is difficult to be precise with dating as the overall ranges are broad. Additional radiocarbon dates were obtained at the analysis stage (SUERC-82845, 2518±25 BP; SUERC-82842, 2340±25 BP; SUERC-82841, 2398±25 BP; and UBA-38530, 2516±30 BP) to improve the chronological precision of the activities and the time span between pit digging and the time of deposition of the mass bone deposit. The new results and slight improvement of the radiocarbon dating

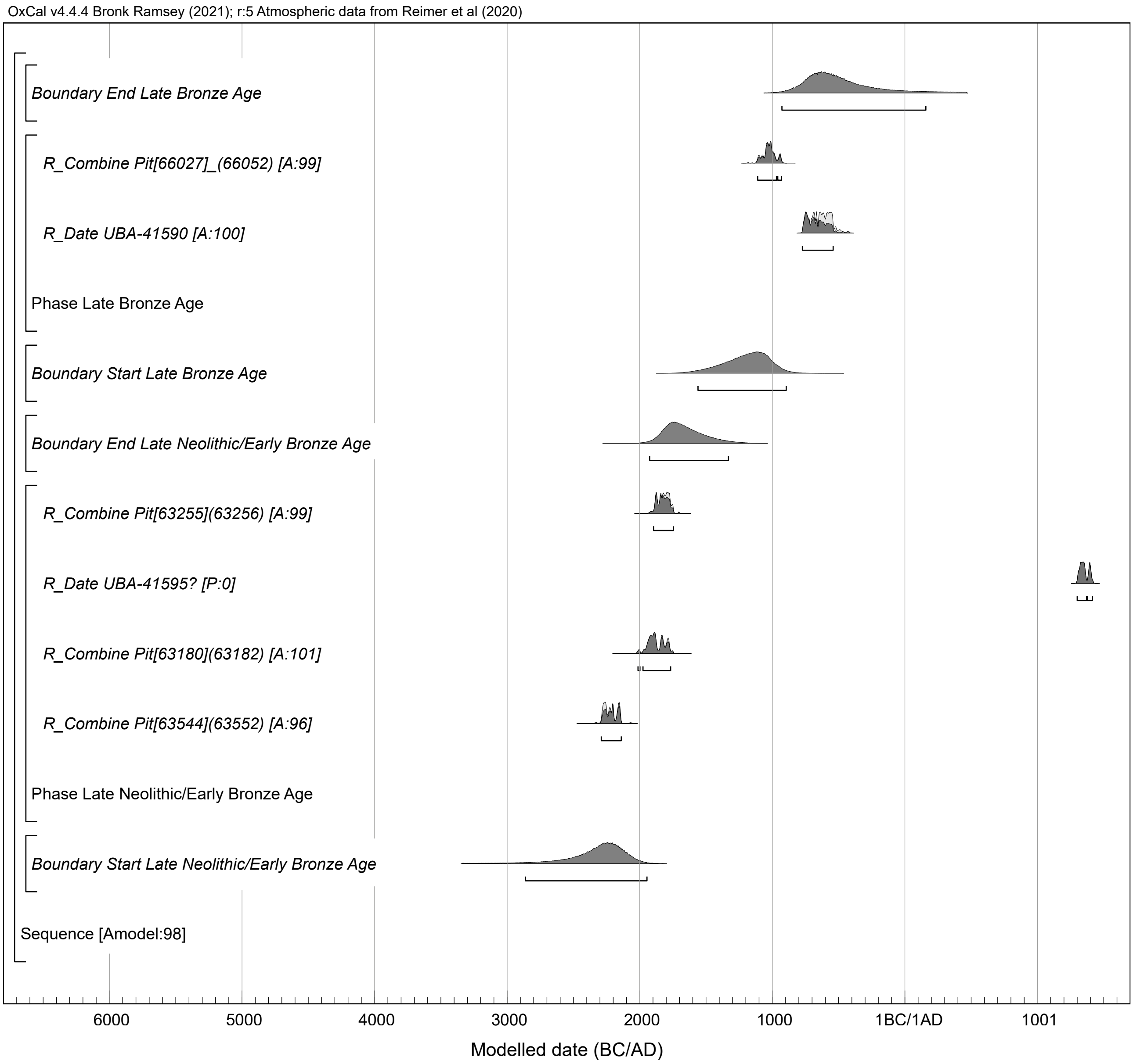

Figure 6.1 Posterior density estimates for radiocarbon dates and combined radiocarbon dates of charred plant remains in the Late Neolithic/Early Bronze Age and Late Bronze Age

curve (IntCal20) allow for a better chronological understanding of this important deposit (Fig. 6.2).

Assuming the time of formation of the deposit – with a red deer antler near the base of one of the pits (63904) – is temporally close to that of the digging of the pit, then its date (SUERC-73565) indicates that this activity occurred during the first half of the 8th century cal BC (92.2% at the 2σ probability concentrates on 820–740 cal BC). This would be consistent with the decorated pottery of All Cannings Cross style that comes from the adjacent settlement and is generally considered to belong to the 8th and 7th centuries BC (Cunliffe 2005, 61: 'The Earliest Iron Age').

Six dates were obtained on three discrete groups of bone (ABGs) from within the mass deposit at the top of the pit cluster (SUERC-73563, SUERC-73564, SUERC-82841, SUERC-82842, SUERC-82845 and UBA-38530), stratigraphically above the basal antler (SUERC-73565), and are all consistently later (in radiocarbon age). However, combinations of the pair and trio of dates from the same discrete mass deposits returned internally inconsistent results (i.e., failing the χ^2 test in OxCal; for SUERC-73563, SUERC-82842 and UBA-38530 the test fails at 5%: df=3 T=24.553(5% 7.8); for SUERC-73564 and SUERC-82845 the test fails at 5%: df=1 T=5.209(5% 3.8)), suggesting a considerable lapse of time (extending beyond the standard deviation) between the death of each of the individuals in the ABGs.

Indeed, the phased model, taking into account

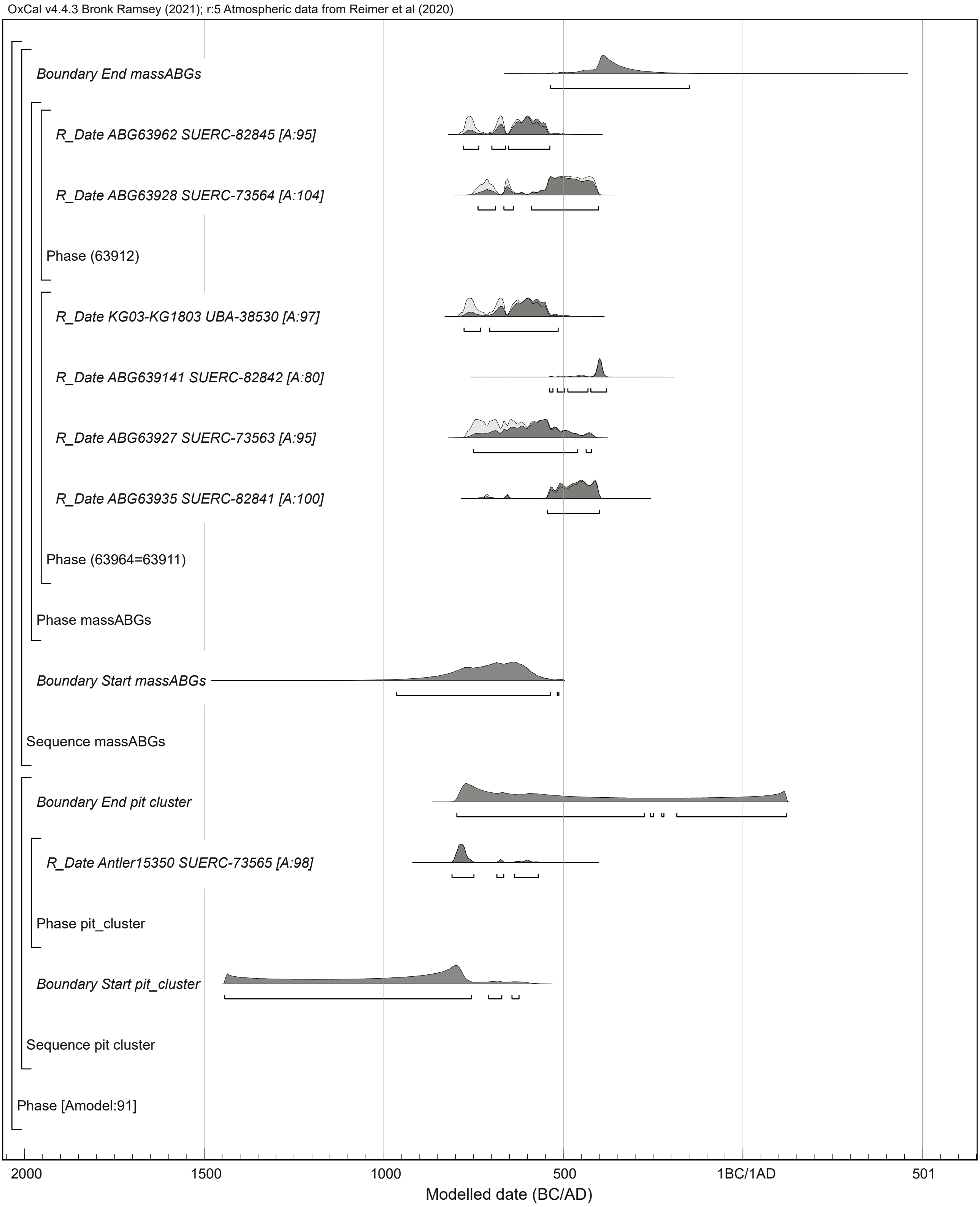

Figure 6.2 Deposition model of contiguous and overlapping phases with posterior density estimates for radiocarbon dating samples in pit cluster 63904 and the mass bone deposits above it

stratigraphic information, lacks agreement in OxCal, and the model with the best accord suggests the mass deposits are overlapping in time but formed within a period of between 200 and 470 years (68.3% probability), ending between 430 and 300 cal BC (68.3% probability).

Overall, the revised radiocarbon dating results are not consistent with the original interpretation of

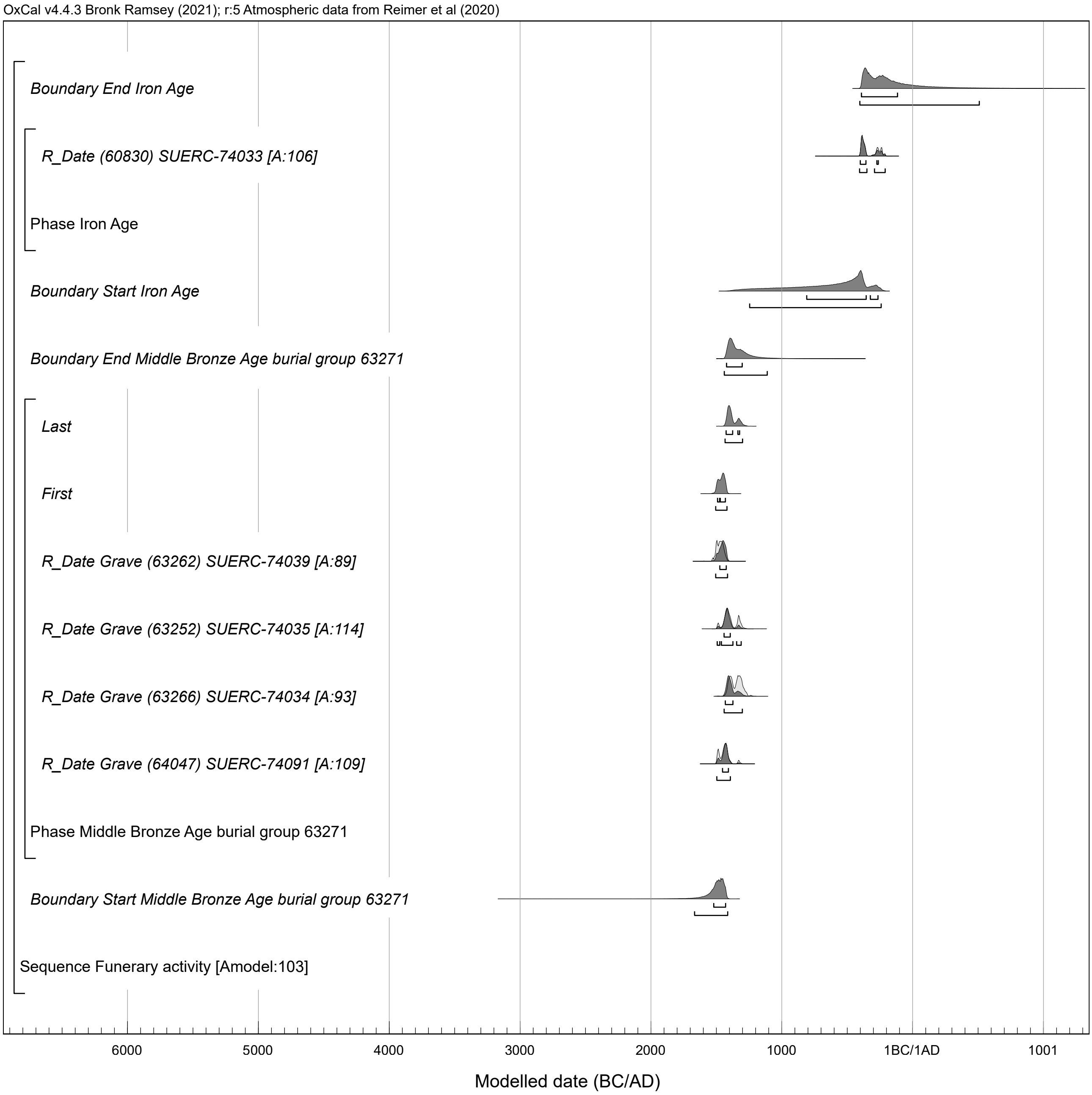

Figure 6.3 Posterior density estimate for the radiocarbon dates on human remains in two sequential phases of funerary activity

the deposit as a single 'feasting' event. Rather, the deposit seems to represent the disposal of carcasses perhaps in two or more events over a period of time, of at least three generations but potentially ranging from the 8th–7th century to the 4th century cal BC. The dates also indicate that the King's Gate mass deposit starts earlier but finishes at about the same time as the deposit at High Post, its dates modelled to 460–390 cal BC (Barclay and Stevens 2011).

Funerary activity

Due to the nature of the calibration curve, the date of the single human bone from pit 63698, part of pit cluster 63804, gave an imprecise result between the 4th and 3rd centuries BC, but the highest density (70%) of the 2σ probability is during the first half of the 4th century BC (410–340 cal BC; Fig. 6.3).

Four radiocarbon dates were obtained on human bone from each of the burial remains in grave group 63271, to demonstrate the longevity of use of this small area for burial and assist in attributing the correct temporal range to the remains within the wider prehistoric mortuary landscape at Amesbury Down (McKinley, forthcoming). The results show that the burials were all made during the 15th to 14th centuries cal BC, at the start of the Middle

Bronze Age (Fig. 6.3), with burial 63262 probably the earliest (SUERC-74039). The four radiocarbon measurements are not statistically consistent (function R_Combine in OxCal returns the following result: χ^2 Test fails at 5%: df=3 T=9.170(5% 7.8)), with the implication that they are not all of the same date. However, if the measurement for the earliest burial 63262 (SUERC-74039) is excluded from the χ^2 test, then the other three are consistent (test df=2 T=2.9(5% 6.0)), suggesting they are contemporaneous and the individuals all likely died between 1450 and 1380 cal BC (highest density, 76%, at the 2σ probability). It should be noted that one of the samples was on cremated human bone and, therefore, potentially carrying an unknown old-wood effect due to the use of long-lived species of tree in the fuel for the cremation (Olsen *et al.* 2013).

Chapter 7
From Sacred Landscape to Settlement, Farming and Feasting

The establishment of an open settlement on Amesbury Down during the Early Iron Age, on the north-western slope of the development area's central ridge, represents one phase of an extended period of occupation and activity on this part of the downland landscape. The significance of this landscape is enhanced by its position immediately east of the Stonehenge part of the Stonehenge, Avebury and Associated Sites World Heritage Site (Fig. 1.1), and this has been recognised by its inclusion within an Area of Special Archaeological Significance as designated in the Salisbury District Local Plan 2011. From the Late Neolithic, activity appears to have been dominated by the construction and use of monumental features, including a large post-circle and post alignment, by burial, and by the digging of pits and the deposition within them of cultural material. The purpose of such deposition, apparently undertaken with varying degrees of formality and deliberation, remains unclear. It is often assumed to have had primarily ritual and/or symbolic significance, and therefore to have been not directly related to settlement activity, even though in many cases the cultural material has characteristics of domestic waste. The pair of pits containing Grooved Ware in Parcel Q (63537, 63539) conform to this pattern and fall within the wider spread of Late Neolithic pits recorded across the development area, of which over 40 have been identified – some isolated, others in loose groupings, but mostly similar in size and shape. The King's Gate pits are, however, the most south-westerly of those so far investigated, the nearest previously recorded pit lying some 170 m to the north-east, and with most being at higher elevations on the central ridge and plateau (Powell and Barclay, forthcoming). Similarly, the distribution of the pits containing Beaker pottery is consistent with the generally dispersed pattern of other such features recorded within the development area (*ibid.*).

However, in the Early Bronze Age there was the first direct evidence for settlement in the form of two small roundhouses on the south-eastern ridge, near the south-east corner of the development area. These structures are some distance both from the Late Neolithic monuments (the post-circle, for example, lies at least 640 m to the north near the top of the plateau) and, to a lesser extent, from the Beaker and Early Bronze Age graves – none of which were found on the south-eastern ridge. The nearest grave to these two structures lies on the south side of the central ridge, on the opposite side of the south-east dry valley, a topographical feature that may have represented a division in the landscape between different zones of activity. The two pairs of Beaker pits (63544 and 63550, and 63602 and 63619) and various Early Bronze Age pits recorded in the King's Gate land parcels are within the main zone of occupation on the central ridge and represent the southern extent of this activity.

Evidence for non-mortuary activity during the Middle Bronze Age is limited across the entire development area, with much of the proof based on radiocarbon dates from deposits of animal bone, including remains of two burials – of a cow and a goat – made in pits on the south-facing slope of the central ridge, and a third deposit of cattle bones from the terminal of an extensive ditched enclosure on the east side of the central ridge. These elements potentially represent activity associated with settlement and economic activity. It may also be no coincidence that the pits lay within a spread of largely undated postholes, some of which could represent contemporary structures. Three roundhouses were identified among these postholes and interpreted as of probable Late Bronze/Early Iron Age date, although the dating evidence was unclear. The absence of features relating to Middle Bronze Age settlement and land use may be a matter of survival but could reflect a continuing perception of this part of the landscape as unsuited or inappropriate for such activity, given the dominance of earlier monuments and widespread mortuary activity (Powell and Barclay, forthcoming).

The most significant finding was a small mixed-rite grave group of Middle Bronze Age date on the south-east-facing slope of a dry valley associated with an extensive flint-rich spread of soil, possibly representing the plough-levelled remains of a flint and turf mound raised over one or more of the graves. The potential presence of further graves in the immediate area is suggested by the recovery of redeposited bone in one of the graves (63263), fragments of Food Vessel from another (63254) and the base of a Middle Bronze Age ceramic vessel found on the surface of the natural, a short distance to the south of cremation grave 63085. The latter was possibly the sole survivor of a truncated cremation urn or inhumation burial with grave goods. The group forms part of a wider Middle

Bronze Age mortuary landscape with singletons and similarly small groups of inhumation graves, including three possible examples covered by flint nodule cairns (see Powell and Barclay, forthcoming), dispersed across the central ridge (see McKinley, Chapter 4; forthcoming). The mixed-rite status of the King's Gate Middle Bronze Age grave group, and particularly the emphasis on inhumation over cremation, the latter being the major rite at a number of sites in the wider area (Caswell and Roberts 2018), is intriguing and implies a broader variation in belief systems, potentially due to external influences (see Evans, Chapter 4).

Several of the burial remains within the wider landscape were accompanied by grave goods, the most notable examples being the three Beaker graves known as the 'Amesbury Archer' and his 'companion', and the 'Boscombe Bowmen', considered to be of particular significance on account of their early date and/or the wealth and character of their associated grave goods. The Early and Middle Bronze Age burial remains of two teenage girls with amber jewellery (graves 25190 and 61230, see Powell and Barclay, forthcoming) are also notable. By comparison, the quoit-shaped faience bead found beneath the right knee of the earliest individual buried at King's Gate (grave 63263; see radiocarbon results, Chapter 6, Table 6.7) seems less extravagant, although the rarity of faience in the archaeological record, and its association with other artefacts elsewhere, denotes high status, reflecting its obvious importance as a precious and prestigious substance (see Sheridan, Chapter 4), and therefore potentially the status of the young woman buried with it. The close proximity of the King's Gate graves and relatively tight range of the radiocarbon dates implies some form of relationship or link between the individuals, and given the possible evidence for earlier graves outlined above, this location may have been in use over a longer period. More compelling evidence for the seemingly deliberate siting of Middle Bronze Age graves adjacent to earlier barrows or other significant features has been recorded within the wider development area, with some attributes also referencing the Beaker burial tradition (Powell and Barclay, forthcoming).

Apart from the three poorly dated structures outlined above, further evidence for Late Bronze Age activity was recorded on the north-western side of the central ridge, comprising a Wessex Linear ditch, previously investigated at a number of locations (Powell and Barclay, forthcoming), and a pit containing charred timbers, crop-processing waste, pottery and animal bone. Wessex Linear ditches represent the large-scale division of the downland landscape, and this particular section of ditch clearly marked some form of division within the later Early Iron Age settlement. Despite the apparent domestic character of the pit assemblage, the nearest settlement activity, which includes roundhouses, lay some distance to the south, on the south-facing slope of the central ridge. Analysis of the charred timbers has revealed potential evidence of shaping to form possible planks and extensive woodworm in some of the pieces, suggesting the wood was in poor condition prior to charring. Wooden planks have been recovered from a range of archaeological contexts as waterlogged or charred remains, often found lining waterholes or wells and as structural timbers. At the Late Bronze Age pile-dwelling settlement at Must Farm in Cambridgeshire (Knight *et al.* 2024) for example, timber planks were used in the roundhouse structures, as well as for a variety of other items (Robinson Zeki *et al.* 2024). Several of the Must Farm planks show evidence of beetle damage, although in this instance it is likely that the timbers were reused pieces given the relatively short-lived nature of the settlement. Woodworm infestations of structural timbers have also been noted at Meare Lake Village in Somerset (Robinson 2002).

The Early Iron Age settlement is situated in a densely occupied landscape, with a wide variety of other settlement types recorded within the immediate area. To the east, on Boscombe Down West, extensive evidence of Early to Middle Iron Age settlement was recorded during levelling operations at the former Boscombe Down RAF station (Richardson 1951). The settlement extended over 30 ha, overlooking the Bourne valley, and included 'working hollows' (similar to the intercutting pits interpreted here) and deep storage pits. No structures were identified but this may be due in part to the degree of levelling. The settlement appears to have been largely open and occupation continued into the Late Iron Age. A further Early Iron Age settlement was recorded at High Post, approximately 5 km to the south-west. The evidence indicates that this began as an open settlement which was then enclosed by a deep, probably defensive ditch, with a high concentration of roundhouse gullies and storage pits in its interior (Powell 2011). The High Post settlement was situated south of a much larger univallate hilltop enclosure at Ogbury Camp, which overlooks the Avon valley, as does Vespasian's Camp, a hillfort to the west of the river, defined by two phases of univallate rampart built in the Early Iron Age (Hunter-Mann 1999).

The King's Gate settlement, located on the north-west-facing slope of the development area's central ridge, appears to represent the continuing westward shift of prehistoric open settlement, a process which culminated in the Middle Iron Age with the enclosed, although not defended, settlement on Southmill Hill. The latter, covering over 7 ha, was identified by crop marks and has been subject to geophysical survey and aerial photographic survey, with limited evaluation. The 10 widely spaced trenches targeted features revealed by the surveys, and identified a possible roundhouse, numerous pits (both individual and in clusters) containing occupation debris including Early–Middle Iron Age pottery, and some of the narrow ditches defining the settlement's internal divisions. The King's Gate settlement, partly exposed during previous excavations within the development area (Powell and Barclay, forthcoming), has been shown by the excavation reported here to extend for at least 360 m north-east to south-west along the north-western side of the central ridge. The settlement structures and features do not continue into the base of the north-western dry valley, although there were two Early Iron Age inhumation graves immediately west of the valley base. Because a large area of relatively flat ground midway along the spine of the central ridge, preserved *in situ* under the landscaping of a playing field, has not been investigated, it is unclear to what extent the settlement may have expanded towards the south. However, two clusters of intercutting pits, one within the playing field area, the other in the King's Gate Phase 2 area, indicate some form of activity close to the spine of the ridge, suggesting that the settlement extended some 200 m north-west to south-east.

The apparently loose focus of the settlement, as represented by the four roundhouses, covered just over 160 m. None of the footprints of the various post-built structures overlapped, making it hard to discern different phases of activity, or the settlement's development over time. That not all structures were contemporary, however, is strongly suggested by the proximity of four-poster 63508 to the entrance of roundhouse 63410. There is little obvious organisation in the settlement's layout. Two of the roundhouses, 100 m apart, faced westwards towards the Avon valley, while another, of less regular oval shape, faced south-east; the relatively small and insubstantial westernmost roundhouse was of uncertain orientation, but potentially also faced towards the west.

The square nine-post structure is of uncertain function. Such structures are relatively rare, and this was the only example of this type found on this site. Gent (1983, 245) has suggested that square or rectangular structures with six or more posts were simply variants of the more common four-post structures usually interpreted as granaries. A number of examples of nine-post structures, of certain or probable Iron Age date, have been recorded elsewhere, such as Redgate Hill, Hunstanton, Norfolk (Bradley *et al.*, 1993, 76) and Kingsborough, Kent (Schuster 2010, 95, fig. 4). Closer to the site, two examples were recorded at Danebury, Hampshire (Poole 1984, 91), one of which (PS3 7), at 5 m square, was the largest post structure within the hillfort (*ibid*, 104). A structure's function, however, cannot be discerned simply from its shape: just as not all circular structures were necessarily domestic roundhouses – some may have had ancillary non-domestic functions – not all square nine-posters need have had a storage function. Other potential functions might include excarnation platforms, watch towers, or shrines. However, the arrangement of the posts – particularly the central post, which would have represented a significant internal obstruction at ground level – strongly suggests that, like the four-post granaries, this was also an above-ground-level, raised structure.

The four-post structures averaged 2 m square (posthole centre to centre), with a range from 1.7 m (63434) to 2.1 m (63367). Their postholes averaged 0.29 m wide and 0.14 m deep. In contrast, the postholes in the nine-post structure were more closely spaced (average 1.8 m) and larger (0.43 m wide and 0.21 m deep), indicating that this was a significantly more robust structure than the four-posters, with a substantially greater load-bearing capacity, potentially comprising more than one above-ground floor. While this could indicate a special high-volume storage facility, such a structure would have had a correspondingly greater risk of loss if, for example, it was damaged by fire.

The four-post structures are more widely distributed than the roundhouses, being recorded over a distance of 280 m along the side of the ridge. It is possible, given the difficulty of identifying postholes in areas where the chalk bedrock was very degraded and disturbed by periglacial striations, that there were further roundhouses on the site which could not be discerned. The structures were not randomly distributed, with two distinct clusters on the present site, and some of those on the King's Gate Phase 1 site laid out in distinct rows. If these structures were all granaries, their total number – at least 28 if counting only those with four (or more) posts, but probably significantly more – suggests a storage capacity far greater than that required for a settlement comprising just four roundhouses.

No storage pits were identified of the deep cylindrical or bell-shaped forms found on many Iron Age settlements. It is notable, however, that during the limited evaluation of the Southmill Hill settlement to the immediate north, an example of such a bell-shaped storage pit was excavated; it was 1 m deep and had been backfilled with soil containing Early/Middle Iron Age pottery and other domestic waste. Many similar pits were found at the Early/Middle Iron Age enclosed settlement at High Post (Powell 2011), a site where there was a complete absence of four-post structures. This suggests a significant change in storage practices during the Early Iron Age.

The few discrete pits were also widely distributed and of uncertain function, and it is unclear to what extent, with the notable exception of stone-lined pit 63645 (see below), they were essentially different from those in the pit clusters. However, they all lay at a distance from the apparent core of the settlement, five of them lying near its western limits, and the other two just east of the Wessex Linear ditch. Although some of the pit clusters also lay at a distance from the roundhouses, one end of the largest (63859) was within 4 m of roundhouse 63410.

The Early Iron Age animal bone deposit from pit cluster 63940 includes 35 associated bone groups (ABGs) and a significant quantity of disarticulated bones, mostly from cattle but also pig, sheep and horse. The composition and condition of the bones indicate that it probably formed over a relatively short period, possibly as a result of one or more episodes of deposition, most likely derived from large-scale butchery and consumption events. The apparent inconsistencies in the sequence of radiocarbon dates probably result in part from the well-known plateau in the calibration curve for the period between 800–400 cal BC.

The sheer quantity of meat generated by this activity is considered far greater than could have been consumed by those living locally, although some might potentially have been distributed more widely to outlying villages or cured for longer-term storage. The extravagance of such a 'feast' implies a large gathering of people, presumably involving groups from outside the immediate area. Did these people bring livestock with them, or was the event provisioned locally? The results of isotope analysis (see Faillace and Madgwick, Chapter 5) on cattle skulls and teeth from the deposit indicate that these animals derived from a single herd, that was probably raised locally. However, the sulphur isotope data raises the possibility of a chalkland coastal origin, potentially in Dorset, around Dorchester.

In Iron Age Britain the possession of livestock was a primary expression of wealth and status, but more importantly, it was a fundamental part of the mixed farming economy, providing food (meat and dairy products) and other materials (hide, wool, horn, and bone) but also manure and, in the case of cattle, traction. To herd cattle from one settlement to another over long distances with the sole intention of slaughtering them to feed the wider community can be seen as an act of munificence that would serve to impress and may have been undertaken to establish bonds through marriage or trade, or to reaffirm existing connections. However, it would also have been costly, involving the loss of valuable economic resources, particularly, as in this instance, many of the cattle were young and in their prime.

The role feasting played in promoting social, economic and political relations should not be underestimated and there is significant evidence that large-scale feasting took place throughout prehistory (see, for example, Albarella and Serjeantson 2002; Serjeantson 1991), including several extensive Early Iron Age midden deposits in Wiltshire where profligate resource use appears to have been encouraged to demonstrate the prestige, status and power of individuals and clans (Madgwick and Mulville 2015, 639). These sites include East Chisenbury (Andrews 2021; McOmish *et al.* 2010;), All Cannings Cross (Cunnington 1923), Potterne (Lawson 2000) and Stanton St Bernard (Barrett and McOmish 2009). Small-scale feasting events at sites such as King's Gate (and High Post) appear to demonstrate a more intimate expression of this tradition. The high proportion of fineware bowls and cups in the ceramic assemblage and the treatment of broken quern stones (see below) further highlights the importance of food and drink preparation, presentation and consumption in social interaction and cohesion. At High Post, for example, the extensive spread of animal bones was preserved beneath the bank of a large enclosure, potentially acting as a votive or propitiatory deposit, perhaps to ensure the effectiveness of the defences, which would have required a significant communal effort of construction (Powell 2011, 94).

The deposition of articulated animal bones, including either whole or partial animal skeletons, pottery vessels and agricultural implements such as quern fragments, and even cereal grain and human remains, is a common feature on many Iron Age sites, frequently being recorded as placed deposits in pits (Bradley 2005, 205; Hill 1995). In addition to the 'feasting' deposit in pit cluster 63940, several other pits in the western part of the excavation area contained unusual deposits. These include the skeleton of a raven from pit 63850, associated with a dog skull and feasting debris, and a group of quern fragments from pit 63645. Deposits like the one from pit 63850 have been recorded at Danebury and several other sites (Grant 1984a; Serjeantson and Morris 2011, 89), and the combination of non-food animals with feasting debris suggests complex symbolic associations and meanings linked to this activity. Deposits of multiple querns in a single pit are, however, rare in Iron Age Britain and the King's Gate deposit is particularly unusual because it includes a complete rubstone and saddle quern, along with substantial fragments from four (or five) other querns, all in different lithologies and likely to derive from separate households (see Shaffrey, Chapter 3). The formalised deposition of this 'collective' group of querns highlights the importance of cereal cultivation in the agricultural economy of the settlement (Barrett 1989), while the proximity of the pit to the feasting deposit in 63940 suggests a possible link between these depositional events and between the people who made them.

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Appendices

Appendix 1. Pottery Fabric Descriptions

Early prehistoric:

Grog-tempered wares

G1. Soft fabric; moderate (10%), poorly sorted, sub-rounded grog (1–3 mm); sparse (3%) shell (<3 mm); slightly sandy matrix

G2. Soft fabric; moderate (10%), well-sorted, sub-rounded grog (<3 mm)

G5. Soft fabric; sparse to moderate (7–10%), moderately sorted, sub-rounded grog (1–3 mm); slightly sandy matrix

G6. Soft fabric; sparse (5%), moderately sorted, sub-rounded grog (2–4 mm); sandy matrix

G9. Soft fabric; common (20%), moderately sorted, sub-rounded grog (2–4 mm); sparse (3–5%) angular flint (2–6 mm)

G10. Soft fabric; moderate (10%), poorly sorted, sub-angular grog (2–5 mm); sparse (5%), poorly sorted burnt bone (3–10 mm); slightly sandy matrix

GF1. Soft fabric; moderate (10%), moderately sorted, sub-rounded grog (2–5 mm); sparse (5%), sub-angular flint (<4 mm)

GQ1. Soft fabric; common (20%), well-sorted, angular grog (<2 mm); sandy matrix

Later prehistoric:

Calcareous wares

C2. Moderately hard fabric; sparse (7%), moderately sorted, sub-angular calcareous (possibly limestone) inclusions (<3 mm); sandy matrix

Flint-tempered wares

F3. Hard fabric; moderate (10%), moderately sorted, angular calcined flint (1–4 mm); sparse (3%) sub-rounded iron oxides (<1 mm); sandy matrix

F4. Hard fabric; abundant (40%), well-sorted, angular calcined flint (<2 mm); rare (3%), sub-rounded iron oxides (<1 mm)

F9. Soft fabric; common (20%), moderately sorted, angular flint (1–3 mm)

F10. Soft fabric; sparse (7%), moderately sorted, sub-angular flint (<2 mm); sparse (7%), moderately sorted shell (<2 mm); sparse (3%) sub-rounded iron oxides (<1 mm)

FG1. Soft fabric; sparse (7%), well-sorted, sub-angular flint (<1 mm); sparse (5%), moderately sorted grog (<2 mm); sandy matrix

Sandy wares

Q1. Soft fabric containing common (25%), well-sorted, sub-rounded quartz sand (<1 mm); rare (1%) flint or shell probably accidental or natural

Q2. Soft fabric with sparse to moderate (7–10%), well-sorted, sub-rounded quartz sand (<0.5 mm) with sparse (5%), sub-rounded iron minerals (<1 mm)

Q3. Soft fabric with very common (30%), well-sorted, sub-rounded quartz sand (<1 mm) and no obvious temper

Q5. Moderately hard, coarse fabric; moderate (15%), moderately sorted, sub-rounded quartz sand (0.25–1 mm); sparse to moderate (7–10%) poorly sorted crushed fossil shell (1–8 mm)

Q6. Hard, fairly fine fabric; moderate (15%), moderately sorted, rounded quartz sand (0.25–0.75 mm); rare (2%) unidentified black inclusions (1–4 mm)

Q7. Moderately hard fabric; moderate (10%), well-sorted, sub-rounded quartz sand (<0.5 mm); rare poorly sorted shell (1–3 mm) and rare organics (<3 mm)

Q8. Soft fabric; common (20%), moderately sorted, sub-rounded quartz sand (<1 mm); sparse (5%), sub-angular flint (<2 mm, rarely up to 5 mm); rare (1%) calcareous inclusions

Q9. Soft fabric; common (20%), moderately sorted, sub-rounded quartz sand (<0.5 mm); sparse (7%), sub-angular flint (<2 mm); sparse (3%) iron oxides (<1 mm)

Q10. Soft fabric; very fine micaceous sandy matrix; rare iron oxides (<1 mm)

Q11. Soft fabric; abundant (40%), well-sorted, sub-rounded quartz sand (<0.5 mm); rare flint or shell (<2 mm) probably accidental or natural

Q12. Soft fabric; common (20%), moderately sorted, sub-rounded quartz sand (<1 mm); rare (2%), moderately sorted shell (<3 mm); rare (1%), sub-angular flint (2–4 mm)

QVes1. Soft fabric; common (25%), moderately sorted, sub-rounded quartz sand (<1 mm); sparse (5%), poorly sorted linear and platey voids (2–5 mm)

Rock-tempered ware

R1. Soft fabric; moderate (15%), moderately sorted, sub-angular igneous rock inclusions (1–2 mm); moderate (10%) mica (<0.5 mm)

Shell-tempered wares
S1. Soft fabric; moderate (10%), well-sorted shell (<2 mm); sparse to moderate (7–10%), angular flint (1–3 mm); quartz sand matrix
S2. Soft fabric; abundant (40%), poorly sorted shell (1–5 mm); slightly sandy matrix
S4. Soft fabric; abundant (40%), poorly sorted shell (1–5 mm); moderate (15%), rounded, black/brown grains (<1 mm); slightly sandy matrix
S5. Soft fabric; very common (30%), well-sorted, sub-rounded quartz sand (0.5–1 mm); moderate (15%) poorly sorted shell (1–7 mm)

Appendix 2. Catalogue of Worked Stone

Late Bronze Age/Early Iron Age
1. Marcasite sphere. 40–42 mm diam. Wt 119 g. Context 66028, Late Bronze Age/Early Iron Age pit 66027
2. Cobble hone. Flat approximately rectangular cobble, worn smooth on both faces and slightly dished on one. >95 mm x 69 mm x 24 mm thick. Wt 217 g. Very fine-grained sandstone. Context 66028, Late Bronze Age/Early Iron Age pit 66027.
3. Cobble hone. Flat approximately rectangular cobble, worn smooth on both faces. Measures >75mm x 72 x 23m. Wt 214 g. Very fine-grained sandstone. Context 66028, Late Bronze Age/Early Iron Age pit 66027.

Early Iron Age
4. Rubber. Complete with pecked grinding surface that is curved and convex in all directions. It is worn smooth at one end of the rubber. The back of the rubber has some pecking where it has been shaped, and a large irregular area of smoothing. 195 mm x 155 mm x 66 mm max thickness. Wt 2.3 kg. Sarsen. ON 15338, context 63648, Iron Age pit 63645.
5. Saddle quern. Almost complete rectangular quern with pecked grinding surface that is dished along its length and approximately flat across its width. It is not a pair with the rubber from this context (the sizes are wrong and the grinding surfaces do not match). This has straight sides flaked to shape and an unworked base that is very irregular and is smoothed, either naturally, prior to making into a quern, or from movement during use. The grinding surface has some slight areas of smoothing and there are a few larger holes where grains or fossils have been plucked out. Both ends look like they have sustained some damage. >235 mm x 135–140 mm x 48 mm max thickness. Wt 2.5 kg. Greensand. Gritty sandstone with frequent polished pink grit, quartz and pink feldspar; rare fossils are seen, including one bivalve of 11 mm. ON 15332, context 63648, Iron Age pit 63645.
6. Saddle quern. Three adjoining fragments. The grinding surface is slightly dished and neatly pecked all over but is smoothed, particularly across one side. The quern is roughly rectangular in profile with sides that taper in towards the base. The base is roughly flat and also neatly pecked; the sides do not appear to have been worked. >200 mm x 175 mm wide. Wt 5.9 kg. Medium-grained, well-sorted, slightly micaceous purple ferruginous sandstone. ON 15330. Context 63648. Fill of pit 63645.
7. Quern. Fragment with flat, pecked surface and part of pecked outer edge. No other original faces survive, and it is not possible to tell whether it is from a saddle quern or a rotary quern. Wt 533 g. Sarsen. ON 15329, context 63648, Iron Age pit 63645.
8. Quern. Fragment with flat, pecked surface. No other original faces survive. A second smaller fragment is almost certainly from this same quern although the fragments do not adjoin. This also has a flat, neatly pecked grinding surface and is burnt/blackened. Wt 546 g and 1697g. Quartz. ON 15342/37, context 63648, Iron Age pit 63645.
9. Probable quern. Small fragment. Generally quite worn. Wt 27 g. Medium-grained purple ferruginous sandstone. Context 63648, Iron Age pit 63645.
10. Saddle quern. Boulder, chipped around the upper edges and given a flat, pecked grinding surface which is worn smooth in some places but covered by concretions. >230 mm x 195 mm x 95 mm thick. Wt 4.9 kg. Quartzite. ON 15341, context 63648, Iron Age pit 63645.
11. Building stone. Boulder with some pecking on two faces, but not worked into a quern. Perhaps a roughout, or, as roughly rectangular, shaped for building stone. 270 mm x 180 mm x 110 mm thick. Wt 6.9 kg. Carstone. ON 15328, context 63648, Iron Age pit 63645.
12. Quern. Fragment with flat, pecked grinding surface. Lower face is crudely rounded. 66 mm thick. Wt 517 g. Fine-grained purple ferruginous sandstone. ON 15358, context 64021, Early Iron Age pit cluster 63940.

Undated
13. Worked stone. Approximately rectangular stone with wear to one face. Possible hone stone. 56 mm x 44 mm x 30 mm. Wt 154 g. Diorite? Context 63860, undated pit 63861.

Appendix 3. List of Associated Animal Bone Groups (ABGs)

Context	*Spit*	*Grid*	*Cut*	*Group*	*ABG*	*Species*	*Side*	*Age estimate*	*Comments*
63911	1	-	-	Pit cluster 63940	63920	cattle	L	adult	mandible TWS p4 = e, m1 = k, m2 = g, m3 = g (distal cusp absent); MWS = G (adult)
					63921	cattle	L	adult	mandible TWS dp4 = k, m1 = g, ,2 = c, m3 = b; MWS = E (30-36 mths)
					63922	horse	-	adult	Skull (no cheek teeth present, canines suggest possibly male)
					63927	cattle	-	adult	atlas, axis, cervical & thoracic vertebrae, ribs
					63929	cattle	-	adult	atlas, axis & cervical vertebrae
					63930	cattle	-	adult	thoracic vertebrae & ribs
					63932	cattle	-	?subadult	skull with horn cores
					63933	pig	-	subadult	skull (female)
					63934	cattle	-	?adult	skull with horn cores
					63936	cattle	-	adult	thoracic vertebrae poss. assoc. with ABGs 63929 & 63930
					63937	cattle	-	subadult	skull & hyoid
					63938	cattle	-	?juvenile	skull with horn cores
					63939	cattle	L&R	adult	right tibia, left & right metatarsals, tarsals, astragali, calcanea, first & second phalanges
					63941	cattle	-	adult	skull with small horn buds
					63942	cattle	-	adult	skull
					63943	cattle	-	subadult	skull
					63944	cattle	-	subadult	skull
					63945	cattle	-	adult	thoracic vertebrae
63912	1	D4	63963		63923	cattle	R	adult	tibia, tarsals, astragalus & calcaneus
					63926	cattle	-	?subadult	skull
					63928	cattle	L	adult	radius & ulna
					63931	cattle	L	young adult	metatarsal, tarsals & astragalus
	2				63956	cattle	R	young adult	metatarsal, tarsals, astragalus, calcaneus & first phalanges (slightly scorched)
					63961	cattle	R	adult	radius & ulna
					63962	cattle	L	adult	tibia, metatarsal, tarsals, astragalus, calcaneus & first phalanges, also includes sesamoids
					64054	cattle	L	adult	tibia, astragalus & calcaneus
					64055	cattle	L	adult	humerus, radius & ulna
					64056	cattle	L&R	adult	pair femurs, right tibia
					64057	cattle	L	adult	metatarsal & first phalanges
63964	2	-	-		63935 & 63968	cattle	-	subadult	skull, atlas, axis, cervical & thoracic vertebrae, & ribs
					63965	pig	-	neonate	thoracic & lumbar vertebrae, & ribs
					63966	cattle	-	adult	skull
					63967	cattle	-	?neonate	skull
					64059	pig	L&R	immature	mandible TWS dp4 = f, m1 = c, m2 = E, MWS = C (7–14 mths)
64011	-	-	64010		64058	cattle	-	adult	articulated section thoracic vertebrae
66083	-	-	66082	Ditch 66096	-	sheep/ goat	L&R	young adult	cremated remains of entire animal

wessex archaeology

In 2015–8 a programme of archaeological works was undertaken on land to the south-east of Amesbury, Wiltshire, in advance of the King's Gate Phase 4 residential development.

Previous archaeological investigations within the wider development area have revealed a landscape rich in prehistoric and Romano-British remains, including monuments, settlements and burials.

The recent excavations recorded several features containing Late Neolithic, Beaker and Early Bronze Age pottery, indicating the extension to the south and south-west of activity previously recorded on Amesbury Down. A small mixed-rite group of Middle Bronze Age graves lay on the south-east-facing slope of a dry valley with an extensive spread of soil, which may represent the plough-levelled remains of a turf mound.

Early Iron Age activity, including roundhouses, four-post structures, and clusters of intercutting pits, is an extension of the settlement previously recorded on the King's Gate Phases 1/2 excavation to the north-east.

Of major significance is the large animal bone deposit found in the upper levels of one of the pit clusters. This deposit formed over a short time span, possibly representing one or two communal feasting events. Isotope analysis on cattle bones from the deposit indicate that these animals derived from a single herd, probably reared locally but potentially in a chalkland coast setting. The evidence suggests the settlement had wider links and highlights the importance of sharing food and resources to bind communities.

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BLOOR HOMES