

*Iron Age and Roman Settlement, including
a Wootton Hill-Style enclosure, and
Bronze Age ring-ditch, south of Main
Road, Earls Barton, Northamptonshire*

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Cover illustrations

- Front:** Aerial view of the development area from the north, with Earls Barton and River Nene in background (Image by Commission Air Ltd; © Albion Archaeology)
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Fieldwork

The fieldwork was managed by Mike Luke (Project Manager) and overseen by Ben Barker (Project Officer). The main areas of excavation were supervised by Ben Carroll and the smaller one by Marcin Koziminski. Hand excavation and recording were undertaken by Matt Billings, Hanno Conring, Mike Emra, Allan King, Anna Orlowska-Synus, Krzysztof Ryniec, Gareth Shane, Marcin Synus, Slawek Utrata, Catie Watts, Heather White, Adam Williams and Adrian Woolmer.

Metal-detecting was undertaken by Archie Gillespie and Mike Head, with dGPS survey by Mercedes Planas (Souterrain Archaeological Services). Earthmoving was undertaken by Whitmore Plant.

All finds were processed under the supervision of Jackie Wells (Finds Officer), who also, along with Holly Duncan, undertook the initial finds identification during fieldwork. Processing of the ecofact samples was supervised by Gary Edmondson. Digitisation of the site plans was undertaken by Joan Lightning.

Post-fieldwork

The post-fieldwork stages of the project were managed by Mike Luke. The provisional phasing hierarchy and contextual assessment were undertaken by Ben Carroll, whose work was finalised for this publication by Jo Barker.

The same specialists worked on both the assessment and the analysis/publication – they are duly acknowledged as contributors within this publication. All ironwork and selected non-ferrous objects were x-rayed by Pieta Greaves (Drakon Heritage and Conservation). Identification of the petrology and source of the worked stone assemblage was carried out by Jill Evers (Chiltern Archaeology), who also identified the samian ware. Both report forms part of the project archive. Identification of the small mammal and amphibian bones was carried out by Michelle Feider and her comments are integrated into the animal bone report. All Albion projects are under the overall management of Drew Shotliff (Operations Manager), who also had the task of reading, commenting on and editing the entire publication.

Photographs

All the photographs published here are Albion Archaeology copyright including Plate 1.1 which was taken by Commission Air Ltd. Photographer credits within the main publication: Ben Barker (Plate 1.3, 5.6, 5.9, 5.11, 5.15), Ben Carroll (Plates 1.2, 5.4, 5.5, 5.16, 5.17), Matt Billings (Plate 5.10), Hanno Conring (Plate 5.14), Mike Emra (Plates 5.7 and 5.8), Allan King (Plates 5.3, 5.13), Marcin Koziminski (Plate 2.3), Anna Orlowska-Synus (Plates 4.1, 5.12), Gareth Shane (Plates 5.1 and 5.2), Slawek Utrata (Plate 2.2), Adam Williams (Plate 2.1), Adrian Woolmer (Plate 3.1). The artefact photograph was taken by Adam Williams.

About this publication

Structure

Following this preamble, both the introduction and the discussion of results are presented in Chapter 1. Chapters 2–5 contain a phased chronological description of the evidence prior to the medieval period; the chapter numbers correspond to the Phases, e.g. Phase 4 is in Chapter 4 etc. These chapters each begin with an overview and a standardised Phase location plan. The text is then typically arranged by Site Landscape (SL number), e.g. settlement areas, with sub-divisions for more significant Land-use Areas (L), e.g. enclosures, activity foci, routeways, monument, and for Groups (G), e.g. buildings, water-pits etc.

Plans, section drawings and plates accompany the text. Significant artefactual/ecofactual evidence is included only where appropriate. The artefactual (Chapter 7) are supplemented by detailed appendices for pottery and coins.

Terminology and abbreviations

An understanding of the structural hierarchy is fundamental to an understanding of the layout and terminology used in this publication. It is described in more detail below (see Chapter 1: The archaeological background; Post-excavation analysis). The main elements comprise Phases (written in full), Site Landscapes (SL prefix), Land-use Areas (L prefix) and Groups (G prefix).

Most of the feature fills were similar, so a generic description is given in the introduction (Chapter 1). On site, slight variations in colour, soil matrix and inclusions were used to distinguish between different fills. Such detail is only included in the text where it aids understanding of the evidence. In general, primary or lower fills tended to be lighter in colour and contain fewer stones. All measurements are metric.

The following terms and abbreviations are used throughout the publication:

Domestic focus: a concentration of buildings, other features and finds suggestive of a focus of activity, which for convenience has been described as ‘domestic’, but which might have included other activities, e.g. crafts, food-processing etc.

Building: a substantial structure, e.g. a roundhouse – also used where no structural elements survive and the evidence is indirect, e.g. a length of drainage gully, the layout of an enclosure etc.

Stonework: an arrangement of stones, whose function is uncertain, including spreads and linear arrangements that probably indicate the location of walls (either in-situ or partially robbed).

Routeway: a linear zone defined by two ditches and used for the movement of animals or people.

Gully versus ditch: used to distinguish the size of linear features, i.e. gully generally less than 0.7m wide and 0.4m deep, with ditches being larger. However, the term gully is always used for linear features associated with possible roundhouses.

Associated bone group (ABG): associated groups of bone at the time of deposition or, at the very least, part of the same animal.

Central Belt: as defined by the Roman Rural Settlement Project ranging from the Vale of Taunton in the south-west of England to and including the Fens in the east of England (Fulford and Brindle 2016, 15–6, fig. 1.5; Smith 2016, 141)

Phases and chronological periods

The indicative date ranges for each phase are as follows:

Phase 1: Early prehistoric (residual flint artefacts recovered from later features)

Phase 2: Early–middle Bronze Age c. 3000–2000 BC

Phase 3: Middle–late Iron Age c. 400–100 BC

Phase 4: Late Iron Age/early Roman c. 100 BC–AD 100

Phase 5: Roman c. AD 100–400

Tables

Table numbering relates to the chapter number e.g. tables in Chapter 3 (Phase 3) are numbered 3.1, 3.2, 3.3 etc. The tables provide detailed information in an easy-to-view manner. Where possible, they have been standardised to allow quick and easy comparison between chapters.

Figures

Illustrations within each chapter are numbered in a unique sequence, e.g. Chapter 3 illustrations are numbered Figure 3.1, 3.2, 3.3 etc.

Reconstructions

This publication includes two reconstruction drawings showing the Iron Age and Roman settlements. Although based where possible on the archaeological evidence, these inevitably require a degree of artistic licence to make them meaningful.

Drawing conventions

Plans

The plans are only labelled with those elements of the structural hierarchy (e.g. SL, L or G numbers) referred to in the text. Most plans distinguish between excavated and unexcavated parts of features by the use of shade. Where relevant, earlier features are shown in a different colour or tone.

Where possible, section drawings are included on the plans for ease of reference. They are greyed to help distinguish them from features shown on the plan. In general, section drawings on plans are not labelled in order to keep the figures uncluttered.

Sections

The majority of the section drawings are at a scale of 1:40. Different line types are used for 'cuts' and their fills. All sections are positioned in the horizontal plane, but no OD heights are given. They are usually either south- or west-facing; if necessary, the original drawing has been mirrored. Section drawings are only labelled where it will aid understanding of the text. Accordingly, most fills are not labelled because they are not specifically mentioned in the text.

Appendices

Detailed information is presented in appendices – pottery type series (Appendix I) and coin catalogues (Appendix II).

Date of writing

All the specialist reports were completed by the end of 2020 with the other text written in 2021.

Location of the archive

The archive will be deposited with the Northamptonshire Archaeological Resource Centre, under Event number ENN107754.

Date of text production

The main specialist reports were completed by the end of 2017 but those for the school site (Appendix I) were not completed until March 2019. The first draft of this publication was issued in December 2019.

Location of the archive

The archive of finds and records from both projects will be accessioned separately with The Higgins Art Gallery and Museum, Bedford under numbers BEDFM: 2011.91 (BWN1893) and BEDFM 2014.55 (LNB626).

Summary

This report describes the results of Albion Archaeology's open-area excavation, undertaken between April and September 2016, on land to the south of Main Road (A4500), Earls Barton, Northamptonshire. The site was centred on SP 8511 6454. Evaluation by geophysical survey and trial trenching had identified the archaeological remains dating from the early Bronze Age to the modern day. Most of the excavated remains related to a settlement that originated in the middle-late Iron Age and continued in use, with two main changes in layout, throughout most of the Roman period. Contemporary remains – now clearly part of the larger settlement – had been previously identified within the adjacent Mallard Close excavation.

The earliest remains comprised an early Bronze Age ring-ditch monument (Phase 2). It had a near-central cremation burial, which is presumed to be primary, although the form of the urn could not be determined. A second cremation burial in a collared urn lay just outside the north edge of the ring-ditch. Two un-urned cremation burials were placed into the infilled ring-ditch and are, therefore, not viewed as contemporary with the original monument. One of these was radiocarbon-dated to the middle Bronze Age, suggesting that while the ditch was filling up it was still a focus for burial.

The earliest firm evidence for settlement dates to the middle-late Iron Age (Phase 3), possibly originating in the early 1st century BC, and was located c. 300m to the east of the ring-ditch monument. The settlement included unenclosed and enclosed areas. Due to its relatively small size, but exceptionally large ditch, the enclosure to the north can be characterised as a Wootton Hill-style enclosure – named after the type-site at Wootton Hill Farm, Northampton. Based on the scale of the enclosure ditch, and associated gateway at some sites, the inhabitants of Wootton Hill style enclosures had the power to command resources (labour and timber) and may have been members of the elite. The enclosure contained evidence for one roundhouse with another located just outside. Two other roundhouses were present within the unenclosed area to the south. Storage pits were found both within the enclosure and in the unenclosed areas, especially to the south.

Possibly in the early 1st century AD the settlement layout was modified to create a series of conjoined enclosures (Phase 4), which incorporated the Wootton Hill-style enclosure. The settlement layout was modified again (Phase 5), possibly by the middle of the 2nd century, although its overall layout remained the same. The presence of five 4th-century coins suggests that activity continued into this century but as the latest coin found was struck in AD 347/348 it may not have continued much beyond that.

Evidence for domestic activity – buildings, stonework, wells, pits, and postholes – was identified in many of the enclosures; whilst others contained evidence for crop-processing and malting. Up to six drying ovens, including one within the Mallard Close excavation, were present within the Roman settlement. Four were T-shaped ovens; the form of the other two is uncertain but they too may have been T-shaped. Integral parallel ditches within the settlement may be described as a routeway but were probably designed for animal control/management.

In the Roman period the use of ironstone and limestone for lining wells and for the construction of buildings and enclosure walls indicates that the inhabitants had the power/wealth to access this resource. The multiple drying ovens within the Roman settlement may also point to the collection and processing of cereals on a significant scale. However, while the overall finds assemblage from Main Road is comparable to those from similar farmsteads, the numbers and range of items are limited. This is perhaps surprising, given the settlement's proximity to the postulated road linking the small towns – and therefore markets – at Irchester (6km to the east) and Duston (8km to the west). While this could be viewed as evidence for the absence of inhabitants of high social status, to some extent such evidence is intrinsically linked to not just an individual's ability but also their willingness to 'buy into' new Roman fashions. Although the settlement underwent several changes in layout, these were not dramatic, and it is possible that the same family lived there for several generations.

A second late Iron Age/Roman settlement c. 430m to the west was preserved *in situ* within the development area. It was only examined during the evaluation and is, therefore, less well understood; it is briefly discussed in this report.

The recovery of 20 sherds of early to middle Anglo-Saxon pottery from the upper fills of enclosure ditches within the eastern settlement does suggest that some activity was still taking place in this period; however, no contemporary features were identified. Furrows, indicative of medieval strip cultivation, showed no similarity in alignment to the Roman ditches.

Chapter 1

Introduction and discussion

1.1 INTRODUCTION

This publication presents the results of open-area excavation undertaken in advance of a large-scale residential, recreational and commercial development on land south of Main Road, Earls Barton, Northamptonshire (Plate 1.1).

Planning and background to the investigations

David Wilson Homes (South Midlands) were granted outline planning consent (WP/2013/0510), by the Borough Council of Wellingborough, for a large-scale residential, recreational and commercial development on land south of Main Road, Earls Barton. As the development area was known to lie in an archaeologically sensitive area (*see* Archaeological background), the Northamptonshire County Council Archaeological Team advised that a condition should be placed on the consent in order to secure a programme of archaeological mitigation in advance of construction.

Location, topography and geology

The development area (DA) lies on the north side of Earls Barton and is centred on NGR SP 8511 6454. It measures c. 18.2ha in extent. It is bounded by Main Road (A4500) to the north, properties fronting onto Northampton Road (B573), Elizabeth Way and Hornby Road to the south and west, and by Earls Barton Cemetery and industrial development on Mallard Way to the east (Fig. 1.1).

The site lies on a slight north-facing slope, with ground levels generally at 94–100m OD. Approximately 200m to the north is the Swanspool Brook and c. 2km to the south is the River Nene. The surface geology comprises Ooidal Ironstone of the Northampton Sand Formation (in the north half of the site) and Sandstone and Siltstone of the Stamford Member (in the south half of the site). Parts of the site had previously been subject to quarrying for ironstone and gravel (CgMs 2013, 6, fig. 2).

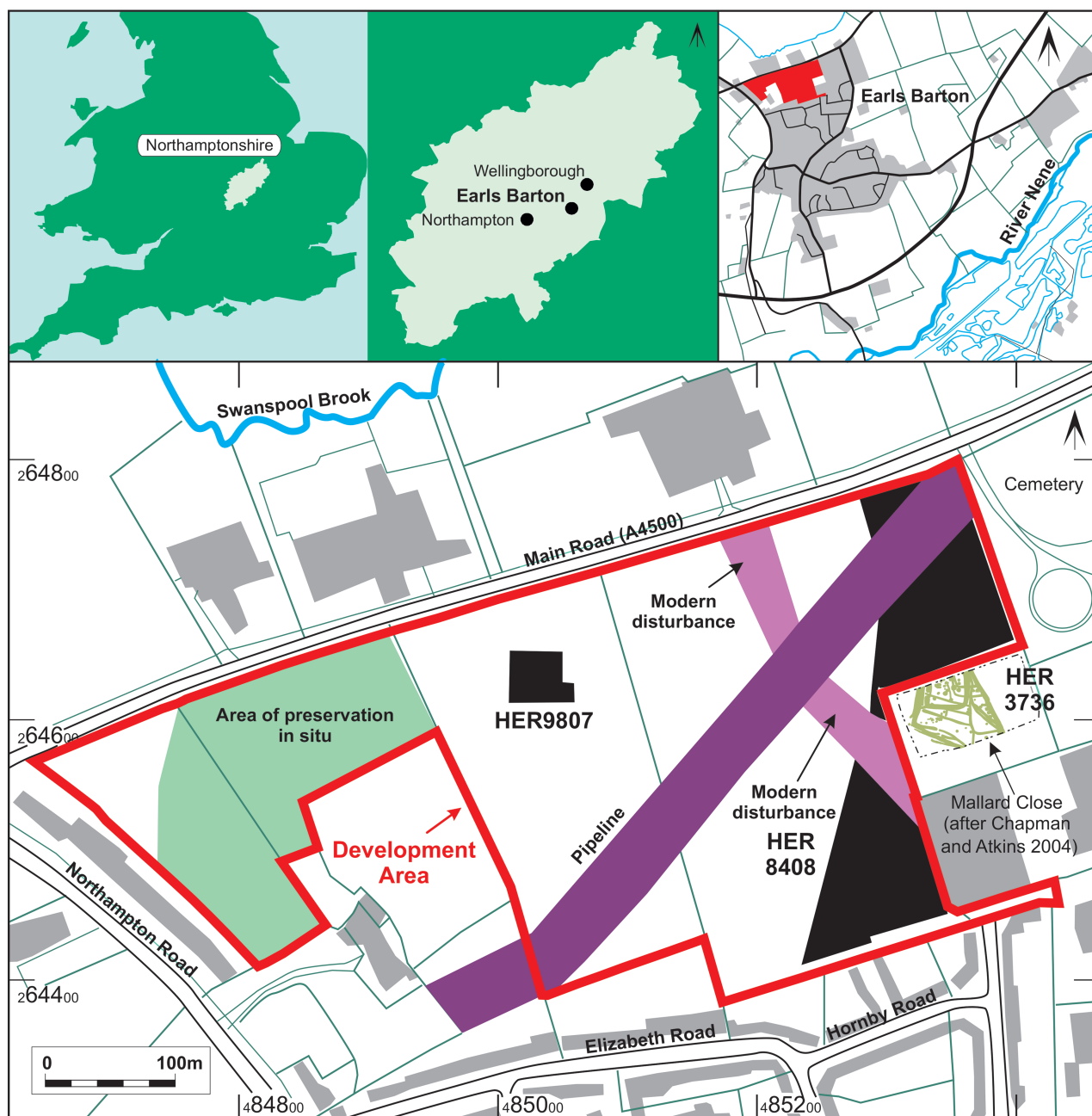
Archaeological background

The archaeological and historical background to the site is detailed in a heritage statement (CgMs 2013); the most relevant elements are summarised here:

- Ring-ditch (HER9807), known from aerial photographs, lay within the development area.
- Corridor associated with former ironstone quarrying (HER 8408), lay within the east part of the development area.
- Immediately east of the development area, settlement (HER 3736) originated in the late Iron Age and by the Roman period comprised several ditched enclosures, one of which was believed to be walled (Chapman and Atkins 2004).



Plate 1.1 Aerial view of the development area from the east, with Earls Barton to the left and Main Road (A4500) to the right (Image by Commission Air Ltd; © Albion Archaeology)



The excavation took place between April and September 2016 (Plate 1.2), with a preliminary report produced at the end of fieldwork (Albion Archaeology 2016). Ploughsoil and subsoil were mechanically removed under archaeological supervision, exposing the underlying geological strata. A pre-excavation plan was immediately created and used to formulate the excavation strategy. All hand excavation and recording were carried out in accordance with the Written Scheme of Archaeological Investigation, Recording, Analysis and Publication (Albion Archaeology 2015) and Albion Archaeology's Procedures Manual (Albion Archaeology 2017). All isolated archaeological features were half-sectioned (Plate 1.3) except for graves, drying ovens and water-pits/wells which were fully excavated. Initial

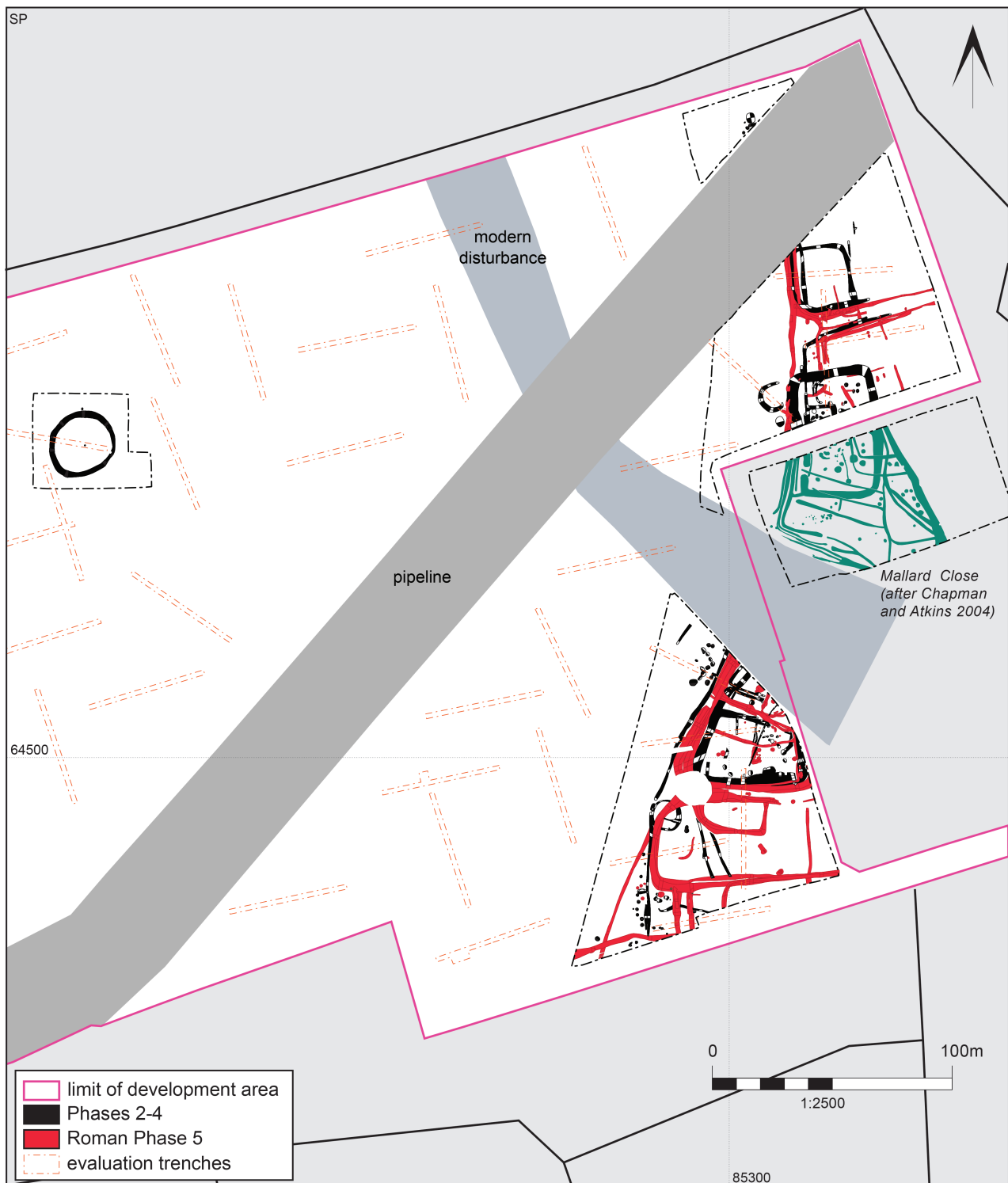


Figure 1.2 All-features plan

segments through ditches were distributed evenly along their lengths, although potentially significant variations in their upper fills, e.g. artefact or ecofact concentrations, were also targeted. Finds and ecofact processing was undertaken concurrently with fieldwork to maximise feedback into, and adjustment of, the excavation strategy.

The features contained fills that were generally firm, mid-grey-brown, silty clay, with occasional small to large stones and charcoal flecks. Any fills that fall outside that ‘norm’ are described in more detail in Chapters 2–5.

Assessment and updated project design

An assessment and updated project design was produced in April 2019 (Albion Archaeology 2019), summarising the results and identifying how the recovered data could address local, regional and national research priorities. In addition, it set out the methodological basis for the post-excavation analysis.

Post-excavation analysis

The overall approach involved the manipulation of all data within a fully integrated, computer-based system of



Plate 1.2 View of northern part of excavation area with T-shaped drying oven G53, looking south-east



Plate 1.3 Archaeological investigation of a pit in cluster G112

analysis. All structural, artefactual and ecofactual data were entered onto an Access database, creating an interface with the digital drawings and images. This allowed rapid and flexible analysis of the data and facilitated the creation of the text and plans which form the basis of this publication.

The methodology for the contextual analysis is summarised below; an understanding of the contextual hierarchy is essential as it underpins the structure of this publication. Analytical methodologies for the artefacts and ecofacts are summarised in the relevant sections. The updated project design (Albion Archaeology 2019) contains full details of the methodologies applied to each dataset.

Contextual

In total, 1949 contexts were recorded on site. Albion Archaeology employs a standardised approach to detailed

contextual analysis, requiring the assignment of contexts to a hierarchy. Each hierarchical level/element gradually becomes more interpretative and less detailed in nature. It should be borne in mind that it is the level within the structural hierarchy that is important, *not* necessarily the actual name of the hierarchical element (e.g. Phase, Site Landscape, Land-use Area etc.). An understanding of these terms is essential to the understanding of this publication as it provides the main framework for presentation of the results.

During analysis, the contexts were combined into a hierarchy, comprising:

Phases: broad, chronological divisions, e.g. middle-late Iron Age, late Iron Age/early Roman, medieval.

SL (Site Landscape): a collection of spatially coherent Land-use Areas, e.g. settlement, activity focus.

L (Land-use Area): a collection of broadly contemporary and spatially coherent groups, e.g. an enclosure, field.

G (Group): more interpretive entities, e.g. buildings, ditch lengths, pits clusters etc.

SG (Sub-group): indivisible unit of interpretation, e.g. grave.

Radiocarbon dating

Human bone from two cremation burials was sent to the Scottish Universities Environmental Research Centre (SUERC) for dating. The accelerator mass spectrometry (AMS) dating failed due to insufficient carbon in the bone. However, a subsequent sample of oak charcoal from cremation burial G12 was successfully dated (SUERC-96918).

1.2 DISCUSSION

Mike Luke, incorporating the work and ideas of Jo Barker, Dana Challinor, Corinne Duhig, Holly Duncan, John Giorgi, Peter Guest, Mark Maltby and Jackie Wells

Introduction

The archaeological investigations recovered evidence for human activity spanning the late Neolithic to the modern day. The most extensive remains relate to Iron Age and Romano-British farming communities. Also present were an early Bronze Age ring-ditch monument (associated with two contemporary cremation burials) and two middle Bronze Age cremation burials.

Evaluation by geophysical survey and trial trenching had provided an initial overview of the archaeological landscape and allowed the definition of areas of archaeological significance (Albion Archaeology 2014); these became the focus of open-area excavations with the exception of the western area which was preserved *in situ*. The eastern area of Iron Age and Roman settlement clearly continued beyond the development area and had previously been investigated within the adjacent excavation at Mallard Close (Chapman and Atkins 2004), the results of which have, where appropriate, been integrated into this discussion to provide an overview of as much of the settlement as possible.

Phasing of most of the features found at Main Road is based on the pottery assemblage, which can be broadly dated to the early Bronze Age, middle-late Iron Age, late Iron Age/early Roman, Roman, and early to middle Anglo-Saxon periods. A single radiocarbon determination provided a more precise date for one middle Bronze Age cremation burial.

The discussion, which concentrates on the Iron Age and Roman evidence, is organised into a number of themes: land-use, continuity and discontinuity; settlement extent, development and morphology; settlement components; economic basis of settlements; ritual and beliefs; and status and wealth.

Land-use, continuity and discontinuity

The Main Road investigations produced evidence for a prolonged period of past land utilisation. Its compartmentalisation into specific phases can usefully characterise activity at a particular point in time and thereby highlight discontinuity. Conversely, this process can also hinder an appreciation of continuity in the landscape. The transition from one chronological period to the next is a common theme in research agendas (Historic Environment Forum 2015).

Early Bronze Age (Phase 2) ring-ditch monument L1 is the first firm evidence for human activity within the excavation area. There was no evidence for a mound, bank or any reworking/cleaning of the monument's ditches after its construction. Cremation burial G2 was placed almost centrally within the interior of the monument and is, therefore, presumed to be primary; the form of the urn could not be determined. A second cremation burial G3 in a collared urn lay just outside the north edge of the ring-ditch. Two unurned cremation burials were placed into the infilled ring-ditch and are, therefore, not viewed as contemporary with the original monument. One of these, G12, was radiocarbon-dated to the middle Bronze Age, suggesting that while the ditch was filling up it was still a focus for burial – a known phenomenon of this

period (Luke 2016, 175). No evidence for the settlements associated with these Bronze Age burials was recovered.

The earliest firm evidence for settlement dates to the middle-late Iron Age (Phase 3), possibly originating in the early 1st century BC. It was located c. 300m to the east of ring-ditch L1. The settlement included an enclosure that can be classed as a Wootton Hill-style enclosure (discussed further below). Contemporary remains, including the south part of the enclosure, had previously been identified within the adjacent Mallard Close excavation (Chapman and Atkins 2004, 35–7).

Possibly in the early 1st century AD the Phase 3 layout was modified to create a series of conjoined enclosures (Phase 4), which incorporated the Wootton Hill-style enclosure. This fits the observed pattern where the majority of late Iron Age settlements in the Central Belt (as defined by the Roman Rural Settlement Project (Fulford and Brindle 2016, 15–16, fig. 1.5)) continued in use after the Conquest, although distinct variations were seen in the different landscape zones of the region (Smith 2016, 150). The settlement layout was modified again (Phase 5), possibly by the middle of the 2nd century, although its overall layout remained the same. The presence of five 4th-century coins suggests that activity continued into this century but as the latest coin found was struck in AD 347/348 it may not have continued much beyond that. A similar suggestion was made for the part of the settlement within the Mallard Close excavation (Chapman and Atkins 2004, 56). This fits with the known 'major phase of abandonment' during the later 4th century observed by the Roman Rural Settlement Project (Smith 2016, 151). However, the presence of 20 sherds of early to middle Anglo-Saxon pottery in the tops of enclosure ditches suggests that some activity was still taking place in this period, although no contemporary features were identified. The furrows, indicative of medieval strip cultivation, showed no similarity in alignment to the Roman ditches.

A second late Iron Age/Roman settlement was preserved *in situ* within the development area, c. 430m from that described above. It was only examined during the evaluation and is, therefore, less well understood. It is known that in Northamptonshire neighbouring settlements can be less than 1km apart; although such settlements are relatively common in the region, they 'are very unevenly distributed and poorly understood' (Taylor 2006, 143).

Settlement extent, development, and layout

It is clear from their layouts that the Iron Age and Roman settlements to the east of the DA extended beyond the limit of excavation (Fig. 1.3). The adjacent Mallard Close excavation (Chapman and Atkins 2004) is also now known to represent a tiny part of the much larger settlements.

Middle-late Iron Age (Phase 3)

The earliest settlement was in use during the middle-late Iron Age (Phase 3); it appeared to extend in a loose linear arrangement (Plate 1.4) – over 2ha in extent, if settlement area SL2 to the north is included. It was largely unenclosed but did feature a single rectilinear enclosure L11, defined by large ditches, which can be classed as a Wootton Hill-style enclosure (Dix and Jackson 1989, 158, see below for fuller discussion). The enclosure contained evidence for one roundhouse with another located just



Figure 1.3 Comparative plans of the middle-late Iron Age (Phase 3), late Iron Age/early Roman (Phase 4) and Roman (Phase 5) settlements

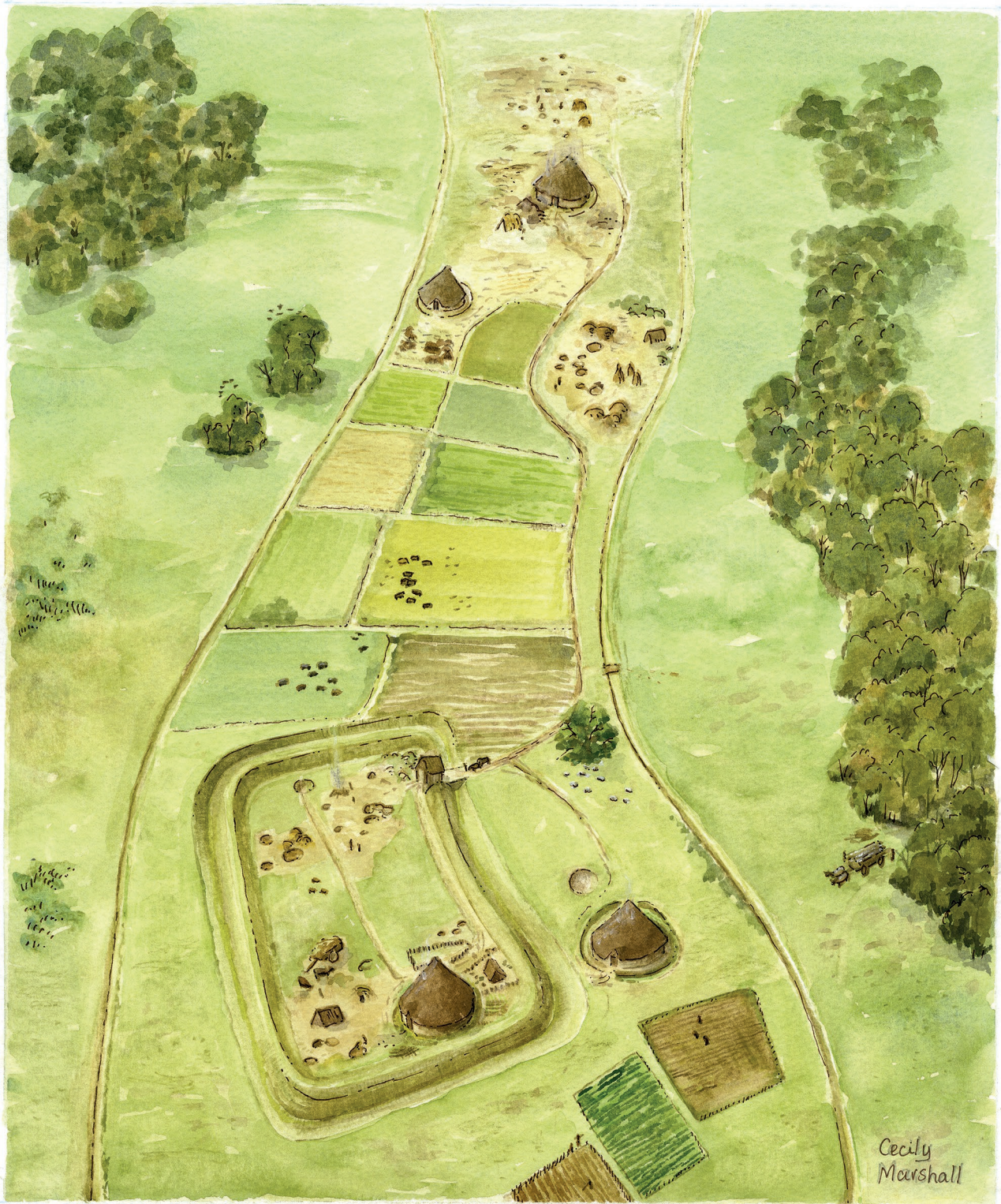


Plate 1.4 Reconstruction of how the Iron Age (Phase 3) settlement might have looked, looking south

outside. Two other roundhouses were present within the unenclosed area to the south SL10. Storage pits were found both within the enclosure and in the unenclosed areas, especially to the south. The pottery assemblage can only be dated broadly to the middle-late Iron Age, meaning that it is uncertain if all three settlement areas were in use at the same time.

Late Iron Age/Roman (Phases 4 and 5)

Two late Iron Age/Roman settlements were identified within the development area. The settlement to the east, which originated in the middle-late Iron Age, was modified to create a series of conjoined enclosures, which incorporated the Wootton Hill-style enclosure. The Phase 4 settlement extended over 1.7ha with its domestic focus to the south; the Phase 5 settlement grew to at least 1.9ha and contained multiple domestic foci (Plate 1.5). Evidence for domestic activity – buildings,



Plate 1.5 Reconstruction of how the Roman (Phase 5) settlement might have looked, looking south
 Plate 1.6 Toiletry knife handle RA9. Scale 20mm

stonework, pits, and postholes – was identified in many of the enclosures; whilst others contained evidence for crop-processing. Integral parallel ditches in both phases of the north part of the settlement may be described as a routeway but was probably designed for animal control/management.

The settlement to the west appeared to cover c. 2.2ha and consisted of multiple ditched enclosures (Fig. 1.4; Albion 2014, 14–15 and fig. 6). The southern part contained a grid-like arrangement of ditches, forming a series of square or rectangular ‘compartments’, c. 7m wide and at least 10m long (Albion Archaeology 2014, 25 and fig. 7). Similar features at Cambourne New

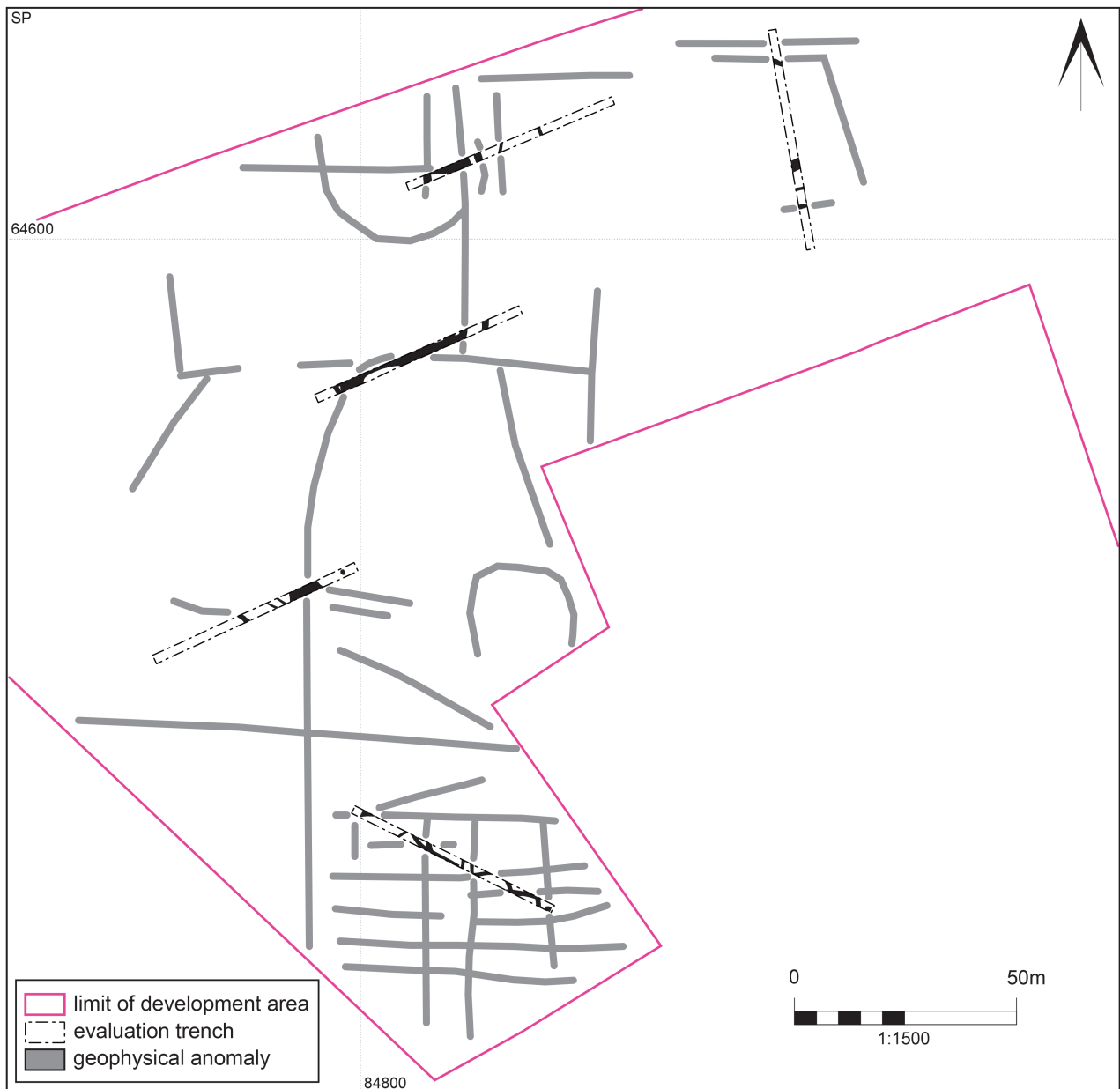


Figure 1.4 Plan of the late Iron Age/Roman settlement in west part of development area (after Albion Archaeology 2014, fig. 6)

Settlement, Cambridgeshire, were interpreted as small stock enclosures (Wright *et al.* 2009, 27–58 and fig. 23), although a horticultural function is also possible.

Settlement components

The overall extent, development and layout of the Iron Age and Roman settlements have been described above. They typically comprised at least one domestic focus, routeways, other activity foci, enclosures, buildings, water-pits/wells and other pits.

Domestic foci

An attempt was made to identify a domestic focus within each settlement (Fig. 1.3). At its simplest this is considered to be where the occupants actually lived, although this does not mean that only domestic activities took place in these areas. Clearly, other farming- and craft-related activities that have left no trace in the archaeological record would also have been undertaken. Domestic foci

were identified primarily on the basis of the presence of one or more buildings/structures or concentrations of features (excluding storage pits).

The two domestic foci within the mid-late Iron Age (Phase 3) settlement were in the north end of the Wootton Hill-style enclosure and c. 100m to the south in an apparently unenclosed part of the settlement (Fig. 1.3). There is nothing to indicate that the two were not contemporary, although the pottery from both is only dated broadly to the middle-late Iron Age. The two domestic foci within the late Iron Age/early Roman (Phase 4) settlement were in enclosure L57 to the south and c. 80m to the north within the Mallard Close excavation (Fig. 1.3). The land between the two was not investigated prior to modern quarrying, so it is uncertain whether these were actually discrete foci or parts of one larger focus. In the Roman (Phase 5) settlement the most likely domestic focus was located in the west part of enclosure L35 (Fig. 1.3).

Other activity foci

Within each settlement, probable non-domestic activity foci were identified primarily on the basis of concentrations of features such as storage pits, drying ovens and water-pits/wells.

The mid-late Iron Age (Phase 3) settlement (Fig. 1.3) featured three concentrations of storage pits – in the south half of the Wootton Hill-style enclosure and in the north and south parts of SL10 – together with a concentration of features SL2 (including a water-pit) close to the north limit of the development area.

No definite activity foci were identified within the late Iron Age/early Roman (Phase 4) settlement. However, the five within the Roman (Phase 5) settlement (Fig. 1.3) were mostly linked to crop-processing. They were dispersed across the settlement from north to south: L19, Mallard Close, L56 and the east part of L35. There was also a small concentration of pits L39 just outside enclosure L35.

Routeways

Routeways were an integral part of the layouts of the late Iron Age/early Roman (Phase 4) and Roman (Phase 5) settlements. The converging nature of their defining ditches suggests that they were primarily designed for livestock management. They are discussed in more detail below (p.000).

Wootton Hill-style enclosure

Rectilinear enclosure L11 represents the northern part of an enclosure that was partially investigated within the Mallard Close excavations (Chapman and Atkins 2004). Due to its relatively small size (1300m²), but exceptionally large ditch, it can be characterised as a Wootton Hill-style enclosure (Kidd 2004, 54; Dix and Jackson 1989, 158) – named after the type-site at Wootton Hill Farm, Northampton (Jackson 1989). Fig. 1.5 illustrates the variety in size of Wootton Hill-style enclosures. However, their defining characteristic is a large ditch – at

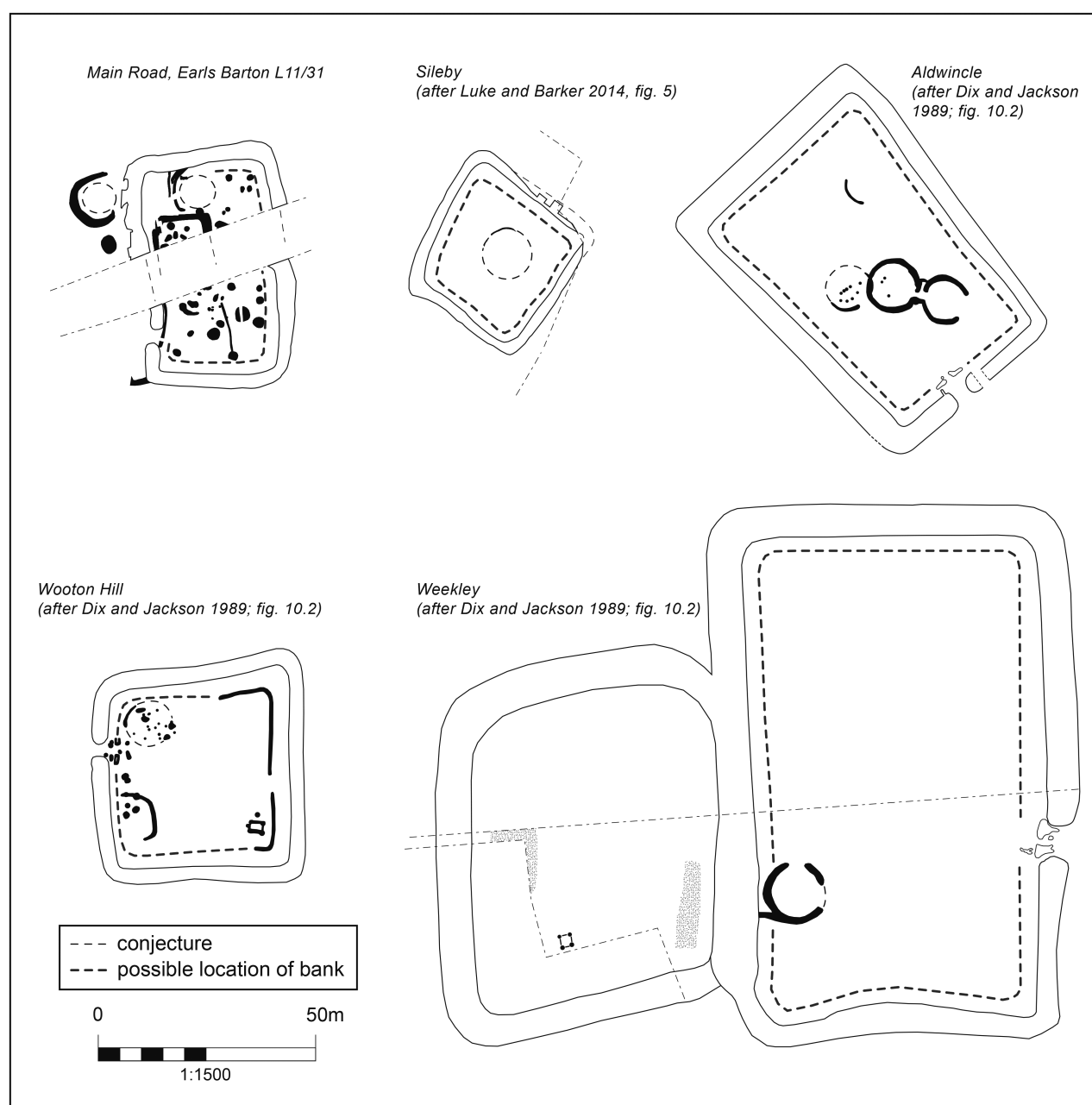


Figure 1.5 Comparative plans of Wootton Hill-style enclosures in Northamptonshire: Main Road, Earls Barton; Aldwinckle; Weekley; and Wootton Hill (after Dix and Jackson 1989, fig. 10.2).

Main Road it was up to 4.5m wide and 2m deep with a concave profile and base; at least some of it had been redug on the same course and alignment.

This type of enclosure often contains evidence for a bank – perhaps indicated here by the absence of contemporary features within 2–3m of the interior side of the ditch. This is clearer on the east and south sides of the enclosure. The position of the possible roundhouse, adjacent gullies, and sub-enclosure L10 may suggest a different arrangement in the enclosure's north-west corner, although the position of the roundhouse at Weekley suggests it may have been partially built into the bank (Fig. 1.5). The single, 3m-wide, entrance was towards the south-west corner; there was no evidence for the type of elaborate gateway seen at some other such enclosures (Chapman and Atkins 2004, 28 and 54). The Mallard Close excavation revealed concentrations of stones in the ditch fills, suggesting that part of the enclosure's bank may have been revetted.

Short lengths of shallow ditches within both excavations suggest that the enclosure was partially sub-divided, although sub-enclosure L10 is unusual for a Wootton Hill-style enclosure. Its west ditch was only c. 1.4m from the main enclosure ditch – ruling out the possibility of an internal bank – but its position and spatial relationship with the other internal ditches suggest it is contemporary with the enclosure, albeit a possible later addition. Only its north side was revealed but it appears to have been c. 10m square.

Although the evidence is slight, the arrangement of features at the north end of the enclosure appears to indicate the presence of a roundhouse (G34). Roundhouses are known in other Wootton Hill-style enclosures, e.g. Aldwinkle, Weekley, and Wootton Hill itself (Dix and Jackson 1989, fig. 10.2). Another roundhouse (G87) defined by a large ditch is located outside the NW corner of the enclosure at Main Road. Although on a different scale the main enclosure at Weekley had another attached to it (Fig. 1.5).

Within the Main Road excavation 14 pits were found within the enclosure. Most of the available space within the south part of the enclosure was also occupied by pits and postholes (Chapman and Atkins 2004, 28–31). The majority of the pits appear to have been used for storage (see below).

Wootton Hill-style enclosures were originally considered to be primarily late Iron Age in date (Dix and Jackson 1989, 165–6). However, in view of some uncertainties about their chronology they have more recently been described as a 'Middle to Late Iron Age phenomenon' (Kidd 2004, 54), which fits better with the dating evidence from Main Road. The presence of Roman finds in its upper fills suggests that the ditch was going out of use in the early 1st century AD, although, even then, it had an influence on the layout of the later settlement.

In 2000, Kidd listed 16 Wootton Hill-style enclosures that had been subject to excavation within Northamptonshire (2000, 7). Other enclosures with similar traits have been excavated in neighbouring counties, e.g.: Colley Hill, Colmworth, Beds. (Souterrain 2012); Seagrave Road, Sileby (Luke and Barker 2014) and Enderby (Meek *et al.* 2004), both Leicestershire; and Finmere, Oxfordshire (Hart *et al.* 2010). However, whether these all represent a uniform type of enclosure constructed at the same time for the same reasons will require more detailed examination.

Dix and Jackson argued that this type of enclosure was primarily built for defence (1989, 164), but there is still much debate as to their defensibility. In an assessment of Northamptonshire's middle to late Iron Age enclosures, Deegan (2007, 102) noted that the locations of some of the Wootton Hill-style enclosures were wholly unsuitable for defensive purposes, demonstrating that many had deficient viewpoints. However, as Dix and Jackson noted the enclosures often 'represent a stage in the development of an individual settlement' (1989, 164). While a substantial ditch (and bank) would undoubtedly have provided an effective deterrent to small-scale raiding, the size of the ditches could also suggest that visual impact was important to the inhabitants (Meek *et al.* 2004, 29).

Other ditched enclosures

Nearly all the enclosures within the settlements were rectangular or sub-rectangular in plan and defined by ditches. The late Iron Age/early Roman (Phase 4) system comprised at least three probably conjoined enclosures in a linear arrangement that corresponded to the early–late Iron Age settlement area. They may have developed organically rather than being created in a single episode. Three enclosures, between 24 × 24m and 100 × 200m in extent, were fully exposed; the largest was sub-triangular in plan and mostly lay within the Mallard Close excavation. Apart from the northernmost one, the enclosures were sub-divided. In the case of the triangular enclosure the subdivision demarcated one of the settlement's domestic foci. The enclosures to the north contained very few features – for at least part of the year they may have been livestock paddocks and they were separated by routeway L13 (see below p.000).

The Roman (Phase 5) settlement was defined by an agglomeration of enclosures. While some clearly corresponded to the earlier enclosures (and were defined by ditches that were often redug on the same alignment but on slightly different courses), others, noticeably to the south, were new additions. The layout of these appeared to be more irregular, probably indicating more organic, piecemeal development. The general impression is that the enclosures to the north, as in the previous phase, were used as livestock paddocks. The converging ditches of routeway L20 mirrored the earlier arrangement. Domestic and other activity foci (including crop-processing and burial) were identified within the enclosures (described above).

The identification of 'obvious' entrances (in the form of breaks in the ditches) into and between the enclosures has proved problematic, partly due to extensive recutting and later truncation. It is possible that other methods, such as planks laid across the ditches, also provided a means of access.

Walled enclosure

At least one enclosure within the Roman settlement may have been walled (Fig. 1.3). Three lengths of partially robbed-out walls within the Mallard Close excavation were interpreted as one side of a walled enclosure with a recessed façade containing a gateway with a stone-flagged threshold (Chapman and Atkins 2004, 39–40, 55–6 and plates 6 and 7). The faced part of the walls only survived in a few places with much of the evidence being either the surviving rubble core or a rubble scatter within a robber trench (Chapman and Atkins 2004, 40). Comparable evidence within the Main Road excavation

comprised linear stonework G27 (part of boundary L16), although it was clearly not *in situ*. In both cases the stonework was predominantly limestone with some ironstone. It lay within 'construction cuts', which, at up to 1.8m, appear too wide to be foundation or robbing trenches and may, therefore, be pre-existing enclosure ditches.

The nature of the soils within both excavations made it very challenging to identify the full extent of robber trenches within infilled ditches. Had G27 been found in isolation, it would probably have been interpreted as part of a causeway across the ditched boundary or the foundation of an entrance structure. However, in light of the evidence from the Mallard Close excavation it does seem possible that at some point the enclosure in this area was redefined by a wall rather than ditches. It is also possible that the evidence for wall lengths within the two excavations are unrelated and that those found within the Mallard Close excavation actually represent the northern boundary of an enclosure to the south, which had been destroyed by quarrying (as suggested by Chapman and Atkins 2004, 55).

The stratigraphic evidence indicates that the walls were the latest element of the enclosure boundary sequence; this is supported by the 3rd- and 4th-century pottery associated with those on the Mallard Close excavation (Chapman and Atkins 2004, 40). The presence of a walled enclosure is unusual but not unique, e.g. Glapthorn Road, Oundle (Maull 2004). However, whether it necessarily indicates that this was a 'prosperous settlement' as suggested by Chapman and Atkins (2004, 55) is less clear (discussed further below).

Roundhouses

Five possible roundhouses were identified: G34, G87, G88 and G170 are middle-late Iron Age (Phase 3); G102 is Roman (Phase 5). Only two were evidenced by near-complete gullies, defining the majority of the building; the others are more speculative, based on only short lengths of curving gully.

The gullies were concave or U-shaped in profile, under 0.9m wide and under 0.6m deep; G87 (Phase 3) was the exception at up to 1.6m wide. The gullies of roundhouses G87 and G88 had been redug. Collectively, this evidence suggests that the gullies were drains around the buildings rather than wall foundation trenches, with the actual roundhouses probably being 8–10m in diameter. Most of the gully circuits were incomplete but possible entrances were tentatively identified on the basis of gaps or terminals. These faced in almost all directions except west, fitting the common trend across Britain for roundhouses to have east-, north-east- or south-east-facing entrances (Oswald 1997, 87–95, figs 10.1 and 10.2).

Roundhouses are synonymous with the Iron Age, but their continued use on Roman rural settlements is now widely recognised (Smith 2016, 168), e.g. Higham Road, Burton Latimer (Luke and Barker 2019, 10). Other than generally small amounts of Roman pottery the best dating evidence for roundhouse G102 at Main Road was a late 3rd-century coin (RA1) from its gully. This supports the idea that, while rectangular buildings were the dominant building type by the early 2nd century in England's Central Belt (as defined by the Roman Rural Settlement Project (Fulford and Brindle 2016, 15–6, fig. 1.5)), circular buildings were still being erected in the 3rd and, in some areas, into the 4th century (Smith 2016, 168).

Other evidence for buildings

The apparent absence of evidence for rectangular buildings, in contrast to roundhouses, has been noted on many sites in the region, e.g. Higham Road, Burton Latimer (Luke and Barker 2019, 10–13), Wavendon Gate, Milton Keynes (Williams *et al.* 1996, 86), Marsh Leys, Kempston (Luke 2011, 155). It is likely that most rectangular buildings were constructed in a way that left little sub-surface evidence. Of course, the only surviving evidence for roundhouses is typically not the wall foundations, but a drainage gully that would have been located outside the walls and which tends to survive all but the most severe later truncation.

As part of the Main Road analysis, an attempt was made to postulate the location of rectangular buildings, even though the results are often speculative. Three criteria were used: the shape and size of enclosures; elements of stonework; and postholes. All these tentative examples are Roman in date.

There were only two examples in the first category: L19 was a rectangular enclosure c. 15 × 4.5m; L36 was c. 25 × 11m. The shape and size of both enclosures may indicate that they defined the location of a rectangular building; if so, the profile and width of their ditches suggest that they represent drains rather than wall foundations, although those defining L19 had two postholes dug into the base of one of the ditches. It is worth noting that L19 was adjacent to drying oven G53 and that L36 contained a possible drying oven, although this obviously does not necessarily support the suggestion that these enclosures contained rectangular buildings.

The presence of stonework, interpreted as evidence for walls, has already been discussed in relation to the possible walled enclosure. Three other lengths/areas of stones may indicate the location of buildings. G28 (L15) was a rectangular area of tightly packed limestone c. 1.5 × 0.7m in extent; it may represent the foundations of a wall which has elsewhere been destroyed. It is uncertain if the four nearby postholes G66 are associated. The precise shape and dimensions of the postulated building must remain speculative, but it might have been c. 15 × 7m in extent. G124 was a linear, c. 9.5 × 1.1m spread of limestone fragments (with some ironstone, c. 4kg of pottery and seven tegula fragments) that occupied the top of the partially infilled boundary ditch G123 (L44). Overall, the stone was not tightly packed and may represent the robbed-out remains of a wall rather than an *in situ* foundation. Although this may represent evidence for one side of a rectangular building, it may be another example of a ditch being replaced by a wall in the later Roman period (as discussed above, p. 000). Linear stone spreads G158, c. 0.9–2m wide, ran parallel to the east side of enclosure L56 next to its entrance. They predominantly comprised limestone, with some ironstone and tegula fragments. The stones of the spread to the west were not tightly packed and may, therefore, represent the robbed-out remains of a wall rather than an *in situ* foundation. However, the stones to the east, unfortunately on the edge of the excavation area, comprised more tightly packed and larger slabs of limestone, some of which had been laid on their long edges – more suggestive of an *in situ* foundation. Again, while it is possible that these are the remains of one wall of a rectangular building, it is equally possible that they are part of a later walled boundary to the enclosure.

Finally, no arrangements of postholes *per se* unequivocally indicate the presence of rectangular buildings. For example, the three postholes G144 (L56) to the east of oven G141 may represent an associated structure but they did not form a coherent pattern.

Wells and water-pits

Two water-pits were associated with the middle–late Iron Age (Phase 3) settlement and three wells with the Roman (Phase 5) settlement (Table 1.1). The term water-pit is used for deep features where no stone or wood lining was evident; the term ‘well’ is used where a stone-lined shaft was located or its existence suspected. However, given that the wells were usually constructed within large pits and their linings may have been removed for re-use, there is clearly possible overlap between the two terms.

Group	Type	L	SL	Phase	Depth (m)	Diameter (m)	Shaft internal (m)
G16	Water-pit	L16	SL2	3	>1.1	4.3 × 3.5	n/a
G22*	Water-pit	L10	SL3	3	>1	1.7	n/a
G104	Well	L35	SL12	5	5.4	3 × 2	0.6
G142	Well	L56	SL12	5	5.4	1.6	0.7
F165**	Well	–	–	–	4.65	1.4	0.7

* water-pit is part of cluster G22

** F165 is within the Mallard Close excavation (Chapman and Atkins 2004)

Table 1.1 Summary of water-pits and wells from Phases 3 and 5

Within the middle–late Iron Age (Phase 3) settlement water-pit G16 (L8) was *c.* 100m from the domestic focus and the possible water-pit in cluster G22 (L10) was within one of the domestic foci. They both had steep sides, were over 1m deep, but did not contain waterlogged deposits. Water-pit G16 was up to 4.3m in diameter and G22 was only *c.* 1.7m in diameter. The latter was circular and situated in a cluster of oval pits that were all under 0.5m deep and interpreted as storage pits. Hence, while it is possible that G16 also served a storage function, it did stand out from the others in this area. No evidence for maintenance of either pit was identified but they may have been regularly cleaned out to prevent silting up and to ensure access to the water. Their steep sides suggest the use of buckets on rope to extract the water, rather than direct access, as suggested at Wavendon Gate, Milton Keynes (Williams *et al.* 1996, 64–6) and Marsh Leys, Kempston (Luke 2011, 157).

Of the three wells within the Roman (Phase 5) settlement: G104 (L35) was adjacent to one of the domestic foci; G142 (L56) was in the adjacent enclosures; and feature 165 was within the Mallard Close excavation, *c.* 130m to the north (Chapman and Atkins 2004, 37–8 and plate 4). All three were located, presumably deliberately, close to drying ovens. The wells had circular shafts lined with coursed ironstone and limestone slabs giving an internal diameter of 0.6–0.7m. The two within the Main Road excavation were 5.4m deep; the Mallard Close well was estimated to be 4.65m deep on the basis of coring. The shafts for G104 and G142 had clearly been built within larger construction pits. The upper lining of G142 and that of the Mallard Close well had been robbed, but G104 was intact.

Other pits

In common with other late Iron Age/Roman rural settlements a variety of pits were present in all phases. Storage pits are discussed below (p. 000). The function of the smaller pits at Main Road is uncertain. They were much smaller than the water-pits, typically 0.5–2m in diameter and no more than 0.7m deep. It is possible that many of these pits were originally dug as small, intermittent quarries to extract sand or ironstone. Some of the pits contained artefacts and animal bone, usually in small quantities, indicating that at some point they were used for the disposal of domestic debris. However, the majority were not clearly associated with storage or rubbish disposal and it is difficult to ascribe a function to them other than intermittent quarries or soakaways.

Economic basis of the Iron Age and Roman settlements

Evidence for this subject derives from a number of sources: principally the ecofacts, which elucidate the animals and plants that were exploited; but also specific features, e.g. the drying ovens and storage pits; and to a lesser extent the few specialist artefacts. As described above (p. 000), the layout of the Iron Age and Roman settlements were designed for farming and their location on higher ground overlooking the Swanspool Brook was ideal for a mixed farming economy. The Roman settlement was located within England’s Central Belt as defined by the Roman Rural Settlement Project (Fulford and Brindle 2016, 15–16, fig. 1.5)– considered to have been the heartland of agricultural productivity in rural Roman Britain (Lodwick 2017, 26)

Cultivation

The charred plant remains

The rich charred plant assemblages shows that spelt wheat and hulled barley were the main cereals being cultivated during the Iron Age and Roman periods, although spelt wheat became the dominant grain in the Roman period (Phase 5). Emmer and free-threshing wheat, represented by much smaller amounts of grains, probably only played a minor role, if any, in the agricultural economy; while the oats are likely to be weeds and the few rye grains may be intrusive. There were traces of flax in one Roman sample while the larger unidentifiable legume seeds, albeit limited in number, may be from cultivated pulses. The Mallard Close excavation also produced evidence for spelt wheat and pulses (Deighton 2004a).

The rich assemblages of charred grain and chaff, including those from the Mallard Close excavation, suggest that specific areas were set aside for crop-processing activities. The spatial distribution of the middle–late Iron Age (Phase 3) material suggests a focus on the southern unenclosed settlement area SL10: a possible storage area for cleaned grain in pits in enclosure L49; and the latter stages of crop-processing, mainly the de-husking of spelt wheat, in the vicinity of roundhouse G88 (L32). The distribution of the late Iron Age/early Roman (Phase 4) remains also suggests a focus within the southern enclosures SL11 – the two rich assemblages of charred hulled barley and de-husked spelt wheat with some weed seeds within enclosure L57 may indicate the storage of semi-cleaned grain in pits. The rich Roman (Phase 5) assemblages were largely concentrated in drying ovens G53, G103 and G140, indicating that the latter stages of crop-processing and food preparation

were taking place in both the northern and southern parts of the settlement (SL5 and SL12).

Drying ovens

Six possible drying ovens, including one within the Mallard Close excavation (Chapman and Atkins 2004, 38 and plate 5), were identified within the Roman settlement (Fig. 1.6, Table 1.2). They were located within different enclosures, suggesting multiple crop-processing areas. Four were broadly N–S aligned and two broadly E–W aligned; where identifiable, the stokehole was to south or west. Two had *in situ* stone linings (G53 and Mallard

Close); G103 contained evidence for the removal of a stone lining; and G140, dug into natural ironstone, did not require lining. These four were T-shaped ovens; the form of the other two is uncertain but they too may have been T-shaped.

Drying ovens were probably used for multiple purposes and the charred plant remains recovered from them largely reflects their last use. The archaeobotanical remains from Roman sites suggest that they were used for the drying/parching of hulled wheats to facilitate de-husking, the drying of grains before milling or storage, or the heating of sprouted grains to halt germination as

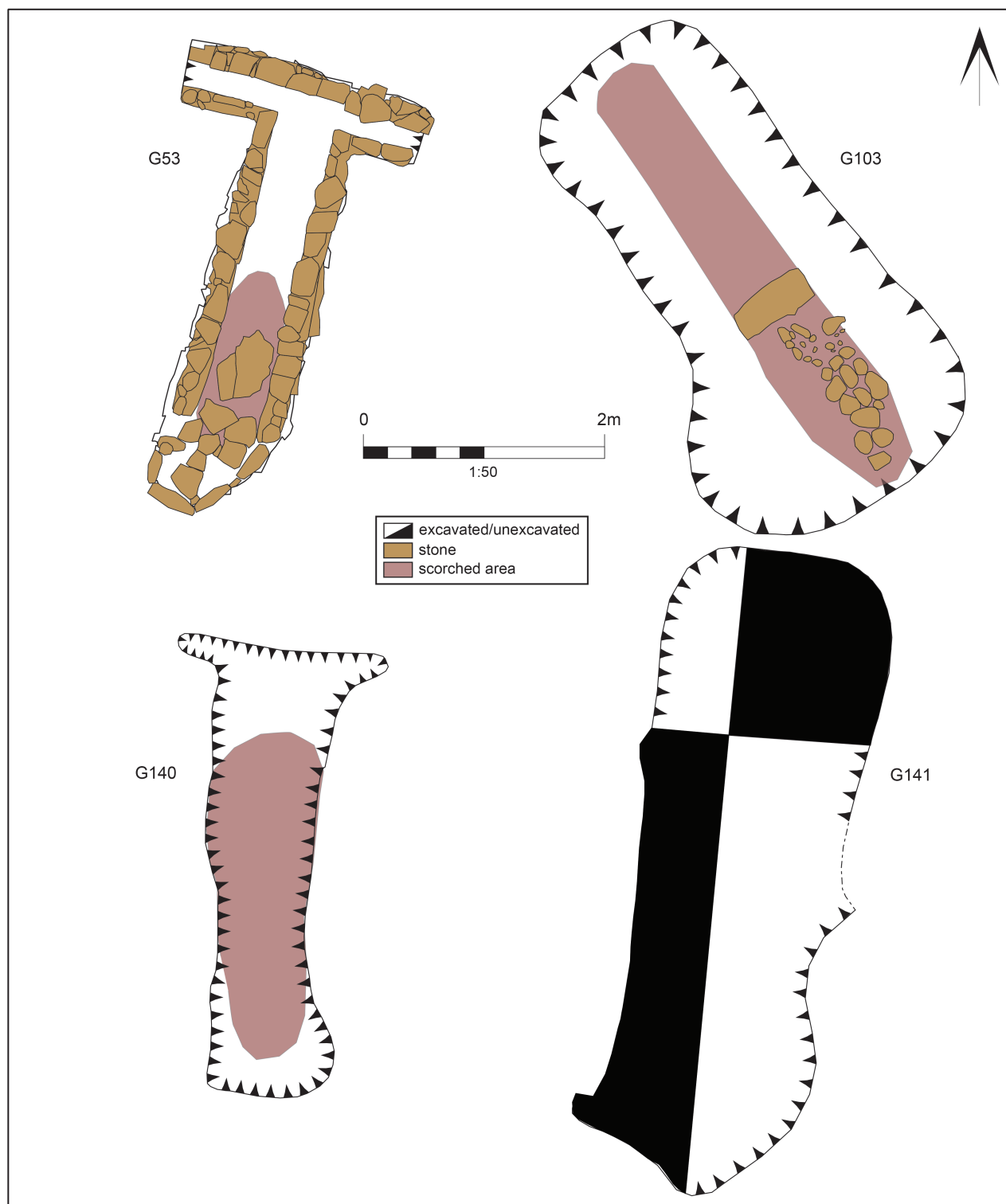


Figure 1.6 Comparative plans of drying ovens at Main Road

Group	Type	Status	Diameter (m)*	Alignment	Construction	Associations	L	SL
G53	T-shaped	<i>In situ</i>	3.5 × 0.5	NNE–SSW	Stone-lined	Near possible building AGBs 1–3	L19	SL5
G103	Uncertain	Robbed but flue survives	4.4 × 0.5	NW–SE	?Stone-lined	Near well G104	L35	SL12
G110	Uncertain	Uncertain	2.2 × 0.8	ENE–WSW	Uncertain	Uncertain	L36	SL12
G140	T-shaped	<i>In situ</i>	3.7 × 0.8	N–S	Dug into ironstone bedrock	Adjacent to oven G141 and near well G104	L56	SL12
G141	Uncertain	Uncertain	5.3 × 1.8	N–S	uncertain	Adjacent to oven G140 and near well G104	L56	SL12
MC**	T-shaped	<i>In situ</i>	4.3 × 0.5	E–W	Stone-lined	Near well	-	-

* where evidence for the flue survives its internal measurements are given

** within the Mallard Close excavation (Chapman and Atkins 2004, 38 and plate 5)

Table 1.2 Summary of Roman (Phase 5) drying ovens

part of the malting process (Lodwick 2017, 55–66; van der Veen 1989). Each process may be reflected in the composition of the charred plant assemblages; for example, in the case of spelt, the parching of spikelets would produce assemblages with almost equal amounts of grains and glume bases, while the drying of processed spelt grain before storage or milling would produce assemblages of mainly grains and only small numbers of chaff fragments and grain-sized weed seeds. The use of ovens for malting would be indicated by germinated grains and detached sprouts or coleoptiles (as well as glume bases and large weed seeds if the grain was allowed to germinate in spikelet form), although grains may also accidentally sprout if stored in damp conditions.

The charred plant remains from all but one of the drying ovens is indicative of burnt debris from parching spelt wheat to facilitate de-husking and/or from the use of the chaff, once separated, as fuel. The exception, G140, contained charred plant remains that appear to have derived from activities associated with malting – a good proportion of the hulled wheat grains were sprouted. Adjacent oven G141 also contained some sprouted grains.

The charcoal from oven G140 included elm, oak, hazel, poplar/willow, hawthorn group and ash. The use of elm for fuel is uncommon as it tends to smoulder (Edlin 1949, 156) and was not present in other samples at the site. Poplar/willow was only present in drying oven G140 and not recorded elsewhere. Insect tunnels were frequently observed in the ash, elm and poplar/willow charcoal from this oven. This suggests that the wood was quite decayed at the time of burning, potentially due to seasoning, but the combination of rotten wood and taxa with inferior burning properties suggests indiscriminate fuel supplies were used.

As is often the case with drying ovens, no artefacts were found that could give a secure, precise date for their use. The absence of diagnostic sherds allows only a broad 2nd–3rd-century date to be ascribed to the c. 3kg of Roman pottery recovered from the fills of the ovens. However, the settlement's developmental sequence suggests that some of them could have been in use from the mid-/late 2nd century. Lodwick (2017, 58–9, fig. 2.46) has observed that few drying ovens were in use in the 1st century but their numbers increased during the 2nd century, with usage peaking in the mid–late 3rd century. It is also uncertain which, if any, ovens were in use at the same time. The stone lining had been removed from at least one of the ovens (G103) – possibly for reuse in a new oven.

Four of the ovens (G103, G140, G141 and Mallard Close) were located close to wells. The association between ovens and nearby sources of water has been known for some time (Morris 1979, 15–6). In the case of malting, water is required to soak the grain to encourage germination and for mashing and brewing (Lodwick 2017, 62). No evidence for associated tanks was identified within the settlement, although wooden barrels or tubs could have been used for this purpose. Although speculative, it is possible that the unusual charcoal assemblage within oven G140 may derive from wood salvaged from such structures.

None of the ovens within the settlement was definitely located within a building. However, the shape and size of enclosure L19 (adjacent to oven G53) and enclosure L36 (which contained oven G110) may indicate that they defined rectangular buildings (see above). Three large postholes G144 adjacent to ovens G140/1 did not form a coherent pattern but they may represent part of an associated structure.

The infill of oven G141 contained fragments of two large querns or millstones (RA64 and RA65); in fact, no other querns/millstones were found at the site (see below). The frequency with which querns and/or millstones occur in the vicinity of ovens was discussed by Morris (1979, 18) and provides indirect evidence for use of drying ovens to prepare grain not just for storage but also for milling, e.g. Haynes Park, Bedfordshire (Luke and Shotliff 2004, 120).

Drying ovens are more common on complex rural settlements, like Main Road/Mallard Close with its interlinked enclosures, than on other types of Roman farmsteads and this is particularly marked in England's Central Belt (Lodwick 2017, 58, fig. 2.45). The increase in numbers of drying ovens during the Roman period, particularly in this area of the country, points to the large-scale processing of cereals probably in response to increased arable cultivation (Lodwick 2017, 55, 61). The rich cereal assemblages from the site suggest that processing of spelt wheat was taking place on a fairly large scale, possibly not only for domestic consumption but also perhaps for an external market. A large number of drying ovens in this part of the country were positioned at roadside settlements or at farmsteads with links to the road network, presumably to facilitate the transport of grain. While there are no proven roads near Earls Barton, the existence of one on the north side of the River Nene, linking the defended small town at Irchester (6km to the east) with Duston (8km

to the west), has frequently been postulated (Taylor and Flitcroft 2004, fig. 1).

Storage pits

The 52 middle–late Iron Age (Phase 3) pits at Main Road occurred in clusters of between six and 19. They were circular or sub-circular in plan, c. 1m in diameter and up to 0.6m deep, with steep sides and a flat base. A minority had more concave profiles and ranged from 0.4m to 3.8m in diameter. Similar steep-sided, flat-bottomed pits were found in the Mallard Close excavation, although two of these were over 1.6m deep (Chapman and Atkins 2004, 28–31). There were 16 similar pits within the late Iron Age/early Roman (Phase 4) settlement. These were 1.4–2.3m in diameter, less than 0.5m deep, and had U-shaped profiles.

Similar pits occur extensively during the Iron Age in the Great Ouse and Nene Valleys (Knight 1984, 100–19 and fig. 26) and the Thames valley (Lambrick 2009, 105–9). The association of certain forms of pit with grain storage has been well documented for over half a century (see Bersu 1940; Knight 1984, 110; Cunliffe 1991, 375). Three middle–late Iron Age pits in cluster G133 (L49) produced rich assemblages of charred plant remains, with over 90% of the quantified remains being grains (mainly hulled wheat, hulled barley, and six-row hulled barley). This, coupled with their U-shaped profiles, suggests that they were used for the storage of fully processed grain, which had perhaps been accidentally burnt *in situ*. Alternatively, the material could derive from the sterilising of the base and sides of the pit before re-use.

As at other sites, the pits at Main Road/Mallard Close rarely intercut; however, it is likely that very few were in use at the same time. The absence of intercutting may simply reflect a desire to avoid the less stable sides that would inevitably result if pits were dug through earlier features. Reynolds believed that pits could ‘be used again and again without any apparent reason for their abandonment’ (1974, 76). At Gravelly Guy, Oxfordshire, it was suggested that the pits with more rounded bases – similar to some of the Main Road pits – might indicate repeated cleaning out, with the same pit re-used for four or five years (Lambrick and Allen 2004, 109). By contrast, at Danebury, Hampshire, it was argued that each pit was used just once (Cunliffe and Poole 1991, 161). The variability in the pits’ sizes, and therefore storage capacity, presumably reflects differences in particular harvests or the quantities of grain that needed storing.

Seven pits of similar form were present within the Roman (Phase 5) settlement but the dating evidence is ambiguous. Lodwick noted that there are only a small number of rural settlements where there is evidence for the continued use of storage pits into the Roman period and this did not extend much beyond the 1st century AD (2017, 67).

Artefactual evidence

Two artefacts from Main Road definitely associated with agriculture were the fragments of large querns or mill-stones (RA64 and RA65) (with estimated diameters of more than 500mm) found in drying oven G141. The small number of querns is unusual but not uncommon. For example, they were entirely absent from the settlements at Higham Road, Burton Latimer (Luke and Barker 2019, 22); Upton, Northampton (Walker and Maull 2010); and Mawsley New Village, Great Cransley (ULAS 2012).

However, they were present at Burton Wold Farm (Edgeworth 2008, 39), West Haddon (Chapman 2006), and Milton Ham (Northamptonshire Archaeology 2008, 11). The only other artefact with a link to horticulture/cultivation was a possible pruning hook (RA60); again, such artefacts were also uncommon at Higham Road, Burton Latimer (Luke and Barker 2019, 22–3).

Animal husbandry

Animal bone evidence

Animals are represented in the faunal assemblages from the Iron Age and Roman settlements. Species present were dominated by cattle, with smaller numbers of sheep/goat, pig, horse, dog and chicken. The small size of the assemblage from the late Iron Age/early Roman (Phase 4) means that the majority of the evidence for animal husbandry relates to the middle–late Iron Age (Phase 3) and Roman (Phase 5) settlements.

Cattle (59–56%), followed by sheep/goat (19–22%), dominate the middle–late Iron Age (Phase 3) and Roman (Phase 5) settlements. These figures are very similar and indicate that there is no evidence for significant changes in species abundance between the two periods. A predominance of cattle over sheep/goat is consistent with the majority of Iron Age and Roman sites in the vicinity (Maltby 2019, 101; 2020, 71). However, this assemblage included a higher percentage of cattle than encountered on most Iron Age sites excavated in recent years in Northamptonshire, in which cattle have usually contributed less than half of the identified mammal fragments. There was no evidence for concentrations of cattle primary processing waste in any areas of the settlement investigated. The evidence indicates that some primary processing of cattle and sheep was taking place nearby but such processing was not on a large scale. In the Roman (Phase 5) settlement fine knives continued to be employed in butchery but the use of heavier blades was also apparent. Ageing data derived from the mandibles of cattle and sheep demonstrate that both immature and adult animals were represented in the settlements. This suggests that they were bred on site and that meat production was a focus of their exploitation. Very limited metrical data were available but the most common measurements fell comfortably within the size ranges of stock previously found in the region.

Horse and pig were present in all phases of settlement but formed only a small percentage of the animals kept (horse less than 19% and pig 3%). The horse bones tended to survive in a more complete state than those of cattle, indicating their carcasses were subjected to less intensive processing. Although no butchery marks were observed on any of their bones, this does not necessarily indicate that horse flesh was not consumed. The percentage of pig is exceptionally low and suggests that pork and bacon was of little importance in the inhabitants’ diet.

It is clear that dogs were kept within the middle–late Iron Age (Phase 3) and Roman (Phase 5) settlements, although the number of bones recovered is very small. Their bones were mainly found in ditches and pits but one partial skeleton (ABG1) suggests that an animal was buried within Roman drying oven G53. They are presumed to have been primarily work animals, such as sheepdogs, but one miniature type (ABG1) was identified. There is no evidence that they were butchered.

No bones of chickens were identified until the Roman period. This is of no great surprise, as chicken bones have

only been encountered on a minority of Iron Age sites in southern England and the Midlands (Hambleton 2008; Pirnie and Alberella 2008). Chicken bones were recorded in only one Roman (Phase 5) deposit (ABG2), associated with the disuse of drying oven G53. They do occur on Roman sites but generally in very small numbers particularly on rural settlements (Maltby *et al.* 2018).

Evidence for livestock control and management

Indirect evidence for stock control and management comes in the form of enclosures and the routeways mentioned above (000). The nature and arrangement of some of the enclosures within the settlements suggest that they were associated with the herding of cattle or sheep into different paddocks or holding pens where they could be counted and separated (Allen and Smith 2016, 33). Very few entrances into enclosures were identified, but many did have noticeably curved boundaries, perhaps more suited to livestock control.

Routeways L13, L20 and L47 were integral parts of the layouts of the late Iron Age/early Roman (Phase 4) and Roman (Phase 5) settlements. The one to the north L13 (Phase 4) was redefined as L20 (Phase 5). The converging nature of the ditches defining L13 (*c.* 16m wide at its west contracting to *c.* 8m wide at its east), L20 (*c.* 9m wide at its west contracting to *c.* 6m wide at its east), and L47 (*c.* 26m at its south contracting to *c.* 7m wide at its north) suggest they were primarily designed for livestock management.

The arrangement of the ditches within L47 suggests that its primary purpose was the channelling of livestock from the south. The way L13/20 functioned is less clear but both narrowed to the east. However, the layout of L20 suggests it turned south and was linked to the non-domestic enclosures within the Mallard Close excavation (Fig. 5.1).

Their positions in relation to adjacent enclosures also makes it difficult to see how they would have functioned as trackways, although Allen and Smith have suggested that these would have helped control the movement of animals beyond farmsteads (2016, 33) which is possible with regard to L13/20.

Wild resources

Although very limited, some evidence for the exploitation of wild species can be derived from the animal bone and charred plant assemblages.

Wild species were restricted to a red deer and a duck in the middle–late Iron Age (Phase 3), a hare/rabbit in the late Iron Age/early Roman (Phase 4) and another duck in the Roman (Phase 5). They were, however, only represented by one or two elements, although Mallard Close produced 12 pieces of antler-working debris from an Iron Age pit (Meadows and Chapman 2004, 42–3). The low numbers, restricted range of species and absence of fish bones is typical of Iron Age and Roman rural settlements in the region. This suggests that hunting wild mammals for food was a very rare pastime for the inhabitants of the settlements. In the case of animals such as deer it is possible that their apparent low frequency is real and reflects a lack of suitable woodland habitat in the vicinity or that, for ease of transport, they were butchered at the kill site rather than in settlements. However, this cannot explain the absence of fish and the low numbers of birds. It has been suggested that hunting might have been the preserve of landowners or the higher classes (Mackreth

1996, 225; Luke 2011, 166); it is also possible that wild species were considered to be sacred and their exploitation was taboo (Luke 2016, 328).

In the early–middle Bronze Age (Phase 2) onion couch (*Arrhenatherum elatius* var *bulbosum*) may have been gathered for use as kindling in cremation pyres or may represent burnt partially cleared grassland vegetation under the pyre or the use of turves in its construction. Two charred fruits of *Crateagus monogyna* (hawthorn) in cremation burial G3 may be the residues of gathered food or may have been burnt as part of wood fuel gathered for the pyre from shrubby, hedgerow, woodland vegetation close-by. There were also single charred fragments of *Corylus avellana* (hazel) shell in three samples from the middle–late Iron Age (Phase 3) – possibly from gathered and consumed nuts, with the shell burnt as fuel or waste. Charred hazelnut shell is often found in late prehistoric contexts in England, including other Iron Age sites in Northamptonshire, for example at Bourton Way, Wellingborough (Giorgi 2020), Higham Ferrers (Moffett 2009) and Crick (Monckton 2000). In terms of charcoal while the dataset is small, it indicates that fuelwood in the middle–late Iron Age was collected from local oak woodland, with supplementary supplies from hedgerow/scrub sources. Similar charcoal assemblages from settlements are known from Higham Road, Burton Latimer (Challinor 2019) and Higham Ferrers (Challinor 2009).

Craft activities

The only evidence for non-agricultural activities from Main Road is associated with metal-working. Tiny quantities of ferrous slag were recovered from the Main Road excavations but Mallard Close produced 4.6kg from late Iron Age/early Roman deposits. ‘There is therefore limited evidence for ironworking on the site, most probably smithing, but diagnostic material is absent’ (Chapman 2004a, 44). In addition, Mallard Close produced 12 pieces of antler-working debris from an Iron Age pit (Meadows and Chapman 2004).

The evidence fits the regional pattern whereby most rural craft activities are under-represented in the archaeological record because their by-products do not survive and their tools are rarely disposed of or lost.

Rituals and beliefs

Most of the evidence for this subject derives from the early–middle Bronze Age funerary monument and the Roman inhumations. Also discussed here are a small number of possible ‘structured’ deposits.

Early–middle Bronze Age monument

Monument L1 comprised a *c.* 23m-diameter ring-ditch G1; it was 2.1–2.8m wide and *c.* 0.8m deep, with steep-sloping sides and a narrow, flat base (Fig. 2.1). There was no evidence to suggest that the ditch had been redug but a *c.* 5m length in the south-east quadrant was noticeably narrower, slightly shallower, and had a stepped profile unlike the rest of the ditch. This may indicate the location of an entrance into the interior, which was later closed by the redigging of the ditch. It may be coincidence but the south-east quadrant of the ditch is also the only place where the nature of its infilling suggests the presence of an internal bank or mound.

A grave containing a truncated, urned cremation burial was located approximately in the centre of the monument. The remains were those of a young child.

Phase	SL	L	G	Burial rite	Urn (sherd: weight (kg))	Grave size (m)	Depth (m)	Bone weight (g)	Age	Sex	Possible grave goods	Radiocarbon date cal BC (94.1 %)
2	1	1	2	Cremation	Shell-tempered (12:0.03)	0.6	0.1	160	5 years ± 16 mths	N/D	-	
		2	3	Cremation	Collared urn (14:2.0)	0.9	0.2	790	Adult	?F	Plano-convex flint knife (RA20)	
			4	Cremation	—	0.5	0.1	16	Immature	N/D	—	
			12	Cremation	—	0.4	0.1	16	N/D	N/D	—	1543–1435
5	5	23	33	Inhumation (decapitated)	n/a	1.4 × 0.7	0.1	n/a	Adult 18–25 yrs	M	—	
			73	Inhumation	n/a	1.9 × 0.8	0.3	n/a	Adult	?M	Calcined, unidentified animal bone	
			74	Inhumation	n/a	2.4 × 1.0	0.3	n/a	Adult	N/D	Calcined, unidentified animal bone	
	12	35	120	Inhumation	n/a	1.5 × 0.6	0.8	n/a	10 yrs ± 30 mths	N/D	—	

Table 1.3 Summary of Bronze Age (Phase 2) and Roman (Phase 5) human burials

The precise fabric and form of the urn could not be determined, although it may be of a similar date to the collared urn in burial G3 (Table 1.3). The latter was located just outside the north edge of the ring-ditch. The urn contained cremated bone from an adult and a plano-convex flint knife (RA20, Fig. 6.1).

The monument's assignment to the early Bronze Age is based on the collared urn, the plano-convex knife, and comparison with better-dated ring-ditch monuments elsewhere, although an earlier date is not impossible. Numerous examples are known in Northamptonshire, particularly along the Nene Valley (Chapman 2004b, 40), and many of these contained burials (Clay 2006, 81). There are at least seven near the river within a Neolithic/Bronze Age monument complex at Grendon, c. 2km from Earls Barton village (Last 2005). More isolated ones, like the example at Main Road, are also known in the vicinity (Jones and Chapman 2005, fig. 2).

Two unurned cremation burials – not contemporary with the original monument – were placed into the infilled ring-ditch (Table 1.3). Burial G12 was radiocarbon-dated to the middle Bronze Age, suggesting that the ditch remained a focus of burial even as it was filling up – a known phenomenon of this period (Luke 2016, 175).

Roman inhumations

In addition to the early and middle Bronze Age cremation burials, there were also four inhumations within the Roman settlement (Table 1.3). No evidence for coffins or grave goods was identified.

Three inhumations (L24) in shallow graves lay within or just outside one of the northern peripheral enclosures L23 (SL5). Two adults (one male, the other unsexed) were in adjacent graves G73 and G74. Both were extended burials and G73 was supine (Plate 5.1). Inhumation G33, c. 20m to the south-west, comprised the partial remains of another adult male. The body was prone with the head placed between the legs, just below the pelvis (Plate 5.2). There was nothing otherwise unusual about the burial or the individual himself – other than some evidence for inflammatory or arthritic disorder around the hip socket. Although decapitation has been described as a 'deviant'

type of burial (Taylor 2008, 102–7), there are examples within most cemeteries in southern England, e.g. Higham Road, Burton Latimer (Duhig 2019, 121–2) and Higham Ferrers (Witkin 2009, 286 and table 6.7). It was clearly a non-Christian practice, but there was nothing in the treatment of decapitated individuals to suggest that they were outcasts, as was once thought. The practice was presumably associated with a particular cult, possibly one associated with the head, and appears mainly to have been a feature of rural cemeteries (Boylston and Roberts 2004, 348–9).

In a separate part of the settlement – the west half of enclosure L35 (SL12), which is considered to be one of the domestic foci – a child (approximately 10 years of age) was buried in a deep, rectangular grave G120 (Plate 5.16), which was aligned, possibly deliberately, towards roundhouse G102, c. 6m to the north-west.

Given the scale of settlement in the late Iron Age and Roman periods, the small number of associated burials is surprising. In England's Central Belt, however, burials are often located on the periphery of settlements (Smith 2018, 231, 243–5) and it is likely, therefore, that the main cemeteries used by the settlements' inhabitants lie outside the development area.

'Structured' deposits

It has long been recognised in Iron Age (Hill 1995), and to a lesser degree Roman (Fulford 2001), studies that certain deposits may be associated with ritual activity rather than simply representing dumps of rubbish. The interpretation of these deposits as being the result of 'ritual' or 'functional' behaviour is inevitably contentious, although it is generally accepted that in many past societies this may be an artificial divide (Morris 2010, 266). A small number of animal bone and pottery deposits from Main Road could be described as, at the very least, 'unusual'. However, especially for an Iron Age site, the numbers are small – even with the inclusion of the possible 'special' deposits of antler-working debris and a complete antler from Mallard Close (Chapman and Atkins 2004, 55).

Animal bone

Assemblages of animal bone identified as being associated at the time of deposition or, at the very least, part of the same animal have been allocated an ABG (associated bone group) number in this publication. Unusually for an Iron Age site, no partial or complete skeletons of any species were recorded. In the locality of Earls Barton, ABGs of cattle, sheep and dogs were recorded in Iron Age features within the settlements at Station Road, Higham Ferrers and Bourton Way (Maltby 2020, 75) and Wilby Way (Maltby 2003, 51–3), Wellingborough.

Three separate ABGs were identified in the Roman (Phase 5) settlement – all within the infill of drying oven G53. They comprised the partial skeletons of a miniature-type dog (ABG1) and a chicken (ABG2), together with four bones that could have belonged to the same adult cat (ABG3). ABGs of chickens have quite frequently been found in graves and shrines (King 2005) or in association with foundation or closure deposits (Morris 2011). The presence of the chicken and cat is unusual in its own right, as these were the only occurrence of these species within the settlement. It is possible, therefore, that these ABGs are the remains of deliberate depositions that marked the end of the oven's use, rather than merely parts of carcasses casually imported from middens when the structure was infilled.

In Iron Age and Roman Britain, animals played a key role in religious practice and belief; the evidence suggests that animal sacrifice was commonplace (Allen 2018, 192). Some 60–70% of the structured deposits found on Roman sites (*ibid.*, 193) comprise animal bone. When found in shrines, temples or sacred places their association with ritual or religious activity appears self-evident. In other contexts, however, it can be difficult to determine whether ABGs are associated with ritual or everyday activities. Indeed, 'ritual and mundane' may not have been distinct concepts in the past, and Allen highlights that the normal everyday slaughter and consumption of animals may have been treated as a ritual (*ibid.*, 193).

Pottery

A small number of deposits within the settlements contained large quantities of pottery sherds. Although it is not easy to distinguish ritual deposition from discard for other reasons, these could be interpreted as evidence for ritualistic behaviour, rather than the result of dumping rubbish into a convenient hole in the ground. For example, so-called rubbish appears to have been deposited prior to significant changes in settlement layout at Kempston Church End, Beds (Luke 2016, 323). It is, therefore, of interest that at Main Road two of the largest individual pottery assemblages came from ditches associated with late Iron Age/early Roman settlement boundaries (Fig 4.3) – 2.7kg from G131 (L48) (Plate 4.1), the boundary ditch on the west side of the settlement; and 1.7kg from G92 (L33), one of the ditches that modified the layout of the enclosures. While at best ambiguous, the evidence is sufficient to suggest that some of the larger assemblages may be the result of ritualistic behaviour.

Status and wealth in the Iron Age and Roman periods

The following section discusses some of the more salient indicators of status and wealth in the Iron Age and Roman periods, based on elements of the structural, artefactual and ecofactual evidence.

It is clear that the settlement originated in the middle-late Iron Age and remained in use into the 4th century AD. There is no evidence to suggest anything other than a British origin for the inhabitants, although it would be difficult to prove otherwise. Although the settlement underwent several changes in layout, these were not dramatic and it is possible that the same family lived there for several generations.

The layout of the Iron Age and Roman settlements is comparable to others in the region. The nature of the Wootton Hill-style enclosure – with its characteristically substantial ditch, bank and elaborate gateway – clearly indicates that visual impact was important to the inhabitants. The scale of these works demonstrates that they had the power to command resources (labour and timber) and were possibly members of the elite, although there is no other evidence to support this idea. The Roman settlement can be categorised as Allen and Smith's 'complex-type' (2016, 28–33), although these are quite common in the region. In the Roman period the use of ironstone and limestone for lining wells and for the construction of buildings and enclosure walls again suggests that the inhabitants had the power/wealth to access this resource. It has been suggested that the presence of at least one walled enclosure indicates that this was a 'prosperous settlement' (Chapman and Atkins 2004, 55).

The change from using roundhouses to rectangular buildings in the Roman period is sometimes viewed as an indicator of 'wealth' and 'status'; it has been suggested that this shift could represent 'the desire of individuals or families to acquire symbols of wealth and civilisation' (Hingley 1989, 34). It is, therefore, of interest that the gully around roundhouse G102 at Main Road contained a late 3rd-century coin (RA1). This supports the idea that, while rectangular buildings were the dominant building type by the early 2nd century in England's Central Belt (as defined by the Roman Rural Settlement Project (Fulford and Brindle 2016, 15–16, fig. 1.5)), circular buildings were still being erected in the later Roman period (Smith 2016, 168). This phenomenon was also evident at Higham Road, Burton Latimer (Luke and Barker 2019, 10).

The settlements, like others in the region, practised a mixed farming economy. The presence of up to six drying ovens within one Roman settlement is unusual but not unique, e.g. there were four at Orton Hall Farm, Cambridgeshire and 14 at Yewden villa, Buckinghamshire (Lodwick 2017, 61). They would have required considerable resources 'to construct, fuel, and supervise' and even if some of the ovens were used, at times, for malting, it appears that cereal-processing was taking place beyond the level of household supply (Lodwick 2017, 61). At Orton Hall Farm, Mackreth tentatively suggested that the site shared some characteristics with a medieval manor or grange whereby it 'may have acted as a collection point for the produce from a lot of separate holdings' (1996, 230). It can be speculated that the Roman settlement at Main Road served a similar function.

Imported goods provide evidence not just of access to markets but also – especially in the case of artefacts – of the wealth of the inhabitants. In the Roman period, the latter was also, to some extent, an indication of people's willingness to adopt Roman fashions. Such products would probably have been purchased at local markets (including those at the small town of Irchester, 6km to the east) or from travelling sellers. A wide range of regional,

national and continental products were available during the Roman period as a result of political stability and improved communications within the Empire.

The Roman pottery from Main Road is dominated by locally manufactured coarse wares – predominately shelly wares, grog-tempered wares, and grey sandy wares/Nene Valley grey wares; they represent 87% of the assemblage (92% by weight). Regional imports from Hertfordshire, Warwickshire and Oxfordshire each constitute less than 1% of the total assemblage – as was the case at Higham Road, Burton Latimer (Wells 2019, 61–2). Continental imports, represented by samian, were scarcer than at Higham Road where they only constituted 1.4% by sherd count of the assemblage (Wells 2019, 62). While this may initially appear surprising given the proximity of the markets at Irchester, the dominance of Nene Valley pottery in the area perhaps suppressed demand for regional and continental imports.

Some of the recovered objects indicate the ways in which at least some of the inhabitants dressed and displayed themselves. However, such items, in particular dress-related items, are not numerous. The adoption by at least some people of Roman-style footwear is indicated by the presence of multiple hobnails although the overall numbers are small. Other objects, such as brooches (RA5, RA31, RA40, RA41 and RA63), were used to secure garments and two small globular beads (RA69) were present. In contrast, dress accessories such as bracelets, finger rings, earrings and hair pins were absent.

The presence of the handle of a toiletry knife (RA9) at Main Road may suggest ‘a desire not just for personal hygiene, but also for the wish to present oneself as clean and respectable to others’ (Brindle 2018, 6), although it is difficult to interpret the significance of only one object (Plate 1.6). Purely domestic-related items were limited to a small fragment of translucent blue-green glass, probably from a prismatic bottle.

The assemblage of 25 Roman coins is the principal evidence for commerce. The assemblage is within the range for rural settlements in the county, with numbers varying from none at West Haddon (Mason 2006); ten at Mawsley New Village (ULAS 2012, 141); 13 at Milton Ham, Northampton (Northamptonshire Archaeology 2008, 13); 31 at Glapthorn (Hylton *et al.* 2005, 64); 87 at Upton, Northampton (Walker and Maull 2010, 33); and 191 at Higham Road, Burton Latimer (Guest 2019, 67). In contrast, the roadside settlement at Higham Ferrers produced 478 coins (King 2009). It is possible that some of these variations do reflect the ‘status’ and/or ‘wealth’ of the individuals within the settlements. However, other significant factors include whether the settlements continued to the end of the 4th century, the extent of the excavation areas and whether or not an experienced metal-detectorist was used during the fieldwork (as was the case at Earls Barton and Higham Road). The only other evidence for commerce at Main Road was a lead steelyard weight found in topsoil over the western settlement (Albion Archaeology 2014, 22). Although similar weights were in use in both the Roman and medieval periods, the Main Road example, at 166g, is quite close to the Roman weight of 6 *uncia* (163g).

When the Mallard Close excavation was published, the quantity of antler-working debris recovered from the Iron Age pits was the second largest in the county (after the high-status hillfort at Hunsbury Hill); low-status sites had produced only a handful of pieces although



Plate 1.6 Toiletry knife handle RA9. Scale 20mm

whether this reflected the status of the inhabitants was uncertain (Chapman and Atkins 2004, 55). Brief mention should also be made of the presence of a miniature-type dog within the Roman settlement. The occurrence of small dogs was once unusual and considered to be more common on higher-status sites (Harcourt 1974; Dobney and Jaques 1996, 223). However, such animals are increasingly being found on rural sites, e.g. one of the farmsteads at Biddenham Loop (Maltby 2008, 284) and at Marsh Leys, Kempston (Maltby 2011, 127), both in Bedfordshire. While they may be suggestive of high status, it is also possible that they reflect a new and specific type of farming dog.

In summary, it had been suggested that the presence of at least one walled enclosure on the Mallard Close excavation was evidence for a ‘prosperous settlement’ that may have contained a villa (Chapman and Atkins 2004, 1 and 55). The multiple drying ovens within the settlement may also point to the collection and processing of cereals on a significant scale. However, while the overall finds assemblage from Main Road is comparable to those from other ‘complex farmsteads’, the numbers and range of items are limited. This is perhaps surprising, given the settlement’s proximity to the postulated road linking the small towns – and therefore markets – at Irchester (6km to the east) and Duston (8km to the west) (Taylor and Flitcroft 2004, fig. 1). This could be viewed as evidence for the absence of inhabitants of high social status. However, to some extent, such evidence is intrinsically linked to an individual’s ability – but also need and willingness – to ‘buy into’ new Roman fashions. As ever, the evidence for status, wealth or the adoption of Roman culture is never particularly clear-cut (Hingley 1989, 159–61; Taylor 2001, 50) and should not be viewed too simplistically (Eckardt 2014, 20–1; Brindle 2018, 46).

Chapter 2

Neolithic (Phase 1) to early–middle Bronze Age (Phase 2)

2.1 OVERVIEW

The earliest evidence for human activity within the excavation area comprised a Neolithic serrated flint flake (assigned for convenience to Phase 1) recovered as a residual find from Phase 4 boundary ditch G42. The early–middle Bronze Age (Phase 2) saw the creation of a ring-ditch monument L1, which contained a central

urned cremation burial (Fig. 2.1). Three other cremation burials L2 were found near the monument.

Assignment of ring-ditch L1 to the early–middle Bronze Age (Phase 2) is based solely on its similarity with better-dated monuments in the region. Burials L2 include G3, dated to the early Bronze Age by a collared

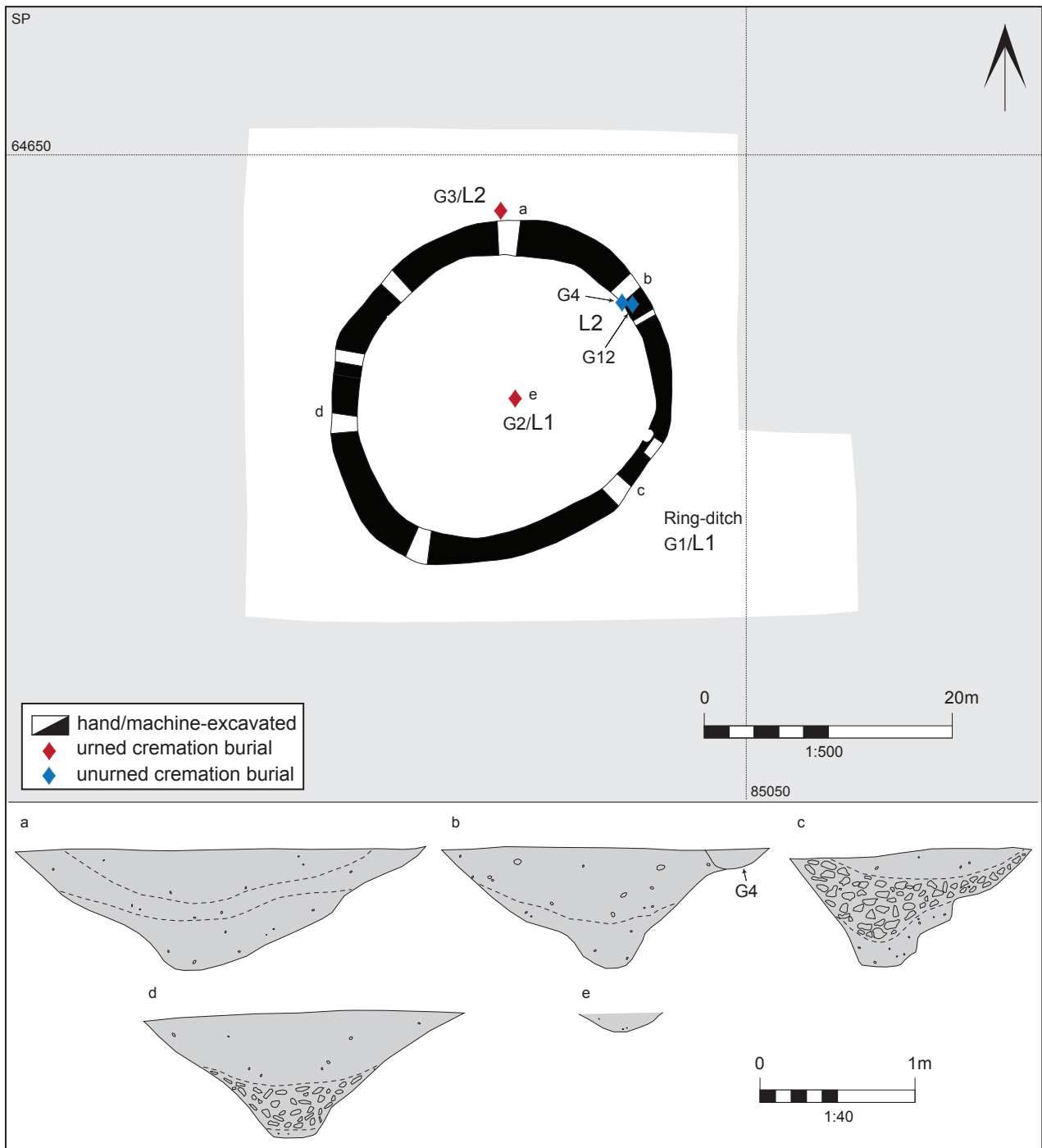


Figure 2.1 Plan of early–middle Bronze Age (Phase 2) ring-ditch, with selected sections

urn, and G12, charcoal from which was radiocarbon-dated to the middle Bronze Age.

2.2 RING-DITCH MONUMENT L1

Ring-ditch monument L1 was initially identified by geophysical survey (Northamptonshire Archaeology 2013) and subsequently confirmed through archaeological trial trenching (Albion Archaeology 2014). Cremation burial G2 was placed almost centrally within the interior of the monument. Approximately 25% of the ditch was hand-excavated with the remainder being machined-out with a toothless bucket, under archaeological supervision, to ensure that no burials or other significant deposits were present; none was found.

Ring-ditch monument G1

The ring-ditch was sub-circular with an internal diameter of c. 23m. It was defined by ditch G1, which was 2.1–2.8m wide and c. 0.8m deep, with steep-sloping sides and a narrow, flat base (Fig. 2.1, sections a–d). There was no evidence to suggest that the ditch had been redug. However, a c. 5m length in the south-east quadrant was noticeably narrower (c. 1.6m wide), slightly shallower (c. 0.6m deep) and had a stepped profile (Fig. 2.1, section c; Plate 2.1) unlike the rest of the ditch. The suspicion is that this indicates the location of an original entrance, which had been closed by the redigging of the ditch.

The ditch was infilled with mid-brown–orange silty sand, with moderate quantities of medium sized ironstone in the southern part of the ditch similar to the natural geology in this area (Fig. 2.1, sections c and d). The uniform fills gave no indication of the presence of a mound or bank except in a segment to the south-east where the distribution of stones within the fill suggests that these derived from the interior of the monument (Fig. 2.1, section c).



Plate 2.1 Hand-excavated segment of ring-ditch G1/L1.
Scale 1m scale

Central cremation burial G2

A circular grave containing a truncated urned cremation burial was located approximately in the centre of the monument. It was c. 0.6m in diameter but only c. 0.1m deep as it had been heavily truncated (Fig. 2.1, section e; Table 1.3; Plate 2.2). The precise fabric and form of the urn could not be determined from the 12 sherds recovered, although it may be of a similar date to the collared



Plate 2.2 Cremation burial G2 (L1) prior to excavation.
Scale 0.4m

urn in burial G3. It contained 160g of cremated bone from a child, approximately 5 years of age, with most areas of the body represented. The bone was mixed with mid-brown–yellow sandy silt and occasional oak charcoal.

2.3 THREE CREMATION BURIALS L2

Three other cremation burials were associated with the ring-ditch (Table 1.3). Urned burial G3 lay just outside the north edge of the ring-ditch in a c. 0.9m-diameter grave. Two unurned burials G4 and G12 were in graves (<0.5m in diameter) dug into the in-filled, north-east quadrant of the ring-ditch. All the burials contained charcoal dominated by oak suggesting uniformity in pyre material.

Grave G3 contained an early Bronze Age collared urn that had been laid on its side at the south end of the grave (Plate 2.3). The urn contained 790g of cremated bone from an adult of middle or later years. This was mixed with mid-brown sandy silt and small stones. The only grave good was a plano-convex flint knife (RA20, Fig. 6.1) found in the upper part of the urn. There was no evidence to suggest that it had been on the pyre.

Burials G4 and G12 comprised unurned cremation deposits. In contrast to the urned burials, only 16g of human bone was present in each grave, which proved to contain insufficient carbon for successful radiocarbon dating. Only a few identifiable bones were present, but the vault fragments in burial G4 suggest an immature individual. Oak charcoal from G12 produced a radiocarbon date of 1543–1435 cal BC (at 94.1% probability, SUERC-96918).



Plate 2.3 Cremation burial G3 (L2) during excavation.
Scale 0.4m

Chapter 3

Middle–late Iron Age (Phase 3)

3.1 OVERVIEW

A settlement was established during the middle–late Iron Age (Phase 3), *c.* 300m to the east of Phase 2 ring-ditch L1. It was largely unenclosed and extended in a linear arrangement over 2ha. Three settlement components were identified within the excavation areas – SL3 was enclosed; SL2 and SL10 were unenclosed (Fig. 3.1). Contemporary remains – now clearly part of a larger settlement – had been previously identified within the adjacent Mallard Close excavation (Chapman and Atkins 2004). For ease of description, the enclosed settlement area SL3 is discussed first, followed by the unenclosed areas to the south and north.

Assignment of features to Phase 3 was based primarily on the presence of middle–late Iron Age pottery (189 sherds, *c.* 4kg) and stratigraphic relationships with Phase 4 features.

3.2 NORTHERN ENCLOSED SETTLEMENT AREA SL3

Settlement area SL3 comprised Wootton Hill-style enclosure L11 defined by large ditches and an adjacent activity focus L31. At least two possible roundhouses and numerous pits were identified.

Wootton Hill-style enclosure L11

Only the north part of enclosure L11 fell within the excavation area; the remainder had been investigated within the Mallard Close excavation to the south (Chapman and Atkins 2004), indicating that it had an internal area of *c.* 48 × 29m (Fig. 3.2). Although the enclosure was created in the middle–late Iron Age, the presence of Roman finds in the upper ditch fills suggests that it was not entirely infilled until the 2nd century AD.

The enclosure ditch was *c.* 4.5m wide and *c.* 2m deep, with a concave profile and base (Fig. 3.3, sections a and b). There was evidence that the west and east lengths of it had been redug on the same course and alignment. Due to its relatively small overall size but large ditch, it can be classed as a Wootton Hill-style enclosure (Dix and Jackson 1989, 158). Virtually the full circuit of the enclosure ditch is now known, including the west-facing entrance seen within the Mallard Close excavation. Reconciling the evidence gathered 30 years apart was not straightforward and the combined plan suggests that the enclosure was more rectangular in shape and less regular than thought by the original excavators.

The interior of the enclosure was partitioned by sub-enclosure L10 and two north–south-aligned ditches G32 and G78. These were 0.5–2.3m wide and 0.1–0.6m deep. Possible ditch G32 extended beyond the excavation to the south and might correspond to ditches identified within the Mallard Close excavation. Other evidence for internal activity comprised possible roundhouse G34 (see below), seven pits (G30 and G31) and three post-holes G35.

The six pits G30 and G31 formed two clusters spaced *c.* 5m apart. They were broadly circular, 1.1–1.6m in diameter and less than 0.4m deep. They had steep sided or U-shaped profiles (Fig. 3.3, section c), characteristic of Iron Age storage pits.

Possible roundhouse G34

The location of a possible roundhouse is indicated by a semi-circular gully, *c.* 0.7m wide and less than 0.3m deep, with a concave profile (Fig. 3.3, section d). It had been redug once on broadly the same course and is interpreted as a drain around the building. It is uncertain if the three intercutting postholes G35 within the interior of the roundhouse are contemporary. Although there is a break in the gully on the south side an east-facing entrance is most likely; however, the gully did not survive on this side.

Sub-enclosure L10

Sub-enclosure L10 extended beyond the excavation area to the south but was not clearly found in the Mallard Close excavation; it may have been *c.* 10m square in plan. An entrance was clearly identified in the north-west corner. Its defining ditches G18/G20 and G21/G19 were 0.9–1.7m wide and less than 0.7m deep, with steep-sloping sides and narrow bases (Fig. 3.3, section e). G18/G20 on the west side may correspond to a ditch in the Mallard Close excavation.

Six pits G22 were dispersed across the interior of the sub-enclosure and pit G29 was dug into the north terminal of ditch G18/G20. With the exception of one pit, all were oval (1.2–2.1m long by 0.9–1.3m wide) and less than 0.5m deep. They had steep sides and flat bases (Fig. 3.3, section f), consistent with typical Iron Age grain-storage pits. The exception was circular, *c.* 1.7m in diameter and over 1m deep; no waterlogged deposits were present, but it may have functioned as a water-pit (Fig. 3.3, section g, Plate 3.1). It was located adjacent to the north-west entrance.



Plate 3.1 Possible water-pit in cluster G22 within enclosure L10. Scale 1m

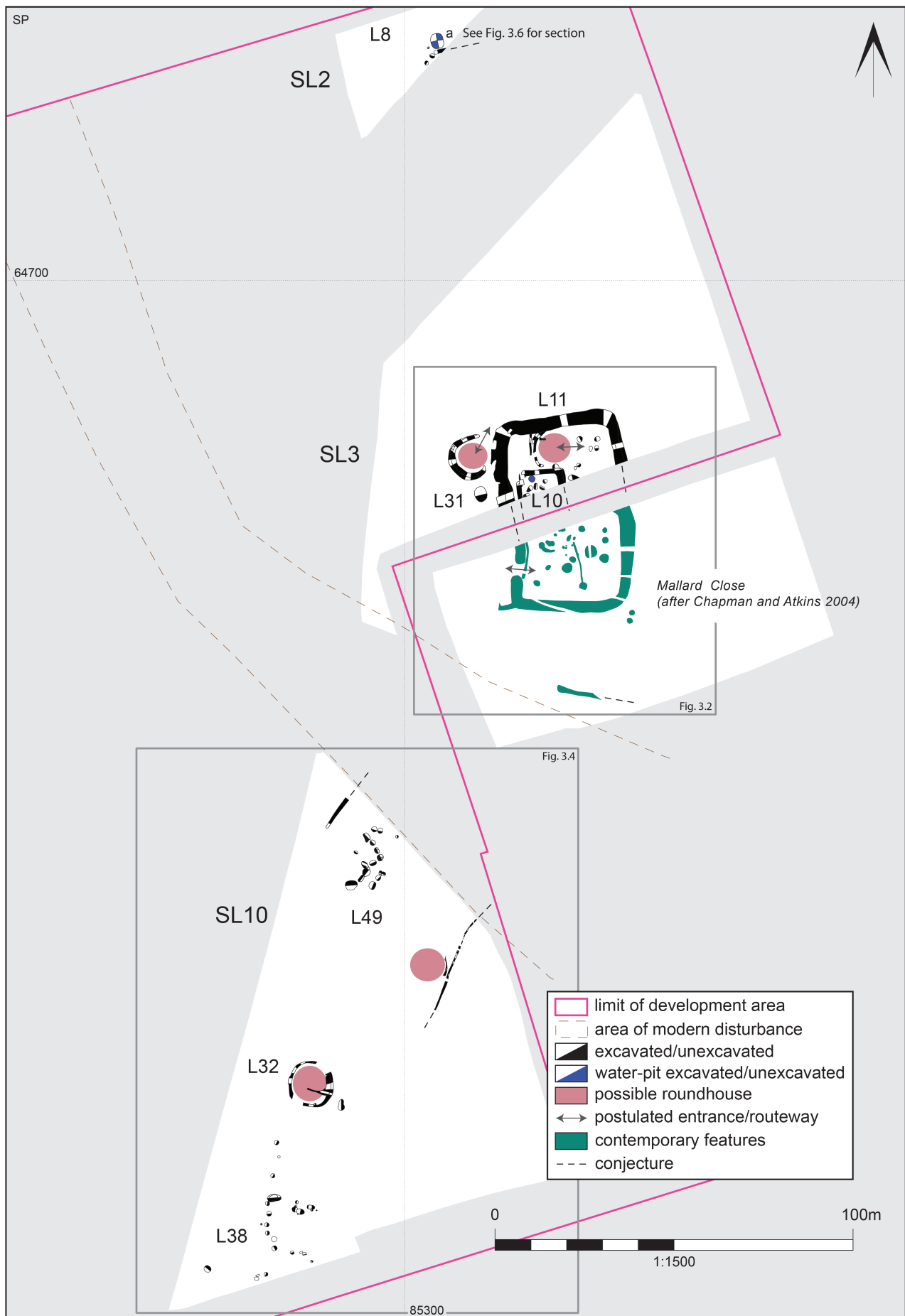


Figure 3.1 Overall plan of middle-late Iron Age (Phase 3) settlement

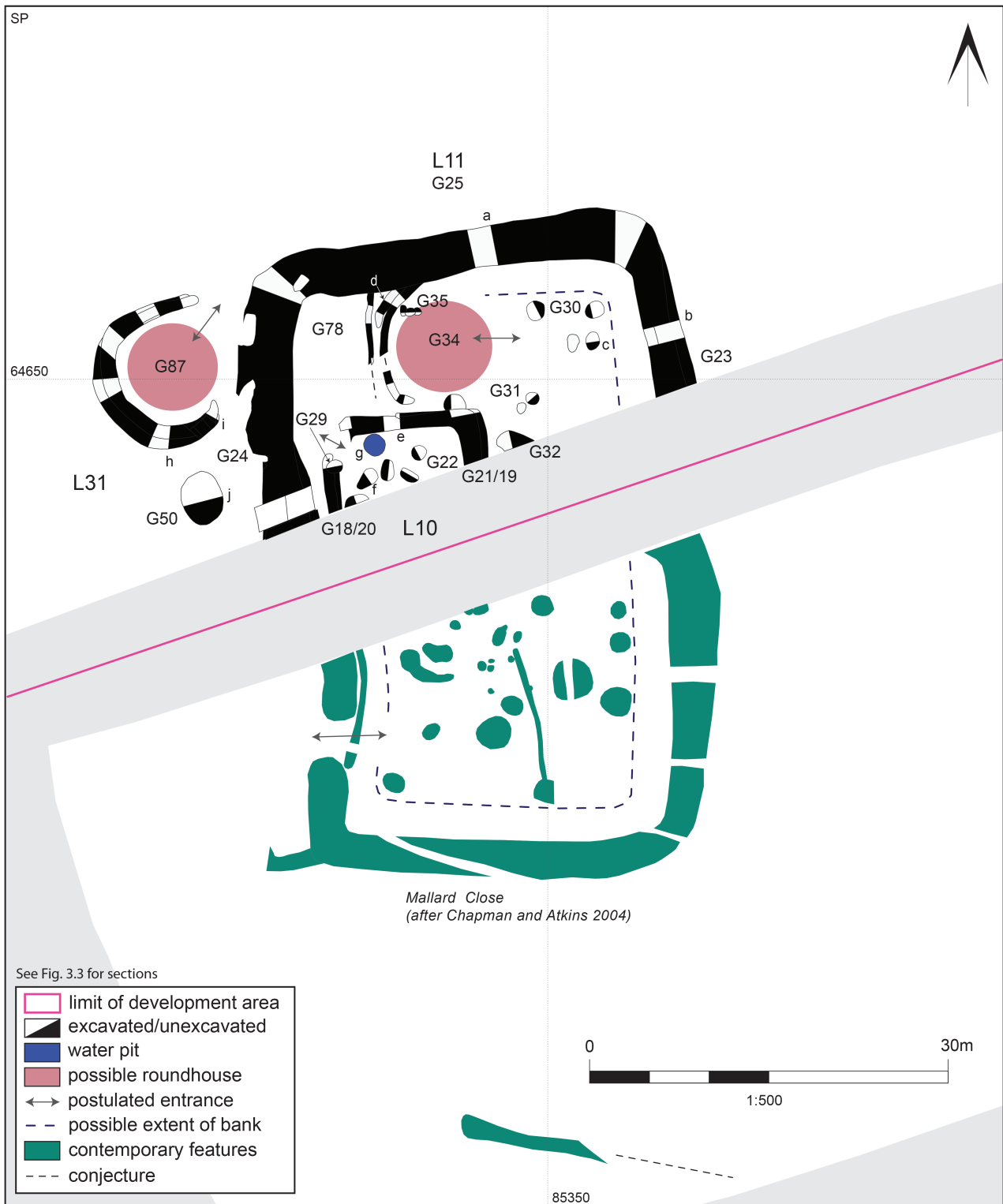


Figure 3.2 Detailed plan of northern settlement area SL3 including Wootton Hill-style enclosure L11

Activity focus L31

Unenclosed activity focus L31 was situated immediately to the west of rectilinear enclosure L11. It contained a possible roundhouse G87 (see below) and, to the south, a large pit G50. The latter was *c.* 4.5 × 3.4m in extent and *c.* 0.4m deep, with a concave profile (Fig. 3.3, section j).

Possible roundhouse G87

This roundhouse was defined by a sub-circular gully, which enclosed a *c.* 9m-diameter and had a *c.* 8m-wide opening to the east. The ditch was 0.8–1.6m wide and 0.3–0.6m deep, with a concave profile (Fig. 3.3, sections h and i). It is interpreted as a drain around the building. The gully had been redug on broadly the same course at least once.

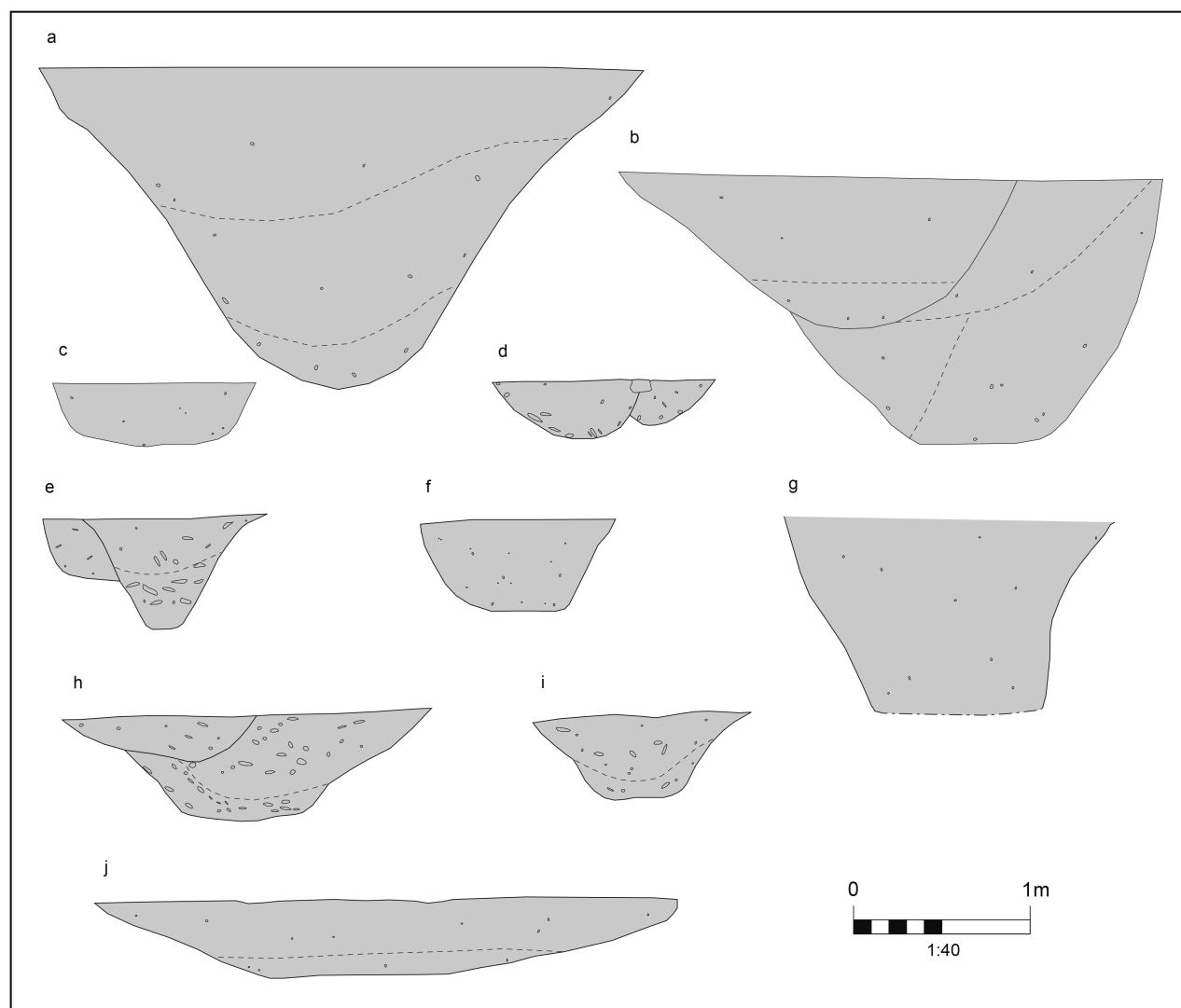


Figure 3.3 Selected sections from Figure 3.2

3.3 SOUTHERN UNENCLOSED SETTLEMENT AREA SL10

Unenclosed settlement area SL10 was located *c.* 70m to the south-west of settlement area SL3. It extended over 0.6ha and comprised three activity foci L32, L38 and L49, with hints that the latter may have been defined by ditches (Fig. 3.4). The distribution of features within L32 and L38 suggests that other boundaries, not surviving in the archaeological record, may once have existed. The majority of features comprised pits but two possible roundhouses were also present.

Possible enclosed activity focus L49

Activity focus L49 was located at the north end of SL10. It comprised a cluster of pits and, *c.* 25m to the south-east, a possible roundhouse G170 (see below). These features were situated between ditch lengths G134 and G147, which were *c.* 50m apart but may represent an enclosure. The ditches were 0.3–0.5m wide and *c.* 0.2m deep, with concave profiles (Fig. 3.5, sections a–c).

The 19 pits of G133 ranged in size from 0.4–3.4m in diameter and 0.1–0.6m deep. They were generally circular with steep sides and flat bases, similar to those in enclosed settlement area SL3 (Fig. 3.5, sections d–f). Three pits produced rich charred plant remains

assemblages with over 90% of the quantified remains being grains (Fig. 3.4, samples 63, 101 and 103). The grains mainly comprised hulled wheat (sample 63), hulled barley (sample 101) and six-row hulled barley (sample 103). This, coupled with their U-shaped profiles, suggests that the pits were used for the storage of fully processed grain which had perhaps been accidentally burnt *in situ*.

Possible roundhouse G170

Possible roundhouse G170 was located adjacent to ditch G147. Evidence for it comprised a *c.* 5m length of curved gully, 0.3–0.5m wide and *c.* 0.1m deep. It is interpreted as a drain around the building.

Activity focus L32

Activity focus L32 was located centrally within SL10. It comprised a possible roundhouse G88 and an adjacent large pit G90. The pit was sub-oval in shape, *c.* 3.1m long, *c.* 1.7m wide and *c.* 0.4m deep with an irregular profile.

Charred plant remains indicative of the latter stages of crop-processing, mainly the by-products from the de-husking of spelt wheat, were present in the roundhouse gully (samples 130 and 131; Fig. 3.4).

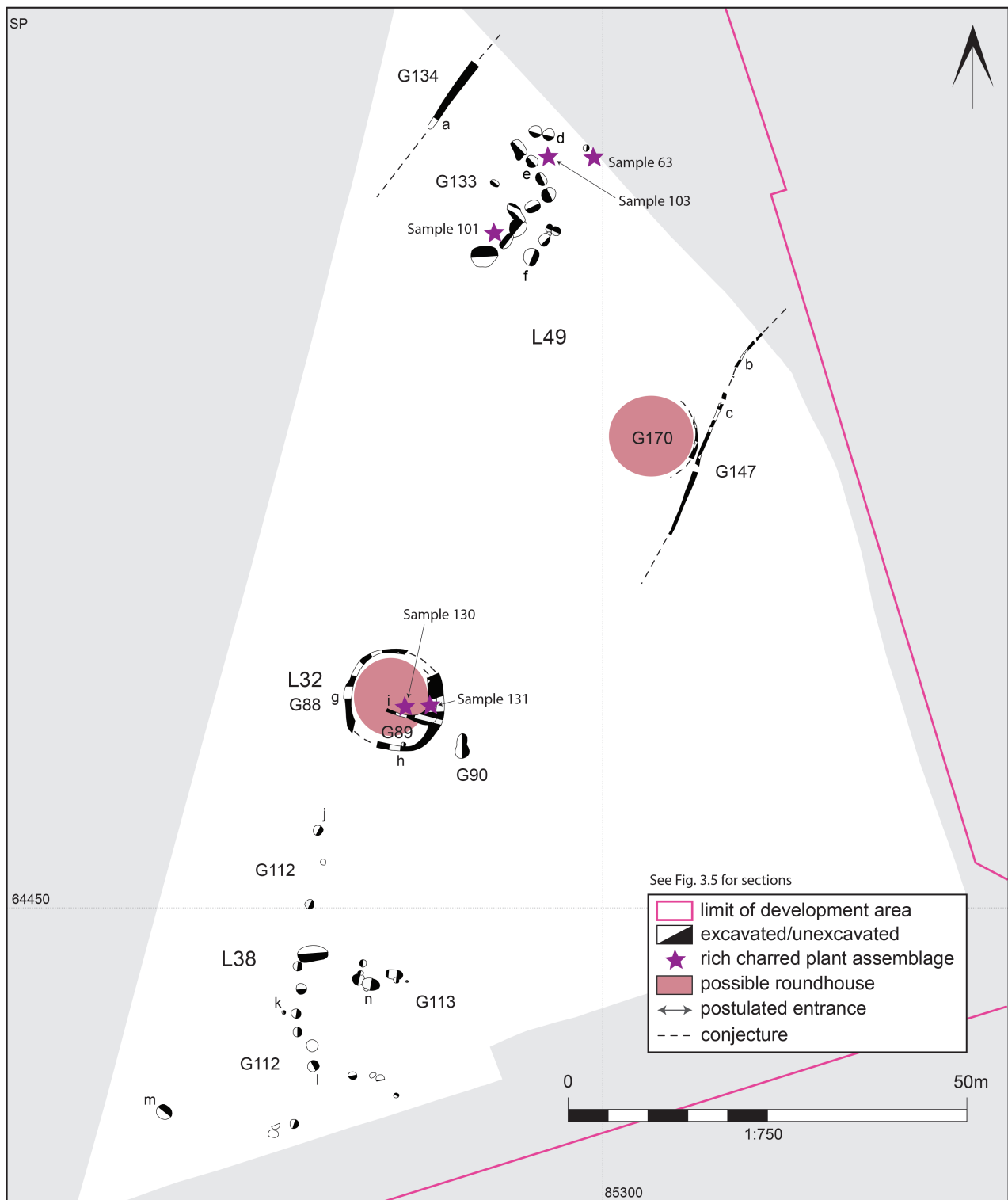


Figure 3.4 Detailed plan of southern unenclosed settlement area SL10

Possible roundhouse G88

Possible roundhouse G88 was defined by a circular gully, 10m in diameter. It was 0.6–0.9m wide and 0.3–0.6m deep, with a U-shaped profile (Fig. 3.5, sections g and h). It is interpreted as a drain around the building. The only internal feature was a single posthole G89 on the south side of the gully. No entrance was identified but one could have been located in the two areas truncated by a Phase 5 ditch. The east side of the gully had been redug on a slightly different alignment and, unusually, it extended into what would have been the interior of the

roundhouse. The redug gully was similar in depth and profile to the original (Fig. 3.5, section i).

Activity focus L38

Activity focus L38 comprised pits and postholes within a c. 40 × 30m area to the south of L32. Twenty-one pits and six postholes formed two clusters, G112 and G113. The latter comprised a tight cluster of four pits and four postholes, covering a c. 8 × 4m area. Some of the postholes had been dug into the pits, indicating more than one episode of activity. The arrangement of the 17 pits and

two postholes of G112 was more linear, suggesting the presence of a defining boundary, for which no evidence was identified. These yielded 1.6kg of pottery, including four sherds (417g) from a single shelly vessel.

Most of the pits were steep sided with flat bases, 0.5–1.3m in diameter and less than 0.4m deep (Fig. 3.5, sections j–n). One pit was much larger in size (c. 3.8 × 2m) and had an irregular profile, c. 0.7m deep.

3.4 NORTHERN UNENCLOSED SETTLEMENT AREA SL2

The northernmost part of the middle–late Iron Age (Phase 3) settlement was located c. 100m to the north of SL3 (Fig. 3.1). It comprised a ditch, three pits and a posthole (all assigned to L8).

Only a 4m length of ditch G13 lay within the excavation area and, therefore, its function is uncertain. It was c. 1m wide and c. 0.2m deep, with a concave profile. The pits and posthole were situated on either side of the ditch. Two of the pits, G14, were 1.1–1.5m in diameter and c. 0.2m deep, but pit G16 was noticeably larger and may have functioned as a water-pit.

Water-pit G16

Pit G16 was oval in shape, c. 4.3m long and 3.5m wide, with steep to near-vertical sides (Fig. 3.6, section a). It was at least 1.1m deep but its full depth was not established due to its unstable sides. No waterlogged deposits were identified, but its size and depth suggest that it may have functioned as a water-pit.

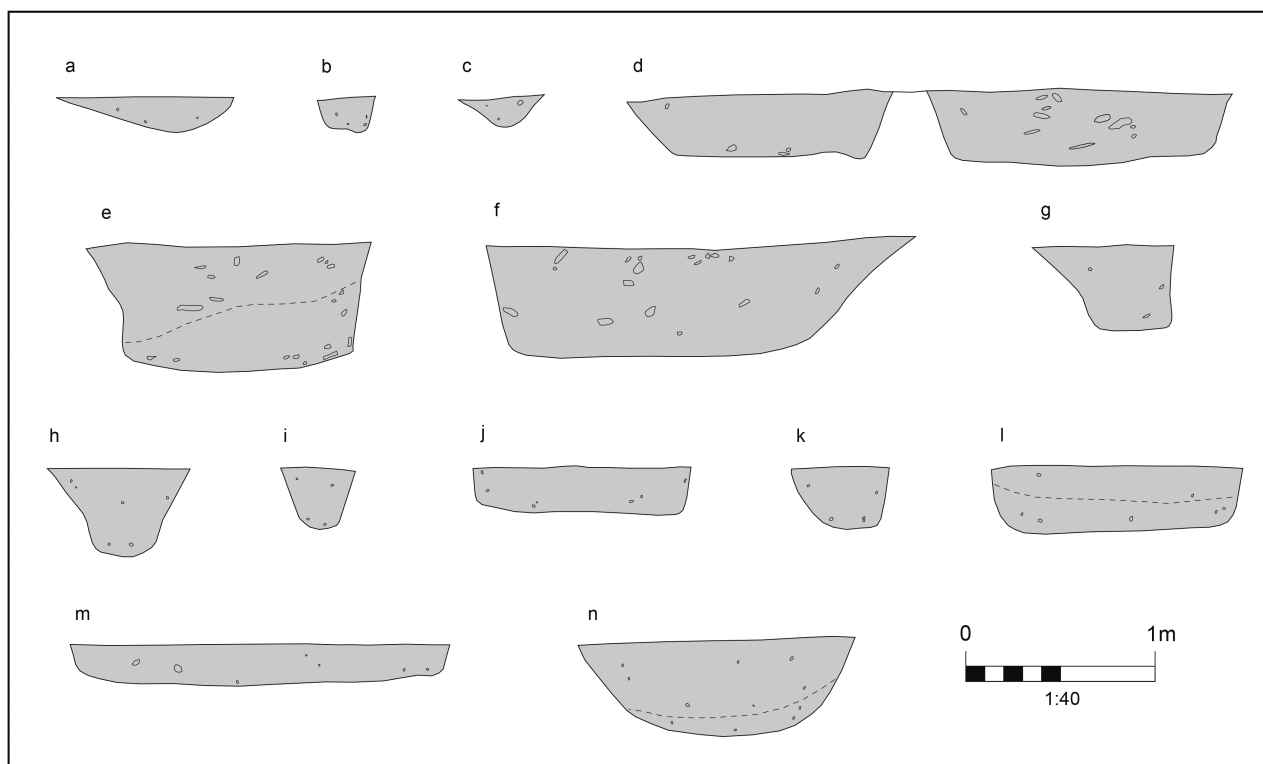


Figure 3.5 Selected sections from Figure 3.40

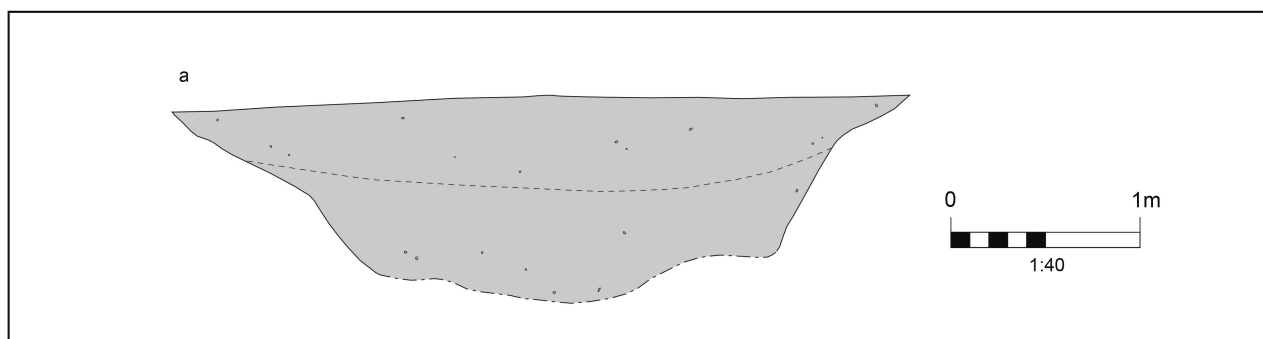


Figure 3.6 Selected section from Figure 3.10

Chapter 4

Late Iron Age/early Roman (Phase 4)

4.1 OVERVIEW

During the late Iron Age/early Roman period the layout of the Phase 3 settlement was modified to create a series of conjoined enclosures SL4 and SL11 in a loose linear arrangement (Fig. 4.1). The settlement was at least 1.7ha in extent but appeared to extend beyond the excavation area to the north and south. Contemporary remains – now clearly part of a larger settlement – had been previously identified within the adjacent Mallard Close excavation (Chapman and Atkins 2004). It is possible that some of the Phase 3 features may have been retained in the new layout, e.g. the pit clusters in L38 and L49, and the roundhouse in L32. The continuing presence of the roundhouse and truncation by later features may explain why no direct evidence for buildings was found.

Compared to its Phase 3 precursor, a larger finds assemblage was recovered from the Phase 4 settlement. Most of the pottery (406 sherds, 11.4kg) and animal bone (283 fragments, c. 3kg) derived from the southern enclosures SL11.

4.2 NORTHERN ENCLOSURES SL4

The northern part of the settlement comprised enclosures L14/L18 and L29 separated by routeway L13 (Fig 4.2).

Enclosures L14/L18

The original form of enclosure L14 comprised an L-shaped arrangement of ditches on the north side of routeway L13. The ditches were up to c. 2m wide and c. 0.7m deep, with steep-sloping sides and flat bases (Fig. 4.2, sections a–c). Less substantial and shorter ditch G83 may represent the east side of the enclosure; it was c. 0.4m wide and c. 0.3m deep (Fig. 4.2, section d). The enclosure extended beyond the area of excavation to the north but may have been 27m wide. A possible entrance on the south side was indicated by a ditch terminal; however, the absence of an opposing terminal casts doubt on this interpretation.

Replacement enclosure L18 was created by a combination of the redigging of the L14 ditches and the addition of a new ditch on the north side. This created a complete enclosure that was broadly square and 24 × 24m in extent. Its constituent ditches were c. 0.6–2m wide and 0.4–0.8m deep (Fig. 4.2, sections b, f–h). The location of ditch G82 suggests it may have been associated with enclosure L18 but this is uncertain. It was c. 0.6m wide and c. 0.3m deep (Fig. 4.2, section e).

The interior of both enclosures was devoid of evidence for activity. The only feature believed to be contemporary with the enclosures was pit G84, which truncated the possible east side of enclosure L14.

Enclosure L29

Enclosure L29 was an L-shaped arrangement of ditches similar to the enclosure to the north of routeway L13. Its constituent ditches were 0.6–1.9m wide with a concave profile (Fig. 4.2, sections i–k). They deepened to c. 1.1m

towards the south end of ditch G37, becoming more V-shaped in profile with a narrower, flatter base (Fig. 4.2, section l). The original ditches had been redug in places, but not in their entirety.

Routeway L13

A broadly east–west aligned routeway separated enclosures L14/18 and L29. It was 40m long and c. 16m at its west end narrowing to c. 8m wide at its east end.

4.3 SOUTHERN ENCLOSURES SL11

The southern enclosures comprised L33, L53 and L57; they were associated with boundary L45 and routeway L47 (Fig. 4.3). They covered an area of c. 0.6ha but clearly extended beyond the excavation area to the north and south. However, it is likely that routeway L47 marked the western extent of this area of activity. The finds assemblage recovered from enclosure L57 suggests that this was the domestic focus of the settlement, although no building remains were identified.

Routeway L47

A broadly north–south aligned routeway was defined by ditch lengths G117, G118, G129, G131 and G156. It was c. 7m wide at its north end, adjacent to enclosure L57, and widened out to c. 26m to the south. This may suggest that its primary purpose was the channelling of livestock from the south. The routeway formed a corridor at least 125m long within the excavation area and continued beyond the development area to the south. As described above (p.000), ditch L45 may represent a modification to the routeway.

The routeway ditches were 0.7–1.8m wide and less than 0.6m deep, with predominantly concave and occasionally V-shaped profiles (Fig. 4.4, sections a–e). Ditches on both sides of the routeway had been redug at least twice on the same alignment and often on the same course. Part of the east side of the routeway comprised ditch G117, which was located 3–6m to the east of ditch G118. It is uncertain if one was a replacement of the other or, as the gap between them narrowed to the north, if they were part of a livestock-management system.

Two possible entrances were suggested by gaps in the west routeway ditch. One was fully exposed within the excavation area – a c. 5m-wide gap, between the terminals of ditches G129 and G131, which was subsequently partially blocked by oval pit G130 (2.9 × 1.4 × 0.5m deep). The size and profile of the pit were similar to those of the adjacent routeway ditches (Fig. 4.4, section f).

A pottery assemblage comprising c. 2.7kg (96 sherds) was recovered from the ditches defining routeway L47 with a single discrete deposit (Plate 4.1) recovered from the west ditch G131 (location shown on Fig. 4.3).

Enclosures L33, L53 and L57, and boundary L45

This group of three enclosures was positioned to the east of routeway L47. The ditches defining enclosures L33 and

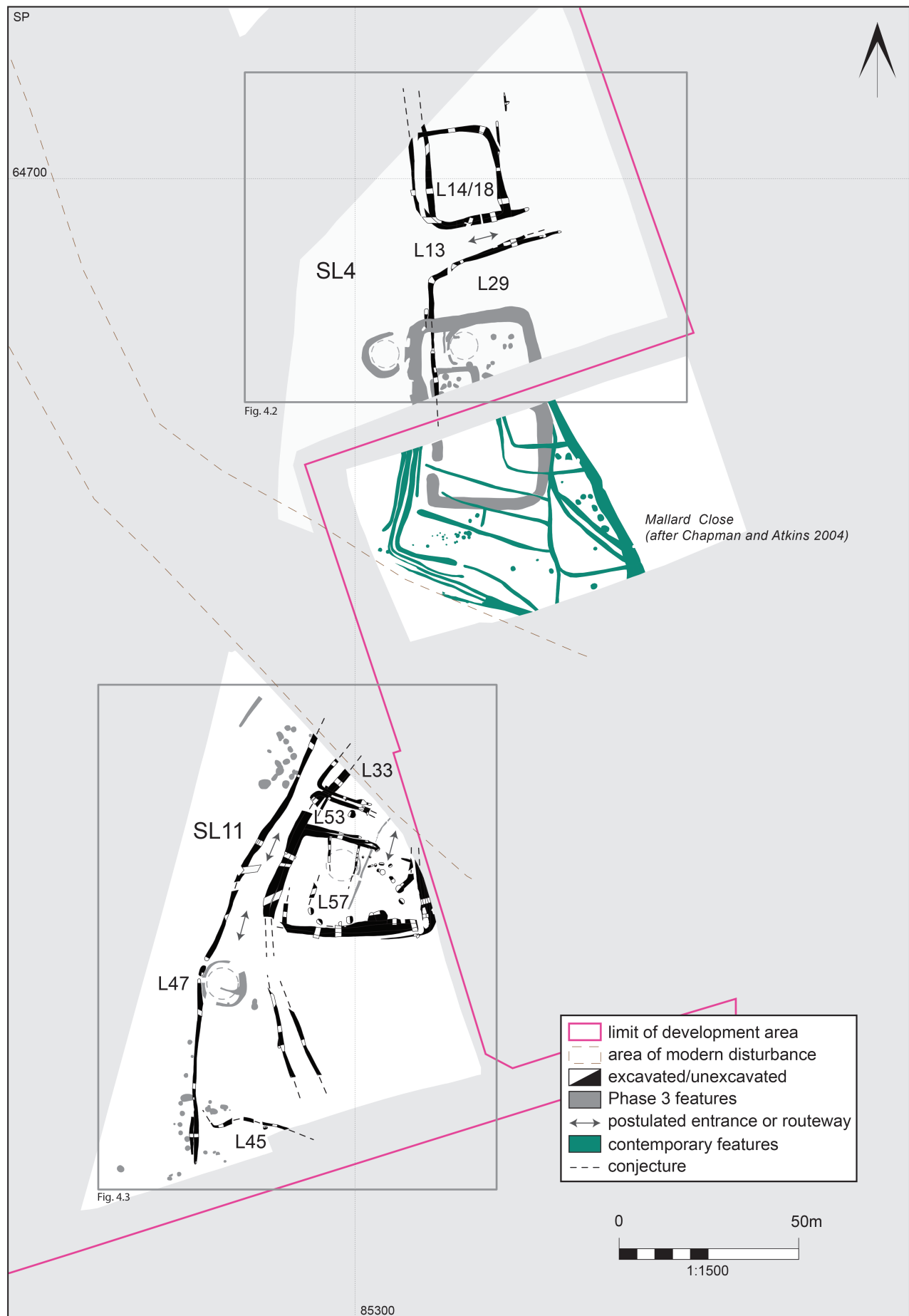


Figure 4.1 Overall plan of late Iron Age/early Roman (Phase 4) settlement

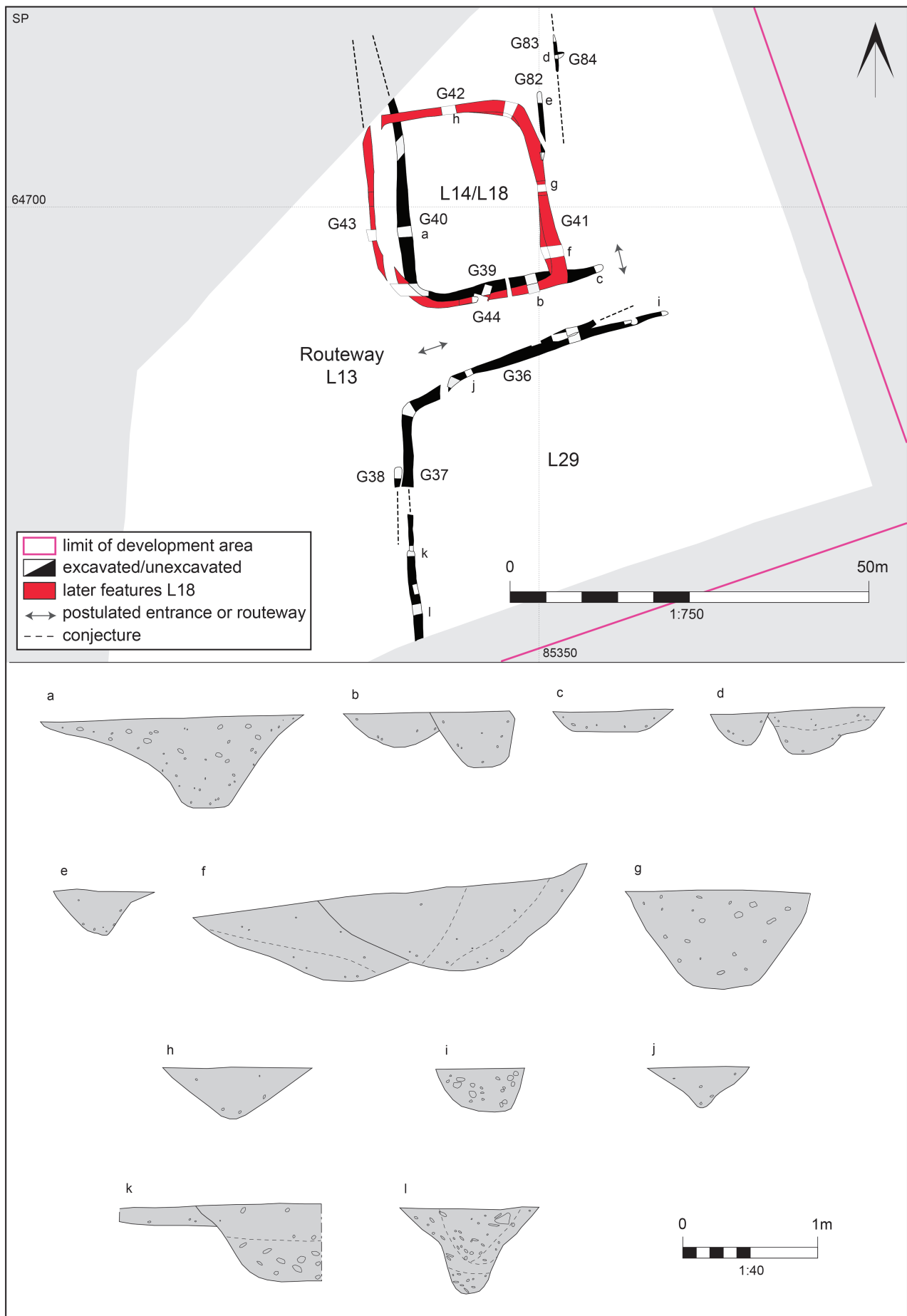


Figure 4.2 Detailed plan of the northern enclosures SL4, with selected sections

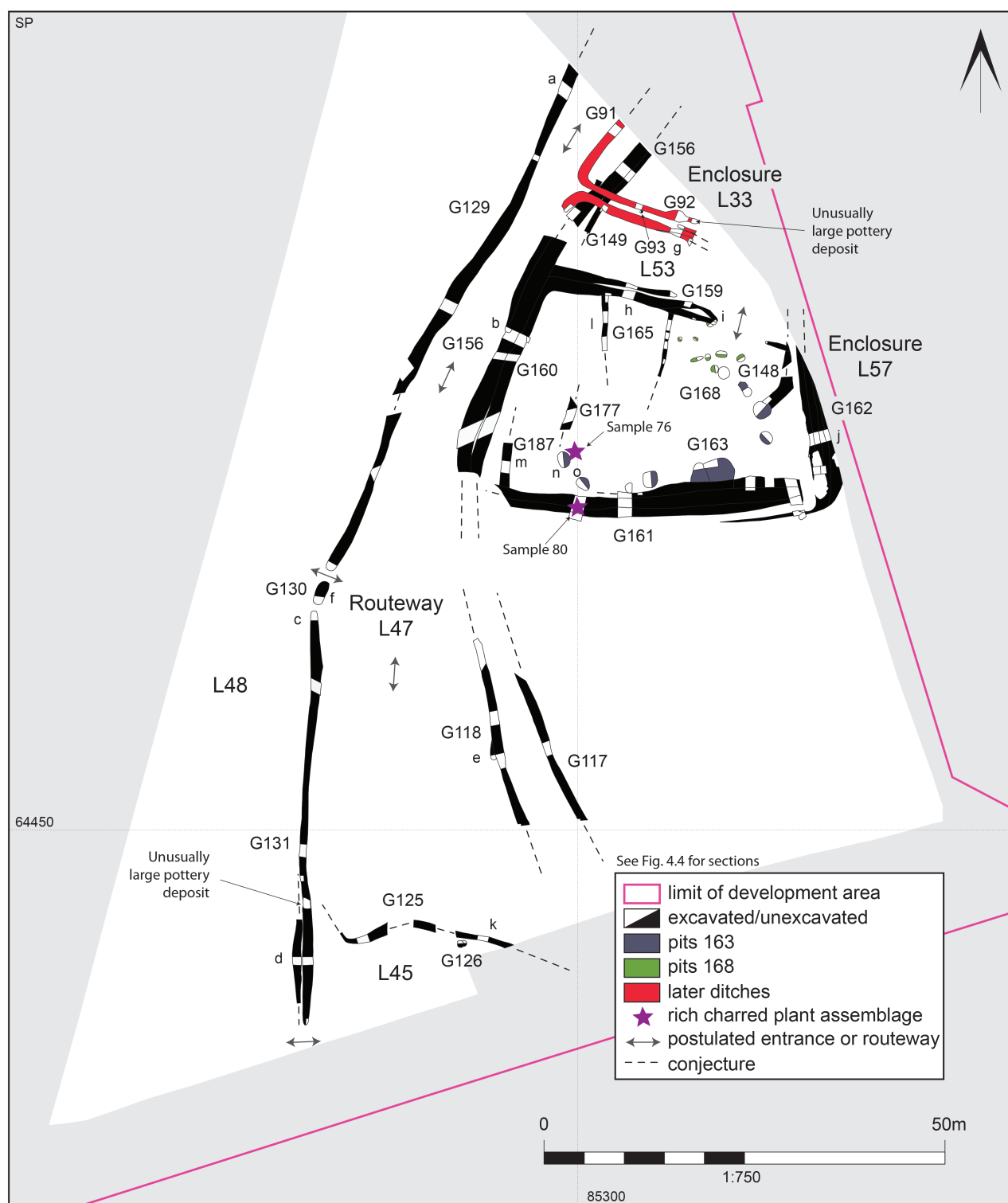


Figure 4.3 Detailed plan of southern enclosures SL40

L53 truncated the east side of routeway L47. They are, therefore, later in date, although the narrowed routeway could still have functioned. It is uncertain if boundary ditch L45, c. 50m to the south, was part of an enclosure or a modification to the routeway. It is the only ditch within the excavation that crosses the routeway, suggesting that at least part of the latter was no longer in use.

No obvious access points between the enclosures and the routeway were visible, although it is possible that they could have comprised wooden planks over the ditch. An unusually large pottery deposit was found in

enclosure ditch G92 (L33) in the form of eight sherds (1.7kg) from a grog-tempered everted rim jar (location shown on Fig. 4.3).

Only enclosure L57 was fully exposed within the excavation area; it was rectilinear and 21 × 36m in extent. The shape and size of the other enclosures are uncertain. They were all defined by ditches that were 0.2–0.9m wide and 0.1–0.5m deep, and generally concave in profile (Fig. 4.4, sections g–j). Most of the ditches had been redefined on multiple occasions. Access into enclosure L57 was indicated by a c. 6m-wide gap in its north-east side.

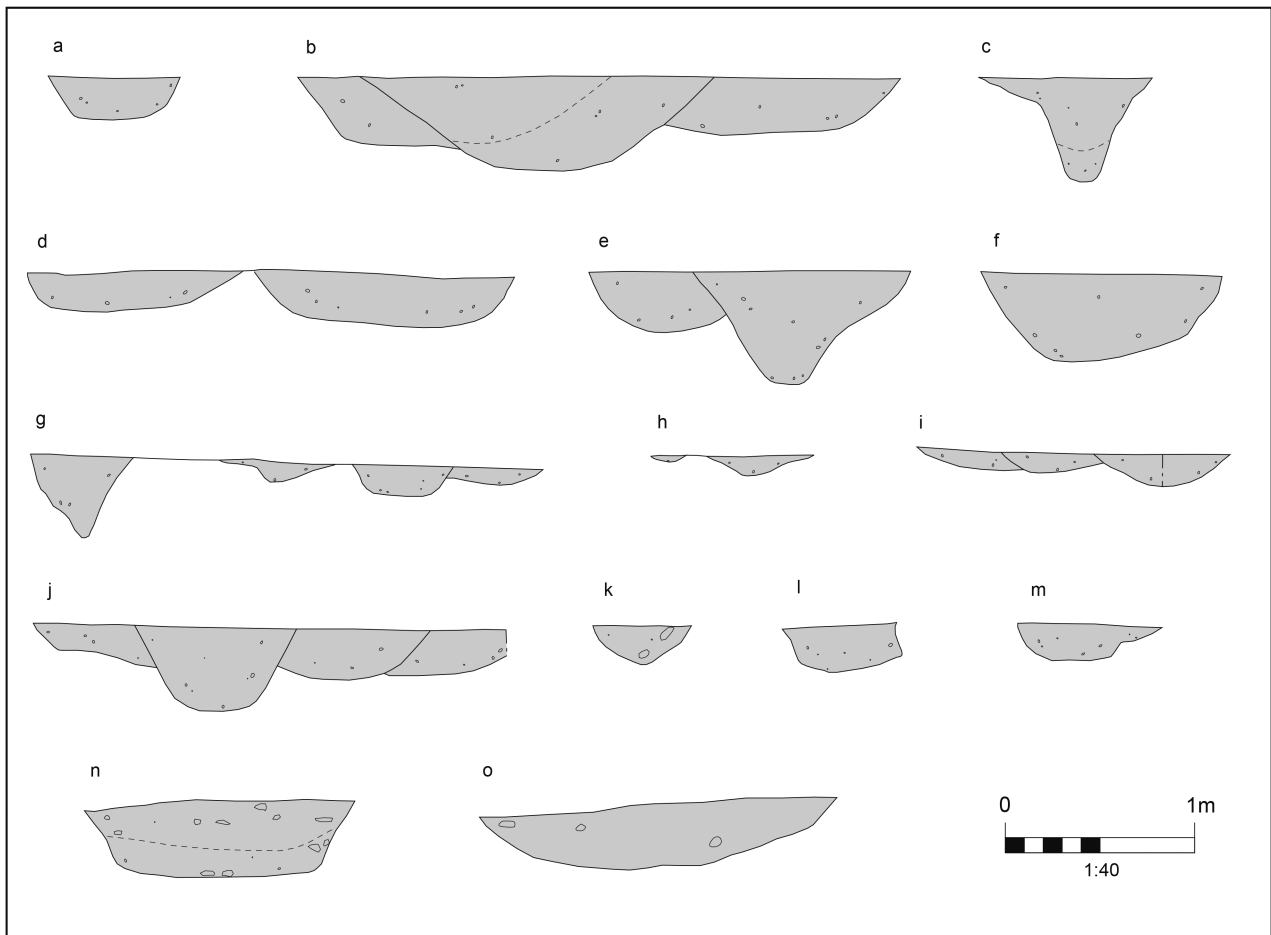


Figure 4.4 Selected sections from Figure 4.3



Plate 4.1 Deposit of pottery in the top of routeway ditch G131, L47. Scale 1m

The majority of evidence for internal activity was found within enclosure L57. It comprised a series of gullies, which presumably served to partition the interior, and two pit clusters (see below). Gullies G148, G165, G177 and G187 were 0.3–1.4m wide and less than 0.3m deep, with U-shaped profiles (Fig. 4.4, sections l and m). They were roughly perpendicular to the main enclosure ditch, although G148 was more L-shaped.

The 16 pits and two postholes within enclosure L57 occurred in two main clusters: G163 adjacent to the south ditch, and G168 adjacent to the entrance in the north-east corner. Some of the nine pits in G163 had been truncated by later recuts of the enclosure ditch. They were 1.4–2.3m in diameter and less than 0.5m deep. Several had steep sides and flat bases similar to ‘classic’ Iron Age storage pits (Fig. 4.4, section n) although others were more concave (Fig. 4.4, section o). Sample 76 from one of the pits contained a rich assemblage of charred grain – mainly de-husked, hulled wheat – possibly supporting its interpretation as a storage pit. Sample 80 from enclosure ditch G161 near this pit also produced a large assemblage of charred grain, mainly hulled barley. The seven pits in cluster G168 were generally smaller in size: 0.7–1.5m in diameter and less than 0.3m deep with more concave profiles. The two postholes assigned to G168 were 2m apart, 0.5–0.7m in diameter and less than 0.3m deep; they may represent a two-post structure.

Away from enclosure L57 very few contemporary features were identified. The exception was two post-holes G126 immediately to the south of boundary ditch L45.

Chapter 5

Roman (Phase 5)

5.1 OVERVIEW

The linear settlement was occupied into the Roman period (Phase 5), with modifications creating a series of enclosures to the south and north (SL12 and SL5 respectively). The settlement was at least 1.9ha in extent but appeared to extend beyond the excavation area to the south and east (Fig. 5.1). Contemporary remains – now clearly part of a larger settlement – had been previously identified within the adjacent Mallard Close excavations (Chapman and Atkins 2004). The settlement contained evidence for a single possible roundhouse, stonework, drying ovens, two wells, and four inhumations.

Assignment of features to this phase was based on stratigraphic relationship with Phase 4 features and the presence of Romanised pottery (1974 sherds, 59kg). Other finds typical of Roman rural settlements include brooches, copper alloy coins (most found from subsoil), glass beads and hobnails. Iron Age pottery also appeared as residual finds in some of the pits and ditches. The presence of five 4th-century coins suggests activity within the settlement continued into this century and the latest coin found was struck in AD 347/348. However, the presence of 20 sherds of early to middle Anglo-Saxon pottery in the tops of SL5 enclosure ditches also suggests some activity was taking place in this period although no features were assigned to it.

5.2 NORTHERN ENCLOSURES SL5

The north part of the Phase 5 settlement comprised the remodelling, L20, of Phase 4 routeway L13 and the establishment of an adjoining enclosure, L23, to the south of it (Fig. 5.2). It is possible that the Phase 4 enclosure L14 on the north side of the routeway remained in use, although there is no evidence for redigging of its ditches. At least three episodes of layout modification took place at the west end of the routeway, including the creation of enclosures L15, L19 and L21 and boundary L16. Enclosures L19 were dug across the south half of routeway L20 and blocked its course westwards. The last modifications to the settlement layout comprised enclosure L15 and boundary L16 that were dug at the west end of the routeway. Some of the ditches clearly continued into the Mallard Close excavations where stone walls, a drying oven and a well were also found (Chapman and Atkins 2004).

Routeway L20

Ditches G59 and G61 defined a routeway that was *c.* 6m wide to the east, expanding to *c.* 9m wide to the west. The ditches followed a similar alignment to those of Phase 4 routeway L13, albeit on a slightly different course. They were *c.* 0.8m wide and less than 0.4m deep, with concave profiles. The north ditch G59 became wider (*c.* 1.7m) and deeper (*c.* 0.6m) towards the west (Fig. 5.3, sections a–c).

Two pits, G63, within the routeway corridor, next to the south ditch, were *c.* 1m in diameter and *c.* 0.2m deep, with steep-sloping, concave profiles.

Enclosure L23

Enclosure L23 abutted the south side of routeway L20 and extended southwards beyond the area of excavation. It measured 23m E–W and at least 30m N–S. Its constituent ditches G69, G70 and G79 were *c.* 0.8m wide and less than 0.2m deep; they had concave sides and wide, flat bases (Fig. 5.3, sections d–h). An entrance into the enclosure was indicated by a *c.* 10m-wide gap in the east side; there was probably an opposing entrance on the west side.

The enclosure was subdivided by ditch G71, which was *c.* 0.4m wide and *c.* 0.2m deep (Fig. 5.3, section i). The north part of the enclosure measured *c.* 17m N–S. It was largely devoid of evidence for internal activity, except for two pits, G68, next to the north side and one pit, G81, next to the east side. Pits G68 were circular and *c.* 1.2m in diameter; whereas pit G81 was oval and measured 2.3×1.2 m. All three were less than 0.5m deep, with asymmetrical profiles (Fig. 5.3, section k).

Access into the south part of the enclosure was via *c.* 4m-wide gaps in the north-west and north-east corners. A short length of ditch G80 adjacent to the north-west entrance may have been dug for drainage. Other than two inhumations the south part of the enclosure was devoid of evidence for internal activity; a third inhumation lay just outside the enclosure to the west.

Inhumations G33, G73 and G74 (L24)

Three inhumations (L24) within or just outside enclosure L23 were all in N–S shallow sub-rectangular/oval graves (Fig. 5.4, sections a–c). No evidence for coffins or grave goods was identified.

Inhumations G73 and G74 in the south part of enclosure L23 were *c.* 2m apart. Grave G74 was the larger ($2.4 \times 1 \times 0.3$ m) and contained the heavily eroded and friable remains of an adult. Grave G73 ($1.9 \times 0.8 \times 0.3$ m) contained the slightly better-preserved skeleton of an adult male (Plate 5.1). Both individuals had been placed in an extended position with the head to the south and feet to the north; G73 was supine. The right arm of G73 had been bent at the elbow and the hand had most likely been placed on the body.

Inhumation G33 was situated to the west of the south part of enclosure L23, *c.* 20m south-west of inhumations G73 and G74. The grave ($1.4 \times 0.7 \times 0.1$ m) contained the



Plate 5.1 Overhead view of inhumation G73. Scale 1m



Figure 5.1 Overall plan of Roman (Phase 5) settlement

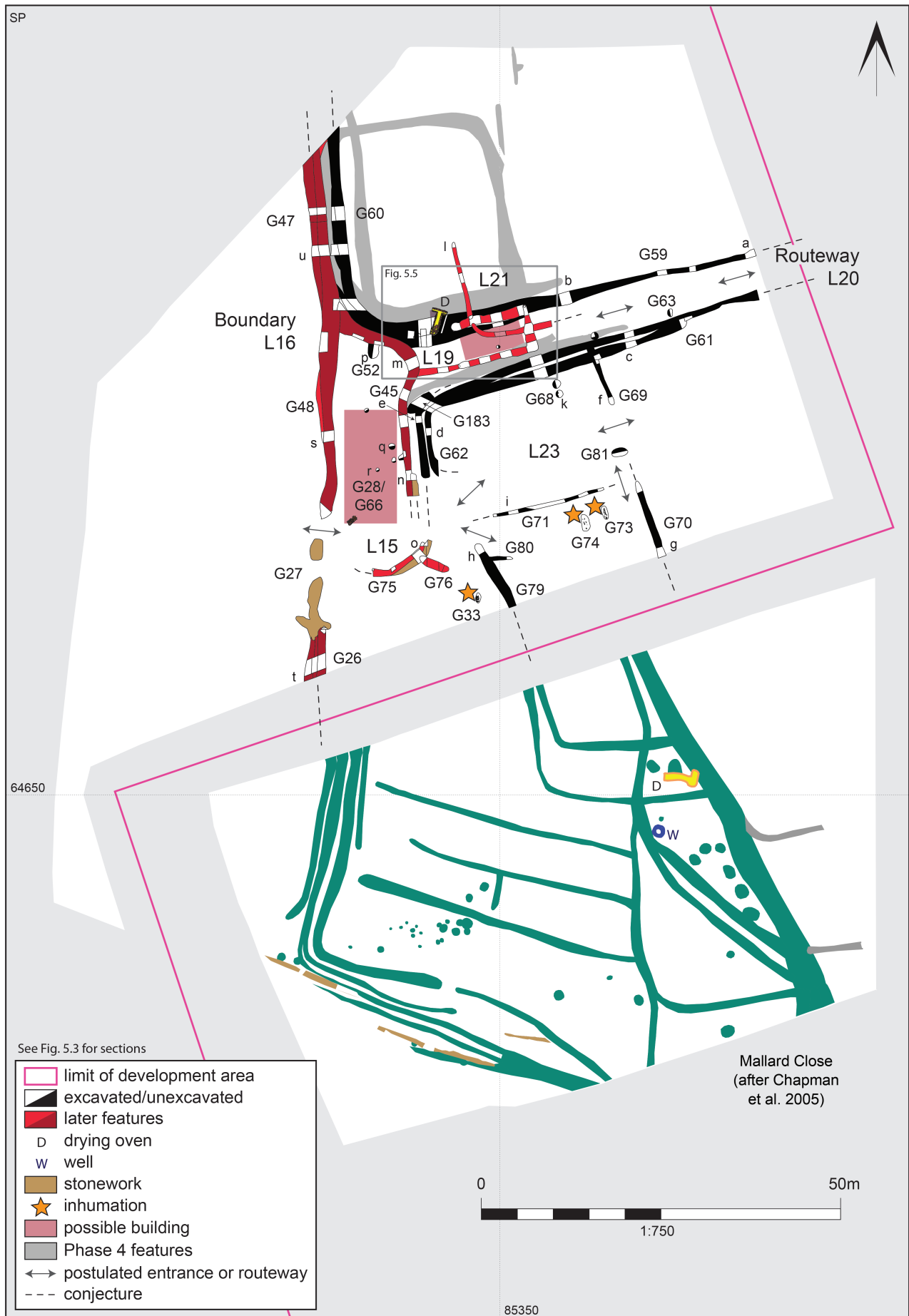


Figure 5.2 Detailed plan of northern enclosures SL5

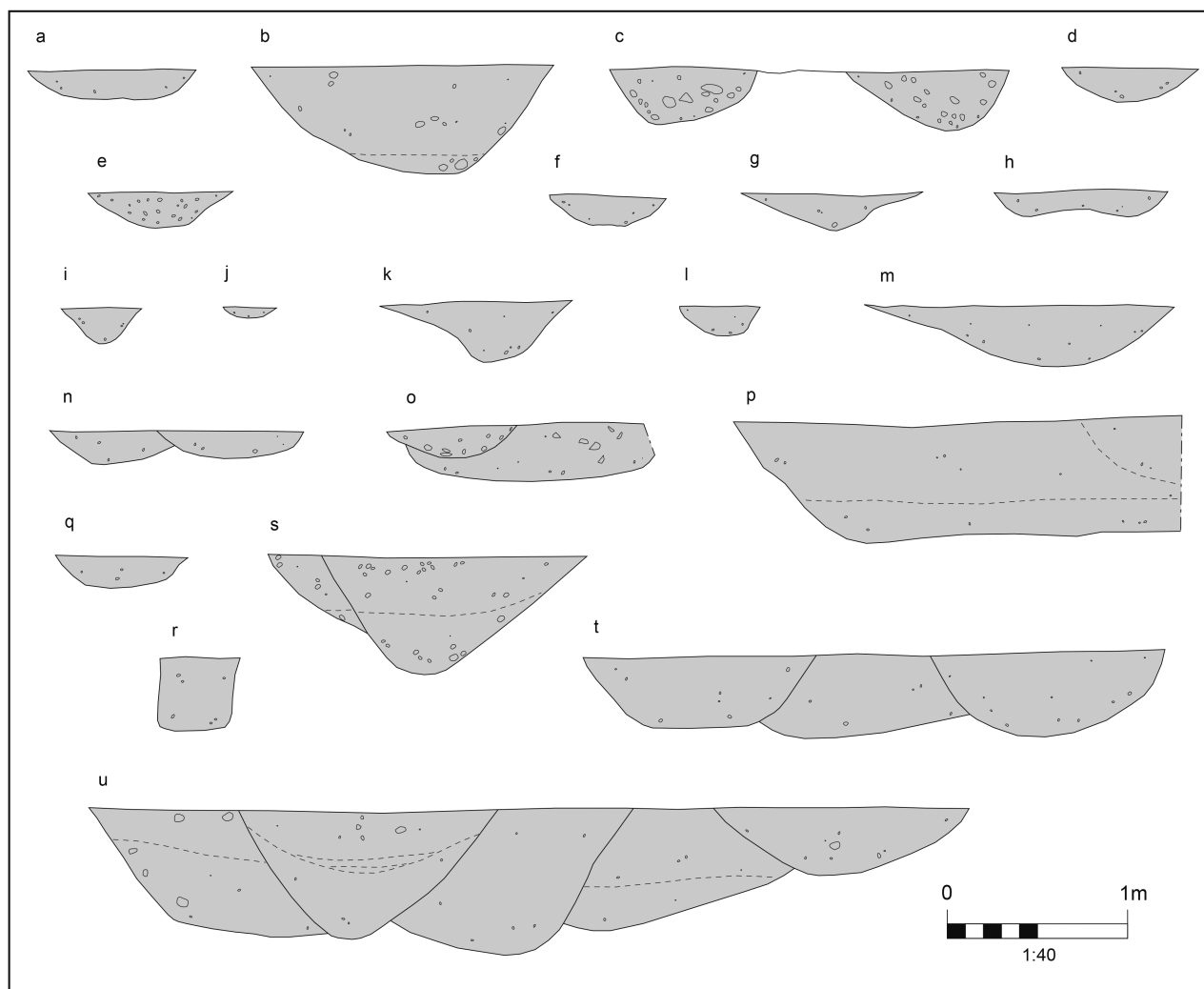


Figure 5.3 Selected sections from Figure 5.2

partial remains of an adult male, in a prone position with the feet to the north (Plate 5.2). The head had been removed and placed between the legs, just below the pelvis.



Plate 5.2 Overhead view of inhumation G33 (L24)

Sub-oval enclosure L15

Enclosure L15 is likely to represent the final episode of modification to the layout of settlement area SL5. It blocked the west end of routeway L20 and appeared to be contemporary with the south ditch of enclosure L19 (Fig. 5.2). It enclosed a $33 \times 9\text{m}$ area, defined by ditch G75 to the south and by ditch G45 to the east. The west side was defined by boundary ditch G48 (L16). The ditches had

been redug at least once. They were $0.7\text{--}1.8\text{m}$ wide, less than 0.3m deep and consistently concave in profile (Fig. 5.3, sections m–o). A possible entrance was indicated by a c. 2m -wide gap in the west side; all other apparent gaps are the product of truncation. At the north end of the enclosure, pit G52 measured c. $2.1 \times 1.5 \times 0.6\text{m}$ deep and had a U-shaped profile (Fig. 5.3, section p).

Stonework G28/66

A possible rectangular building was indicated by four postholes, G66, and a $1.5 \times 0.7 \times 0.1\text{m}$ rectangular area of tightly packed, undressed limestone G28 (Plate 5.3). No foundation trench was identified, but the arrangement



Plate 5.3 Detailed view of stonework G28 in enclosure L15. Scale 1m



Figure 5.4 Detailed plans of inhumations G33, G73 and G74 (all L24) in enclosure L23 (SL5) and inhumation G120 in enclosure L35 (SL12), with selected sections

of the stones and consistent overall width suggest that they had been placed in one. It is therefore possible that the stones represent the foundations of a wall which has elsewhere been destroyed. The postholes were c. 0.5m in diameter and less than 0.3m deep, with U-shaped profiles (Fig. 5.3, sections q–r). The precise shape and dimensions of the postulated building must remain speculative, but it might have been c. 15 × 7m in extent.

Boundary L16

Boundary L16 was at least 72m long and extended beyond the area of excavation to the north and into the Mallard Close excavation to the south (Chapman and Atkins 2004). It was defined by a series of ditches G26, G27, G47 and G48 (0.6–1.5m wide and 0.2–0.7m deep) that increased in width and depth towards the north. It was redug at least four times on the same alignment but a slightly different course (Fig. 5.3, sections s–u).

Stonework G27

Two linear spreads of stone (1–1.6m wide and 0.2m deep), separated by a 2m-wide gap, extended for c. 14m along the line of boundary ditch L16, with two near-perpendicular off-shoots to the south. They comprised small, closely packed fragments of mainly limestone (Plate 5.4). Although clearly associated with the boundary, the function of the stonework is uncertain – it may represent the partially robbed foundation of a wall, part of a causeway across the ditched boundary or the foundations of an entrance structure.



Plate 5.4 Initial cleaning exposing stonework G27, looking north-east

Later enclosures L19 and L21

Enclosures L19 and L21 were unusual in that they had been formed across the west part of routeway L20 (Fig. 5.5). Stratigraphically, enclosure L21 was the earlier of the two, but part of it may have coexisted with enclosure L19. Little can be said about c. 12m-square enclosure L21 other than that it was defined by L-shaped ditch G64, which was 0.4–0.6m wide and less than 0.3m deep, with a steep, concave profile (Fig. 5.3, section l; Fig. 5.5, section a).

Rectangular enclosure L19 measured c. 15 × 4.5m but was open on its west and north-west sides. It was defined by ditches G56, G57 and G58 (Plate 5.5); the north ditch G56 terminated 1.5m from drying-oven G53, suggesting contemporaneity. The ditches were 0.8–1.5m wide and less than 0.4m deep, with concave to U-shaped profiles. The north and east ditches were wider and more concave in profile (Fig. 5.5, sections b–g). The enclosure's shape may indicate that it defined the location of a rectangular building; if so, the profile and width of its ditches suggest that they represent drains rather wall foundations. However, two postholes had been dug into the base of the ditches (Fig. 5.5, section h) and a single posthole was located adjacent to the south ditch G58. Samples from ditch G57 near to oven G53 contained charred plant remains that probably represent debris largely from the de-husking of spelt wheat which may have been accidentally burnt.

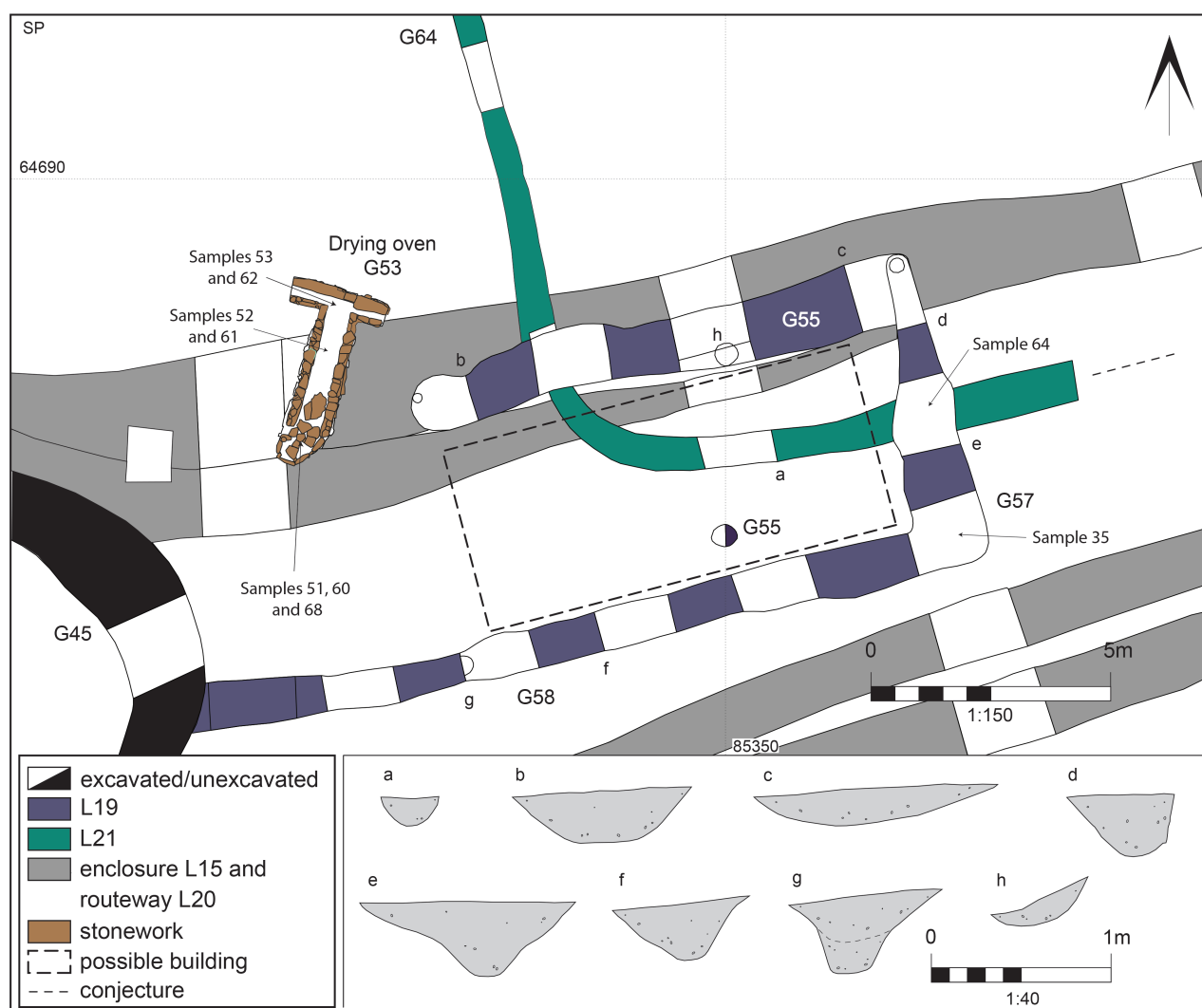


Figure 5.5 Detailed plan of enclosures L19 and L21 and drying oven G53, with selected sections



Plate 5.5 Enclosure L19 and routeway L20, looking east

T-shaped drying oven G53

T-shaped, NNE–SSW aligned drying oven G53 comprised a c. 3.5 × 0.5m flue with a 2m-long cross flue at its north end (Fig. 5.5; Plate 5.6). The oven walls comprised at least four courses (0.4m high) of limestone and ironstone, with occasional large, rounded cobbles and a fragment of brick (Plate 5.7 and 5.8). The stokehole was defined by a semi-circular arrangement of vertically placed larger stones with limestone on its base.



Plate 5.6 Initial half-sectioning of T-shaped drying oven G53, looking south-east

Much of the base of the oven was scorched and overlain by a layer of dark brown–black silty sand (<0.01m thick), mixed with flecks and fragments of charcoal and rich assemblages of charred cereal remains. Samples 51, 52 and 53 produced broadly similar assemblages,

suggesting that the oven was being used to parch spelt spikelets to facilitate de-husking, and also to dry barley grains before storage or milling – with the cereals being accidentally burnt in the oven during these processes. Sample 68, taken from the stokehole, contained charred remains representing the by-products of de-husking, probably used as fuel for the oven.

The backfill of the oven comprised brown–yellow silty sand and light-yellow clay, mixed with flecks of charcoal and fragments of limestone and ironstone, some of which were burnt. The animal bone assemblage included three associated animal bone groups – representing a miniature-type adult dog ABG1, an adult hen ABG2 and an adult cat ABG3. The bones were not found articulated, but most parts of the dog were represented; it is likely to have been deposited as a complete carcass.

5.3 SOUTHERN ENCLOSURES SL12

The southern part of the settlement comprised a series of adjoining enclosures L34, L35, L36, L39, L54 and L56 (Fig. 5.6). They represent several episodes of modification and expansion, with enclosures L34, L35 and L39 being the latest in the sequence. The western extent of the settlement was defined by ditch L48 and the sides of enclosures L54 and L56, all of which mirrored the position of Phase 4 routeway L47.

Enclosures L36, L54 and L56

These three adjacent, sub-rectilinear enclosures were defined by ditches that had been redug multiple times on the same alignment and broadly the same course. The ditches were 0.5–1.3m wide, 0.2–0.6m deep and concave in profile (Fig. 5.7, sections a–e). The larger enclosures



Plate 5.7 Stone-lining of T-shaped drying oven G53, looking south-west. Scale 1m



Plate 5.8 Stone-lining of T-shaped drying oven G53, looking east. Scale 1m

L54 and L56 extended beyond the limit of excavation but smaller enclosure L36 was c. 25 × 11m. The shape and size of the latter may indicate that they defined the location of a rectangular building. The interiors of enclosures L54 and L56 were partitioned by ditches G154 and G164, which were 0.5–1.1m wide and less than 0.4m deep. Single entrances into enclosures L35 and L56 were represented by c. 3m- and c. 1m-wide gaps in their east sides. Stonework G158 was situated next to the entrance into enclosure L56. The same enclosure contained two drying ovens and a well.

Eighteen pits (G94, G109, G139, G143 and G155) and three postholes, G151, were dispersed across the interiors of enclosures L36, L54 and L56. The pits ranged in diameter from 0.9–1.9m, but were usually less than 0.2m deep, with steep sides and flat bases (Figs 5.7, sections

f and h). However, three pits were up to 0.7m deep and had U-shaped profiles (Figs 5.7, section g), similar to 'classic' Iron Age storage pits. Postholes G151 in enclosure L56 did not form any obvious pattern.

Stonework G158

Two linear stone spreads ran parallel to the east side of enclosure L56 next to its entrance (Plate 5.9). SG215 was c. 6m long, 0.9–2m wide and 0.3m deep; it slightly overlapped the adjacent enclosure ditch G186. Approximately 1.5m further to the east, SG280 was c. 1.8m long. Both were set on a silty bedding layer in shallow, flat-bottomed trenches dug into the upper fills of late Iron Age/early Roman (Phase 4) ditches. SG215 predominantly comprised limestone, with some ironstone and two tegula fragments. The stone was not tightly packed and may therefore represent the robbed-out remains of a wall rather than an *in situ* foundation. In contrast, the



Plate 5.9 Aerial view of stonework G158, looking south

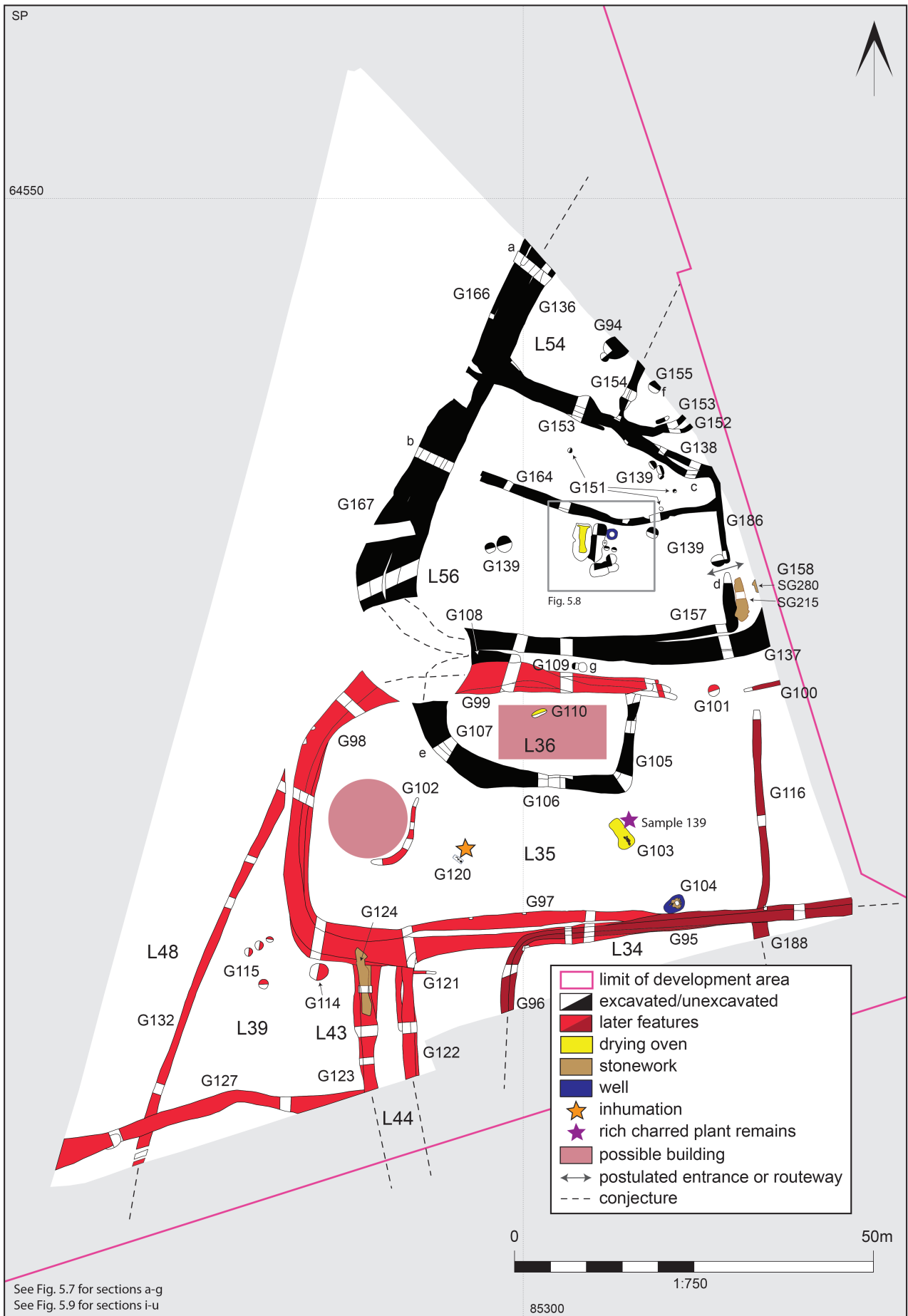


Figure 5.6 Detailed plan of southern enclosures SL12

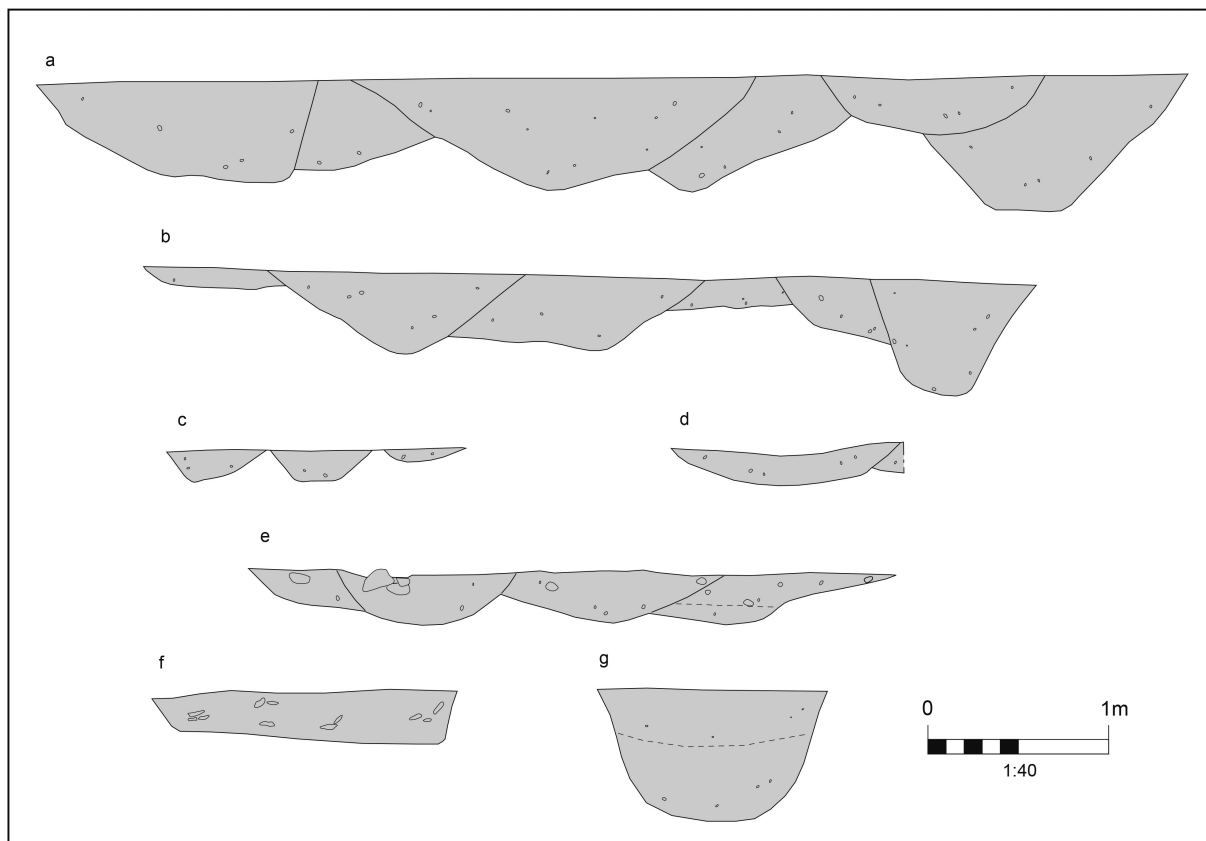


Figure 5.7 Selected sections from Figure 5.6

stones of SG280 comprised more tightly packed and larger slabs of limestone, some of which had been laid on their long edges – more suggestive of an *in situ* foundation. The full extent of SG280 was not established as it extended eastwards beyond the area of excavation.

Drying ovens G140 and G141

Two drying ovens were situated adjacent to the central partition in the south half of enclosure L56. They were next to each other but T-shaped oven G140 slightly truncated the remains of an earlier oven G141, suggesting that the two were not in use at the same time (Fig. 5.8). Three postholes, G144, three intercutting pits, G143, and a well, G142, immediately to the east of oven G141 are likely to be associated.

Drying oven G140 took the form of a sub-rectangular, north–south aligned shallow scoop ($5.1 \times 2.4\text{m}$), from the base of which a flue ($3.7 \times 0.6\text{–}1\text{m}$, Fig. 5.8, section a) had been cut into the ironstone bedrock (Plates 5.10). With a cross-flue at the north end ($1.7 \times 0.2\text{m}$) and a stoke-hole at the south end, the oven conforms to Morris's T-shaped type (1979, 158–64). Heavy scorching was visible on the sides and base, in particular at the junction of the flue and stokehole (Plate 5.11). Rich charred plant assemblages – dominated by cereal grain, of which a good proportion had sprouted – suggest that the oven was being used in the malting process.

The evidence for drying oven G141 was less conclusive. It comprised a sub-rectangular, north–south aligned shallow scoop ($5.3 \times 1.8\text{m}$, Fig. 5.8, section b) similar to that of oven G140. However, there was no evidence for a flue or any evidence for *in situ* burning. The charred plant assemblage mainly represents debris from spelt spikelets which may have been accidentally burnt possibly while being used for parching grain to facilitate de-husking. Of

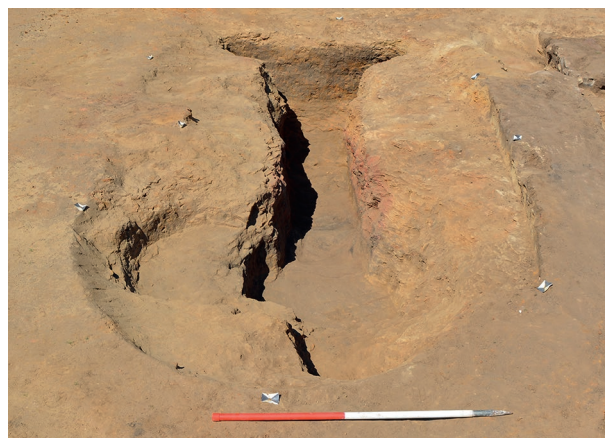


Plate 5.10 T-shaped drying oven G140, fully excavated, looking north. Scale 1m



Plate 5.11 T-shaped drying oven G140, with scorched sides clearly visible

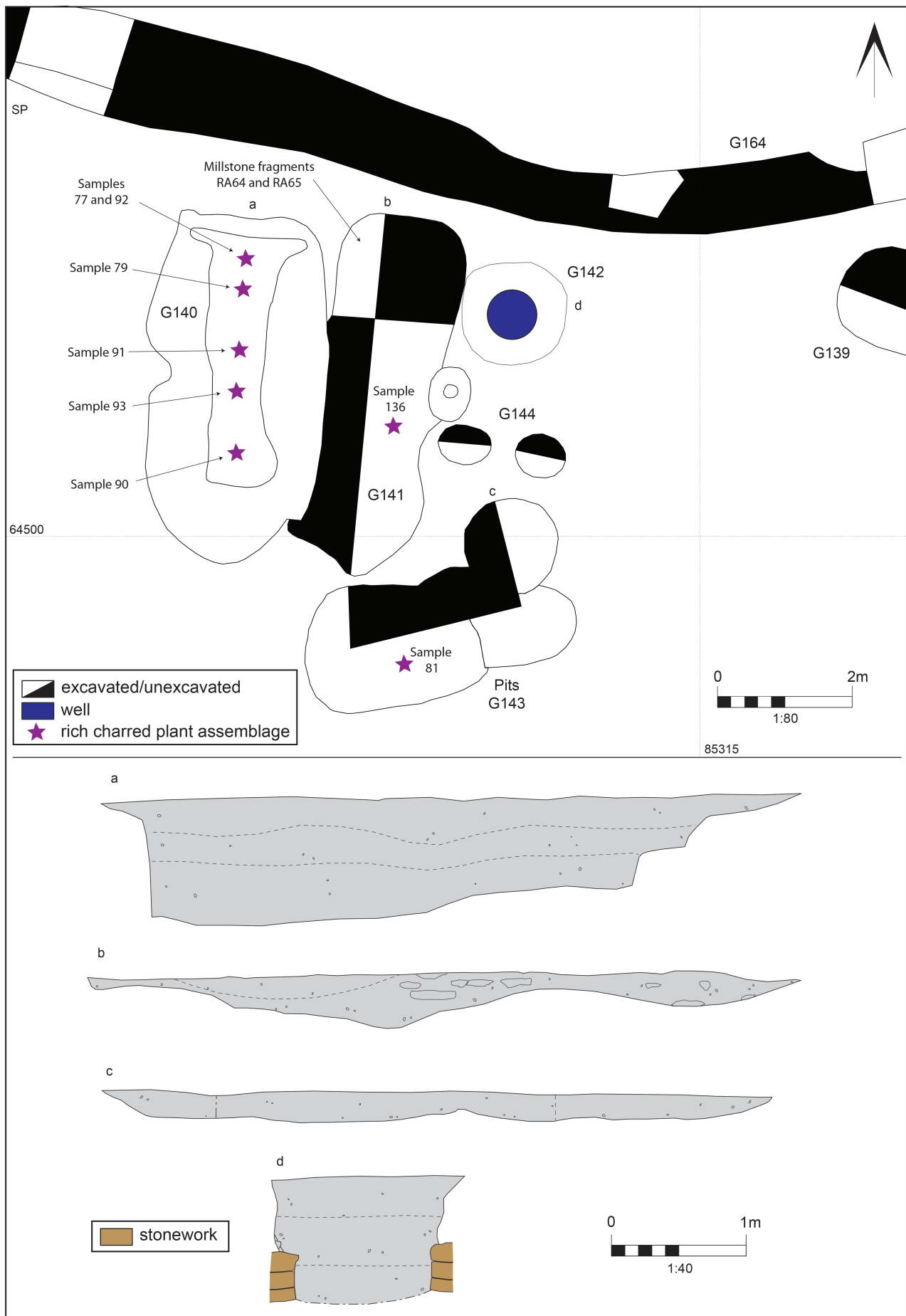


Figure 5.8 Detailed plan of drying oven G140 in enclosure SL56, with selected sections

course, it is possible that this material derived from adjacent drying oven G140.

Both ovens had been backfilled with dark grey–brown silty sand, mixed with frequent charcoal. The latter from G140 included elm, oak, hazel, poplar/willow, hawthorn group and ash some of which contained insect tunnels suggesting the wood was quite decayed at the time of burning (Challinor, Chapter 7.5). Two fragments of millstone (RA64 and RA65) were recovered from oven G141.

Three postholes, G144, to the east of oven G141 may represent a structure associated with the ovens; however, they did not form a coherent pattern. They were under 0.8m in diameter and less than 0.4m deep. One contained a central post-pipe that was c. 0.25m in diameter.

Three intercutting pits, G143, to the south of oven G141 were 1.4–2.1m in diameter and less than 0.2m deep (Fig 5.8, section c). They were filled with a mix of mid-brown–grey and yellow–brown silty sand, which contained charcoal (predominately oak). A rich assemblage of charred grains and chaff was recovered from one pit, which may suggest that they were open while at least one of the drying ovens was operating.

Possible drying oven G110

An ENE–WSW aligned, sub-rectangular feature G110 within enclosure L36 may indicate the location of another drying oven. It was 2.2m long, 0.8m wide and 0.2m deep with gradually sloping sides (Plate 5.12). Although the base of the feature was scorched, the sides were not, suggesting that they may have been lined. The fill comprised dark grey–black sandy silt and a rich assemblage of charred grains and chaff, which probably represent debris from the de-husking of spelt wheat.



Plate 5.12 Possible drying oven G110 in enclosure L36.
Scale 1m

Well G142

Well G142 on the east side of drying oven G141 was constructed within a 1.6m in diameter construction pit with a c. 0.7m-diameter stone-lined shaft (Fig 5.8, section d). The shaft was lined with ironstone and limestone blocks, although the upper courses had been robbed to a depth of c. 0.5m. Machine-excavation demonstrated that the well was 5.4m deep, although it was blocked with fragments of stone at a depth of 1.2m.

No waterlogged plant remains or deposits were present, but the feature's depth and lining indicate that it had functioned as a well. It was filled with mid-grey–brown silty sand.

Later enclosures L34, L35 and L39

These three interlinked enclosures which all continued the beyond the limit of the excavation lay to the south

of enclosure L56. They may represent a later addition, as the north side of enclosure L35 crossed the north half of enclosure L36 (itself attached to L56). However, it is possible that enclosure L36 remained in use, albeit reduced in size.

The enclosure ditches were typically 0.7–1.2m wide and less than 0.4m deep, with concave profiles (Fig. 5.9, section i–m). They had been redug multiple times on the same alignment and broadly the same course. The west side of enclosure L34 was defined by two parallel ditches (assigned to L44), spaced 2–4m apart (Fig. 5.9, section n). Their close spacing suggests that they do not represent a routeway. An entrance into enclosure L35 was indicated by a 9m-wide gap in its north side. The interiors of enclosures L34 and L35 were partitioned by north–south aligned ditches G96 (L34), G116 (L35) and G188 (L34); they were c. 0.9m wide and c. 0.3m deep (Fig. 5.9, sections p–q). Access across partition ditch G116 was represented by a c.2m-wide gap at its north end.

Evidence for internal activity was present in enclosures L35 and L39. It comprised a possible roundhouse, drying oven, well, an inhumation, stonework and six pits (all but one in enclosure L39). The four pits G115 were circular, 1–2.5m in diameter and less than 0.2m deep, with U-shaped profiles (Fig. 5.9, section r) – comparable to the 'classic' Iron Age storage pits. Nearby pit G114 was larger in both diameter (2.3m) and depth (0.9m) than the others (Fig. 5.9, section s). The purpose of pit G101 in the entrance to L35 is uncertain; it was c. 1.6m in diameter and 1m deep (Fig. 5.9, section o).

Roundhouse G102

Curved gully G102 on the west side of enclosure L35 may represent the site of a roundhouse. It was c. 12m long, 0.5–0.9m wide and less than 0.4m deep, with a variable V- to U-shaped profile (Fig. 5.9, sections t–u). The form of the gully suggests that it represents a drain around the east side of the putative roundhouse. A late 3rd-century coin (RA1) were recovered from the gully.

Drying oven G103

A NW–SE aligned, sub-rectangular feature towards the centre of enclosure L35 may represent the remains of a robbed-out drying oven. It was 4.4m long and 1.7m wide. Although no lining survived, there were slabs of burnt ironstone in the centre of the feature and a linear band of scorching and charcoal extending from it (Plate 5.13).



Plate 5.13 Close-up view of burnt ironstone pad in drying oven G103/L35, looking north-west. Scale 0.4m

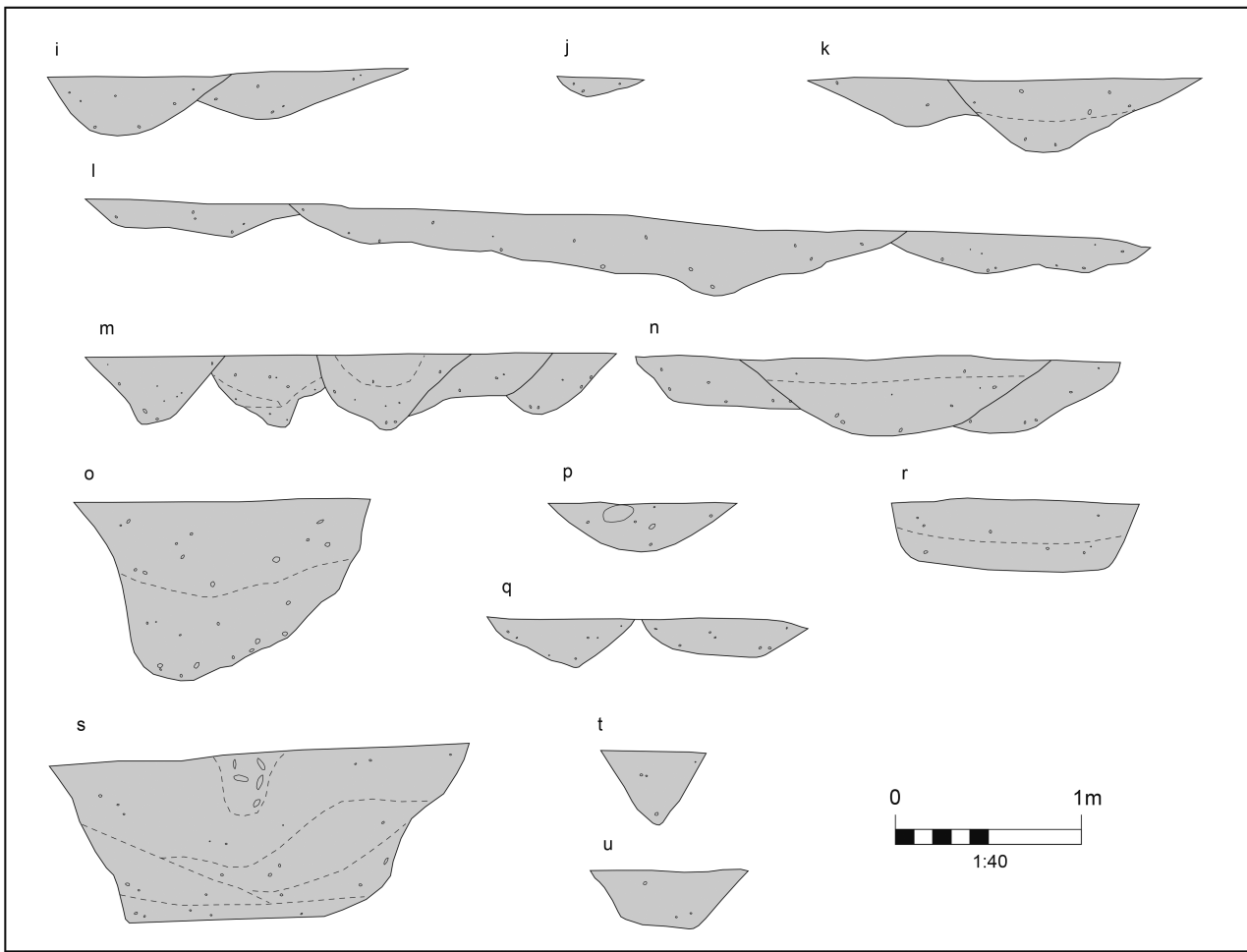


Figure 5.9 Selected sections from Figure 5.6

This suggests that the sides were once lined with stones, that flue was *c.* 0.5m wide and that the drying chamber was located at the north-west end of the oven. Charred plant remains, predominately chaff with some grains, from the stokehole area most likely represent burnt fuel. Fragments of sandstone and limestone and large pebbles from the fill of the oven may have derived from its lining.

Well G104

A stone-lined well next to the south side of enclosure L35, *c.* 9m from oven G103, had been built within an oval, 3 × 2m construction pit. The well shaft had an internal diameter of 0.6m and was lined with limestone and ironstone (Plate 5.14), including a block of dressed limestone. Machine-excavation revealed that the well

was 5.4m deep and that the stone lining extended to its base (Plate 5.15).



Plate 5.14 Stone-lined well G104 in enclosure L35.
Scale 1m



Plate 5.15 Well G104 half-sectioned. Scale 2m

Inhumation G120

In the west half of enclosure L35, inhumation G120 was in a deep rectangular grave, $1.5 \times 0.6 \times 0.8\text{m}$ (Fig. 5.4), which was NW–SE aligned towards possible roundhouse G102 c. 6m to the NW. It comprised the partial remains of a child (approximately 10 years of age) who had been placed on their side with the legs bent slightly at the knees (Plate 5.16). Sufficient bones survived to demonstrate that the head had been positioned to the south-east. No grave goods accompanied the burial, but the grave had been dug into an infilled late Iron Age/early Roman (Phase 4) ditch – hence its assignment to Phase 5.



Plate 5.16 Overhead view of inhumation G120 in enclosure L35. Scale 1m

Stonework G124 (L43)

A linear, c. $9.5 \times 1.1 \times 0.2\text{m}$ spread of limestone fragments (with some ironstone, c. 4kg of pottery and seven tegula fragments) occupied the top of the partially infilled boundary ditch G123 (L44) (Plate 5.17). Some gaps between the stones appeared more circular and could represent post-settings. Overall, the stone was not tightly packed and may represent the robbed-out remains of a wall rather than an *in situ* foundation.



Plate 5.17 Stonework G124 (L43) during hand-excavation, looking north-east

Chapter 7

Ecofacts

7.1 INTRODUCTION

The excavation yielded assemblages of animal bone, charred plant remains, charcoal and human bone. The material is discussed below, with methods outlined in each section where appropriate.

7.2 ANIMAL BONE

Mark Maltby

Introduction and methods

All the bones and teeth recovered by hand and from sieved samples were recorded individually onto a relational database (MS Access). In the main database table the following data were recorded where appropriate for each specimen: species; anatomical element; zones of bone present; approximate percentage of bone present; gnawing damage; erosion; weathering; concretions; burning (charring and calcification); fusion data; associated bone group (ABG) number; sieved sample number; other comments including observations of pathology. Separate tables linked to the main table by an individual identification number were created for metrical, butchery and tooth ageing data. Tooth eruption and wear descriptions for cattle, sheep/goat and pig follow the method of Grant (1982). Most measurements followed those described by von den Driesch (1976). All fragments, including loose teeth, shaft fragments, rib heads and vertebrae were recorded to species level where possible.

Overall sample size and bone preservation

Animal bones were collected from 186 contexts, providing a total of 2144 individual specimens (NISP), of which 735 were identified. Sieved samples provided 1258 of the recorded fragments, of which 942 were unidentified mammal fragments; small mammals and amphibians provided 275 of the other elements.

The assemblages from each context were assigned to one of five potential preservation grades. No assemblage was assigned to the highest grade (excellent preservation) and only five (3%) were graded as good, containing bones with good surface preservation and relatively little fragmentation or other damage. Ninety (48%) contexts produced moderately preserved assemblages, which generally had fair surface preservation but were much more fragmentary and included more bones damaged by gnawing and weathering. Seventy-seven (42%) assemblages were assigned to the quite poorly preserved category. These included more weathered and burnt specimens. However, only 14 (8%) assemblages were very poorly preserved usually consisting entirely of burnt bones. Taking account of the sizes of the assemblages, 126 (6%) of the fragments came from contexts whose assemblages were graded as good and 1124 (52%) from those graded as moderately preserved. A total of 859 (40%) fragments were from quite poorly preserved assemblages and 35 (2%) came from very poorly preserved assemblages.

A total of 208 fragments (10%) were burnt; most were recovered from sieved samples and all but 11 were unidentified. Amongst the identified elements in the whole assemblage, only 41 (6%) were recorded as eroded and 235 (32%) showed signs of (usually minor) weathering damage. Gnawing marks were observed on 21 cattle and seven sheep/goat elements.

Phase 3: Middle-late Iron Age

	SL2		SL3		SL10					
	L8	L10	L11	L31	L32	L38	L49	Total	% Id	
Cattle	3	13	28	9	1	10	–	64	58.7	
Sheep/goat	–	11	6	2	1	1	–	21	19.3	
Pig	–	1	2	–	–	–	–	3	2.8	
Horse	–	2	8	2	–	4	–	16	14.7	
Dog	–	–	2	–	–	–	–	2	2.0	
Red deer	–	–	–	2	–	–	–	2	2.0	
Duck	–	–	–	1	–	–	–	1	1.0	
Thrush family	–	–	1	–	–	–	–	1		
Frog/toad	–	–	2	–	–	–	–	2		
Total identified	3	27	49	16	2	15	0	112		
Small mammal	–	–	1	–	–	–	–	1		
Unid. mammal	14	53	50	54	5	20	4	200		
Total unidentified	14	53	51	54	5	20	4	201		
Total	17	80	100	70	7	35	4	313		

Counts are of numbers of individual specimens (NISP).
Totals include bones in sieved samples.
% excludes amphibian and small mammals.

Table 7.1 Middle-late Iron Age (Phase 3) animal bone species counts by Land-use Area

Northern unenclosed settlement area SL2

Three cattle elements were identified amongst 17 animal bone fragments from water-pit G16 (L8).

Northern enclosed settlement area SL3

Sub-enclosure L10

Of 80 animal bone fragments (mainly from pits G22) only 27 elements were identified, with cattle, sheep/goat and horse represented. Most of the unidentified mammal fragments were found in sieved samples. A largely complete cattle radius was found in ditch G18/G20. Fine knife cuts were recorded on a cattle femur from one of the G22 pits. The ten sheep/goat elements included four metatarsals, from at least three sheep, deposited in one of the G22 pits.

Rectilinear enclosure L11

The 100 animal bone fragments from enclosure L11, included 49 identified elements, many of which were weathered. Cattle (28) were the most commonly

recorded; seven mandible fragments included a largely complete calf jaw from enclosure ditch G24.

The eight horse elements included substantial portions of a scapula and radius from enclosure ditch G24. Pig (two) and dog (two) were also recorded. An unidentified small mammal bone, an ulna from a member of the thrush family, and two frog/toad bones were retrieved from sieved samples.

Activity focus L31

The 70 animal bone fragments from possible roundhouse G87 and large pit G50 included 16 identified elements, nearly all of which were weathered. In addition to cattle (nine), horse (two) and sheep/goat (two), a cervical vertebra and a metatarsal of red deer were recorded. A tarsometatarsus of a duck was also found.

Southern unenclosed settlement area SL10

Activity focus L32

Seven animal bones from sieved samples included a charred cattle metacarpal and a sheep/goat tooth.

Activity focus L38

Most of the 15 identified elements amongst the 35 animal bone fragments from pit cluster G112 were slightly weathered and/or eroded. The ten cattle elements included a largely complete metatarsal. Horse (four) and sheep/goat (one) were also represented.

Possible enclosed activity focus L49

Four unidentified mammal fragments were recovered from one of the G133 pits and ditch G147.

Discussion

Excluding small mammal and amphibian bones, cattle provided 59% of the identified assemblage followed by sheep/goat (19%) and horse (15%) (Table 7.1). Six sheep/goat elements were identified as sheep but there was no positive identification of goat. This assemblage included a higher percentage of cattle than encountered on most Iron Age sites excavated in recent years in Northamptonshire, in which cattle have usually contributed less than half of the identified mammal fragments (Table 7.2). However the sample size was small and preservation favoured the survival of cattle and horse bones, which were also better represented than in nearly all of the assemblages compared. In contrast, pigs are very poorly represented forming 3% of the identified mammal fragments (Table 7.2). As usual on Iron Age sites from this region, bones of wild mammals, birds and fish were poorly represented with only red deer and a duck the size of a small mallard being potential contributors to the diet. No bones of chickens were identified. This is of no great surprise, as chicken bones have only been encountered on a minority of Iron Age sites in southern England and the Midlands (Hambleton 2008; Pirnie and Alberella 2008). Unusually for an Iron Age site, no partial or complete skeletons of any species were recorded. In the locality of Earls Barton, ABGs of cattle, sheep and dogs were recorded in Iron Age features from the sites at Station Road Higham Ferrers (Maltby 2020, 75), and Bourton Way (Maltby 2020, 75) and Wilby Way (Maltby 2003, 51–3) both in Wellingborough.

The types of element of the major domestic mammals represented in the Phase 3 assemblage are included in Tables 7.3–7.6. The samples were too small for detailed

analysis. Mandibles were the most common of the 58 cattle elements (Table 7.3) with 13 fragments from at least five jaws. They were particularly common in ditch L11 and the same feature produced a group of sheep metatarsals that were probably removed from the rest of the carcasses during skinning and initial disarticulation. This may indicate that some primary processing of cattle and sheep was taking place in the vicinity but such processing was not on a large-scale.

Ageing data derived from the mandibles of cattle and sheep (Table 7.7) merely demonstrated that both immature and adult animals were represented. Two horse mandibles came from adults, one of which was aged around 10 years based on its crown height measurement (Levine 1982). A pig maxilla came from a sub-adult or adult sow. The epiphyseal fusion data from all phases was too small to merit analysis. There were also very few measurable bones (Table 7.8). A complete sheep metatarsal provided a withers height estimate (Teichert 1975) of 59.9cm, typical of the small British Iron Age sheep. A horse radius provided a withers height estimate (Vitt 1952) of 123.7cm (12.2 hands), again typical of the small ponies found in Iron Age Britain.

Phase 4: Late Iron Age /early Roman (Table 7.9)

Northern enclosures SL4

Routeway L13

Although 164 bone fragments were recorded, most were unidentified mammal fragments from sieved samples. Only six fragments of cattle and four of sheep/goat were identified. A tooth of a lagomorph, probably a hare, was found in the terminus of ditch G38. Fine knife cuts were observed on the dorsal end of a sheep/goat rib made during separation from the vertebral column.

Enclosures L14/L18

Nineteen generally poorly preserved fragments included three of cattle and two of horse. Apart from an eroded horse scapula fragment, all the identified elements were loose teeth.

Southern enclosures SL11

Enclosure L33

Only five bones were recorded, including two of cattle and one of horse.

Routeway L47

Nineteen bone fragments included five of cattle and two of horse. One of the cattle elements was a tibia fragment from a neonatal calf.

Enclosure L57

Of 177 animal bone fragments 58 were identified, dominated by cattle (40). These included eight fragments from at least five metatarsals and six mandible fragments. Two largely complete sub-adult cattle humeri were also retrieved. The 13 sheep/goat elements included four charred fragments. Horse (three) and pig (one) were also identified, including a fairly complete horse tibia. A frog/toad vertebra was retrieved from a sieved sample.

	Earls Barton Northampton Rd, Brackley		Radstone Fields, Station Rd, Brackley Higham Ferrers		Bourton Way, Wellingborough	Wilby Way, Wellingborough	A6 Bypass, Rushden
	Phase 3	Total	Total	Total	Total	Total	Phases 1&2
Cattle	58	781	717	252	577	853	22
Sheep/goat	20	898	901	215	559	826	26
Pig	3	191	176	96	113	218	3
Horse	16	135	125	20	82	215	14
Dog	2	13	14	4	13	23	0
Red deer	2	7	3	4	5	7	0
Roe deer	0	5	1	0	4	0	0
Wild boar	0	1	1	0	0	0	0
Hare	0	1	1	0	0	1	0
Badger	0	0	0	0	1	0	0
Total	101	2032	1939	591	1354	2143	65
% Mammal							
Cattle	57.4	38.4	37.0	42.6	42.6	39.7	33.8
Sheep/goat	19.8	44.2	46.5	36.3	41.3	38.5	40.0
Pig	3.0	9.4	9.1	16.2	8.3	10.2	4.6
Horse	15.8	6.6	6.4	3.4	6.1	10.0	21.5
Dog	2.0	0.6	0.7	0.7	1.0	1.1	0.0
Red deer	2.0	0.3	0.2	0.7	0.4	0.3	0.0
Roe deer	0.0	0.2	0.1	0.0	0.3	0.0	0.0
Wild boar	0.0	0.0	0.1	0.0	0.3	0.0	0.0
Hare	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Badger	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total	101	2032	1939	591	1354	2147	65
% Cow:S/G:Pig							
Cattle	71.6	42.7	40.3	44.8	46.2	45.0	43.1
Sheep/goat	24.7	49.1	50.6	38.2	44.8	43.5	51.0
Pig	3.7	10.4	9.9	17.1	9.0	11.5	5.9
Total	81	1870	1794	563	1249	1897	51

	A43 Silverstone Site 2	A43 Silverstone Site 3	A43 Silverstone Fields Farm	A43 Biddlesden Road Clay Lane	Hardingstone	Moulton Park	
Cattle	108	152	152	116	642	489	364
Sheep/goat	102	145	375	39	516	599	192
Pig	13	17	52	14	64	141	79
Horse	14	13	30	17	141	124	36
Dog	2	1	4	3	0	41	19
Red deer	0	0	5	3	2	18	8
Roe deer	0	0	0	0	0	0	0
Wild boar	0	0	0	0	0	0	0
Hare	0	0	0	0	0	0	0
Badger	0	0	0	0	0	0	0
Total	239	328	618	192	1365	1412	698
% Mammal							
Cattle	45.2	46.3	24.6	60.4	47.0	34.6	52.1
Sheep/goat	42.7	44.2	60.7	20.3	37.8	42.4	27.5
Pig	5.4	5.2	8.4	7.3	4.7	10.0	11.3
Horse	5.9	4.0	4.9	8.9	10.3	8.8	5.2
Dog	0.8	0.3	0.6	1.6	0.0	2.9	2.7
Red deer	0.0	0.0	0.8	1.6	0.1	1.3	1.1
Roe deer	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wild boar	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hare	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Badger	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	239	328	618	192	1365	1412	698
% Cow:S/G:Pig							
Cattle	48.4	48.4	26.3	68.6	52.5	40.0	57.3
Sheep/goat	45.7	46.2	64.8	23.1	42.2	49.0	30.2
Pig	5.8	5.4	9.0	8.3	5.2	11.5	12.4
Total	223	314	579	169	1222	1229	635

Counts are of NISP unless otherwise stated.

Totals include bones in sieved samples but exclude all bones of small mammals and bones in ABGs (see text for details) except in the case of Radstone Fields, Brackley

Data from Brackley sites (Radstone Field and Northampton Road) adapted from Maltby (2021)

Data from Higham Ferrers and Bourton Way adapted from Maltby (2020).

Data from Wilby Way adapted from Maltby (2003).

Data from A6 Bypass adapted from Deighton (2004b); counts are of Minimum Animal Units (MAU).

Data from A43 sites adapted from Deighton (2007); counts are of MAU.

Data from Clay Lane, Hardingstone and Moulton Park are taken from the Archaeology Data Service (Pirnie and Albarella 2008)

Table 7.2 Overall mammal percentages and comparisons with selected other Iron Age sites in Northamptonshire

	Phase				
	3	4	5	Total	%
Horncore	3	–	3	6	2.2
Maxilla	2	–	6	8	2.9
Skull	1	2	4	7	2.6
Mandible	13	8	23	44	16.2
Loose teeth	7	7	19	33	12.1
Scapula	2	4	10	16	5.9
Humerus	5	4	10	19	7.0
Radius	5	1	11	17	6.3
Ulna	2	1	4	7	2.6
Pelvis	–	1	6	7	2.6
Femur	3	3	10	16	5.9
Patella	–	–	–	0	0.0
Tibia	5	5	14	22	8.1
Astragalus	1	–	–	1	0.4
Calcaneus	3	1	1	5	1.8
Centroquartal	–	–	3	3	1.1
Metacarpal	3	3	4	10	3.7
Metatarsal	3	8	12	23	8.5
Phalanx 1	1	2	4	7	2.6
Phalanx 2	–	–	2	2	0.7
Atlas (VC1)	1	–	–	1	0.4
Cervical V	1	1	1	3	1.1
Thoracic V	1	1	1	3	1.1
Lumbar V	1	–	1	2	0.7
Sacral V	–	1	2	3	1.1
Ribs	1	3	3	7	2.6
Total	58	56	158	272	

NISP = number of individual specimens

Table 7.3 Phases 3–5 cattle element counts

	Phase				
	3	4	5	Total	%
Maxilla	–	–	1	1	1.0
Skull	–	–	2	2	2.0
Mandible	2	1	5	8	8.1
Loose teeth	3	2	13	18	18.2
Humerus	2	–	3	5	5.1
Radius	1	3	8	12	12.1
Ulna	1	–	1	2	2.0
Pelvis	–	1	3	4	4.0
Femur	–	–	1	1	1.0
Tibia	3	2	8	13	13.1
Calcaneus	–	1	–	1	1.0
Metacarpal	1	3	9	13	13.1
Metatarsal	7	2	4	13	13.1
Phalanx 1	–	1	1	2	2.0
Atlas (VC1)	1	–	–	1	1.0
Cervical V	–	–	2	2	2.0
Ribs	–	1	–	1	1.0
Total	20	17	62	99	

NISP = number of individual specimens

Table 7.4 Phases 3–5 sheep/goat element counts

	Phase			
	3	4	5	Total
Maxilla	1	–	–	1
Mandible	–	–	1	1
Loose teeth	–	–	6	6
Scapula	–	1	–	1
Humerus	1	–	1	2
Radius	–	–	1	1
Ulna	1	–	–	1
Total	3	1	9	13

NISP = number of individual specimens

Table 7.5 Phases 3–5 pig element counts

	Phase				
	3	4	5	Total	%
Maxilla	–	–	3	3	4.5
Skull	1	–	3	4	6.0
Mandible	2	1	7	10	14.9
Loose teeth	2	1	16	19	28.4
Scapula	2	1	–	3	4.5
Humerus	1	–	1	2	3.0
Radius	2	–	–	2	3.0
Ulna	–	–	1	1	1.5
Pelvis	1	–	1	2	3.0
Femur	–	–	1	1	1.5
Tibia	2	1	–	3	4.5
Astragalus	–	1	1	2	3.0
Calcaneus	1	1	1	3	4.5
Metacarpal	1	–	5	6	9.0
Metatarsal	–	1	1	2	3.0
Metapodial	–	–	1	1	1.5
Peripheral Mp	–	–	1	1	1.5
Phalanx 1	1	–	–	1	1.5
Phalanx 3	–	1	–	1	1.5
Total	16	8	43	67	

NISP = number of individual specimens

Table 7.6 Phases 3–5 horse element counts

	Phase			
	3	4	5	Total
<i>Cattle</i>				
Stage 1	–	–	2	2
Stage 2	–	1	1	2
Stage 3	1	1	2	4
Stage 4	–	1	5	6
Stage 5	–	–	1	1
Stage 6	1	–	3	4
Stage 7	1	–	–	1
Total	3	3	14	20
<i>Sheep/goat</i>				
Stage 3	1	–	1	2
Stage 3–4	–	–	2	2
Stage 4	–	–	1	1
Stage 5	1	–	2	3
Stage 6–7	–	–	1	1
Stage 7	–	–	1	1
Total	2	0	8	10

Stage 1 = 4th deciduous premolars (dp4) not in wear
 Stage 2 = dp4 in wear; 1st molar (M1) not in wear
 Stage 3 = M1 in wear; 2nd molar (M2) not in wear
 Stage 4 = M2 in wear; 3rd molar (M3) and permanent premolars not in wear
 Stage 5 = M3 in wear; 4th permanent premolar (P4) not in wear (cattle)
 Stage 5 = M3 in wear; M1 at Grant (1982) wear stage g (S/G)
 Stage 6 = P4 in wear; M3 < Grant wear stage k (cattle)
 Stage 6 = M1 at Grant wear stages h-m; M2 at Grant wear stage g (S/G)
 Stage 7 = M3 at Grant wear stages k-m (cattle)
 Stage 7 = M1 and M2 at Grant wear stages h-m (S/G)

Table 7.7 Cattle and sheep/goat mandibular tooth ageing data

	Phase 3	Phase 4	Phase 5
<i>Cattle</i>			
Humerus BT	–	72.9	64.0 83.3
Humerus HT	–	42.0 43.6	40.6 44.3
Metatarsal Bp	41.6	44.5	42.6 43.2 44.7
Radius BFp	69.8	–	66.2 69.5
Tibia Bd	64.4	51.4 59.1	55.5 57.7 61.0 63.4
Withers Ht (cm)	–	–	121.0
<i>Sheep</i>			
Metatarsal Bp	17.9	16.3	19.7
Tibia Bd	24.4	–	24.8 26.1
Withers Ht (cm)	59.9	–	–

BT = breadth of distal trochlea; HT = greatest height of distal trochlea
 Bp = maximum proximal breadth; BFp = proximal articular breadth
 Bd = distal breadth; withers height estimated from greatest lengths of complete limb bones

Table 7.8 Common measurements of cattle and sheep

	SL4			SL11		
	L13	L14	L33	L47	L57	Total
Cattle	6	3	2	5	40	56
Sheep/goat	4	–	–	–	13	17
Pig	–	–	–	–	1	1
Horse	–	2	1	2	3	8
Hare/rabbit	1	–	–	–	–	1
Frog/toad	–	–	–	–	1	1
<i>Total identified</i>	11	5	3	7	58	84
Unid. mammal	153	14	2	12	119	300
Total	164	19	5	19	177	384

Counts are of numbers of individual specimens (NISP).
 Totals include bones in sieved samples.

Table 7.9 Late Iron Age/early Roman (Phase 4) animal bone species counts by Land-use Area

Discussion

The assemblage, derived mainly from enclosure L57, is too small for detailed analysis, comprising a total of just 84 identified fragments (Tables 7.3–7.6, 7.9). Cattle provided 67% of the NISP counts followed by sheep/goat (20%) and horse (9%). Many of the bones showed signs of weathering, which will have favoured the survival of cattle and horse bones. Pig and hare/rabbit were represented by single elements. No bones of other wild mammals, birds or fish were identified.

Metatarsals, mandibles and loose teeth were the best represented of the cattle elements (Table 7.3), largely reflecting their abundance in L57. Three mandibles came from immature cattle (Table 7.7). Immature cattle were also well represented amongst bones from other areas of the body. Eight surviving late-fusing limb bone epiphyses were all unfused, indicating that the cattle involved were slaughtered before full skeletal maturity. This would suggest that meat-production was the focus of exploitation of cattle, although the sample is very small. No ageable mandibles of other species were recovered. There was also very limited metrical data (Table 7.8).

Phase 5: Roman

Northern enclosures SL5

Sub-oval enclosure L15

Of 56 animal bone fragments 19 were identified. The 12 cattle elements included three butchered mandibles. In all three cases the butchery marks were located on the lateral aspect of the ramus and made when the mandibles were detached from the skull. In two cases a fine blade had been used and in the third a heavier blade. Sheep/

goat (five) and horse (two) were also represented. Two bones of small mammals recovered in a sieved sample are included in the unidentified material.

Boundary L16

A total of 106 animal bone fragments were recovered, mainly from stonework G27; 43 were identified. Unusually, horse (21) was the most common species represented – largely due to the presence of ten cranial fragments and nine loose teeth in stonework G27. These included fragmentary remains of pairs of maxillae and mandibles (Table 7.6). The 13 cattle elements included three portions of mandibles, one of which was substantially complete, and another that bore knife cuts on the ramus similar to those found on three butchered specimens from L15. Sheep/goat (nine) was the only other species positively identified.

Later enclosure L19

Deposits within oven G53 produced the largest assemblage of animal bones from Phase 5. Including bones from sieved samples, 351 fragments were recovered, of which 164 were identified. Very few of these belonged to the main species exploited for meat. Four cattle elements included a complete radius and tibia, both from adults. The tibia was associated with the distal portion of a femur. Sheep/goat was only represented by a tooth and part of a tibia of a young lamb. The eight horse elements included a complete third metacarpal and the front portions of a pair of mandibles.

At least 18 of the 20 dog bones belonged to the same skeleton (ABG1). Although fragmented and disturbed, most parts of the body were represented. Both mandibles

	SL5							SL12								Total	%
	L15	L16	L19	L20	L21	L23	L24	L34	L35	L36	L39	L43	L44	L54	L56		
Cattle	12	13	4	12	1	–	–	1	15	6	1	23	15	6	43	152	55.1
Sheep/goat	5	9	2	3	–	–	–	–	3	3	–	13	5	4	14	61	22.1
Pig	–	–	–	–	–	–	–	1	1	1	–	1	–	–	5	9	3.2
Horse	2	21	8	2	–	–	–	–	2	1	–	1	1	2	3	43	15.6
Dog	–	–	20	1	–	–	–	–	2	1	–	–	–	–	–	24	8.7
Cat	–	–	4	–	–	–	–	–	–	–	–	–	–	–	–	4	1.4
Short-tailed (field) vole	–	–	2	–	–	–	–	–	5	–	–	–	–	–	–	7	–
House mouse	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Wood mouse	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	–
Mouse	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Shrew	–	–	2	–	–	–	–	–	–	–	–	–	–	–	1	3	–
Chicken	–	–	15	–	–	–	–	–	–	–	–	–	–	–	–	15	5.4
Duck	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	0.4
Frog/toad	–	–	104	–	–	–	–	–	102	–	–	–	–	–	8	214	–
Total identified	19	43	164	18	1	0	0	2	130	12	1	38	21	12	77	538	
Small mammal	2	–	24	–	–	–	–	–	3	–	–	–	–	–	15	44	
Unid. mammal	35	63	163	23	–	20	–	3	73	21	–	17	67	11	267	858	
Unid bird	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1	
Total unidentified	37	63	187	23	0	20	0	3	77	21	0	17	67	11	282	903	
Total	56	106	351	41	1	20	0	5	207	33	1	55	88	23	359	1441	

Counts are of numbers of individual specimens (NISP).

Totals include bones in ABGs and sieved samples.

% excludes amphibian and small mammals.

Table 7.10 Roman (Phase 5) animal bone species count by Land-use Area

survived largely intact. The wear on the teeth indicated they belonged to an adult, which had lost some of the right premolars prior to death. The skull was not recovered but three cervical vertebrae, four ribs and part of a pelvis were retrieved along with three of the metacarpals and the left, humerus, radius, tibia and fibula. The dog was a miniature type with bowed radius and a shoulder height of only 28.4cm (Harcourt 1974) based on the length of the radius (83.0mm). The proximal end of the humerus had recently fused, indicating that the dog was not a very old adult. The fibula had evidence of a healed fracture.

A second associated bone group (ABG2) consisted of 15 bones of an adult hen. Bones from both wings and both legs were recovered. The tarsometatarsals had no spurs and both femora contained medullary bone within their shafts, indicating that the hen was or had recently been in lay. Finally, two associated metatarsals and two ribs could have belonged to the same adult cat (ABG3).

Sieving produced substantial numbers of bones of small species. These included a femur of an immature duck. Large numbers of amphibian bones and some small mammal bones were also recovered. Amongst the amphibian bones the presence of toad was identified from two tibio-fibula elements. Other more diagnostic elements were present but due to breakage it was impossible to identify further than frog/toad. Two frog humeri were identified, with one exhibiting possible digestion to the distal articular surface.

A right mandible was identified as house mouse. Two short-tailed (field) vole teeth were identified, as well as many fragments of small mammal postcranial bones. Several fragments were burnt, including a calcined murid tooth. Other burnt remains included a possible frog femur and amphibian vertebrae, a calcined vertebral body, and two left rodent ulnae.

Routeway L20

Of 41 bone fragments 18 were identified to cattle (12), sheep/goat (three), horse and dog. A cattle scapula had a fine longitudinal cut on the lateral aspect of the blade adjacent to the base of the projecting spine. This was inflicted during filleting.

Later enclosure L21

A cattle tooth was the only element recovered.

Enclosure L23 and inhumations L24

Sieved samples produced 115 unidentified animal bone fragments, of which 95 derived from inhumations G73 and G74; the latter very fragmented and mainly calcined bone fragments.

Southern enclosures SL12

Later enclosure L34

Five fragments included a pig tooth and fragment of cattle skull.

Later enclosure L35

A total of 207 animal bone fragments were recovered, of which 130 were identified. These included over 100 amphibian bones from well G104. All diagnostic elements were identified as frog, which ranged in size. Based on the pelvis, there was a minimum of nine frogs represented, but only one of the 17 pelvis fragments

showed evidence of possible digestion. The humerus showed higher levels of corrosion, most likely from digestion (seven of 12 specimens).

Among the small mammal bones, field vole was most prevalent. At least three were represented by maxillae with at least one other rodent species represented by another maxilla fragment. At least one insectivore was represented by a humerus and tibia. Although these bones are most likely to have belonged to shrews, it was not possible to identify the species. No evidence of digestion was recorded on any of the vole teeth. However, there did appear to be potential mammalian carnivore gnawing on a rodent humerus. The amphibians and small mammals may have been trapped after falling into the well.

Only 23 bones of larger mammals were identified; 15 belonging to cattle included a fairly complete mandible. Sheep/goat, horse, dog and pig were also represented.

Enclosure L36

Of 33 animal bone fragments 12 were identified, with cattle, sheep/goat, pig, horse and dog represented. Skinning cuts were observed on the shaft of a cattle first phalanx.

Later enclosure L39

A substantial portion of a cattle horncore was recovered from one of the pits.

Stonework L43 (G124)

Of 55 fragments 38 were identified, with cattle (23) the most abundant. Their elements included a complete metacarpal from an immature animal and a pelvis that bore chop marks on the shaft of the pubis inflicted during dismemberment. The 13 sheep/goat elements included the complete radius of a juvenile lamb. Pig and horse were each represented by a single tooth.

Two parallel ditches L44

Only 21 of the 88 bone fragments were identified; again, most (15) belonged to cattle. These included a complete metacarpal of an adult and a mandible fragment from a neonatal calf. Another mandible bore chop marks on the ascending ramus made during separation from the skull. Five sheep/goat elements and a complete horse metacarpal were also recovered.

Enclosure L54

Twelve out of 23 bone fragments were identified to cattle (six), sheep/goat (four) and horse (two).

Enclosure L56

Of 359 bone fragments 77 were identified, with cattle (43) providing most of the identified specimens. These included eight mandible fragments including substantial parts of a pair of jaws from stonework G158, one of which displayed slight charring of the teeth. There were also eight metatarsals, five of which were largely complete. The 14 sheep/goat elements included a substantially complete metacarpal. Elements of pig (five) and horse (three) were also recorded.

Several sieved samples produced small mammal and amphibian bones. The eight amphibian bones included three positively identified as frog. Three jaws of wood mouse and one of a common shrew were also recovered.

Discussion

Excluding small mammals, amphibians and bones in ABGs, cattle provided 56% of the identified assemblage followed by sheep/goat (22%) and horse (16%) (Table 7.10). These figures were very similar to those from Phase 3 and there is therefore no evidence for significant changes in species abundance. Eleven sheep/goat elements were identified as sheep but there was no positive identification of goat. Pigs (3%) continued to be very poorly represented. Chickens were recorded but only in one deposit associated with the disuse of a drying oven. Chickens do appear on many Roman sites but generally in very small numbers particularly on rural settlements (Maltby *et al.* 2018). No bones of fish, deer or hare were recovered and only one other bird bone apart from chicken was recorded. The restricted range of species is typical of assemblages from Roman non-villa rural sites.

ABGs of chickens have quite frequently been found in graves and shrines (King 2005) or in association with foundation or closure deposits (Morris 2011). This raises the possibility that the miniature type dog (ABG1), chicken (ABG2), and possibly the cat bones (ABG3) found in the fills of oven G53 may have been remains of deliberate animal depositions associated with the closure event, rather than merely parts of carcasses casually imported from middens when the structure was infilled. No bones of chicken or cat were found in any other feature. Miniature type dogs have been quite commonly found in Roman Britain including farmsteads *e.g.* Marsh Leys, Kempston (Maltby 2011, 127) and probably indicate the emergence of specialist breeding.

The types of element of the major domestic mammals represented in the Phase 5 assemblage are included in Tables 7.3–7.6. Mandibles continued to be the most common of the cattle elements with 24 fragments coming from at least ten different jaws (Table 7.3). Loose teeth formed 13% of the cattle assemblage indicating quite severe fragmentation levels. Metatarsals and tibiae were the best represented of the cattle limb bones, each with 13 specimens from at least seven and six different bones respectively. However, higher quality meat bones such as the scapula, humerus and femur were also quite well represented and there was no evidence for concentrations of cattle primary processing waste in any areas of the settlement investigated. Butchery marks were recorded on nine cattle bones including five mandibular rami. Fine knives continued to be commonly employed in butchery but the use of heavier blades was also apparent. However, no scoop marks made during filleting were observed on any of the cattle bones. Such marks are commonly found in areas where specialist butchers operated but these have been infrequently recorded on rural settlements (Maltby 2007).

Nearly 21% of the sheep/goat assemblage consisted of loose teeth. This is a good indication of relatively poor

preservation, particularly as the number of mandible fragments (five) was unusually low in comparison with many Roman sheep/goat assemblages. Metacarpals were the most common of the limb elements with nine specimens from at least five bones. Tibia and radius fragments were also well represented, particularly by the more robust parts of their shafts (Table 7.4). The pig and horse assemblages were too small for detailed analysis but the prevalence of loose teeth in both assemblages was again evident (Tables 7.5–7.6). At least four different bones were represented by seven horse mandible fragments and five metacarpals. Horse bones tended to survive in a more complete state than those of cattle, indicating their carcasses were subjected to less intensive processing. Indeed, no butchery marks were observed on any of their bones, although this does not necessarily indicate that horse flesh was not consumed.

Tooth ageing data extracted from 14 mandibles indicated that cattle of all ages were represented but with a prevalence of jaws from immature and sub-adult animals including neonatal calves (Table 7.7). This suggests that cattle were bred at the settlement and that meat production was a focus of their exploitation at the settlement. The prevalence of immature cattle contrasts with many urban assemblages in which mandibles of prime adults (particularly Stage 6) often predominate (Maltby 2016, 794). Similarly, the eight mandibles of sheep indicated that all ages of sheep were represented. None of the horse elements came from young animals. Their value lay mainly in transport.

Very limited metrical data were available. The most common measurements provided no surprises in the sizes of cattle and sheep. All the measured bones fell comfortably within the size ranges of Roman stock previously found in the region (Table 7.8). A cattle metatarsal with a greatest length of 222mm provided an estimated withers height of 121cm (Boessneck and von den Driesch 1976). The two sheep tibiae distal breadth measurements (24.8mm; 26.1mm) were quite large by Roman standards. A horse metacarpal with a greatest length of 220mm provided an estimate height (Vitt 1952) of 134.2cm (13.2 hands).

7.3 CHARRED PLANT REMAINS

John Giorgi

Introduction and methods

A total of 129 environmental bulk soil samples was collected, primarily for the recovery of charred plant remains. Three of the samples (from two wells/water-pits) were taken for the potential retrieval of ‘waterlogged’ plant remains. However, none of these samples produced any ‘waterlogged’ remains. Following assessment, 105 samples from a range of feature types were subject to full analysis Table 7.11.

Phase	Ditch	Pit	Oven	Grave	Well/water-pit	Posthole
Phase 2: early–middle Bronze Age	3	–	–	11	–	–
Phase 3: middle–late Iron Age	9	12	–	–	–	–
Phase 4: late Iron Age/early Roman	6	5	–	–	–	–
Phase 5: Roman	17	8	25	3	5	1
Total	35	25	25	14	5	1

Table 7.11 Number of analysed samples by phase and feature type

The volume of the soil samples ranged from <1–40 litres, although most were 30 litres. The samples were either partially or completely processed using a Siraf-style type flotation tank and meshes of 0.3mm and 1mm for the recovery of the flot and residue respectively.

The flots were dried and any charred plant remains sorted and identified using a binocular microscope (with a magnification of up to $\times 40$) together with modern and charred reference material and reference manuals (Cappers *et al.* 2006; Jacomet 2006). Flots containing rich charred plant assemblages were sub-sampled, small fractions being sorted and quantified and the remaining larger fractions scanned for the presence of additional species. All the sorted charred plant remains were counted except for small cereal grain fragments, indeterminate items and charcoal, estimated frequencies of which were made. The same scale was used to estimate frequencies in the scanned fractions of the rich charred plant assemblages.

There were variable but generally low amounts of uncharred seeds in 115 of the samples with large numbers in two ditch fills (G61/L20) and a grave fill (G74/L23) in SL5 (Phase 5), although species diversity was very low and it is likely that the uncharred seeds are intrusive, facilitated by roots and burrowing molluscs and worm activity. The most frequent species were *Fumaria* (fumitory) *Chenopodium/Atriplex* (goosefoot/orache), *Stellaria media* (common chickweed), *Polygonum aviculare* (knotgrass) and *Veronica* (speedwell).

Identifiable charred plant remains were recovered from 105 of the 129 samples with the results shown in Tables 8.12–8.20. Very large amounts of charred plant items were recovered from the Iron Age and Roman samples, with almost 12,000 items being counted consisting largely of cereal grains (54% of the quantified remains) and chaff fragments (33%) with smaller numbers of mainly wild plant/weed seeds (13%). Nomenclature and taxonomic order for the wild plants follow Stace (2005), which was also used for ecological data together with Hanf (1983) and Wilson and King (2003).

Phase 2: Early–middle Bronze Age

Of 16 samples from ring-ditch monument L1 14 produced charred plant assemblages – from two urned (G2 and G3) and two un-urned (G4 and G12) cremation burials and the fills of the ditch G1. They largely consisted of burnt tuber roots and rhizome fragments (Table 7.12), with traces of cereal grains in six samples.

Most of the burnt tubers, which included *Arrhenatherum elatius* var *bulbosum* (onion couch), roots and rhizome fragments, were recovered from cremation burial G3, with smaller amounts in the other three. Such remains are often found in cremation deposits in prehistoric southern Britain; for example in Neolithic and Bronze Age cremations at Raunds, Northamptonshire, c. 20km to the north-east (Campbell 2011, 30), and further south in early Bronze Age cremations within the Biddenham Loop, Bedfordshire (Giorgi 2016).

Onion couch may have been gathered for use as kindling for the cremation burials or may represent burnt partially cleared grassland vegetation under the pyre or the use of turves in its construction or un-grazed or lightly grazed areas in the vicinity of the cremation burials. Onion couch is also a troublesome cereal weed which, together with evidence for another grassland plant *Plantago lanceolata* (ribwort plantain) in cremation

burial G4, also often found in prehistoric cereal assemblages, may indicate the periodic cultivation of grassy areas.

There were just a few fragmented charred cereal grains, including one of *Triticum dicoccum* (emmer wheat) in ring-ditch G1 and two of *Triticum aestivum/turgidum* type (free-threshing wheat), one of which was only a tentative identification, in two of the cremation burials (G3 and G12). These few grains may be food waste incidentally incorporated into these features and/or very possibly pyre offerings. Emmer and free-threshing wheat are often found in Neolithic and early Bronze Age sites in southern England (Greig 1991, 300), including at Raunds, where Bronze Age deposits produced a good assemblage of emmer grains and a free-threshing wheat grain and rachis fragments (Campbell 2011, 34). It is possible, however, that free-threshing wheat remains may be intrusive, radiocarbon dating of such grains from prehistoric contexts often showing this to be the case (Carruthers *et al.* 2015).

Two charred fruits of *Crataegus monogyna* (hawthorn) in cremation burial G3 may be the residues of gathered food or may have been burnt as part of wood fuel gathered for the pyre from shrubby, hedgerow, woodland vegetation close-by. Hawthorn charcoal is often found in cremation deposits, for example being one of the main woods used in Bronze Age cremation burials in Raunds (Campbell 2011, 32).

The few charred plant remains from the early–middle Bronze Age samples provide little evidence for the scale of human activities in the area at this time other than the use of local grassland resources for burial ceremonies. The few charred cereal grains may perhaps point to local cereal cultivation.

Phase 3: Middle–late Iron Age

Of 27 samples from a range of middle–late Iron Age features 23 produced variable amounts of charred plant remains (Table 7.13) – largely cereal remains, both grains (66% of the quantified remains) and chaff fragments (21%), with smaller numbers of wild plant/weed seeds (13%).

Overview

Triticum (wheat) and *Hordeum vulgare* (barley) were the main cereals, identified in 21 and 12 samples, respectively. The well-preserved wheat remains were virtually all from hulled wheat, chaff fragments showing *Triticum spelta* (spelt) to be the main hulled cereal, represented in 19 samples with only traces of definite emmer in two. There were also a few possible free-threshing wheat grains in six samples. All the well-preserved barley grains were from hulled species with twisted grains showing the presence of six-row hulled barley. One grain was tentatively identified as *Secale cereale* (rye), although this is probably intrusive. A few *Avena* (oat) grains in four samples may be weeds.

Other Iron Age sites in southern England have produced similar results showing spelt wheat and hulled barley to be the main cereals during this period, with only occasional finds of emmer and free-threshing wheat (Greig 1991, 306). Similar results were identified on other sites in Northamptonshire, for example: to the north-east at Great Doddington (Stevens 2003); Bourton Way, Wellingborough (Giorgi 2020, 82–8); Station Road, Higham Ferrers (Giorgi 2020, 88–90); and

Land-use Area		1			2									
Group		1		2		3								
Feature type		Ring-ditch		Grave		Grave								
Sample number		16	25	26	10	24	11	12	19	20	21	22	Grave	Grave
vol sample (l)		10	10	10	8	4	10	8	0.5	0.5	0.7	0.5	2	3
vol flot (ml)		1	<1	24	5	1	62	27	17	14	19	1	130	8
Latin name	English name													
Cereal grains														
<i>Triticum dicoccum</i> Schubl.	emmer wheat	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>T. aestivum/turgidum</i> type	free-threshing wheat	-	-	-	-	-	-	1	-	-	-	-	-	-
<i>T. cf. aestivum/turgidum</i> type	?free-threshing wheat	-	-	-	-	-	-	-	-	-	-	-	-	1
Cerealia	indet. cereal (estimate)	-	-	-	-	-	-	1	-	-	-	-	2	-
Cerealia	indet cereal fragments <2mm	-	+	-	+	-	-	+	-	-	-	-	-	-
Other plant/weed seeds														
<i>Crateagus monogyna</i> Jacq.	hawthorn	-	-	-	-	-	1	-	-	-	1	-	-	-
<i>Plantago lanceolata</i> L.	ribwort plantain	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Arrhenatherum elatius</i> var <i>bulbosum</i> (Willd.) St-Amans	onion couch tuber fragments	-	-	-	-	1	26	6	3	10	5	1	-	-
indeterminate	tuber/rhizome fragments	6	-	5	13	18	85	204	31	18	27	7	11	32
indeterminate	tuber/rhizome fragments <1mm	-	-	-	-	-	++	++	-	+	-	-	-	-
indeterminate	wood charcoal	++	+++	+++++	+++++	+++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
Total		6	6	6	19	19	112	112	34	33	8	8	14	9
item density (per litre of processed soil)		0.6	0.6	0.6	4.8	4.8	11.2	11.2	68	47.1	16	16	7	3

Item frequency: + = 1-10; ++ = 11-50; +++ = 51-150; ++++ = 151-250; +++++ = 250+ items

Table 7.12 Early-middle Bronze Age (Phase 2) charred plant remains by Group

Twywell (Jackson 1975); and further afield, to the north-west, at Crick (Monckton 2000); and to the south-west at Silverstone (Carruthers 2007); and Radstone Fields and Northampton Road, Brackley (Giorgi 2021).

The cereals may have been used for bread; while meal (unrefined flour) may have been used in pottage (along with whole grains) as a thickener or for porridge or gruel. The grains may have also been used for producing malt for brewing beer, although potential evidence for this was limited to a few sprouted spelt wheat grains in one sample which may have germinated accidentally because of damp, storage conditions. Another potential use of barley was as fodder.

There were also single charred fragments of *Corylus avellana* (hazel) shell in three samples, possibly from gathered and consumed nuts, with the shell burnt as fuel or waste. The nuts may have been gathered in late summer and stored for over-winter use. Charred hazelnut shell is often found in late prehistoric contexts in England including other Iron Age sites in Northamptonshire; for example at Bourton Way, Wellingborough (Giorgi 2020), Higham Ferrers (Moffett 2009) and Crick (Monckton 2000).

There were only small numbers of wild plant/weed seeds from a modest range of species in the Iron Age samples, most of the seeds probably being from cereal weeds given their presence in mainly grain-dominated assemblages. Wild grasses (Poaceae) were well represented, accounting for over 50% of the weed seeds, particularly large ones notably *Bromus* (brome) but also some small wild grass seeds.

Although represented by just one or two seeds, a number of potential cereal weeds usually found in (acid) sandy loams were identified to species, for example *Scleranthus annuus* (annual knawel), *Agrostemma githago* (corn cockle), *Polygonum aviculare* (knotgrass), *Fallopia convolvulus* (black bindweed), *Plantago lanceolata* (ribwort plantain) and *Tripleurospermum inodorum* (scentless mayweed), the latter found most frequently on sandy soils but also on clay. These weeds may indicate the cultivation of the free-draining slightly acid but base-rich loamy soils around the site associated with the sandy and gravel terrace deposits of the River Nene and Swanspool Brook. Occasional seeds of *Carex* (sedge) and *Eleocharis* (spike-rush) perhaps suggest the use of damper areas of ground towards the river for growing crops. *Sherardia arvensis* (field madder), although represented by just one seed, may perhaps also suggest the use of the free-draining lime-rich loamy soils immediately to the east of the site. Both spelt wheat and hulled barley, the two main cereals in the samples, can grow in a range of soils including both heavy and light ones (Jones 1981, 105–6).

The presence of *Rumex acetosella* (sheep's sorrel), *Fallopia convolvulus* and small leguminous seeds, including *Vicia/Lathyrus/Pisum* (vetch/tare/vetchling/pea) and *Medicago/Trifolium* (medick/trefoil), all with low nitrogen values, may point to the cultivation of poor arable land, possibly resulting from over-cropping. Weeds represented in the samples with high nitrogen values, including *Agrostemma githago*, *Chenopodium/Atriplex* (goosefoot/orache), *Stellaria media* (common chickweed), *Polygonum aviculare* and *Galium aparine* (cleaver), suggest that a mix of poor and good land may have been used for growing crops around the site.

Galium aparine, although only represented by one seed, may point to the autumn-sowing of grain; while *Stellaria media* and *Fallopia convolvulus* are mainly found in spring-sown crops. Spelt is a particularly hardy grain and would have probably been autumn-sown; while barley may be sown in either period, although today it is usually sown in spring. Low-growing weeds in the samples, including *Rumex acetosella*, *Sherardia arvensis* and *Scleranthus annuus*, may suggest that the cereals were harvested fairly low on the straw. Occasional to small numbers of tuber (including onion couch) and rhizome fragments in 11 samples could potentially also indicate harvesting of cereals by uprooting and/or the gathering of wild grasses for various uses on site including as fuel.

The bulk (87%) of the quantified charred plant remains from the Iron Age samples consisted of cereal debris from the latter and final stages of crop-processing and food preparation. The grains may have been accidentally burnt while being dried before storage/use or milling and in the case of the hulled wheats while being parched to facilitate de-husking with the chaff, virtually all from hulled wheats, accidentally burnt at the same time or through a subsequent use as fuel or burnt as waste.

Large weed seeds, notably large grass seeds, including *Bromus* (brome grass) and occasional *Agrostemma githago* and *Galium aparine* seeds, represented over 40% of the weed seeds and are indicative of almost clean or stored cereal deposits – being of a similar size they are difficult to separate from the grains other than by hand-sorting. *Bromus* seeds are often found in large amounts in charred Iron Age deposits, including sites in Northamptonshire, for example at Bourton Way, Wellingborough (Giorgi 2020, 82–8), Station Road, Higham Ferrers (Giorgi 2020, 88–90), Silverstone (Carruthers 2007) and Crick (Monckton 2000). The smaller weed seeds in the samples, including *Atriplex/Chenopodium*, *Rumex* (dock), *Tripleurospermum inodorum*, small leguminous and wild grass seeds, would have been largely removed by fine sieving using the 'wheat' sieve, also during the later stages of crop cleaning in order to remove contaminants smaller than grains.

The virtual absence of debris from the earlier stages of crop-processing (initial threshing and winnowing) is not unusual; such activities were probably carried out in the fields before the grain was brought onto site in a semi-cleaned state. In any event, the value of cereal straw for thatching, bedding/flooring and possibly as fodder means that it is unlikely to have been burnt as fuel or waste but if so tends to be one of the first components to be reduced to ash.

Northern enclosed settlement area SL3

Seven samples, five from ditch fills and two from pit fills, produced only small amounts and very low densities of charred plant remains, consisting mainly of cereal grains (in all the samples), a little hulled wheat chaff in three, and a few weed seeds (mainly large Poaceae/*Bromus* seeds) in six. There was no significant difference between the assemblages, the charred remains representing debris from small-scale activities associated with the final stages of crop-cleaning (including possibly de-husking of hulled wheats) and food preparation.

Southern unenclosed settlement area SL10

Fifteen samples from ditch and pit fills contained charred plant remains; they included five rich assemblages with

Latin name	Site Landscape	10			3		11		31		130
	Land-use area	20			24		32		87		
	Group	19	20	22	24	32	87				
	Feature type	Ditch			Ditch	Pit	Ditch				
	Sample number	59	58	42	96	48	38	39			
	vol sample (l)	10	8	10	10	10	10	10			
	vol flot (ml)	1	2	<1	<1	2	1	<1			
	% flot sorted										
	% flot scanned										
	English name										
Cereal grains											
<i>Triticum</i> cf. <i>dicoccum</i>	?emmer wheat	–	–	–	–	–	–	–	–	–	
<i>T. spelta</i> L.	spelt wheat	–	–	–	–	–	–	–	–	–	
<i>T. cf. spelta</i>	?spelt wheat	–	–	–	–	–	–	–	–	–	
<i>T. cf. spelta</i>	?spelt wheat (sprouted)	–	–	–	–	–	–	–	–	–	
<i>T. dicoccum/spelta</i>	emmer/spelt wheat	–	–	–	1	2	1	–	–	4	
<i>T. cf. dicoccum/spelta</i>	?emmer/spelt wheat	–	1	–	–	–	–	–	–	1	
<i>T. aestivum/spelta</i> type	free-threshing/spelt wheat	–	–	–	–	–	–	–	–	–	
<i>T. aestivum/turgidum</i> type	free-threshing wheat	–	–	–	–	–	–	–	–	1	
<i>T. cf. aestivum/turgidum</i> type	?free-threshing wheat	1	–	–	–	–	–	–	–	1	
<i>Triticum</i> sp(p).	wheat	1	–	1	–	2	–	–	–	1	
cf. <i>Triticum</i> sp(p).	?wheat	–	–	2	–	2	1	–	–	–	
cf. <i>Secale cereale</i>	?rye	–	–	–	–	–	–	–	–	1	
<i>Hordeum vulgare</i> L.	barley, hulled twisted	–	–	–	–	–	–	–	–	1	
<i>H. vulgare</i> L.	barley, hulled straight	–	–	–	–	–	–	–	–	–	
<i>H. vulgare</i> L.	barley, hulled indet.	–	–	–	–	–	–	–	–	–	
<i>H. vulgare</i> L.	barley, indet.	–	–	–	–	–	1	–	–	–	
cf. <i>H. vulgare</i>	?barley	–	–	–	–	–	–	–	–	–	
<i>Avena</i> sp(p).	oat	–	–	–	–	–	–	1	–	–	
cf. <i>Avena</i> spp.	?oat	–	–	–	–	–	–	–	–	2	
Cerealia	indet. cereal (estimate)	2	1	2	1	12	4	2	–	20	
Cerealia	indet cereal fragments <2mm	+	+	+		++	+	+		++	
Cereal chaff											
<i>Triticum dicoccum</i> Schubl.	emmer wheat glume base	–	–	–	–	–	–	–	–	2	
<i>T. spelta</i> L.	spelt glume bases	–	–	–	–	2	–	–	–	48	
<i>T. spelta</i> L.	spelt rachis fragments	–	–	–	–	–	–	–	–	2	
<i>Triticum</i> sp(p).	wheat glume bases	–	1	–	–	3	–	–	–	57	
<i>Triticum</i> sp(p).	wheat spikelet forks/bases	–	2	–	–	1	–	–	–	49	
<i>Triticum</i> sp(p).	wheat rachis fragments	–	–	–	–	–	–	–	–	2	
<i>Hordeum vulgare</i> L.	barley rachis fragments	–	–	–	–	–	–	–	–	–	
Cerealia	indet cereal floret fragments	–	–	–	–	–	–	–	–	–	
Other plant/weed seeds											
<i>Papaver</i> spp.	poppy	–	–	–	–	–	–	–	–	–	
<i>Corylus avellana</i> L.	hazelnut shell fragments	1	–	–	–	–	1	–	–	–	
<i>Chenopodium</i> sp(p).	goosefoots etc.	–	–	–	–	–	–	–	–	–	
<i>Atriplex/Chenopodium</i> spp.	orache/goosefoots etc.	–	–	–	–	–	–	–	–	–	
<i>Stellaria media</i> (L.) Vill.	common chickweed	–	–	–	–	–	–	–	–	–	
<i>Scleranthus annuus</i> L.	annual knawel	–	–	–	–	–	1	–	–	–	
<i>Agrostemma githago</i> L.	corncockle	–	–	–	–	–	–	–	–	–	
<i>Polygonum aviculare</i> L.	knotgrass	–	–	1	–	–	–	–	–	–	
<i>Fallopia convulvulus</i> (L.) A Love	black bindweed	–	–	–	–	–	–	–	–	–	
<i>Rumex acetosella</i>	sheep's sorrel	–	–	–	–	–	–	–	–	1	
<i>Rumex</i> sp(p).	dock	–	–	1	–	–	–	–	–	5	
Polygonaceae indet.		–	–	–	–	–	–	–	–	–	
<i>Vicia/Lathyrus</i> sp.	vetch/tare/vetchling (seeds>2mm)	–	–	–	–	–	–	–	–	1	
<i>Vicia/Lathyrus</i> sp(p).	vetch/tare/vetchling (seeds<2mm)	–	–	–	–	–	–	–	–	3	
<i>Vicia/Lathyrus/Pisum</i> sp.	vetch/tare/vetchling/pea (seeds<2mm)	–	–	–	–	–	–	–	–	–	
<i>Medicago/Trifolium</i> sp(p).	medicks/clovers (seeds<1mm)	–	–	–	–	–	–	–	–	–	
Fabaceae indet.	pea family (small round cotyledons)	–	–	–	–	–	–	–	–	–	
Lamaiceae indet		–	–	–	–	–	–	–	–	–	
<i>Plantago lanceolata</i> L.	ribwort plantain	–	–	–	–	–	–	–	–	–	
<i>Euphrasia/Odontites</i> spp.	eyebrights/bartsias	–	–	–	–	–	–	–	–	–	
<i>Sherardia arvensis</i> L.	field madder	–	–	–	–	–	–	–	–	–	
<i>Galium aparine</i> L.	cleaver	–	–	–	–	–	–	–	–	–	
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	scentless mayweed	–	–	–	–	–	–	–	–	–	
Asteraceae indet		–	–	–	–	–	–	–	–	–	
<i>Eleocharis palustris/uniglumis</i>	spike-rush	–	–	–	–	–	1	–	–	–	
<i>Carex</i> sp.	sedge	–	–	–	–	–	–	–	–	–	
<i>Lolium</i> sp.	rye-grass	–	–	–	–	–	–	–	–	1	
<i>Lolium/Festuca</i> sp.	rye-grass/fescue	–	–	–	–	–	–	–	–	1	
<i>Arrhenatherum elatius</i> var <i>bulbosum</i> (Willd.)	onion couch tuber fragments	–	–	–	–	–	–	–	–	2	
St-Amans											
<i>Avena/Bromus</i> sp.	oat/brome	–	–	–	–	–	–	–	–	1	
<i>Bromus</i> sp(p).	brome	–	–	–	–	1	–	–	–	8	
cf. <i>Bromus</i> sp(p).	?brome	–	–	1	–	1	–	1	–	3	
Poaceae indet.	grasses (large seeds)	1	–	5	–	1	–	–	–	7	
Poaceae indet.	grasses (small seeds)	–	–	–	–	–	–	–	–	13	
Poaceae indet.	cereal/grass culm node/internode	–	–	–	–	–	–	–	–	1	
indeterminate	rhizome fragments	–	–	–	–	–	–	–	–	10	
indeterminate	tuber/rhizome fragments	–	1	–	–	–	2	1	–	–	
indeterminate	wood charcoal	+++	+++	+++	++	++++	+++	+++	+++++	–	
indeterminate		–	–	–	–	–	–	–	–	+	
Total											
item density (per litre of processed soil)		6	6	13	2	27	12	5		249	
		0.6	0.8	1.3	0.2	2.7	1.2	0.5		12.5	

Item frequency: + = 1–10; ++ = 11–50; +++ = 51–150; ++++ = 151–250; +++++ = 250+ items

Table 7.13 Middle–late Iron Age (Phase 3) charred plant remains by Group

more than 100 quantified items associated with round-house L32 and activity foci L38 and L49.

Activity focus L32

Two of four samples from the fills of possible roundhouse ditch G88 produced fairly rich assemblages (Table 7.14 and Fig. 7.1); sample 130 contained mainly by-products from the de-husking of hulled (spelt) wheat, chaff fragments making up 64% of the quantified remains and wild plant remains (mainly of wild grass seeds and tuber/rhizome fragments) making up 23%. These remains probably represent fuel waste. Small numbers of grains made up the other 13% of the quantified remains in this sample. The other rich assemblage from the ditch (sample 131) contained mostly cereal debris with slightly more chaff (52%) than grains (39%), which may represent spikelets accidentally burnt during parching prior to de-husking. There were few weed seeds (14%) in this sample. The other two ditch fill samples and one pit fill sample (sample 100) in L32 contained only very small mixed charred plant assemblages. The charred plant remains suggest that activities associated with the de-husking of

hulled wheats may have been carried out in this area of the site.

Activity focus L38

Six samples from five pits within clusters G112 and G113 produced only small amounts and low densities of charred plant remains – cereal debris (grain, chaff, weed seeds) indicative of waste from small-scale, possibly domestic activities associated with the final stages of crop-cleaning and food preparation.

Possible enclosed activity focus L49

Three of the four samples produced very rich and high densities of charred plant remains from three fills of pits G133, two of the assemblages requiring sub-sampling before quantification (Table 7.14 and Fig. 7.1).

All three rich assemblages were very similar containing mainly clean grain; 91% of the quantified remains in pit fill samples 63 (estimated item density 42.2) and 101 (item density 18.2) were grains. Virtually all the identifiable grains in pit fill sample 63 were (hulled) wheat, while pit fill sample 101 contained mainly hulled barley

Land-use Area	Phase 3					Phase 4	
	32		49			57	
Group	88		133			161	163
Feature type	Ditch		Pit			Ditch	Pit
Sample	130	131	63	101	103	80	76
Grains	32 (13%)	60 (39%)	173 (91%)	165 (91%)	416 (99%)	225 (68%)	159 (63%)
Cereal chaff	160 (64%)	80 (52%)	5 (3%)	3 (2%)	4 (1%)	–	11 (4%)
Weed seeds	57 (23%)	14 (9%)	12 (6%)	14 (7%)	1 (<1%)	108 (32%)	82 (33%)
Total	249	154	190	182	421	333	252
Item density	12.5	7.7	42.2e	18.2	168.4e	16.7	50.4e

e = estimated item frequency based on sorted fraction

Table 7.14 Frequencies and percentages of grain, chaff and weed seeds in Phase 3 and 4 samples (with >100 quantified items)

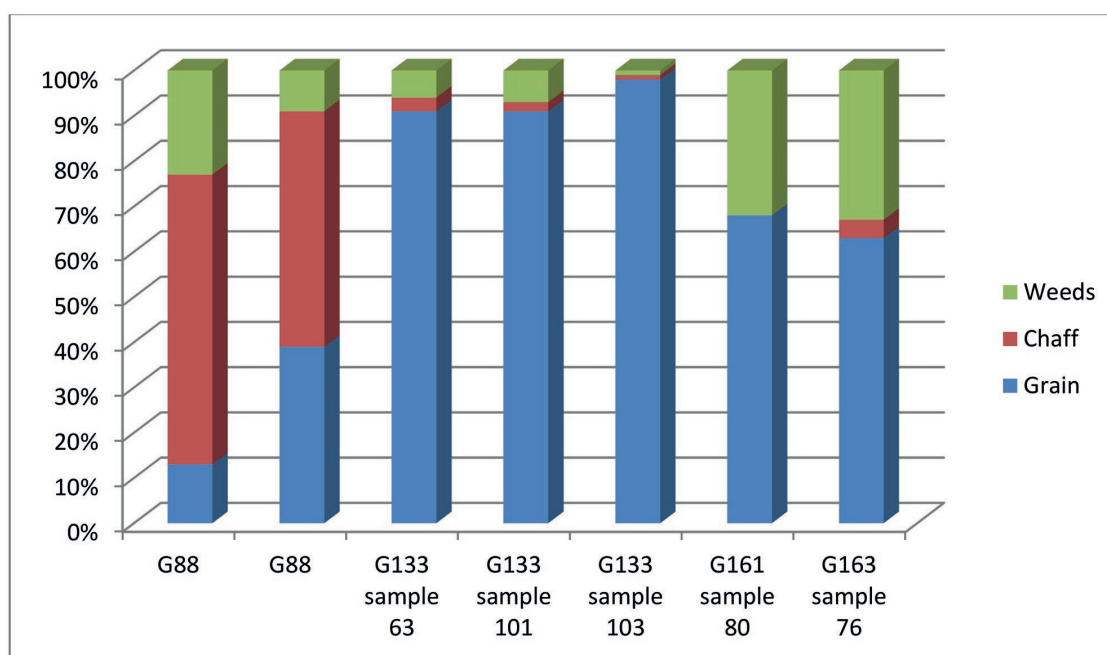


Figure 7.1 Proportions of grain, chaff, and weed seeds in the richer Phase 2 and 3 samples (with >100 quantified items)

grains with fewer (hulled) wheat grains. Both pit fills contained only a little hulled wheat chaff and few weed seeds, mainly large wild grass seeds including *Bromus*. The other pit fill sample 103 produced an exceptionally rich assemblage (estimated item density of 168.4), 99% of the quantified remains consisting of grains virtually all the identifiable ones being of (six-row) hulled barley with only traces of chaff and a hazelnut shell fragment.

The charred plant remains in all three pit fills represent fully processed cereal grains of both hulled (spelt) wheat and hulled barley, perhaps accidentally burnt *in situ*, with these pits possibly being used for the storage of cleaned grains. The other sample from this area, from the fill of ditch G134, produced just a few charred plant remains, mainly rhizome/tuber fragments.

Phase 4: Late Iron Age/early Roman

Eleven of 15 samples produced charred plant remains (Table 7.15), consisting mainly of cereal grains (60% of the quantified material) and wild plant/weed seeds (36%) in all the samples and smaller amounts of chaff (4%), virtually all from hulled spelt wheat, in nine.

Overview

Hulled wheat, mainly spelt on the basis of the chaff fragments, and hulled barley were again the best-represented cereals. They were present in most of the samples along with traces of free-threshing wheat grains in two samples and a small number of oat grains, probably weeds, in four. There were also traces of hazelnut shell fragments in two samples.

A fairly good range of wild plants/weeds were represented by charred seeds. Legume seeds accounted for just over 50% of the quantified remains, although none could be reduced to species. The larger *Vicia/Lathyrus/Pisum* seeds and large indeterminate legume (Fabaceae) fragments (>2mm) are probably from cultivated pulses, but the majority of the legumes were represented by smaller seeds, including *Vicia/Lathyrus* and *Medicago/Trifolium* (medick/trefoil), which are more likely to be from wild species. Wild grasses were again well represented making up 27% of the quantified weed seeds and consisting mainly of large wild grass seeds notably *Bromus*. There was a very similar range of weeds to those in Phase 3 suggesting the use of sandy loamy soils for growing crops but with further evidence – *Lithospermum arvense* (field gromwell) and *Valerianella dentata* (narrow-fruited cornsalad) in addition to *Sherardia arvensis* – for the cultivation of calcareous loams to the east. It is possible that there was an expansion of arable cultivation into new areas at the time in response to impoverished or overworked soils, as reflected in the increased presence of leguminous seeds in this phase – these nitrogen-fixing plants thriving in poor soils.

The presence of *Fallopia convolvulus* and *Valerianella dentata* on the one hand, and *Galium aparine* on the other, may tentatively suggest both spring- and autumn-sowing of cereals. The presence of low-growing weeds again suggests the cutting of cereals fairly low on the straw; as in Phase 3 there were small amounts of tuber and

rhizome fragments (including onion couch tubers in one) in seven samples, which may also indicate harvesting of cereals by uprooting and/or the collection of wild grasses for various uses on site including as fuel.

Most of the charred plant remains from the late Iron Age/early Roman samples again represent debris from the final stages of crop-cleaning and food preparation – mostly cleaned grains, possibly burnt during drying before storage/use or milling but with little chaff to suggest de-husking activities. The weed seeds include large ones, notably large grass seeds, which would have required hand-sorting as well as smaller weed seeds which would have been removed by fine sieving using the ‘wheat’ sieve.

Northern enclosures SL4

Two of four samples, from ditches defining routeway L13, produced charred plant remains. One of the ditch fills produced only a few charred seeds, although sample 40 from ditch G38 produced a modest-sized assemblage of mainly grains and weed seeds (particularly large-seeded wild grasses) – debris from semi-cleaned cereals, from which the weeds had yet to be separated.

Southern enclosures SL11

Nine of 11 samples from two areas within SL11, five from pit fills and four from ditch fills, contained charred plant remains. Two samples from ditches defining routeway L47 produced very small assemblages – a few grains, chaff fragments and weed seeds.

Two of seven samples from enclosure L57, however, produced rich and high concentrations of charred plant assemblages. Ditch G161 (sample 80) contained largely grains (68%) mainly of hulled barley; the other remains (32%) in this sample consisted almost entirely of small- and large-seeded legumes, plus a small number of wild grass seeds. Sample 76 from a pit in cluster G163, situated close to ditch G161, produced an even richer assemblage (only partially quantified and with an estimated item density of 50). This comprised grains (63% of the quantified fraction), consisting mainly of hulled wheat grains with some barley. Wild plant/weed seeds (33%) were also present, consisting mainly of leguminous seeds and (large) wild grass seeds but also with a good number of mineralised *Lithospermum arvense* seeds; these grain-sized weeds along with *Bromus* are difficult to extract other than by hand-sorting. There were also traces of hulled (spelt) wheat chaff (4%) in this sample (Table 7.14 and Fig. 7.1).

These two rich charred plant assemblages represent semi-cleaned grains – mainly hulled barley in the ditch fill and mainly de-husked, hulled wheat grains in the pit fill – from which all the weed seeds had yet to be fully separated. It is possible that the pits in this area may have been used for the storage of semi-cleaned grain.

The other five productive samples from L57 included three modest-sized assemblages in three pit fills from clusters G163 and G168 – mainly grains, some weed seeds and a little chaff – and two very small assemblages in ditches G159 and G165.

<i>Rumex</i> sp(p).	dock	-	1	1	-	1	-	1	++	1	-	-	1
<i>Vicia/Lathyrus</i> sp(p).	vetch/tare/vetchling (seeds>2mm)	-	1	-	-	6	5	++	-	-	1	-	-
<i>Vicia/Lathyrus</i> sp(p).	vetch/tare/vetchling (seeds<2mm)	-	-	1	-	20	11	++	-	-	-	-	-
<i>Vicia/Lathyrus/Pisum</i> sp.	vetch/tare/vetchling/pea (seeds>2mm)	-	-	-	-	-	1	-	-	-	-	-	-
<i>Vicia/Lathyrus/Pisum</i> sp(p).	vetch/tare/vetchling/pea (seeds<2mm)	-	2	-	-	1	-	-	-	-	-	-	1
<i>Medicago/Trifolium</i> sp(p).	medicks/clovers (seeds<1mm)	1	2	1	-	-	8	+++	1	2	-	-	3
Fabaceae indet.	pea family large fragments	1	2	-	-	-	-	-	-	-	-	-	-
Fabaceae indet.	pea family (small fragments)	-	-	-	-	21	9	-	-	-	-	-	1
Fabaceae indet.	pea family (small round cotyledons)	-	-	-	-	53	-	++	-	6	-	-	1
<i>Lithospermum arvense</i> L.	field gromwell	-	-	-	-	-	19	+++	-	-	-	-	3
<i>Plantago lanceolata</i> L.	ribwort plantain	-	-	-	-	-	-	-	-	-	-	-	1
<i>Euphrasia/Odontites</i> sp(p).	eyebrights/bartsias	-	-	-	-	-	1	++	1	-	-	-	1
<i>Rhinanthus minor</i> L.	yellow rattle	-	-	-	-	-	-	+	-	-	-	-	-
<i>Sherardia arvensis</i> L.	field madder	-	-	-	-	-	1	++	-	-	-	-	-
<i>Gallium aparine</i> L.	cleaver	-	-	1	-	-	-	-	-	-	-	-	1
<i>Valerianella dentata</i> (L.) Pollich	narrow-fruited cornsalad	-	-	-	-	-	2	+	-	-	-	-	-
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	scentless mayweed	-	-	-	-	-	-	+	-	-	-	-	-
Asteraceae indet		-	-	-	-	-	1	+	1	-	-	-	-
<i>Carex</i> sp.	sedge	-	-	-	-	-	-	-	1	1	-	-	-
Cyperaceae indet.		-	-	-	-	-	-	+	-	-	-	-	-
cf <i>Poa</i> spp.	?meadow-grasses	-	-	-	-	-	-	+	-	-	-	-	-
<i>Arrhenatherum elatius</i> var <i>bulbosum</i> (Willd.) St-Amans	onion couch tuber fragments	-	-	-	-	-	-	-	-	-	1	-	-
<i>Bromus</i> sp(p).	brome	-	3	-	1	-	2	4	+	-	3	-	2
cf. <i>Bromus</i> sp(p).	?brome	-	8	-	1	1	-	3	-	-	4	-	-
Poaceae indet.	grasses (large seeds)	-	12	-	-	-	3	12	++	3	-	-	5
Poaceae indet.	grasses (small seeds)	2	-	-	1	3	2	4	++	1	-	-	5
indeterminate	rhizome fragments	-	-	-	-	-	-	-	+	-	-	-	-
indeterminate	tuber/rhizome fragments	-	-	1	1	3	-	-	-	8	1	2	3
indeterminate	wood charcoal	+++	++++	+++	++++	++++	++++	+++	+++	++++	+++	+++	+++
indeterminate		-	-	-	-	-	-	+	+	-	-	-	+
Total		4	70	11	10	22	333	252		68	44	15	4
item density (per litre of processed soil)		0.4	3.5	1.1	1	2.2	16.7	50.4e		6.8	4.4	0.8	6.4

Item frequency: + = 1-10; ++ = 11-50; +++ = 51-150; ++++ = 151-250; +++++ = 250+ items

Table 7.15 Late Iron Age/early Roman (Phase 4) charred plant remains by Group

Phase 5: Roman

Collectively, 63 of 70 samples produced a charred plant assemblage of almost 9000 quantified items (Tables 7.16–7.18). The remains consisted largely of cereal debris with slightly more grains (55% of the quantified remains) than chaff (39%) – virtually all from hulled wheat – and a smaller amount of mainly wild plant/weed seeds (6%).

Overview

Wheat was by far the best-represented cereal, identified in 53 samples by grains (almost 90% of all identifiable ones) and virtually all the chaff fragments. Hulled wheat was the main cereal in 49 samples and specifically spelt in 37 samples on the basis of the chaff fragments; emmer was represented by only occasional chaff fragments in 11 samples. There were a few free-threshing wheat grains in 19 samples. Hulled barley (including six-row) was the second most common cereal, although represented in 31 samples by much smaller numbers of grains (9% of identifiable ones) and a small number of rachis fragments. There were only 21 oat grains in 11 samples; they may be weeds. Four rye grains in four samples may also be weeds or intrusive. Over half (58%) of all the grains could not be identified while there were variable but occasionally large amounts of unquantifiable grain fragments in 54 samples. There were loose cereal grain coleoptiles in 17 samples.

Other Roman sites in southern England have produced similar results. Current evidence shows that spelt was the main hulled wheat grain during this period together with hulled barley; there is less evidence for emmer and free-threshing wheat (Greig 1991, 309; van der Veen 2016; Lodwick 2017). The dominance of spelt over hulled barley at the site is consistent with the results from other Roman sites in this area of the country (Lodwick 2017, 26) including sites close-by, for example to the north-east at Higham Road, Burton Latimer where spelt was the dominant cereal with significantly less hulled barley and small numbers of free-threshing wheat grain and traces of emmer (Giorgi 2019) and at Higham Ferrers where spelt wheat was the main grain with possibly a little emmer and a small amount of six-row hulled barley (Robinson 2009).

Spelt wheat has excellent baking and milling properties (Jones 1981, 107) and contains the proteins necessary for making a well-risen loaf (Cool 2006, 70); the grains were also used for a gruel known as *puls* or *pulmentus*, similar to modern Italian *polenta* (Renfrew 1985, 22). Spelt was also used to produce malt for brewing; the large numbers of sprouted grains in drying oven G140 suggest that such activities may have been taking place on the site (see below). Barley may have been used for making flat bread and griddle cakes (Cool 2006, 70–1) as well as for animal fodder. Free-threshing wheat has good bread-making qualities (Jones 1981, 107), although the small number of grains suggests that it probably only played a minor role, if any, in the food economy of the site.

There was very little evidence for other food/economic plants in the samples, although a seed of *Linum usitatissimum* (flax) was found in ditch G97 (L35, SL12). Flax seeds have been found on other Roman sites (Greig 1991, 311; Lodwick 2017, 223) with the fibrous stems used for textiles and the seeds for food or oil. There were occasional large legume seeds (>2mm) in six samples that may be from cultivated pulses, although most of the

legume seeds were very small and more likely to be from wild species; pulses, however, probably played an important role in the Roman diet (Cool 2006, 127). There was a single charred hazelnut shell fragment and one charred *Sambucus* (elder) seed, which may be the residues of wild foods collected from shrubby/hedgerow/woodland habitats close-by.

There was a fairly good range of wild plants/weeds represented by charred seeds, although individual species representation was generally poor. *Rumex* (docks) seeds were frequent, accounting for almost a third of the charred weed seeds and appearing in 24 samples; this perennial may be an indication of less intensive arid tillage of the soils cultivated around the site. Wild grasses were also well represented, again accounting for 27% of the quantified weed seeds and consisting mainly of large wild grass seeds, notably *Bromus*. Legume seeds accounted for 11% of the weed seeds in 24 samples, consisting mainly of smaller seeds of *Vicia*/ *Lathyrus*/ *Pisum* and *Medicago*/ *Trifolium*. These remains along with *Rumex acetosella* and *Fallopia convolvulus* may again suggest impoverished or overworked soils, archaeobotanical evidence suggesting that spelt, a hardy cereal, was grown in soils with low fertility during the Roman period (van der Veen 1992). Other weeds represented in the samples, however, are indicative of nutrient-rich soils, suggesting that a mix of good and poor arable land may have been used for growing crops.

There was a very similar range of potential cereal weeds to those in the previous phases, including those often found on (acid) sandy loams, e.g. *Agrostemma githago*, *Fallopia convolvulus*, *Plantago lanceolata*, *Tripleurospermum inodorum* and the first records for *Raphanus raphanistrum* (wild radish), an indicator of acid soils (Hanf 1983). *Plantago lanceolata* is today found in meadows and pastures but in the past is common in charred grain assemblages, which may suggest the opening up of new grassland areas for arable cultivation. There is less evidence, however, for the cultivation of the local lime-rich loamy soils to the east of the site with only traces of *Sherardia arvensis* and possibly *Lithospermum arvense*.

The weed seeds tentatively suggest both the spring-sowing of crops – as indicated by the Chenopodiaceae, *Fallopia convolvulus* and *Raphanus raphanistrum* – and autumn-sowing, with *Galium aparine* identified in 11 samples. Archaeobotanical evidence suggests that autumn-sowing of crops was probably more likely during the Roman period (Lodwick 2017, 46). Low-growing weeds suggest harvesting fairly low on the straw with evidence from other Roman sites suggesting that this was probably the usual method of harvesting cereals at the time (Lodwick 2017, 47). The large amount of tuber and rhizome fragments (including onion couch tubers in one), in 20 samples, however, could also suggest harvesting by uprooting – although as noted before these remains could also be from the collection of wild grasses for various uses.

The bulk of the charred plant remains from the Roman Phase 5 samples represent cereal debris from the final stages of crop-cleaning (including the de-husking of hulled wheats) and food preparation, the grains possibly burnt during drying before storage/use or milling or along with the chaff during parching to facilitate de-husking. The chaff from de-husking may have been used as fuel along with the few weed seeds, separated in the case of

the larger ones by hand-sorting and in the case of the smaller weed seeds by use of the 'wheat' sieve. Most of the charred plant remains and the richest assemblages were from the three drying ovens, the functions of which are examined below.

Northern enclosures SL5

Of 24 samples, 22 produced variable amounts of charred plant remains with ten samples producing rich assemblages of at least 100 quantified items; most of this material came from drying oven G53 (L19).

Later enclosure L19 (including drying oven G53)

Other than samples from drying oven G53 (described separately below), two other samples from L19, both from ditch G57, produced over 100 quantified items: sample 35 and sample 64 (Fig. 5.5). The latter contained a particularly rich assemblage which required sub-sampling.

The composition of the charred plant assemblages in these two samples is shown in Table 7.19 and Fig. 7.2. While sample 64 produced a much richer and denser concentration (estimated item density of 129.6) of charred plant remains, both assemblages were broadly similar, containing mainly hulled (spelt) wheat chaff (64% and 75% of the quantified remains) with fewer grains (32% and 23%) and very few weed seeds (4% and 2%). These remains represent debris largely from the de-husking of spelt wheat, which may have been accidentally burnt while being parched in the oven close-by.

Eleven samples were collected from fills in different areas and levels of the drying oven G53. Seven produced rich assemblages (several requiring sub-sampling) with item densities ranging from 44.1 to an estimated 147.6 items per litre of processed soil: samples 53 and 62 from the centre of the T junction; samples 52 and 61 from half way along the flue; samples 51, 60 and 68 at the other end near the stokehole (Fig. 5.5). Cereal remains (grains and chaff) dominated the assemblages, making up between 91% and 99% of the quantified material in the seven rich assemblages.

Spelt wheat and hulled barley were the two main grains in the oven fills. Spelt was the main cereal in samples 51, 53, 61, 62 and 68; there were more equal amounts of the two grains in samples 52 and 60. Virtually all the chaff in the samples was from hulled (spelt) wheat. Spelt wheat is the most frequent cereal found in Roman drying ovens (Lodwick 2017, 57). Wild grasses (Poaceae), represented by both large and small seeds, made up a good proportion of the small numbers of weed seeds in the samples, along with other large seeds, for example *Agrostemma githago*, and smaller ones, for instance *Rumex*.

Six of the rich assemblages from samples 51, 52 and 53 produced broadly similar charred assemblages – a mix of mainly grains (between 38% and 64% of the quantified remains) and hulled (spelt) wheat chaff fragments (34–58%) with few weed seeds (2–9%). These remains suggest the oven was being used for parching spelt spikelets to facilitate de-husking and also for the drying of barley grains before storage or milling with the cereals being accidentally burnt in the oven during these processes. The other rich oven assemblage in sample 68 contained mainly chaff (80%) of hulled (spelt) wheat, fewer grains (20%) and just a few weed seeds (<1%), representing the by-products of de-husking probably used as fuel for the oven. There was no evidence that the oven was being used for activities associated with

malting – a few cereal coleoptiles in some of the samples are probably from accidentally germinated grains.

Sub-oval enclosure L15

Two samples from an enclosure to the south-west of the oven produced charred plant remains. A very small assemblage was recovered from ditch G45 but a fairly good assemblage (just over a 100 quantified items) derived from one of postholes G66 (sample 47). This assemblage comprised mainly wild plant remains (86% of the quantified material) – largely of tuber, root and rhizome fragments – and only a small number of wild plant/weed seeds, plus a very small number of grains and a few hulled wheat chaff fragments (Table 7.18 and Fig. 7.2). These charred plant remains probably mainly represent debris from wild vegetation gathered by uprooting for use as fuel; a number of potential grassland plants, *Ranunculus acris/repens/bulbosus* (buttercup), *Plantago lanceolata*, *Rhinanthus minor* (yellow rattle), *Carex* and wild grasses (Poaceae) in this sample suggest that these may have been from (damp) grassy areas possibly near the Swanspool Brook to the north.

Other charred plant remains from SL5

Seven other samples SL5 produced small or modest amounts of charred plant remains. In the south-west, two samples from boundary ditch G48 (L16) contained small and modest charred plant assemblages mainly of tuber and rhizome fragments – both contained *Plantago lanceolata* – residues of wild plants probably gathered for use as fuel from grassland areas. Single samples from routeway ditch G61 (L20) and large pit G81 (L23) and three samples from graves G33, G73 and G74 (L24), all in the south-east part of SL5, produced only traces or very small amounts and very low densities (1.1 items or less) of cereal debris.

Southern enclosures SL12

Of 44 samples, 39 produced variable amounts of charred plant remains. Ten produced rich assemblages each with at least 100 quantified items; most of this material was recovered from drying oven G140 and several other features in L56 (Tables 7.17 and 7.18).

Later enclosure L34

Two samples from an enclosure ditch contained only small amounts of cereal debris (grain and chaff) and a few weed seeds in one fill (G95) and a few grains in the other (G96); these derive from the final stages of crop-processing and food preparation activities, possibly taking place some distance away.

Later enclosure L35 (including drying oven G103)

Thirteen samples from ditches (G97, G99 and G116), drying oven G103, stone-lined well G104 and inhumation G120 did not produce a great deal of charred plant material. The three sampled fills of stone-lined well G104 and the two samples from inhumation G120 produced only traces of charred cereal debris (grain and chaff), weed seeds and tuber/rhizome fragments, although two of the ditch fills (G97 and G116) contained modest-sized assemblages with residues (grain, chaff) from the de-husking of hulled (spelt) wheat, a flax seed and a small range of weed seeds in one of the fills G97.

Of four samples from drying oven G103 only sample 139 produced a fairly good-sized assemblage (with more

	Land-use Area Group	15		16		
		45	66	48	49	
	Feature type	Ditch	Posthole	Ditch	Pit	
	Sample number	37	47	32	57	34
	vol sample (l)	10	20	10	5	10
	vol flot (ml)	<1	13	2000	17	1
	% flot sorted					
	% flot scanned					
Latin name	English name					
Cereal grains						
<i>Triticum</i> cf. <i>spelta</i>	?spelt wheat	—	—	—	—	—
<i>T. dicoccum/spelta</i>	emmer/spelt wheat	—	1	—	—	—
<i>T. cf. dicoccum/spelta</i>	?emmer/spelt wheat	1	—	—	—	—
<i>T. aestivum/spelta</i> type	free-threshing/spelt wheat	—	—	—	—	—
<i>T. aestivum/turgidum</i> type	free-threshing wheat	—	—	—	—	—
<i>T. cf. aestivum/turgidum</i> type	?free-threshing wheat	—	—	—	—	—
<i>Triticum</i> sp(p).	wheat	—	—	—	—	—
<i>Triticum</i> spp.	wheat (sprouted)	—	—	—	—	—
cf. <i>Triticum</i> sp(p).	?wheat	—	1	—	—	—
cf. <i>Secale cereale</i>	?rye	—	—	—	—	—
<i>Hordeum vulgare</i> L.	barley, hulled twisted	—	—	—	—	—
<i>H. vulgare</i> L.	barley, hulled straight	—	—	—	—	—
<i>H. vulgare</i> L.	barley, hulled indet.	—	2	—	—	—
<i>H. vulgare</i> L.	barley, indet.	—	—	—	—	—
cf. <i>H. vulgare</i>	?barley	—	—	—	—	—
<i>Avena</i> sp(p).	oat	—	—	—	—	—
cf. <i>Avena</i> sp.	?oat	—	—	—	—	—
Cerealia	indet. cereal (estimate)	—	8	4	2	—
Cerealia	indet cereal fragments <2mm	+	+	+	+	+
Cerealia	indet cereal loose coleoptiles	—	—	—	—	—
Cereal chaff						
<i>Triticum dicoccum</i> Schubl.	emmer wheat glume base	—	—	—	—	—
<i>T. spelta</i> L.	spelt spikelet forks	—	—	—	—	—
<i>T. spelta</i> L.	spelt glume bases	—	2	—	1	—
<i>T. spelta</i> L.	spelt rachis fragments	—	—	—	—	—
<i>Triticum</i> sp(p).	wheat glume bases	2	—	—	1	—
<i>Triticum</i> spp.	wheat glume fragments	—	—	—	—	—
<i>Triticum</i> sp(p).	wheat spikelet forks/bases	—	1	—	3	—
<i>Triticum</i> spp.	wheat rachis fragments	—	—	—	—	—
<i>T. aestivum/turgidum</i> type	free-threshing wheat rachis fragments	—	—	—	—	—
<i>Triticum</i> spp.	wheat awn fragments	—	—	—	—	—
<i>Hordeum vulgare</i> L.	barley rachis fragments	—	—	—	—	—
<i>Avena</i> spp.	oat awn fragments	—	—	—	—	—
Other plant/weed seeds						
<i>Ranunculus acris/repens/bulbosus</i>	buttercups	—	6	—	—	—
<i>Corylus avellana</i> L.	hazel nut shell fragments	—	—	—	—	—
<i>Chenopodium album</i>	<i>Chenopodium album</i>	—	—	—	—	—
<i>Chenopodium</i> sp(p).	<i>Chenopodium</i> spp.	—	—	—	—	—
<i>Agrostemma githago</i> L.	corncockle	—	—	—	—	—
<i>Silene</i> sp(p).	campion/catchfly	1	—	—	—	—
Caryophyllaceae indet.		—	—	—	—	—
<i>Persicaria lapathifolia</i> (L.) Gray	pale persicaria	—	—	—	—	—
<i>Persicaria</i> sp.	knotweed	—	1	—	—	—
<i>Polygonum aviculare</i> L.	knotgrass	—	—	—	—	—
<i>Fallopia convulvulus</i> (L.) A Love	black bindweed	—	1	—	—	—
<i>Rumex</i> sp(p).	dock	—	1	1	—	—
<i>Vicia/Lathyrus</i> sp.	vetch/tare/vetchling (seeds>2mm)	—	1	—	—	—
<i>Vicia/Lathyrus</i> sp(p).	vetch/tare/vetchling (seeds<2mm)	—	—	—	—	—
<i>Vicia/Lathyrus/Pisum</i> sp(p).	vetch/tare/vetchling/pea (seeds<2mm)	—	1	—	—	—
<i>Medicago/Trifolium</i> sp.	medicks/clovers (seeds<1mm)	—	1	—	—	—
Fabaceae indet.	pea family (small fragments)	—	—	—	1	—
Fabaceae indet.	pea family (small round cotyledons)	—	—	—	—	—
<i>Plantago lanceolata</i> L.	ribwort plantain	—	3	8	1	—
<i>Euphrasia/Odontites</i> spp.	eyebrights/bartsias	—	—	—	—	—
<i>Rhinanthus minor</i> L.	yellow rattle	—	1	—	—	—
<i>Sherardia arvensis</i> L.	field madder	—	—	—	—	—
<i>Galium aparine</i> L.	cleaver	—	—	—	—	—
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	scentless mayweed	—	—	—	—	—
Asteraceae indet		—	—	—	—	—
<i>Carex</i> sp.	sedge	—	1	—	—	—
Cyperaceae indet.		—	1	—	—	—
<i>Lolium</i> sp(p).	rye-grass	—	—	—	—	—
<i>Lolium/Festuca</i> sp(p).	rye-grass/fescue	—	—	—	—	—
cf <i>Poa</i> spp.	?meadow-grasses	—	—	—	—	—
<i>Bromus</i> sp.	brome	—	1	—	—	—
cf. <i>Bromus</i> sp(p).	?brome	—	—	—	—	—
Poaceae indet.	grasses (large seeds)	—	—	—	—	—
Poaceae indet.	grasses (small seeds)	4	1	—	1	—
indeterminate	tuber/rhizome fragments	—	74	55	10	—
indeterminate	thin stem ribbed round fragments	—	—	2	—	—
indeterminate	wood charcoal	++	+++++	+++++	+++++	+++
Total						
item density (per litre of processed soil)		8	109	20	70	
		0.8	5.5	4	7	

Item frequency: + = 1–10; ++ = 11–50; +++ = 51–150; ++++ = 151–250; +++++ = 250+ items

Table 7.16 Roman (Phase 5) charred plant remains from SL5 by Group

	19														57			20	23				24
	53														64		61	81	33	73	74		
	Drying oven														Ditch	Ditch	Ditch	Pit	Grave				
	62	52	60	51	61	53	54	55	68	67	66	64	35	46	44	50	30	33					
	19	10	8	10	20	10	10	10	12	4	8	30	20	10	10	40	21	30					
	29	11	10	16	72	10	3	1	5	<1	<1	34	2	1	2	10	2	2					
25%	25%														12.50%								
75%	75%														87.50%								
6	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
9	++	2	7	6	11	+++	16	++	2	-	2	-	2	++	1	-	-	-	-				
6	-	5	7	-	9	-	4	-	-	-	-	-	-	-	2	-	-	2	-				
2	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-				
2	+	1	4	-	-	+	-	-	-	-	-	-	-	-	-	-	-	1	-				
1	-	2	1	1	3	-	-	-	-	-	-	-	+	-	-	-	-	-	-				
31	+++	20	22	14	37	+++	23	++	1	2	9	-	12	++	3	-	2	-	-				
-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-				
46	-	10	7	15	40	-	21	3	7	-	-	4	++	5	-	2	2	-	-				
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
4	+	2	8	5	5	++	3	++	-	-	-	1	+	-	-	-	-	-	-				
-	-	1	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
9	-	3	14	2	7	-	5	-	-	-	-	1	-	-	-	-	-	-	-				
2	-	18	21	11	15	-	7	-	1	-	-	2	-	-	-	-	1	-	-				
-	-	2	3	2	-	-	2	-	2	-	-	1	-	2	1	-	2	1	1				
1	+	-	3	3	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-				
-	-	-	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-				
112	+++++	182	123	152	347	+++++	89	+++	12	5	144	3	80	+++++	27	-	3	7	4				
+++	-	-	-	-	+++	-	+++	++	+	++	+	+	++	-	++	-	+	++	+				
2	+	6	5	1	-	-	5	+	2	-	9	-	6	++	-	-	-	-	-				
2	+	-	-	-	-	+	2	-	-	1	2	-	2	+	1	-	-	-	-				
1	+	2	2	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-				
49	+++	78	114	32	22	+++	19	++	14	4	212	-	70	+++++	13	-	-	1	-				
3	+	14	11	9	6	++	8	+	2	-	31	-	8	++	2	-	-	-	-				
69	+++	179	142	113	176	+++++	65	+++	26	11	214	1	172	+++++	52	-	2	3	-				
-	-	-	-	-	-	-	-	-	-	++	-	18	-	-	-	-	-	-	-				
47	+++	82	39	32	33	+++++	23	+++	15	5	188	1	83	++++	5	-	-	1	-				
19	++	19	41	27	10	+++	14	+	5	-	30	2	30	++	7	-	-	-	-				
-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
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-	-	1	3	1	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-				
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Land-use Area		34		35						36				39		44							
Group	95	96	Ditch	97	99	Drying oven		104		116	Ditch		120	Grave	105	Ditch	110	?Drying oven	114	122	123		
Feature type				Ditch					Water-pit										Pit		Ditch		
sample number	75	122		108	82	134	139	135	138	117	143	145	111	88	86	89	95	113	112	109	84	129	83
vol sample (l)	10	10		10	10	20	20	10	10	10	10	10	10	3	25	6	10	10	10	20	20	10	20
vol flot (ml)	2	<1		2	1	<1	2	1	<1	<1	1		1	<1	1	<1	<1	1	1	<1	2	10	2
% flot sorted																							
% flot scanned																							
English name																							
Cereal grains																							
<i>Triticum spelta</i> L.	-	-		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>T. cf. spelta</i>	-	-		-	-	-	-	-	-	-	1		-	-	-	-	-	-	-	-	-	-	-
<i>T. dicoccum/spelta</i>	-	-		3	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1
<i>T. cf. dicoccum/spelta</i>	1	1		1	-	1	1	-	-	-	-	-	-	-	-	-	1	-	2	-	-	2	1
<i>T. cf. dicoccum/spelta</i>	-	-		-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>T. cf. aestivum/turgidum</i> type	-	-		-	-	-	1	1	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-
<i>Triticum</i> sp(p).	-	-		3	-	1	3	-	-	-	-	-	-	-	-	-	-	-	5	1	1	1	1
cf. <i>Triticum</i> sp(p).	1	-		1	2	1	2	3	-	-	-	-	-	-	-	-	2	-	15	-	-	2	1
<i>Triticum/Secale cereale</i> L.	-	-		-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
cf. <i>Secale cereale</i>	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Hordeum vulgare</i> L.	-	-		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>H. vulgare</i> L.	-	-		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>H. vulgare</i> L.	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>H. vulgare</i> L.	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cf. <i>H. vulgare</i>	-	-		2	-	1	1	-	-	-	-	-	-	-	-	-	-	-	2	-	1	4	-
Cerealia	3	2		12	8	4	16	8	1	2	1	-	-	-	-	-	-	3	-	-	6	11	11
Cerealia	++	-		++	++	+	++	+	-	+	-	-	+	+	+	+	+	++	++	+	++	++	++
Cerealia	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Cereal chaff																							
<i>Triticum dicoccum</i> Schubl.	1	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
<i>T. spelta</i> L.	2	-		7	3	-	24	-	-	-	-	-	-	-	-	-	-	12	3	-	4	-	1
<i>T. spelta</i> L.	2	-		-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-
<i>Triticum</i> sp(p).	4	-		11	11	-	32	9	-	-	-	-	2	-	2	1	-	37	8	-	9	1	2
<i>Triticum</i> sp(p).	3	-		5	5	1	16	2	-	-	-	-	-	-	-	-	-	8	-	-	4	-	1

<i>Triticum</i> sp(p).	wheat rachis fragments	-	-	-	1	2	12	2	-	-	-	-	-	-	-	1	5	2	15	-	1	-	1
<i>Hordeum vulgare</i> L.	barley rachis fragments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Other plant/weed seeds																							
<i>Persicaria</i> sp.	knotweed	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Rumex acetosella</i>	sheep's sorrel	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<i>Rumex</i> sp(p).	dock	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	2	-	-	1	-
<i>Vicia/Lathyrus</i> sp.	vetch/tare/vetchling (seeds>2mm)	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Vicia/Lathyrus</i> spp.	vetch/tare/vetchling (seeds<2mm)	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Medicago/Trifolium</i> sp.	medicks/clovers (seeds<1mm)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fabaceae indet.	pea family (small round cotyledons)	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
<i>Linum usitatissimum</i> L.	flax	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Plantago lanceolata</i> L.	ribwort plantain	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Galium aparine</i> L.	cleaver	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
cf. <i>G. aparine</i>	?cleaver fragments	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Tripleurospermum inodorum</i> (L.) Sch. Bip.	scentless mayweed	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Asteraceae indet		-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Carex</i> sp.	sedge	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<i>Lolium/Festuca</i> sp.	rye-grass/fescue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
<i>Bromus</i> sp.	brome	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
cf. <i>Bromus</i> sp.	?brome	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poaceae indet.	grasses (large seeds)	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	2
Poaceae indet.	grasses (small seeds)	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	4	1	-	-	-	-	-
indeterminate	tuber/rhizome fragments	3	-	2	-	-	-	1	-	1	1	4	-	2	-	-	-	3	-	-	3	2	2
indeterminate	wood charcoal	+++	++	++++	+++	++++	+++	+	++	+	++++	+++	+++	+	+	++	+++	++	++	+++	+++	++++	+++++
indeterminate		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		24	3	64	31	12	117	30	2	3	2	1	7	6	2	2	78	19	210	3	34	29	24
item density (per litre of processed soil)		2.4	0.3	6.4	3.1	0.6	5.9	3	0.2	0.3	0.2	0.1	0.7	0.2	0.3	0.2	7.8	1.9	10.5	0.2	1.7	2.9	1.2

Item frequency: + = 1-10; ++ = 11-50; +++ = 51-150; ++++ = 151-250; +++++ = 250+ items

Table 7.17 Roman (Phase 5) charred plant remains from L34-44 (SL12) by Group

Land-use Area	15	19									
Group	66	53								57	
Feature type	Posthole	Drying oven								Ditch	Posthole
Sample	47	51	52	53	60	61	62	68	35	64	
Grains	12 (11%)	214 (49%)	254 (40%)	175 (53%)	229 (38%)	475 (64%)	234 (50%)	171 (20%)	40 (32%)	111 (23%)	
Cereal chaff	3 (3%)	214 (49%)	375 (58%)	131 (40%)	353 (57%)	247 (34%)	190 (41%)	677 (80%)	80 (64%)	365 (75%)	
Weed seeds etc.	94* (86%)	13 (2%)	16 (2%)	22 (7%)	32 (5%)	16 (2%)	43 (9%)	3 (<1%)	5 (4%)	10 (2%)	
Total	109	441	645	328	614	738	467	851	125	486	
Item density	5.5	44.1	64.5	65.6e	76.8	147.6e	98.3e	70.9	6.3	129.6e	

e = estimated item frequency based on sorted fraction

* 68% of wild plant remains in sample 47 are tuber/rhizome fragments

Table 7.19 Roman (Phase 5) frequencies and percentages of grain, chaff and weed seeds in SL5 samples (with >100 quantified items)

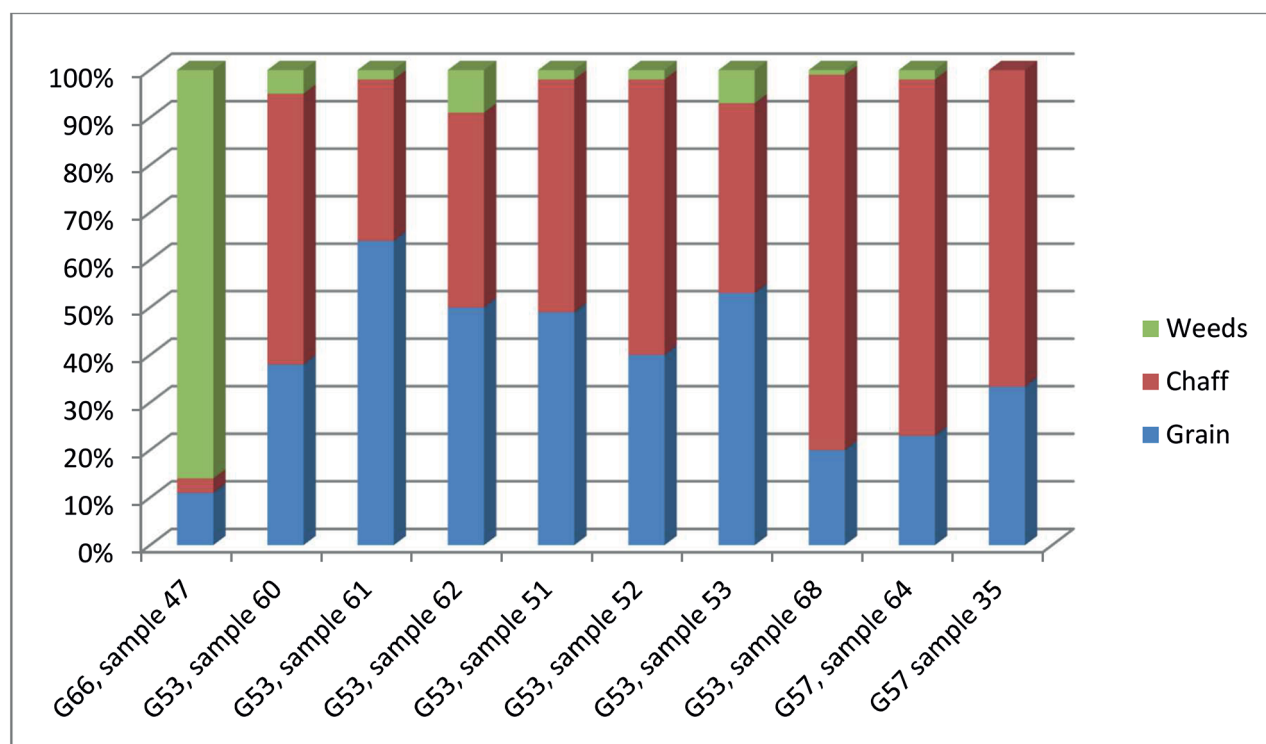


Figure 7.2: Proportions of grain, chaff, and weed seeds in the richer Phase 4 (SL5) samples (with >100 quantified items)

than 100 quantified items) – mainly hulled (spelt) wheat chaff (73% of the quantified remains) along with a small number of grains (24%) and a few large-sized weed seeds (3%) (Table 7.20 and Fig. 7.3). These remains mainly represent debris from spelt wheat spikelets either accidentally burnt in the oven while being parched to facilitate de-husking and/or from the use of the chaff, once separated, as fuel. The other three oven fill samples contained only occasional or small amounts of charred plant remains, consisting mainly of cereal debris (grains and hulled wheat chaff) probably also from de-husking activities along with a few weed seeds.

Enclosure L36 (including possible drying oven G110)

Four samples were collected from three ditch fills and the fill of possible drying oven G110. Of the three ditch fill samples only one, from the eastern ditch G105, produced a modest-sized charred plant assemblage,

consisting mainly of chaff from the de-husking of hulled (spelt) wheat. The other sample from ditch G105 contained only traces of cereal debris. Ditch G106 only produced a small amount of charred material of mainly hulled (spelt) wheat chaff.

Sample 71 from the upper fill of oven G110 produced a large charred plant assemblage, consisting virtually entirely of debris from hulled (spelt) wheat with good amounts of both grains (40% of the quantified remains) and chaff fragments (49%) and only a few weed seeds, probably from de-husking activities taking place close-by (Tables 7.17 and 7.20 and Fig. 7.3).

Later enclosure L39

One sample from pit G114 produced only traces of charred cereal grain.

Land-use Area	35	36	56							
Group	103	110	140							141
Feature type	Drying oven	Pit	Drying oven							Pit
Sample	139	71	77	79	90	91	92	93	136	81
Grains	28 (24%) (3/11%)	81 (40%) -	128 (79%) (15/11.7%)	402 (97%) (121/30%)	682 (96%) (316/46%)	317 (95%) (153/48%)	330 (99%) (125/38%)	212 (95%) (99/47%)	102 (39%) (8/8%)	178 (55%) (22/12%)
Cereal chaff	85 (73%)	121 (59%)	21 (13%)	12 (3%)	3 (0.5%)	3 (1%)	2 (0.5%)	1 (0.5%)	136 (51%)	144 (44%)
Weed seeds etc.	4 (3%)	3 (1%)	13 (8%)	1 (<1%)	26 (3.5%)	13 (4%)	3 (0.5%)	11 (4.5%)	27 (10%)	3 (1%)
Total	117	210	162	418	713	369	336	233	265	328
Item density	5.9	10.5	16.2	83.6e	35.7	36.9e	67.2e	11.7	26.5	65.6e

e = estimated item frequency based on sorted fraction

Table 7.20 Roman (Phase 5) frequencies and percentages of grain, chaff and weed seeds in SL12 samples (with >100 quantified items)

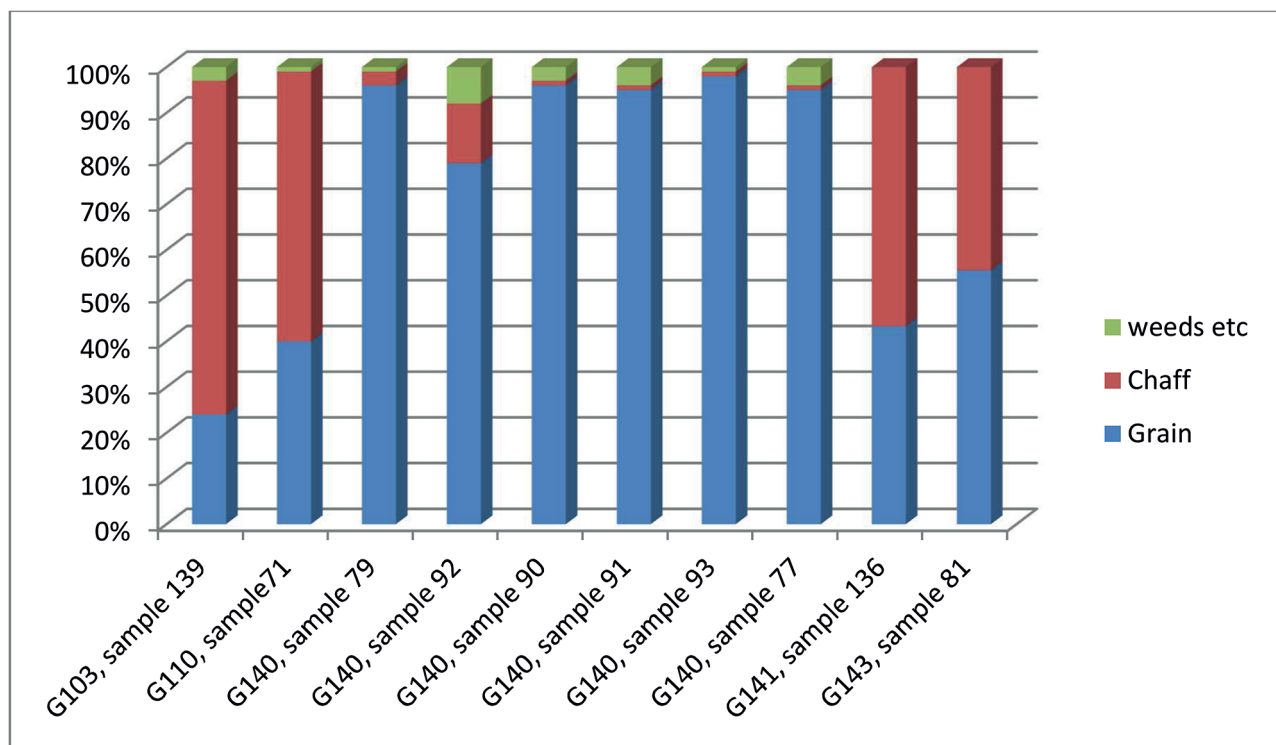


Figure 7.3: Proportions of grain, chaff, and weed seeds in the richer Phase 5 (SL12) samples (with >100 quantified items)

Two parallel ditches L44

Three samples from ditches G122 and G123 produced modest-sized charred plant assemblages consisting mainly of cereal debris (grains and chaff) from the advanced stages of crop-cleaning (including the de-husking of hulled spelt wheat) and food preparation together with a few weed seeds and tuber/rhizome fragments.

Enclosure L54

One of the samples from a G94 pit produced a modest-sized charred plant assemblage, consisting mainly of poorly preserved cereal grains and a few chaff fragments and weed seeds, representing debris from the final stages of crop-cleaning and food preparation.

Enclosure L56 (including drying ovens G140 and G141)

Fifteen samples from various features, including a drying oven, produced variable amounts of charred plant remains including eight rich assemblages.

Eight samples were taken from fills from different areas and levels of drying oven G140: from the stoke-hole end (samples 78, 90, 93); midway along the flue (samples 91, 94); and in the vicinity of the T-shaped cross-flues (samples 77, 79 and 92). Six of the eight samples produced rich assemblages (Fig. 5.8), three requiring sub-sampling; densities for the rich assemblages ranged from 11.7 to an estimated 83.6 items per litre of processed soil.

Cereal grains dominated the charred plant assemblages from the oven fills, making up between 79% and 99% of the quantified remains in the six rich assemblages

with little chaff (0.5–13%) and few weed seeds (0.5–8%) (Tables 7.18 and 7.20 and Fig. 7.3). Cereal grains also dominated the two smaller assemblages from the oven, making up 80% and 89% of the quantified remains.

The identifiable grains in the oven fills were virtually all of wheat, the better-preserved ones being from hulled wheat and probably spelt on the basis of the few chaff fragments in these samples. There were very few free-threshing wheat, hulled barley and oat grains in the samples. The few weeds were represented by both large and small seeds. There was no significant differences between the rich assemblages, although there was slightly more chaff (13%) and weed seeds (8%) in sample 77 taken from the cross-flue. Grains, however, still dominated in this sample and indeed formed 97% and 99% of the quantified remains in the other two samples (79 and 92) from the north end of the oven.

A good proportion of the hulled wheat grains from all the assemblages had sprouted, generally to between three-quarters and the whole length of the grain; many of the sprouts or coleoptiles had detached themselves from the grains with small amounts of loose coleoptiles being recovered from the samples. This evidence suggests that the oven was being used in the malting process. Deliberate germination of the grains is carried out by soaking in water to release diastase enzymes, which form the basis of malt used in brewing. Germination is halted by heating the grains in the oven; they are then mashed with hot water to produce beer.

It has been suggested that the percentage of sprouted grains as evidence for malting activities in ovens should be greater than 75% (van der Veen 1989, 305), although others have suggested smaller proportions from *c.* 20% (Parks 2012, 129–37). In the rich oven fill assemblages the percentage of sprouted grains as a proportion of all grains in each assemblage ranged from 12% to 48%. These calculations, however, do not take account of the fact that it was not possible to establish whether or not the large number of indeterminate and poorly preserved cereal grains had sprouted. If these grains are left out of the equation then the proportion of sprouted grains is much higher, accounting for between 45% and 70% of all wheat grains; these percentages are likely to have been even higher given that it was also difficult to establish whether or not many of those grains only tentatively identified as wheat had sprouted. On this basis, the evidence strongly suggests that the charred plant remains represent grain accidentally burnt as part of the malting process.

The archaeobotanical evidence suggests that spelt wheat was the main cereal used for producing malt for brewing in Roman Britain (van der Veen 1989, 316; Lodwick 2017, 64). Other sites have also produced evidence for the use of ovens for malting activities: for example, Bancroft Villa, Milton Keynes (Pearson and Robinson 1994, 582–3); and Grange Park, Courtenhall (Jones *et al.* 2006).

The samples from possible drying oven G141 (sample 136) and one of the G143 pits (sample 81) also produced rich and broadly similar charred plant assemblages with item densities of 26.5 and 65.6 (estimated) per litre of processed soil for the possible drying oven and pit fill samples respectively. Both contained mainly grains (39% and 55%) and chaff (51% and 44%) of hulled (spelt) wheat with weed seeds (mainly wild grasses) accounting for 10% in the pit and just 1% in the possible drying oven fill sample.

These remains mainly represent debris from spelt spikelets, which may have been accidentally burnt in oven G140 or G141 while being used for parching grain to facilitate de-husking. There were a number of sprouted (hulled) wheat grains in both samples, representing just 7% and 12% of all grains. However, 75% of the grains in both samples were too poorly preserved to establish whether they had sprouted. Therefore, it is difficult to know whether the sprouted grains derive from malting activities in adjacent oven G140 or were a result of accidental germination. Several possible millstone fragments were also found in this area to suggest that milling of grains may have taken place close-by.

The other five samples from enclosure L56 produced very few charred plant remains. Two samples from pits G139 and two samples from well G142 contained small numbers of charred grains and traces of chaff and weed seeds, including an onion couch tuber/rhizome fragment in one of the pit fill samples. A sample from ditch G167 produced a few charred grains and a weed seed. These remains represent debris from the advanced stages of crop-cleaning (de-husking), food preparation and fuel.

Summary

The rich charred plant assemblages shows that spelt wheat and hulled barley were the main cereals being cultivated during the Iron Age and Roman periods with spelt wheat becoming the dominant grain in the Roman period (Phase 5). Emmer and free-threshing wheat, represented by much smaller amounts of grains, probably only played a minor role, if any, in the agricultural economy of the site; while the oats are likely to be weeds and the few rye grains may be intrusive. There were traces of flax in one Roman sample while the larger unidentifiable legume seeds, albeit limited in number, may be from cultivated pulses. The few hazelnut shell fragments and one elder seed may be from collected and consumed wild foods. Excavations of Iron Age and Roman deposits adjacent to the site at Mallard Close also produced evidence for spelt wheat and pulses (Deighton 2004a).

The weed seeds in the Iron Age and Roman samples suggest that the cereals were being cultivated on the surrounding sandy loams of the gravel terraces and calcareous soils to the east and perhaps damper areas of ground towards the Swanspool Brook. The weed seeds suggest that both poor and nutrient-rich soils may have been used for growing crops around the site. An increase in small leguminous seeds in the late Iron Age and into the Roman period possibly reflects overworked and impoverished soils, which may have led to an expansion into new grassy areas for arable cultivation. There is evidence to suggest both the spring- and autumn-sowing of cereals and the harvesting of cereals fairly low on the straw but also possibly by uprooting – although the latter may also be from the collection of grassland vegetation for use as fuel.

The charred plant remains from the early-middle Bronze Age (Phase 2) samples mainly showed the collection of wild grassland vegetation for burial ceremonies with very little evidence to suggest cereal cultivation around the site. The Iron Age and Roman samples on the other hand contained rich charred plant assemblages suggesting large-scale cultivation of cereals. The spatial distribution of the charred plant remains from the middle-late Iron Age (Phase 3) suggests that agricultural activities were largely based in the south of the site within

SL10, with a possible storage area for cleaned grains (both spelt wheat and hulled barley) in pits in enclosure L49 and activities associated with the latter stages of crop-processing, mainly the de-husking of spelt wheat, taking place in the vicinity of unenclosed roundhouse L32. The south part (L38) of SL10 as well as the north area of settlement SL3 only contained small amounts of cereal debris from the final stages of crop-cleaning and food preparation, perhaps representing domestic or peripheral areas of the site.

The distribution of the late Iron Age/early Roman (Phase 4) charred plant remains showed a similar dearth of crop-processing debris in the north part of settlement SL4, again possibly reflecting domestic activities or peripheral areas of activity. Two rich assemblages of hulled barley and de-husked spelt wheat with some weed seeds in the southern settlement area SL11, mainly within enclosure L57, may indicate an area of grain storage in pits for semi-cleaned grain.

The rich Roman (Phase 5) charred plant assemblages were largely concentrated in three drying ovens with cereal debris showing that activities associated with the latter stages of crop-processing and food preparation were taking place in both settlement areas SL5 and SL12. Drying oven G53 within enclosure L19 (SL5) appears to have been used for the parching of spelt wheat spikelets to facilitate de-husking and there was some evidence to suggest that this was also being carried out in drying oven G103 within L35 (SL12). Oven G140 within L56 (SL12), on the other hand, appears to have been used for activities associated with malting, the roasting of germinated grain to stop the germination process, although cereal debris close-by could also point to the use of this oven for parching spelt wheat for de-husking, potentially illustrating the multi-function of these features and the fact that the recovered charred plant remains only reflect the final use(s) of the ovens.

Drying ovens may have been used for multiple purposes, although archaeobotanical remains from Roman sites suggest that they were largely used for the drying/parching of hulled wheats to facilitate de-husking, the drying of grains before milling or storage, or the heating of sprouted grains to halt germination as part of the malting process (van der Veen 1989). Each process may be reflected in the composition of the charred plant assemblages; for example, in the case of spelt, the parching of spikelets would produce assemblages with almost equal amounts of grains and glume bases while the drying of processed spelt grain before storage or milling would produce assemblages of mainly grains and only small numbers of chaff fragments and grain-sized weed seeds. The use of ovens for malting would be indicated by germinated grains and detached sprouts or coleoptiles (as well as glume bases and large weed seeds if the grain was allowed to germinate in spikelet form), although grains may also accidentally sprout if stored in damp conditions.

Earls Barton is located within England's Central Belt as defined by the Roman Rural Settlement Project (Fulford and Brindle 2016, 15–6, fig. 1.5), which was the main centre of agricultural production in Roman Britain with spelt being the main cereal (Lodwick 2017, 26). Increasing numbers of drying ovens during the Roman period, particularly in this area of the country, point to the large-scale processing of cereals probably in response to increased arable cultivation (ibid. 55, 61). The rich cereal

assemblages from the site suggest that processing of spelt wheat was taking place on a fairly large scale, possibly not only for domestic consumption but also perhaps for an external market. A large number of drying ovens in this area of the country were positioned at roadside settlements to facilitate the transport of grain, the existence of a Roman road linking settlements on the north side of the River Nene is postulated but not yet proven (Taylor and Flitcroft 2004, fig. 1).

7.4 CHARCOAL

Dana Challinor

Introduction and methods

Thirty-two samples were examined from a range of features associated with the early–middle Bronze Age ring-ditch (Phase 2) and the Iron Age and Roman settlements (Phases 3–5). Of particular interest was the study of pyre fuel from the four cremation burials in SL1 (Phase 2) and the fuel assemblages associated with the processing and storage of cereal crops in SL10 (Phase 3), SL11 (Phase 4) and SL12 (Phase 5).

Standard identification procedures were followed using identification keys (Schweingruber 1990; Hather 2000) and modern reference material. The charcoal was fractured and examined at low magnification (up to $\times 45$), with representative fragments examined in longitudinal sections at high magnification (up to $\times 400$). Where available, 30–60 fragments per feature were selected for identification. Multiple samples from cremation burials were scanned for comparison, with sub-samples of richer assemblages identified (up to 50 fragments per burial). Observations on maturity and other features were made where appropriate. Classification and nomenclature follow Stace (1997).

Results

Results for the quantified samples are presented by phase in Tables 7.21–7.23. Note that the counts of individual samples from the same feature have been combined in the tables, except where there were significant differences between the assemblages of discrete contexts within the same feature. The condition of the charcoal was fair, though generally quite comminuted and with

Land-use Area	1	2		
Feature type	Ring-ditch	Urned burial	Unurned burial	
Group	1	3	4	12
<i>Quercus</i> sp. oak	27 (s)	49 (rhs)	50 (srhbr)	29 (s)
<i>Corylus avellana</i> L. hazel	–	–	–	1
<i>Alnus/Corylus</i> alder or hazel	–	1	–	–
Maloideae hawthorn group	1	–	–	–
<i>Fraxinus excelsior</i> L. ash	2	–	–	–

s = sapwood; r = roundwood; h = heartwood; br = burrwood; brackets denote occasional presence

Table 7.21 Early–middle Bronze Age (Phase 2) charcoal from ring-ditch and associated cremation burials

Land-use Area	57	
Feature type	Pit	Ditch
Group	163	161
<i>Quercus</i> sp. oak	1	1
<i>Prunus</i> sp. blackthorn/cherry	3	–
Maloideae hawthorn group	4	29 (r)
<i>Acer campestre</i> L. field maple	19 (r)	–
<i>Fraxinus excelsior</i> L. ash	1r	–
Indeterminate diffuse porous	2r	–

r = roundwood; brackets denote occasional presence

Table 7.22 Late Iron Age/early Roman (Phase 4) charcoal from selected features

Land-use Area	15	16	56	
Feature type	Posthole	Ditch	Drying oven	Pit
Group	66	48	140	143
<i>Ulmus</i> sp. elm	–	–	26 (rs)	9r 5 (r)
<i>Quercus</i> sp. oak	30	60 (shr)	–	1 11
<i>Corylus avellana</i> L. hazel	–	–	–	– 1r
<i>Populus/Salix</i> poplar/willow	–	–	4	19 (r) –
Maloideae hawthorn group	–	–	–	6r 3 (r)
<i>Fraxinus excelsior</i> L. ash	–	–	–	15r 3 (r)

s = sapwood; r = roundwood; h = heartwood; brackets denote occasional presence

Table 7.23 Roman (Phase 5) charcoal from selected features

some strong sediment staining. A total of eight taxa were positively identified, all of which were consistent with native species: *Ulmus* sp. (elm); *Quercus* sp. (oak); *Corylus avellana* (hazel); *Populus/Salix* (poplar/willow); *Prunus* sp. (blackthorn/cherry); Maloideae (hawthorn, apple, whitebeam/rowan etc.); *Acer campestre* (field maple); and *Fraxinus excelsior* (ash).

Phase 2: Early–middle Bronze Age

Of the four cremation burials associated with ring-ditch monument SL1, urned burial G2 produced only sparse charcoal remains which did not merit quantification, but were identified as oak. This is consistent with the dominance of oak found in the other cremation burials. These comprised both urned G3 and unurned burials (G4 and G12), indicating uniformity in pyre fuel, whatever the burial type. Much of the wood was sapwood, although heartwood and even burr wood (indicating mature trees) was observed in the assemblages from G3 and G4. Rare fragments of hazel or undifferentiated alder or hazel were also recorded. The sample from the ring-ditch itself (G1) was not substantively different – mostly oak with traces of probably Maloideae type (hawthorn group) and ash, and the assemblage is likely to have derived from cremation pyres.

The predominant use of a single taxon in cremation pyres of Bronze Age date is well documented across Southern England; locally, oak-dominated cremation

burials (both urned and unurned) have been recorded at Higham Ferrers (Challinor 2009), Raunds (Campbell 2007) and Biddenham Loop, Bedfordshire (Challinor 2016). The Phase 2 assemblages are consistent with this pattern. Oak, especially heartwood, provides a highly calorific fuel, suitable for effective cremation.

Phase 3: middle–late Iron Age

Charcoal from Phase 3 features was very sparse and did not merit quantification as most contained <10 identifiable fragments. Nonetheless, some identifications were made which yielded useful results. Some of the pits in clusters G112 and G133 contained oak, with blackthorn/cherry and hawthorn group, along with some ash wood and alder/hazel. The charcoal from these features may represent the remains of fires used to sterilise the pits prior to use for grain storage. Ditch samples from possible roundhouse G88 were also examined; these produced charcoal of oak, hazel, blackthorn/cherry, hawthorn group and ash. While the data-set is small, it indicates that fuelwood in the middle–late Iron Age was collected from local oak woodland, with supplementary supplies from hedgerow/scrub sources.

Phase 4: late Iron Age/early Roman

Only two samples merited examination, but they produced some interesting results. The charcoal from a pit in cluster G163 (L57) produced a mixed range of taxa, with a significant component of field maple, along with blackthorn/cherry, hawthorn group, ash and oak. Enclosure ditch G161 (L57) produced mainly hawthorn group charcoal, with a trace of oak. In both samples oak was sparsely represented.

Phase 5: Roman

There was an interesting contrast in the Roman assemblages between the features in L15/16 (posthole G66 and ditch G48) and L56 (drying oven G140 and a pit in G143). The former samples were entirely composed of oak, with a notably large assemblage from ditch G48. The L56 features were more mixed, with a range of taxa including elm, oak, hazel, poplar/willow, hawthorn group and ash. The use of elm for fuel is uncommon as it tends to smoulder (Edlin 1949, 156) and was not present in other samples at the site. Poplar/willow was only present in drying oven G140 and not recorded elsewhere. Notably, insect tunnels were frequently observed in the charcoal from this feature (in ash, elm, and poplar/willow). This suggests that the wood was quite decayed at the time of burning, potentially due to seasoning, but the combination of rotten wood and taxa with inferior burning properties suggests indiscriminate fuel supplies were used.

Conclusions

The results from the cremation burials and the ring-ditch assemblages are consistent with other early Bronze Age sites, with the predominant use of oak for pyre fuel. The Iron Age and Roman settlement features generally produced a greater diversity of taxa, reflecting the fuel supplies used for general domestic functions. This is fairly typical for the period, the context types and the location of the site. Similar domestic-type contexts at local sites, such as Higham Road, Burton Latimer (Challinor 2019) and Higham Ferrers (Challinor 2009), have produced comparable charcoal assemblages,

indicating the use of hedgerow/scrub types and wetland sources, along with oak woodland. Charcoal was not abundant in the Iron Age pits and this paucity may reflect the use of charring for sterilisation, with the pits subsequently cleaned out. The Roman drying oven G140 produced a somewhat unusual assemblage, potentially suggesting that fuel supplies were being sourced from a wider range of woody habitats; poplar and willow favour wet ground environments, which elm will also tolerate. It is also possible that this particular charcoal assemblage represents an atypical firing. A charcoal assemblage from a Roman drying oven at Brixworth produced mainly ash and hazel charcoal, with a little oak (Challinor, in prep.).

7.5 HUMAN BONE

Corinne Duhig

Introduction and methods

Human bone was recovered from four cremation burials (Phase 2) and four inhumations (Phase 5). Recording methods used for inhumations were primarily those of Stewart (1979); Steele and Bramblett (1988); Ubelaker (1989); Iscan and Kennedy (1994); and Cho *et al.* (1996). Methods used for recording cremation burials followed McKinley (1989); Mayne Correia (1997); and Mays (1998).

Phase 2: Early–middle Bronze Age

Urned cremation burial G2 (L1)

Urned cremation burial G2 was situated in the centre of ring-ditch G1 (L1). Bone representing the skull, one tooth crown, torso, pelvis and legs was recovered, as well as some unidentifiable long-bone shaft fragments. The bone derived from the urn and surrounding grave fill. There is complementarity between the fragments, with, for example, the central part of the mandible in the urn and the condyles – which form the jaw joint – in the grave fill. The larger fragments from the leg bones were in the urn, as might be expected, with subsequent escape of smaller parts into the surrounding fill as a probable result of post-depositional damage.

The overall small size of the bones and the thin vault indicate that these are the remains of a child. If (and it is not certain) the tooth crown fragment is in fact an adult lower first premolar, then the age of the individual is 5 years $\pm$ 16 months.

All but four fragments were creamy-white in colour, indicating thorough burning and complete removal of the organic component of the bone. The remaining four fragments were blue-grey (less well burned) and are eroded – perhaps they were residual from a previous cremation event.

Urned cremation burial G3 (L2)

Urned cremation burial G3 was situated on the outside northern edge of ring-ditch G1 (L1). The urn was found on its side and its fill was excavated in five 0.05m spits.

The majority of the bone contained within the urn was creamy-white in colour, showing excellent burning. The upper spit contained few and small fragments, but the other spits contained many large and easily-identifiable fragments, including femoral and humeral shafts 5cm and 6cm long, and a nuchal area of the skull that was 5.4 $\times$ 4.4 cm in size. This large size of fragment indicates that no significant disturbance of the pyre had occurred

whilst the bone was hot – which is when it is most fragile. The middle (3rd) spit had some larger fragments that appeared eroded, suggesting that they were residual, perhaps derived from an earlier cremation event. A small quantity of cremated bone was also recovered from the grave fill and the few, small fragments also appeared eroded.

All areas of the body, except teeth, were present, even including the extremities, with complementarity and no duplication. This indicates that the remains of one individual were distributed throughout the urn. Sex determination is unclear: the nuchal area of the skull is assessed as ?female in form; the zygomatic roots, by contrast, are male+; and the overall size appears to be possibly female.

The presence of lipping and cysts on the body of a lower cervical vertebra, indicative of osteoarthritis, and long-standing tooth loss from an anterior maxilla fragment, suggest that this individual was an adult of middle or later years.

Unurned cremation burial G4 (L2)

The cremated bone in this burial was creamy-white in colour, although some fragments had abraded edges, suggesting that they have been subject to different soil conditions to the rest of the bone in G4 and were perhaps residual. There was little identifiable bone but part of the petrous bone and skull vault, some vertebral and long-bone shaft fragments, and one dentine tooth crown (perhaps a lower lateral incisor) were recovered. During cremation, the tooth enamel tends to explode and be lost in small fragments, leaving a ‘model’ of the tooth shape in the more resistant dentine. The vault fragments were thin and suggest an immature individual; the tooth cannot be used to establish age because it is not possible to determine whether it was or was not erupted.

Unurned cremation burial G12 (L2)

As with the other cremation burials, the bones were creamy-white and a few were eroded. The eroded bone was pure white in colour, supporting the idea that they were not from the same cremation event and might be residual. The only identifiable bones were from the skull vault and petrous bones, one tooth root and some fragments, and a few long-bone shaft fragments. The tooth root was a molar, which appears to have been widely-splayed and hence deciduous but is too damaged for certainty.

Phase 5: Roman

Inhumation G33 (L24, SL5)

This inhumation was of an adult male whose head had been removed and placed between the legs, just below the pelvis. The skeleton was represented by parts of the skull vault and face, shoulder and pelvic girdles, limbs, hands, rib cage and some tiny portions of ten vertebrae. No bones pertaining to the feet were present. Twenty-one tooth sockets were present, all with adult teeth, plus some loose fragments of molar roots. The three features of the skull that can be assessed are male or male++ in form; one feature on the pelvis is male, one not-determinable and one female in form; the femoral head is well within the male size range. Therefore, this skeleton is determined as that of a male adult, and the trace of attrition on the lower right first molar – the

only molar in place – places it in the Brothwell (1981) 18–25-year age group.

Some new bone on the surface of the acetabulum (hip socket) suggests an inflammatory or arthritic disorder, but there is so little remaining of the bone of the hip joint that diagnosis cannot be progressed. There is also new bone on the outer surface of the upper jaw, adjacent to the socket of the right canine tooth, suggesting an infection; this is accompanied by calculus around the roots of most of the lower teeth and one upper tooth, and two instances of dental caries in the molar roots – dental hygiene was not good.

Inhumation G73 (L24, SL5)

The inhumation of an adult male was identified in the south half of enclosure L23 adjacent to inhumation G74. Not all elements of the body were represented, but small fragments of the skull (largely vault), an upper left central incisor, both shoulders and arms, pelvis, femora and right tibia were present. There were also a few tiny pieces of vertebrae and many small fragments of unidentifiable long bone. Only two sexually-dimorphic features were preserved; both are ?male in form. These comprised a femoral head of male size and the general robusticity of the bones.

The head of the right femur had what is possibly lipping around its circumference, which is indicative of osteoarthritis, although this cannot be definitively diagnosed due to the very poor condition of the bone. The incisor tooth had a malformation that included a

lingual tubercle and invagination (a fold at the back of the tooth crown that includes a small ‘pearl’ of enamel); this change is not of pathological significance except that in life it might hold food particles and lead to decay – although not in this case.

Inhumation G74 (L24, SL5)

The inhumation of a second adult was situated adjacent to inhumation G73. The skeleton consisted of only a few small or tiny fragments of skull vault, ribs, pelvis, femur, and tibia, all heavily eroded and friable. The large size and robusticity of the femoral and vault (specifically nuchal) fragments shows that an adult is represented, but no more can be determined.

Inhumation G120 (L35, SL12)

The small size and paucity of the fragments in this burial is somewhat compensated for by the presence of the jaws with many teeth. Bone fragments come from the skull vault and petrous bones (with two ear bones, the left malleus and right incus, still *in situ*), from the vertebral column, pelvis, upper limb, and femur. Thirty-one teeth were present, including both heavily-worn deciduous teeth and permanent teeth in various stages of development and eruption. The state of eruption and tooth formation indicates an age of 10 years $\pm$ 30 months.

All four upper incisors are shovelled, an epigenetic trait which shows some heritable element – unfortunately, none of the other skeletons had the teeth to show this characteristic.

Chapter 6

Artefacts

6.1 INTRODUCTION

The excavation yielded an artefact assemblage comprising pottery, ceramic building material, coins, and other artefacts. The material is discussed below; where appropriate, methodologies are outlined in each section.

6.2 POTTERY

Jackie Wells

The assemblage totals 2886 sherds (82.7kg), the majority deriving from the Phase 5 Roman settlement (Table 6.1). It mainly dates to the Roman period, with a smaller Iron Age component indicating continuity between pre-conquest activity and post-conquest occupation, as observed on the adjacent Mallard Close investigation (Mackreth 2004, 45). Early prehistoric and post-Roman wares are poorly represented (Table 6.2). The assemblage is discussed chronologically by fabric, form and deposition across the site. Wares and forms are common and well-represented from published excavations across the county, so no sherds have been selected for illustration. Methodology and fabric types are detailed in Appendix I.

Phase	Sherd No.	% Sherd	Wt (g)	% Wt
2	27	0.9	2090	2.5
3	341	11.8	6285	7.6
4	406	14.1	11,418	13.8
5	2112	73.2	62,965	76.1
Total	2886	100	82,758	100

Table 6.1 Pottery quantification by Phase

Pottery date	% Sherd	% Wt
Early prehistoric	0.9	2.5
Mid- to late Iron Age	9.3	7.5
Late Iron Age	9.8	11.1
Roman	79.2	78.6
Post-Roman	0.8	0.3
Total	100	100

Table 6.2 Pottery quantification by date

Phase 2: early–middle Bronze Age

Fourteen sherds (2kg) from an early Bronze Age collared urn were collected from cremation burial G3 (L2). Approximately half the vessel survives intact although in a cracked and fragile condition. The grog-tempered vessel is 245mm high and tripartite in form, with a simple internally bevelled rim (diameter 216mm), straight/vertical collar (52mm deep), concave neck (50mm deep) and flat base (diameter 95mm). It is totally undecorated, although the surfaces appear to have been smoothed/wiped. Undecorated vessels are a regular component of the tradition (Longworth 1984, 8) and the incidence of collared urns in funerary contexts is relatively high across Northamptonshire and the East Midlands (Clay 2006, 81).

Twelve highly leached and abraded shelly body sherds (31g) representing a single vessel were associated with cremation burial G2 (L1). Their poor and fragmented condition (mean sherd weight 3g) precludes positive identification, although they may be of similar date to the collared urn.

Phase 3: middle–late Iron Age

Phase 3 settlement features yielded 341 sherds (6.2kg), representing a minimum of 147 vessels, most deriving from enclosed settlement area SL3 (Table 6.3). These include 97 intrusive Roman sherds (1.5kg), the majority collected from rectangular enclosure L11 (1.3kg), and likely to derive from overlying Phase 5 features. The largest Iron Age deposits occurred in enclosure L11 (SL3) and activity focus L38 (SL10), principally pit cluster G112 – the latter yielded 1.6kg, including four sherds (417g) from a single shelly vessel.

In common with most Iron Age assemblages from the Nene Valley and north Northamptonshire (cf. Jackson 2009, 40) shelly wares are dominant, totalling 71% by sherd count and 70% by weight (fabrics SH1–SH5). They comprise a number of variants containing combinations of coarse or fine shell, grog or sand. Wares containing only grog and/or sand comprise the remainder (fabrics GR1, GR2; SA1–SA3).

Diagnostic forms are poorly represented; no complete profiles occur and only a small number of vessels retain rim to shoulder profiles. Jar and bowl forms are variants

SL	Description	Land-use Area (Groups)	Sherd No.	Wt (g)
SL2	Unenclosed settlement area	L8 Activity focus (G14, G13, G16)	14	274
SL3	Enclosed settlement area	L10 Sub-enclosure (G19, G22, G29)	49	1074
		L11 Wootton Hill-style enclosure (G23, G24, G30–G35)	108	2188
		L31 Activity focus with roundhouse and pit (G87)	7	120
SL10	Unenclosed settlement area	L32 Activity focus with roundhouse (G88, G90)	45	440
		L38 Activity focus with pits (G112, G113)	104	1990
		L49 Enclosed activity focus (G133, G147, G170)	14	199
Total			341	6285

Table 6.3 Phase 3 pottery quantification

of hand-built, slack- or round-shouldered, fairly open vessels with either ovoid or globular profiles. Vessel necks are fairly short, and rims are generally stubby. They are predominantly rounded (nine vessels) or flat-topped (five), with a small number of beaded (one) and flattened (two) examples, the latter with a slight external ledge. Indicating a range of vessel sizes, rim diameters typically span 120–280mm. A single flat base (diameter 86mm) and three handle fragments were identified.

Although the assemblage is dominated by plain body sherds, a few fine ware examples have a burnished finish; while the surfaces of some coarser wares are wiped or randomly brushed prior to firing. Irregular vertical scoring, ranging from deeply incised to lightly applied, occurs on 29 sherds. Three rims have fingernail and fingertip decoration and a single body sherd has a curvilinear motif.

The assemblage is typical of the period and compares well with pottery recovered from the adjacent Mallard Close investigations (Jackson and Chapman 2004, 41). Middle/late Iron Age sites are known in large numbers across Northamptonshire (Willis 2006, 99), and the pottery assemblage from the sites fits into this group well.

Phase 4: Late Iron Age/early Roman

The Phase 4 assemblage totals 406 sherds (11.4kg), representing a minimum of 231 vessels, the majority associated with southern enclosures, SL11. The largest deposits derived from enclosures L33, L57 and routeway L47, with all other Land-use Areas yielding less than 1kg (Table 6.4). The assemblage is well-fragmented, with most vessels weighing less than 100g; the largest single vessel, from one of the later enclosure ditches, G92, (L33), is represented by eight sherds (1.7kg) from a grog-tempered everted rim jar (location shown on Fig. 4.3).

Fifty-seven percent of the assemblage by sherd count (64% by weight) comprises Iron Age pottery, with fully Romanised wares providing the remainder. Roman pottery (172 sherds: 4.1kg) mainly comprises local, reduced, sandy, shelly and grogged coarsewares, datable to the 1st and 2nd centuries. Roman vessels are well-fragmented, most weighing under 100g. Imports are three central Gaulish samian sherds (AD 120–150), including a form 18/31 plate with an illegible stamp. The Roman wares are discussed collectively with the Phase 5 assemblage below.

Iron Age vessels are of both pre- and post-conquest date and reflect conservatism of Iron Age potting traditions noted elsewhere in the county (cf. Timby 2004, 79). Wares are either entirely grog-tempered (fabric GR3), contain admixtures of shell or sand (GR4, GR5), or are entirely shell- or sand-tempered (SH6, SA4).

Vessels are predominantly wheel-thrown; a number are hand-built with wheel-finished shoulder and rim; and a few are entirely hand-built. The latter mainly occur in coarse grog and shelly fabrics, and generally represent the largest vessels in the assemblage (storage-type vessels and some cooking pots). There are no unusual or exotic forms to suggest higher status. Diagnostic forms in the 'Belgic' tradition (cf. Thompson 1982) are narrow-necked or wide-mouthed jars with beaded, simple everted, or lid-seated rims (Thompson forms B1-1, B3, C5-1, C5-2), many displaying single or multiple cordons. Rim diameters typically span 120–240mm, with a coarse, grog-tempered storage jar at 380mm. Decorative elements are principally linear and random combing, with a few rouletted, burnished and rilled wares. A small number of butt-beakers (including a barrel-shaped form G5-1), carinated bowls and cups (E1-1, E1-2) and a single platter also occur. Two shelly base sherds have single post-firing holes drilled through them.

Phase 5: Roman

Phase 5 settlement features yielded 2112 sherds (62.9kg), representing a minimum of 1400 vessels. Ditches and gullies represent the main focus of deposition, containing 52% of the assemblage by sherd count (43% by weight). Pits yielded 17% (32%), structural deposits 22% (18%), ovens/hearths 8% (6%), and water-pits the remainder. The largest assemblages were associated with southern enclosures SL12 (Table 6.5). Although most sherds are fully Romanised, the assemblage contained 115 residual Iron Age sherds (3.7kg), of both middle to late Iron Age date and in the late 'Belgic' Iron Age tradition.

Twenty sand-tempered body sherds (248g) of early to middle Anglo-Saxon origin, most representing a single vessel, derived from upper fills of settlement SL5 enclosure ditches.

Roman pottery totals 1974 sherds, weighing 58.9kg (mean sherd weight (MSW) 30g), mainly dating from the mid-1st to 3rd centuries, with a small quantity of 4th-century material. The pottery is primarily local in character and a combination of basic, utilitarian types and a relatively small amount of both regional and continental imports indicates domestic activity of modest status (Appendix I).

Ordered by prevalence, the assemblage is dominated by shelly wares, grog-tempered wares and grey sandy wares/Nene Valley grey wares, which collectively total 87% of the pottery (92% by weight). Shell-tempered coarsewares are of the general South Midlands shelly ware tradition of the 1st century onwards and derive from local sources, including Bedfordshire (Brown 1994). Sandy grog-tempered wares include white, burnt,

SL	Description	Land-use Area (Groups)	Sherd No.	Wt (g)
SL4	Northern enclosures	L13 Routeway (G36–G39)	51	693
		L14 Enclosure (G41, G43, G44, G82–G84)	29	360
SL11	Southern enclosures	L33 Enclosure (G92)	35	2426
		L45 Enclosure (G125, G126)	3	564
		L47 Routeway (G129, G131, G156)	96	2745
		L53 Enclosure (G149)	1	7
		L57 Enclosure (G148, G159-G163, G165, G168, G187)	191	4623
Total			406	11,418

Table 6.4 Phase 4 pottery quantification

SL	Description	Land-use Area (Groups)	Sherd No.	Wt (g)
SL5	Northern enclosures	L15 Enclosure (G45, G47, G66, G75, G76)	79	1647
		L16 Boundary (G26, G27, G28, G48)	90	2183
		L19 Enclosure (G53, G56–G58)	224	5372
		L20 Routeway (G59, G60, G61, G63)	192	4149
		L21 Enclosure (G64)	2	51
		L23 Enclosure (G68, G70, G81)	9	56
SL12	Southern enclosures	L36 Small enclosure (G105, G107)	35	741
		L41 Parallel ditches (G117)	6	30
		L54 Enclosure (G94, G152, G154, G155, G166)	288	9890
		L56 Enclosure (G136, G137, G138, G139, G140–G143, G157, G158, G164, G167, G186)	510	11,107
		L34 Later enclosure (G95, G96)	7	135
		L35 Later enclosure (G97–G100, G102–G104, G116)	364	6677
		L39 Later enclosure (G114, G115, G132)	128	15,242
		L43 Stone structure (G121, G124)	126	4219
Total		L44 Parallel ditches (G122, G123)	52	1466
			2112	62,965

Table 6.5 Phase 5 pottery quantification

oxidised and reduced variants and are a distinct local tradition from the later 1st–2nd centuries (Timby 2009, 178). Sandy grey wares are considered a feature of later 1st- and early 2nd-century date, with Nene Valley products dating from the second quarter of the 2nd century (Perrin 1999, 78).

The assemblage is supplemented by a range of local, reduced and oxidised wares, for which various sources are likely, particularly during the early Roman period, when small-scale localised manufacture would have been the main means of production.

Regional imports from Hertfordshire, Warwickshire and Oxfordshire each constitute less than 1% of the total assemblage (Appendix I). Continental imports are 31 central Gaulish samian sherds from Lezoux, broadly datable from c. AD 120–200 and seven sherds of Baetican Dressel 20 amphorae, known to occur widely on post-conquest sites, and up to the mid-3rd century (Tyers 1996, 87).

As with many rural sites (cf. Timby 2009, 181), the assemblage is dominated by jars, with bowls, dishes and specialised forms occurring in smaller quantities. Jars are mainly medium- or narrow-mouthed forms, evolving from the ‘Belgic’ tradition with everted, beaded, or lid-seated rims. Large storage-type vessels also occur. Bowls are lid-seated, plain- or rectangular-rimmed, or flanged. Less prevalent forms are straight-sided dishes, beakers (colour-coated and poppy-head), platters, flagons, mortaria, amphorae and a single Castor Box. Samian forms are plates (form 18) plate/bowls (forms 18/31 and 18/31R), bowls (forms 37 and 38), cups (form 27) and a mortarium (form 43 or 45), with a low proportion of decorated ware, typical of a rural assemblage (Wild 2016).

Decoration comprises rouletting, rilling, burnishing (overall and lattice), slipping, painting and barbotine scroll motifs. A few reduced, London-ware style vessels are characterised by incised and rouletted decoration. Vessels show little evidence for either repair or modification, suggesting ready access to new pottery.

The assemblage appears to be typical for the region, reflecting the availability of products from the Nene

Valley and other local industries. The poor representation of imported wares, particularly samian, also reflects local trends. The pottery broadly complements the assemblage from the Mallard Close investigations (Mackreth 2004, 45) and generally compares well with assemblages recovered from other rural settlements in the county, such as Higham Ferrers (Timby 2004; 2009) and Burton Latimer (Wells 2019).

Northern enclosures SL5

SL5 features yielded 596 sherds (13.4kg), representing 28% of the Phase 5 assemblage by sherd count (21% by weight). The largest deposits derived from enclosure L19 (5.3kg) and routeway L20 (4.1kg), respectively associated with northern ditch G56 and pits G63. ?????? pottery is well-fragmented (MSW 22g), with single sherds ranging in weight from 1–405g, the latter an amphora body sherd. Only five vessels weigh more than 400g, the largest being 25 sherds (468g) representing the base and lower body of a single grogged-whiteware vessel (routeway ditch G59).

Southern enclosures SL12

The majority of the Phase 5 assemblage (72% by sherd count: 79% by weight) derived from SL12 features, which yielded 1516 sherds (49.5kg). Sizeable deposits were collected from enclosures L54 (9.8kg), in particular ditch G166; L56 (11.1kg); and later enclosure L39 (15.2kg). Pottery from SL12 is less fragmented than that from SL5, reflected in a mean sherd weight of 33g. A number of vessels are represented by more than single sherds, although total vessel weights are typically less than 350g.

The composition and condition of the assemblages from SL5 and SL12 are comparable, and most (with the exception of structure L43 and ditches L44), contain pottery of both later Iron Age and Roman date. Functional attributes, mainly represented by sooting on cooking pots, indicate the pursuit of similar domestic activities. There are no discernible patterns in the distribution of wares and forms that might be indicative

of functional or chronological variation within the settlement.

There appears to be little variation between deposits representing final use/initial disuse and disuse/infilling of features, although the latter generally contain larger quantities of pottery. The material indicates a fairly rapid sequence of development across the settlement, with on-going modification and redefinition of features resulting in evidence for redeposition of pottery in some Land-use Areas.

6.3 CERAMIC BUILDING MATERIAL

Jackie Wells

Introduction and methods

Brick, roof tile and fired clay were recorded by fabric type and (where possible) form and quantified by minimum fragment count and weight. Eighteen pieces of Roman brick and tile (2.1kg) were collected from Phase 5 deposits. A fired clay assemblage weighing 1.2kg derived from late Iron Age and Roman features assigned to Phases 4 and 5 (Table 6.6).

Brick and tile

Deriving almost entirely from southern enclosures SL12, Roman building material comprises 14 pieces of tegulae (three retaining shallow D-shaped flanges), and three indeterminate fragments. Drying oven G53 (L19, SL5) yielded a single piece of brick. The majority of fragments are shell-tempered, with four sandy examples. Tile pieces have a mean weight of 93g and are uniformly abraded.

Fired clay

Fired clay fabrics are similar to those used for the brick and tile – either sand- or shell-tempered. Most pieces are small and amorphous, although a few retain traces of flat or slightly undulating finger-smoothed surfaces. Eight fragments (177g) in a sand-and-organic fabric retain traces of wattle impressions. Portable furniture comprises fragments from three probable slabs/trays of variable thickness. Slabs occur with greatest frequency on late Iron Age and early Roman sites and are likely to represent temporary shelves in ovens or kilns. The majority of the assemblage derived from southern enclosures SL12, in particular enclosure L56 which yielded 526g.

6.4 COINS

Peter Guest

The 24 Roman copper alloy coins are, in general, in good condition and the majority could be identified to an emperor's reign or a 4th-century numismatic issue period. The catalogue of coins is presented in Appendix II, ordered by Phase (Table A2) and date of production (Table A3). Table 6.7 summarises the coins by issue period.

Three coins, spanning the late 3rd century to AD 313–315, were recovered from Roman deposits associated with southern enclosures SL12. These comprised a radiate of the Gallic emperor Victorinus (AD 268–270; RA51) from one of small pits G151 in enclosure L56, a barbarous radiate dating to AD 275–296 from round-house ditch G102 (L35; RA1), and an early 4th-century coin of Constantine I from adjacent enclosure ditch G97 (L35: RA74).

Most of the coins (18) were recovered from subsoil over the Roman settlement. These comprised two 2nd-century coins, 13 later 3rd-century coins (including a Claudius II radiate (AD 268–270; RA71) and an Urbs Roman coin (AD 330–335; RA72)), and three 4th-century coins.

The coin assemblage begins with a probable *as* of Hadrian and a Commodan *sesertius*, both of which are very worn (RA47 and RA53). The next latest coins are 16 *radiates* of the later 3rd century, of which the majority were struck between AD 268 and 296. These include eight coins of the Gallic emperors Victorinus, Tetricus I and Tetricus II, another of the British usurper Carausius (RA49), a *quinarius* of Carausius's successor Allectus (RA33), and at least two contemporary copies (so-called 'barbarous radiates'). The 4th century is represented by five coins, four of which were struck during the 330s and 340s. The latest coin is an example of the common VICTORIAE DD AVG ET CAE type, struck in AD 347/348.

Late 3rd-century radiates and coins of the mid-4th century are often found in relatively large quantities on rural sites in Roman Britain and, in terms of coin loss, this settlement behaves like many other similar sites during these years.

Phase	SL	Description	Land-use Areas (Groups)	Brick/tile	Fired clay	
				No.	Wt. (g)	Wt. (g)
4	SL11	Southern enclosures	L47 Routeway (G129)	–	–	36
5	SL5	Northern enclosures	L15 Enclosure (G45)	–	–	51
			L19 Enclosure (G53)	1	595	91
			L20 Routeway (G59)	–	–	83
	SL12	Southern enclosures	L34 Later enclosure (G95)	2	117	35
			L35 Later enclosure (G98, G104)	2	200	272
			L43 Stone structure (G124)	7	484	–
			L44 Parallel ditches (G123)	2	410	–
			L54 Enclosure (G166)	1	77	167
		L56 Enclosure (G140, G158, G167)	3	298	526	
Total				18	2181	1261

Table 6.6 Ceramic building material quantification

NIP	Dates	No. coins	% coins
I	to AD 41	–	0
II	41–54	–	0
III	54–68	–	0
IV	69–96	–	0
V	96–117	–	0
VI	117–138	1	43.5
VII	138–161	–	0
VIII	161–180	–	0
IX	180–192	1	43.5
X	193–222	–	0
XI	222–238	–	0
XII	238–260	–	0
XIII	260–275	10	434.8
XIV	275–296	6	260.9
XV	296–317	1	43.5
XVI	317–330	–	0
XVII	330–348	4	173.9
XVIII	348–364	–	0
IXX	364–378	–	0
XX	378–388	–	0
XXI	388–402	–	0
Sub-total		23	1000
	Æ late 3rd–4th century	1	
Total		24	

Table 6.7 Roman coins by numismatic issue period (NIP)

6.5 OTHER ARTEFACTS

Holly Duncan

Quantification and methods

Of the 92 ‘other artefacts’ (defined as registered and non-ceramic bulk finds) 80 derived from phased deposits (Table 6.8). The assemblage from Bronze Age–Roman deposits is discussed here, as are artefacts of intrinsic interest and similar date from topsoil and subsoil. Small quantities of bulk finds, including ferrous slag and fuel ash slag, have no analytical value and are not considered further. A full catalogue of all the material, including medieval and later finds, along with digital x-rays of all the ironwork and selected non-ferrous items form part of the project archive.

The assemblage is discussed by Phase (P), Site Landscape (SL), Land-use Area (L) and Group (G). A selected catalogue of objects is included at the end of each Phase discussion; this excludes nails and fragments whose function cannot be determined, although these are listed within the tables. The catalogue numbers are prefixed by RA (registered artefact). Illustrated items are indicated by an asterisk and the figure reference. Catalogue entries are appended as follows: Phase (P); Site Landscape (SL); Land-use Area (L); Group number (G).

Phase 2: Early–middle Bronze Age

Cremation burial G3 (SL1) contained a plano-convex flint knife (RA20, Fig. 6.1) found in the upper part of the collared urn. The knife is retouched across the whole of the dorsal surface (ventral surface unworked). Edmonds (1995, 144) comments that plano-convex knives reflect structured routines of flaking and invasive retouch, which suggests a heightened concern with the definition of a clear and consistent form. Although plano-convex knives are occasionally found with women or children, there is a clear funerary association with males, and with collared urns (Edmonds 1995, 145).

	Phase								Total
	2	3	4	5	6	7	8	Unphased	
Material									
Individual finds									
Bone	—	—	—	—	—	1	—	—	1
Copper alloy	—	3	2	9	—	—	20	6	40
Lead alloy	—	—	—	—	—	—	—	2	2
Iron	—	2	2	24	1	1	2	3	35
Stone	—	—	—	6	—	—	1	—	7
Flint	1	—	1	—	1	—	—	—	3
Glass	—	—	—	3	—	—	—	1	4
Total	1	5	5	42	2	2	23	12	92
Bulk finds (wt. in g.)									
Cob?	—	—	—	257	—	—	—	—	257
Plaster	—	—	—	—	—	2346	—	—	2346
Fuel ash slag	—	—	29.4	—	—	—	—	—	29.4
Ferrous slag	—	—	18.6	337	—	—	—	—	355.6
Ferrous hammerscale	—	0.3	0.7	0.43	—	—	—	—	0.53

Table 6.8 Other artefacts by material

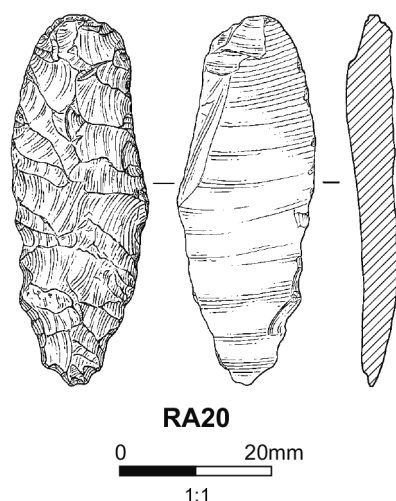


Figure 6.1 Flint knife RA20 (Phase 2)

Catalogue

RA20. Knife. Brown-grey translucent flint. Invasively retouched knife on hard hammer-struck flake. Bulb and platform removed, invasive retouch across entire dorsal surface, ventral surface unworked. L.48.6mm; w. 17.4mm; th. 6mm. P2; SL1; L2; G3; Fig. 6.1

Phase 3: Middle-late Iron Age

The Phase 3 assemblage was limited to three objects all from enclosed settlement area SL3 (Table 6.9). The upper fill of enclosure ditch G25 (L11) contained a Colchester derivative brooch (RA22, Fig. 6.2), dating to the second half of the 1st century AD, remaining in use perhaps into the early 2nd century (Mackreth 2011, 56). The fill of L11 partition ditch G32 yielded two pyramidal-headed Roman hobnails (RA67).

SL	L	Group	Description	Object	No.
3	11	25	North ditch of Wootton-Hill style enclosure	Copper alloy brooch	1
		32	Partition ditch	Iron hobnail	2

Table 6.9 Other artefacts from Phase 3 deposits

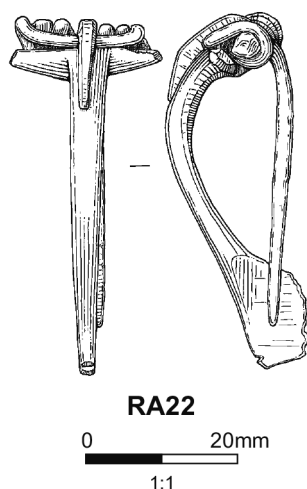


Figure 6.2 Brooch RA22 (Phase 3)

Catalogue

RA22. Brooch. Copper alloy. Colchester derivative, Mackreth's (2011) CD Ha 2.c.d. Plain wings, low crest, six coils, plain pseudo-hook down upper bow, bow oval section, solid catch plate, cut cross foot of bow, L.46.5mm. P3; SL3; L11; G25; Fig. 6.2.

Phase 4: Late Iron Age/early Roman

The Phase 4 assemblage is presented in Table 6.10. The only find from SL4 comprised a serrated flint flake from enclosure ditch G42. This has lost its proximal end so closer dating than to the Neolithic period is not possible.

Further to the south in SL11, pit cluster G163 (L57) contained coils from a copper alloy brooch (RA50) and the part of an iron brooch (RA52), which appears to be a Camulodunum type VII continental form, dating to around the mid-1st century AD (Olivier 1996, 233–5). Boundary ditch L47 yielded a flat-headed nail (Manning's type 1b; Manning 1985, 134–5).

SL	L	Group	Description	Object	No.
4	14	42	North ditch of enclosure L14	Flint denticulate	1
11	57	163	Pits within enclosure L57	Copper alloy brooch	1
				Iron brooch	1
47	129		West ditch of routeway	Iron nail	1

Catalogue

RA50. Brooch. Copper alloy. Coiled wire of circular section (c. 1.5mm diam.), four coils, wire at one end starting to thicken, one coil partially pulled out. Coils from brooch? L. 15.2mm. P4; SL11; L57; G163.

RA52. Brooch. Iron. Head of brooch with coil, rounded bow which rises in an arch above the head before running in a slight reverse curve. Bow broken just after arched curve. Poor condition. L. 30.5mm. P4; SL11; L57; G163.

Phase 5: Roman

Despite the presence of drying ovens and charred plant remains indicative of grain-processing in settlement enclosures SL5 and SL12, there are few items within the Phase 5 assemblage that can be directly related to either cultivation or processing of grain (Table 6.11).

Drying oven G53 contained a nail shank and oven G103 a tapered iron rod with a hooked end (RA70), possibly the remains of an implement tang or alternatively the clenched tip of a robust nail. Oven G140 produced fasteners, including two nails, a perforated iron strap (RA57), possibly part of binding or a hinge, and a tiny (1.6mm long) copper alloy rivet with upset tip (RA59). The size of the rivet suggests it may have served to affix something the size of a belt plate or similar. None of these items appears to be directly associated with the processing of grain.

In contrast, two fragments of large querns or perhaps millstones (RA64 and RA65) were found in oven G141. They comprise only a small portion of the outer 'skirt' and the diameters can only be estimated as greater than 500mm, hence the suggestion that they may be millstones; both fragments have pecked grinding surfaces. One of the few possible agricultural tools identified was found in stonework G124 (L43) and comprises a crescentic tip of a bladed object, possibly a pruning hook (RA60).

SL	L	Group	Description	Object	No.
5	19	53	Drying oven	Iron nail	1
				Stone blocks	2
	20	59	North ditch of routeway L20	Copper alloy brooch	1
				Glass bottle?	1
	62		East ditch of routeway L20	Copper alloy rove	1
	63		Two pits in routeway L20	Iron nail	1
	23	70	East ditch of enclosure L23	Iron hobnail	2
12	35	97	South ditch of enclosure L35	Copper alloy coin	1
				Iron nail	1
	102		Roundhouse	Copper alloy coin	1
	103		Drying oven	Iron rod	1
	36	105	East ditch of enclosure L36	Iron hobnail	1
	43	124	Stone spread	Iron nail	1
				Iron pruning hook?	1
				Iron fragment	1
	44	123	West ditch of parallel ditches L44	Glass bead	2
				Iron hobnail	4
	56	139	Pit cluster	Copper alloy button	1
		140	Drying oven	Iron nail	2
				Copper alloy rivet	1
				Iron hinge?	1
		141	Drying oven	Millstone	2
		142	Stone-lined well	Iron nail	1
		151	Posthole	Copper alloy coin	1
		158	East ditch of enclosure L56	Iron nail	4
				Iron hinge pivot	1
		167	West ditch of enclosure L56	Copper alloy brooch	1
		164	Partition ditch within enclosure L56	Iron hobnail	1
				Copper alloy brooch	1

Table 6.11 Other artefacts from Phase 5 deposits

Items of a personal nature, in particular dress-related items, are not numerous. Small quantities of hobnails were recovered from ditch fills, two from SL5 and six from SL12, testifying to the adoption of Roman-style footwear by some of the occupants.

Enclosure L56 (SL12) produced two brooches: a Nauheim derivative (RA63, Fig. 6.3) (Mackreth 2011, 20) dating from pre-conquest to *c.* AD 70, recovered from partition ditch G164; and a copper alloy Colchester derivative (RA5, Fig. 6.3) of Mackreth's Nene Group (2011, 56–7), recovered from enclosure ditch G167. Mackreth notes that the latter is part of a group centred overwhelmingly at the junction of Bedfordshire, Buckinghamshire and Northamptonshire. These brooches are not closely dated, but do not pre-date the mid-1st century AD. A Colchester derivative brooch (RA41, Fig. 6.3) was recovered from routeway L20 (SL5) (Mackreth 2011, 88–9). Mackreth suggests that the dating of the earliest stages of the CDH 6 series (the Nene Group) may be *c.* AD 60/65, with a core distribution of Norfolk/Hertfordshire/Cambridgeshire/ Northamptonshire/Leicestershire (2011, 89).

Two small globular beads (RA69) in translucent cobalt blue glass were recovered from the fills of ditches G123 (L44). These equate to Guido's Group 7iv, medium and small globular beads in cobalt blue translucent or opaque glass (Guido 1978, 70). They are a long-lived form, but at Vindolanda examples were found in 3rd-century contexts (Birley 2006, 24) while those from Poundbury were found, in combination with jet beads and with beads of green glass and coral, in two burials dated to the 4th century (Guido and Mills 1993, 100–2).

Purely domestic-related items were limited to a small fragment of translucent blue-green glass, probably from a prismatic bottle.

Catalogue

- RA5 Brooch. Copper alloy. Colchester derivative, Mackreth's Nene Group type CD Ha 2.e), plain narrow bow (3mm wide and 3.5mm thick), almost rounded rectangular in section, solid catch plate, slight step down from the bow along the junction. Plain wings set below the level of the head. L. 45.5mm. P5; SL12; L56; G167; Fig. 6.3.
- RA41 Brooch. Copper alloy. Colchester derivative, Mackreth's hybrid type CDH 6.ad. Single moulding at end of plain wings, bow plano-convex groove either side of raised ridge with horizontal lines down its length creating beaded effect. Ridge continues three-quarters length of bow. Bow tapers to squared foot knob. Solid catchplate. There is a simulated spring behind the wings with a slot for a pin with unilateral spring. L.35mm. P5; SL5; L20; G59; Fig. 6.3.
- RA60 ?Pruning hook fragment. Iron. Crescentic blade(?), possibly tip of pruning hook? L38.3mm; w. 15.8mm; th. 3.8mm. P5; SL12; L43; G124.
- RA63 Brooch. Copper alloy. Four coil internal chord, relatively broad bow of shallow triangular section with border lines and raised ridge down centre, bow tapers to narrow foot,

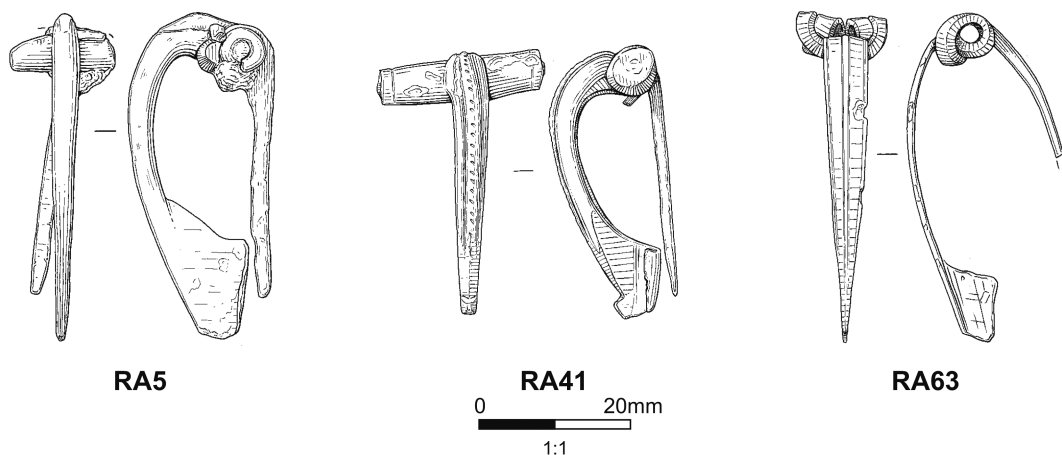


Figure 6.3 Brooches RA5, RA41 and RA63 (Phase 5)

solid catch plate (incomplete). Bow has gentle shallow curve in profile. L. 43.4mm; W. bow 6.2mm (max). Mackreth's ND Odd 2. P5; SL12; L56; G164; Fig. 6.3.

- RA64 Millstone? Millstone Grit (Pennines). Small fragment including straight-sided skirt, pecked grinding surface, upper surface roughly worked. Diam. indeterminate but exceeds 500mm. Burnt fragment. Th. 52.6mm. 190 × 85mm. P5; SL12; L56; G141.
- RA65 Millstone? Millstone Grit (Pennines). Small fragment of straight-sided skirt, pecked grinding surface. Obverse surface roughly worked. Diam. indeterminate but exceeds 500mm. Th. 45mm. 140 × 125mm. P5; SL12; L56; G141.
- RA69 Bead. Translucent 'cobalt blue' glass. Two small globular beads. Diameter A) 3.7mm; ht. 3mm; B) diam. 4mm; ht. 3.6mm. P5; SL12; L44; G123.

Topsoil, subsoil and unphased deposits

One of the more interesting finds is a handle from a toiletry knife (RA9, Fig. 6.4 and Plate 1.6) recovered from subsoil overlying Phase 5 southern enclosures SL12. It consists of a cast hollow handle with zoomorphic (duck-like) head in profile with open beak, protruding tongue and eye sockets, which originally would have held amber/glass/stone settings. Incised zig-zag and curvilinear ornament decorates the handle. Similar handles have been found at Braughing, Hertfordshire (finds.org.uk record id 112842; unique ID: BH-0D333) and Silchester, Hampshire; they

are thought to date from 30 BC to AD 40 (Boon 2000, 346 no. 81, figs 161–3).

The same area of subsoil also yielded two brooches. The Birdlip brooch (RA40, Fig. 6.4) is one of a series that were in use in the later 1st century BC but continued in use into the 1st century AD; its hinged pin suggests it may be later in the series, i.e. post-AD 25 (Mackreth 2011, 13). The Dolphin brooch (RA31, Fig. 6.4) dates to the second half of the 1st century AD into the earlier 2nd century AD (Mackreth 2011, 72).

Catalogue

- RA9 Toiletry knife handle. Copper alloy. Cast hollow handle with remains of iron corrosion focused at one end. X-ray indicates an *in situ* copper alloy rivet about halfway along the length of the handle, presumably affixing the iron implement. The opposing edge of the handle has two incised lines running its length and two close-set horizontal incised lines at roughly mid-point. The sides of the head are flat, apart from two eyes, one each side of the handle, which would have originally held amber/glass/stone (not surviving). The neck of the creature has an incised collar, above and below which are narrow bands of incised zig-zag ornament. Further curvilinear bands of zig-zag ornament outline the eye, beak and upper neck. The handle terminates in the remnants of an iron blade. L. 43.8mm; max width at 'beak' 18.7mm (handle portion 10.8mm); th. at eyes 9.6mm (handle only 6mm); Fig. 6.4 and Plate 1.6.

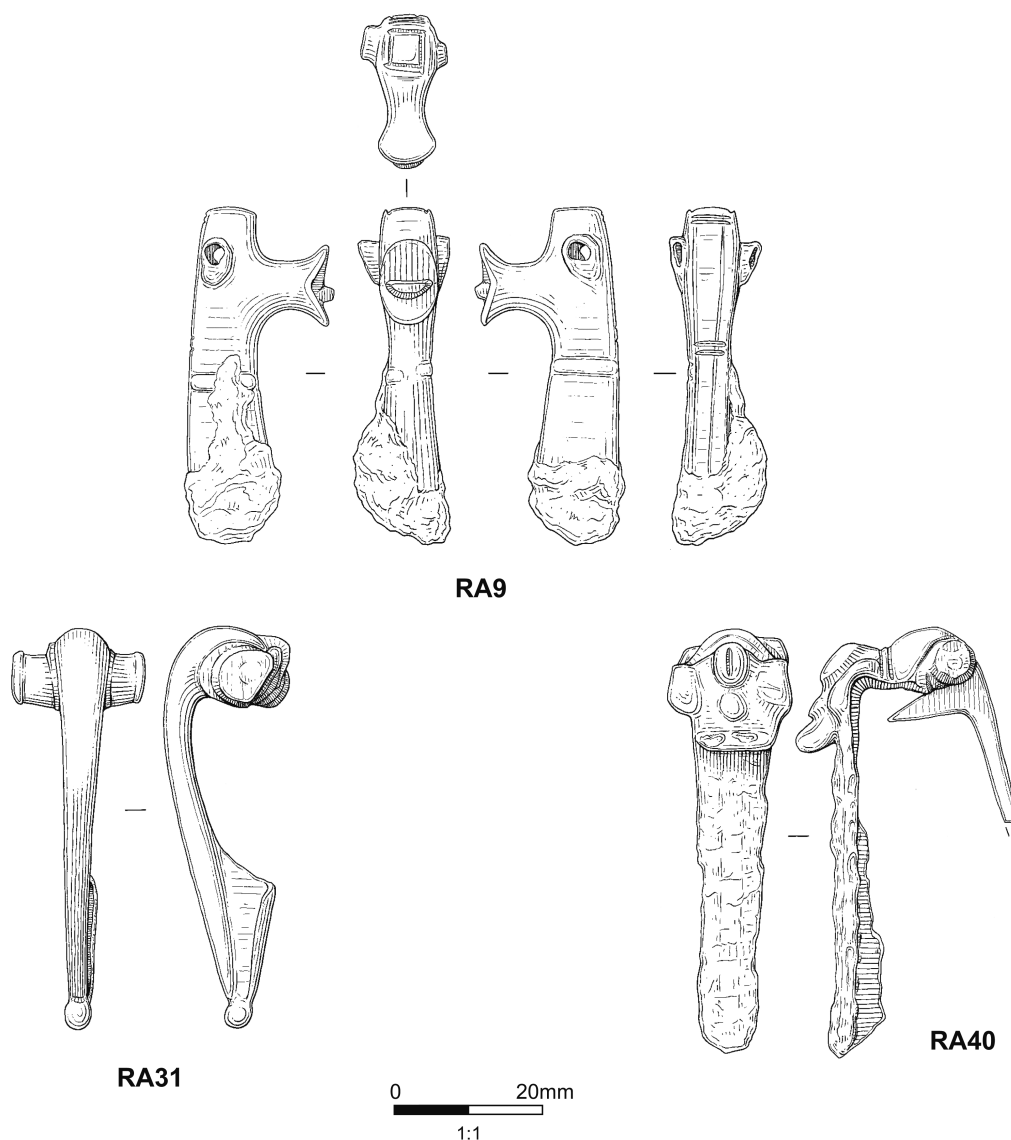


Figure 6.4 Toiletry knife handle RA9 and brooches RA31 and RA40 (topsoil/subsoil)

- RA31 Brooch. Copper alloy. Colchester derivative Dolphin brooch (Mackreth's CD PH 4.b). Plain dominant head, plain rounded bow, short wings with single moulding at each end, small rounded foot knob, solid catch plate. L. 54mm. P7; SL6; L63; G184; Fig. 6.4.
- RA40 Brooch. Copper alloy. Mackreth's Birdlip 4.1.c. Surface of bow in poor condition. Straight profile to bow, sharp bend at top, hinged pin, pin with very long tension lug at back, pin incomplete. Bow has four mouldings above the 'beak' – a central rectangular protuberance, two smaller ones off to the side, and a smaller one beneath the central protuberance. Catch plate incomplete. L. 57.5mm. P7; SL6; L63; G184; Fig. 6.4.

Summary

The Phase 2 assemblage was limited to a single plano-convex knife found within a collared urn – another example of the link between this knife form and early Bronze Age funerary rites. No 'other artefacts' can be typologically dated to the middle–late Iron Age (Phase 3). The few datable finds from Phase 3 deposits are intrusive (hobnails and a brooch).

The 'other artefacts' assemblage from Phases 4 and 5, along with other items typologically dated to this period, provide little insight into the settlements' inhabitants. The hobnails indicate adoption of some aspects of Roman dress and the brooches attest to a continuance of brooch-wearing from the *c.* early 1st century AD into the 2nd century. There is a lack of brooches typologically dated to the mid-2nd to 4th centuries; whether this reflects conservatism of the inhabitants or a change in the economic basis of the settlements is unclear.

No definite tools were recovered and, although there are two fragments of large quernstones or millstones, no other artefacts are directly linked to the cultivation of grain or its processing, despite the presence of the Roman (Phase 5) drying ovens. Hence it is unclear whether this activity was intensive or on a subsistence level. The coinage does suggest the inhabitants engaged in a degree of commercial activity, as does the presence of imported querns/millstones and brooches.

Appendix I

POTTERY TYPE SERIES

Jackie Wells

Pottery was examined in accordance with PCRG/SGRP/MPRG guidelines (2016). The assemblage was quantified by minimum vessel and sherd count, and weight, and assigned forms and fabric groups. Sherds belonging to the same vessel, but deriving from separate contexts, were quantified as one. Vessel attributes, including decoration, manufacturing techniques and levels of abrasion, together with evidence for use (modification, residues/sooting and wear) were recorded.

Pottery fabrics, based on surface appearance and the type, size and density of principal inclusions are summarised in Table A1 by chronological period, and prehistoric wares further detailed below. Roman wares are classified where possible in accordance with the National Roman Fabric Reference Collection (Tomber and Dore 1998). Detailed descriptions are available in the archive: no new fabric types were identified.

Prehistoric fabric descriptions

Bronze Age

Collared Urn: Uniformly oxidised surfaces and reduced core, containing common, poorly sorted coarse angular grog, 1.0-3.0mm.

Iron Age

Shell

SH1: Coarse shell. Moderate to dense temper of angular coarse shell fragments, up to 10mm, with rare quartzite, grog, flint, organic material or ironstone.

SH2: Fine shell. Sparse to moderate angular shell fragments, up to 5mm, although most are usually below 2mm. Other material occurs as SH1.

SH3: Shell and sand. As SH2, but with moderate sub-rounded quartz 0.5–1.0mm, giving sherds a sandy texture.

SH4: Shell and grog. As SH2, but with sparse to moderate red grog, up to 2mm.

SH5: Mixed shell, grog and sand. A variant of SH1 but with grog and sand occurring in greater quantities and, less commonly, flint.

Sand

SA1: Sand. Abundant sub-rounded quartz, up to 1.5mm.

SA2: Sand and organic. As SA1, but with frequent elongated voids, where organic matter has burnt out.

Grog

GR2: Grog and sand. Abundant grog, up to 2mm, and moderate sub-rounded quartz up to 0.5mm, giving sherds a sandy texture.

	Fabric	Description	No.	%	Wt. (g)	%
Middle-late Iron Age Hand-built	SH1	Coarse shell	74	2.6	1510	1.9
	SH2	Fine shell	47	1.6	468	0.6
	SH3	Shell and sand	74	2.6	2088	3.0
	SH4	Shell and grog	4	0.1	52	0.1
	SH5	Shell, grog and sand	23	0.8	364	0.4
	SA1	Fine sand	12	0.4	381	0.5
	SA2	Sand and organic	12	0.4	280	0.3
	SA3	Sand and calcareous	2	0.1	43	0.1
	GR1	Grog (hand-built)	22	0.8	298	0.4
	GR2	Grog and sand	42	1.5	903	1.1
Later Iron Age/early Roman Hand-built/wheel thrown	GR3	Grog (SOB GT)	164	5.8	6128	7.6
	GR4	Grog and sand (SOB GT)	11	0.3	265	0.4
	GR5	Grog and shell	40	1.4	1074	1.3
	SH6	Shell	59	2.1	1708	2.1
	SA4	Sand	7	0.2	160	0.2
Roman Local	GR	Grog-tempered (all variants)	145	5.1	4541	5.6
	WWGR	Grogged whiteware	287	10.1	12,953	16.1
	PNK GT	Pink-grogged ware	3	0.1	96	0.1
	SH	Shell	488	17.2	24,403	30.3
	LVN CC	Lower Nene Valley colour-coated ware	39	1.4	1024	1.3
	LVN RE	Lower Nene Valley grey ware	338	11.9	5344	6.6
	LVN WH	Lower Nene Valley white ware	2	0.1	80	<1.0
	BWSA	Black sandy ware	128	4.5	1944	2.5
	BWMI	Black micaceous ware	11	0.3	75	<1.0
	GWSA	Sandy grey ware	462	16.3	7492	9.3
	OXSA	Oxidised sandy ware	192	6.8	1726	2.1
	WW	White ware	55	1.9	1440	1.8
Regional	HAD OX	Hadham oxidised ware	4	0.1	103	0.1
	MAH WH	Mancetter-Hartshill mortaria	1	<1.0	96	0.1
	OXF RS	Oxford colour-coated ware	1	<1.0	27	<1.0
	VER WH	Verulamium region white ware	33	1.2	973	1.2
Import	LEZ SA	Central Gaulish samian (Lezoux)	31	1.1	551	0.7
	BAT AM	Baetican amphorae	7	0.2	1629	2.0
Unknown	RB MD	Mica-dusted ware	1	<1.0	13	<1.0
	MISC.	Indeterminate Roman	15	0.5	158	0.2

Table A1 Pottery type series

Appendix II

COIN CATALOGUES

Peter Guest

P	SL	L	G	RA no	Denomination	Date	Obverse	Reverse
4	12	35	97	74	AE2	313–15	CONSTANTINE I	SOLI INVICTO COMITI
			102	1	Barbarous radiate	275–96	uncertain	uncertain
		56	151	51	Radiate	268–70	VICTORINUS	[salvs avg]
7	6	61	173	71	Radiate	268–70	CLAUDIUS II	VICTORIA AVG
				72	AE3	330–335	VRBS ROMA	Wolf and twins
				73	AE3	late 3rd/4th	uncertain	uncertain
		63	184	6	Radiate	260–96	uncertain	uncertain
				7	AE3	347–48	Constans	VICTORIAE DD AVGG QNN - 2 victories
				8	Radiate	270–74	TETRICUS I	VICTORIA AVG?
				25	Radiate	273–274	TETRICUS II	SPES PVBLICA
				26	Radiate	270–274	TETRICUS I	SPES PVBLICA
				27	Radiate	268–70	VICTORINUS	PROVIDENTIA AVG
				28	Radiate	270–74	TETRICUS I	FIDES MILITVM
				29	Radiate	270–274	TETRICUS I	PAX AVG
				33	Quinarius	293–296	ALLECTUS	VIRTVS AVG - galley
				34	Radiate	270–74	TETRICUS I	PAX AVG?
				36	Radiate	270	DIVO CLAUDIO	CONSECRATIO -eagle
				46	AE4 copy	330–40	VRBS ROMA	[wolf and twins]
				47	As?	117–38?	HADRIAN?	uncertain
				48	Barbarous radiate	275–96	uncertain	uncertain
				49	Radiate	286–93	CARAUSIUS	PAX?
				53	Sestertius	138–161	COMMODUS	HI[LARIT AVG PM TRP XII IMP VII] COS V P
				54	AE3	335–40	Hse of Constantine	GLORIA EXERCITVS 1 standard
				76	Radiate	275–96	Uncertain	uncertain

Table A2 Catalogue of coins by phase

RA no	Denomination	Date	Obverse	Reverse	Mint mark	Mint	Reference	Remarks
47	As?	117–38?	HADRIAN?	uncertain		Rome		very worn
53	Sestertius	186–87	COMMODUS	HI[LARIT AVG PM TRP XII IMP VIII] COS V PP – SC		Rome	RIC: 497	
27	Radiate	268–70	[VICTORINUS]	PROVIDENTIA AVG		Mint II	Cunetio: 2577	
51	Radiate	268–70	VICTORINUS	[SALVS AVG]		Mint II	Cunetio: 2567	
71	Radiate	268–70	CLAUDIUS II	VICTORIA AVG		Rome		
36	Radiate	270	DIVO CLAUDIO	CONSECRATIO – eagle		Rome		
8	Radiate	270–74	TETRICUS I	VICTORIA AVG?		Mint I		
26	Radiate	270–74	TETRICUS I	SPES PVBLICA		Mint I	Normanby: 1465	
28	Radiate	270–74	TETRICUS I	FIDES MILITVM		Mint II	Normanby: 1506	
29	Radiate	270–74	TETRICUS I	PAX AVG		Mint I	Normanby: 1473	
34	Radiate	270–74	TETRICUS I	PAX AVG?		Mint I?		
25	Radiate	273–74	TETRICUS II	SPES PVBLICA		Mint I	Normanby: 1526	
49	Radiate	286–93	CARAUSIUS	PAX?		–		
33	Quinarius	293–96	ALLECTUS	VIRTVS AVG – galley	//QL	London	RIC: 55	
6	Radiate	260–96	uncertain	uncertain				very worn
76	Radiate	275–96	uncertain	uncertain				
1	Barbarous Radiate	275–96	uncertain	uncertain				
48	Barbarous Radiate	275–96	uncertain	uncertain				
74	AE2	313–15	Constantine I	SOLI INVICTO COMITI	T/F//STR	Trier	RIC: 40	
72	AE3	330–35	VRBS ROMA	Wolf & Twins	//●SLG	Lyons	LRBC I: 190	
46	AE4 copy	330–40	VRBS ROMA	[Wolf & twins]		–		
54	AE3	335–40	Hse of Constantine	GLORIA EXERCITVS – 1 std		–		
7	AE3	347–48	Constans	VICTORIAE DD AVGG QNN – c//TRS 2 victories		Trier	LRBC I: 155	
73	AE3	late 3rd–4th c.	uncertain	uncertain				

Table A3 Catalogue of coins by production date

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