Wessex Archaeology

EARLY IRON AGE METALWORKING AND IRON AGE/EARLY ROMANO-BRITISH SETTLEMENT EVIDENCE ALONG THE BARTON STACEY TO LOCKERLEY GAS PIPELINE

By Robert De'Athe

with Grace Perpetua Jones (pottery and miscellaneous finds) and Matt Leivers (pottery), Jessica M. Grimm (animal bone), Jacqueline I. McKinley (human remains), Nicholas Cooke (coins), Chris J. Stevens (radiocarbon dates), Catherine Barnett (wood charcoal), Jörn Schuster (miscellaneous finds), Ruth Pelling (plant remains) and Will Foster (illustrations)

FINDS AND ENVIRONMENTAL REPORTS

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A series of excavations and a watching brief on the route of a gas pipeline from Barton Stacey to Lockerley, Hampshire, revealed evidence of predominantly Iron Age and Romano-British rural settlement activity. A group of Early Bronze Age burials comprising two cremation burials and one inhumation were recorded during the watching brief. A small group of unaccompanied Early–Middle Iron Age inhumation burials and Romano-British fields were recorded at site MT05 near Crawley and a series of Early Iron Age pits at site MT08 near Michelmersh contained mostly domestic waste with a few more unusual deposits including a human skull with sharp-weapon trauma and another containing metalworking debris. No structures were found but the assemblage points to the presence of an early Iron Age farmstead close by operating a mixed farming economy.

A probable Late Iron Age double ditched enclosure was recorded at site MT09 near Awbridge on the west side of the River Test, again indicating a small rural farmstead that continued into the early Romano-British period.

This document contains the full texts of finds and environmental reports, with accompanying figures and tables which support the paper to be published in Hampshire Studies Volume 68, 2013. The location of the sites is shown in Figure 1.

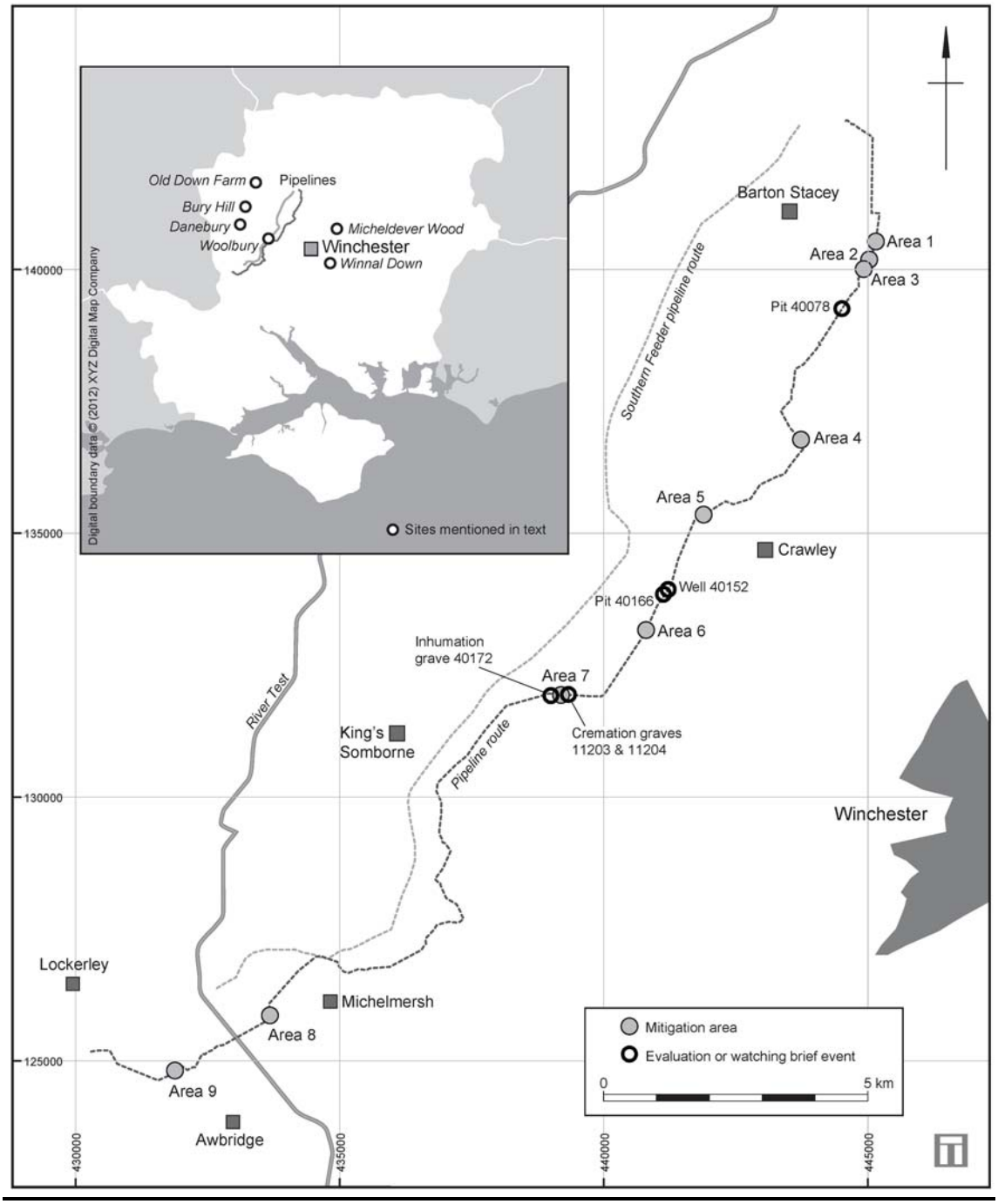

Figure 1 Location of the pipeline route; features and burials from watching brief mentioned in text marked

PART 1: FINDS

Mitigation Area 05

MT05 (NGR 441887 135353), just north-west of Crawley, measured 140 x 26 m and was orientated north-east to south-west; an undifferentiated topsoil/subsoil *c*. 0.20–0.30 m overlay Upper Chalk. Three Middle Iron Age inhumation graves were excavated (aerial photography suggesting there may exist a possibly associated settlement to the north of the site) with the majority of features consistent with field systems and boundary ditches dated to the Late Iron Age/Romano-British period (Fig. 2).

Coin

by Nicholas Cooke

One Roman coin (ON 93) was recovered from the subsoil in MT05. This is a small copper alloy 'Gloria Exercitus' (two soldiers, one standard) *nummus* minted by an emperor of the House of Constantine. The coin is both worn and corroded, but its size suggests that it may be a contemporary copy, probably minted between AD 335 and 345. These contemporary copies of 'official' coinage were probably struck to compensate for gaps in supply of coinage to Britain and to supply sufficient small change for the province's needs. It is unclear whether these copies were officially sanctioned, if at all, but they are not uncommon as site finds, and seem to have circulated in the same fashion as officially struck coins.

Metalwork

by Jörn Schuster

Two copper alloy and five iron objects were recovered from MT05. Of these, four warrant further comment.

Brooch ON 26, Context 25069

Brooch with four round-sectioned spring coils, internal chord and pin; neck and front of arched bow round sectioned but flat, rectangular in lower part of bow/foot with slight reverse curve to the outside of triangular catchplate. Change in bow section marked by six diagonal lines. Copper alloy. L. 40.0 mm. Weight 2 g.

This very delicate brooch is shaped in the La Tène III fashion, but the six diagonal lines in the middle of the bow are a typologically rudimentary feature of the La Tène II returned foot, which was initially attached lower down but in the course of time moved to that area of the bow (cf. Hull and Hawkes 1987, 135 type 3); Jope also points to the even earlier spring/bow sleeve junction of Italic tradition as found, for instance, in the 'Certosa' type (Jope 1984, 343). Comparisons for such lines are quite common on similar *Drahtfibeln´* or wire brooches, for instance at Canterbury, Marlowe Car Park (Mackreth 1995, 966 fig. 405, 38) or Richborough (Bayley and Butcher 2004, 56 fig. 38, 24). A more local parallel comes from Danebury (Jope 1984, 342, fig 7.6, 1.26). One important difference to the aforementioned brooches is that the bow of ON 26 is round sectioned behind the spring but has a flat, rectangular foot, a rare combination in wire brooches. An, admittedly inconclusive, comparison may be a brooch from St-Bertrand-de-Comminges, Dép. Haute-Garonne, France, which is lacking the catchplate. Feugère (1985, 191 pl. 12, 171) classes it amongst his type 3b1a. Feugère type 3b, which is very widespread in Gaul, is comparable to Hull and Hawkes type 3C in Britain, and when viewed from the top it is likely that this type of brooch with a flat-sectioned return of the foot attached to a round-sectioned bow is what has been replicated in ON 26 but in a La Tène III shape. Considering the date range of the suggested

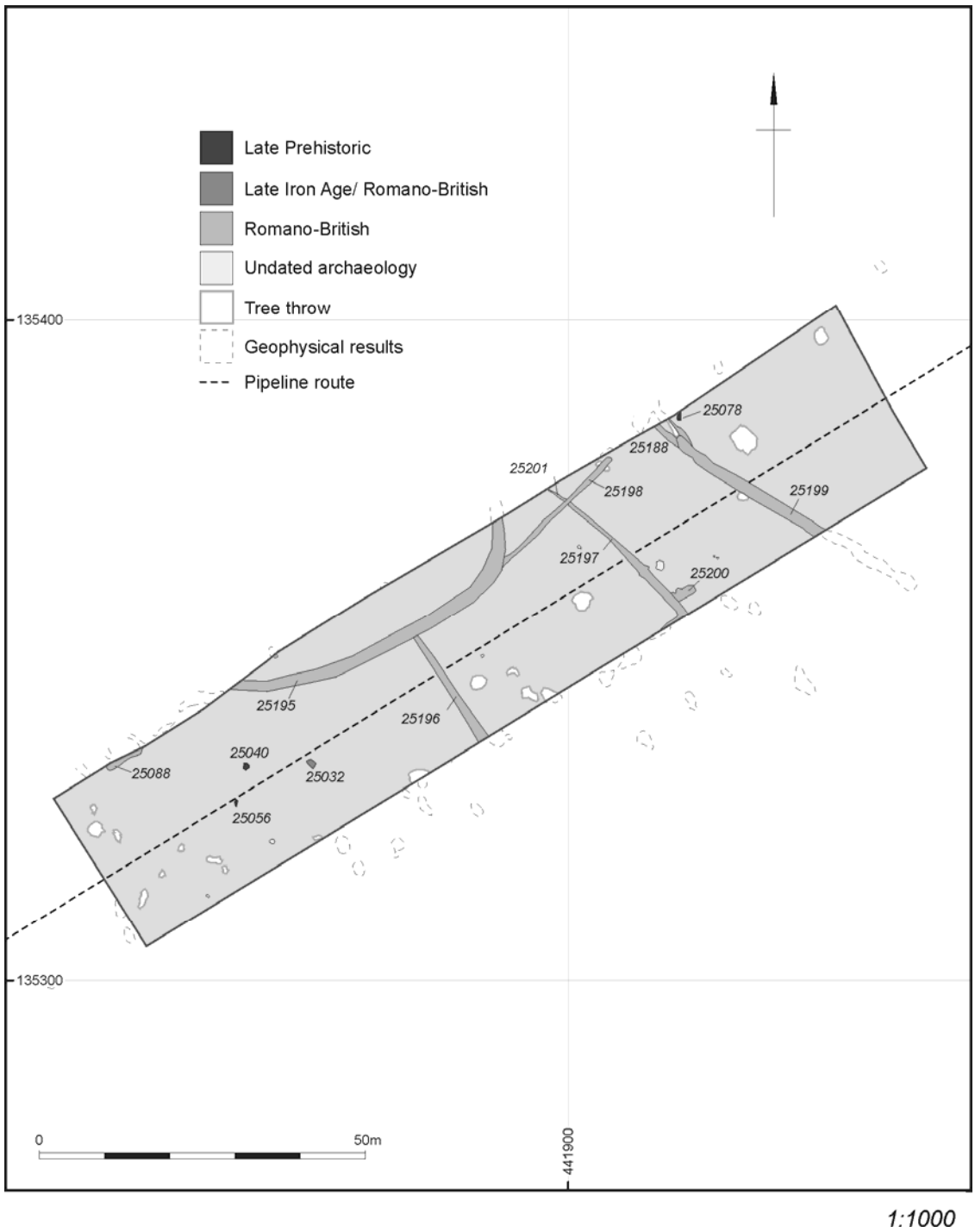

Figure 2. Plan: MT05

predecessors, Feugère type 3b essentially late or post-Augustan to Vespasianic although some extending into the 2nd century (*ibid*., 196), Hull and Hawkes type 3C equally not 'at a date BC' (Hull and Hawkes 1987, 179), ON 26 is likely to date to the 1st century AD, but whether before or after the Roman Conquest remains to be clarified by future discoveries.

Brooch ON 40, Context 25186

Four-coil spring with internal cord of subcircular sectioned wire. Neck and bow oval- sectioned; straight bow almost at right angles to neck, tapers towards missing catchplate of which only the uppermost corner of the inner edge remains. Iron. L. 54.9 mm, Weight 6 g.

A Nauheim-derivative brooch of the 'poor man's variant' with an iron rod bow. At Colchester Nauheim-derivatives with a flat bow are found in Claudian to Neronian contexts (Hawkes and Hull 1947, 312), and at Baldock a distinction between flat- and the simpler 'poor

man's' variants showed that the former were predominantly pre-Flavian while the latter continued to the end of the 1st century (Stead 1986, 123–4 fig. 51). While the flat section bows have a distinctly southern distribution in Britain, those with rod or wire bows are also found in the North (cf. Bayley and Butcher 2004, 192 fig. 168). At Higham Ferrers, Northamptonshire, most of the iron rod bow brooches were found in the shrine area (Scott 2009, 205–7 tab. 5.22).

Brooch ON 92, Context 25002 (subsoil) (Fig. 3)
Brooch with spring in cylindrical cover, flat trumpet head continues into slender bow. Pin bent to the right, almost at right angles, along the spring cover. Double waist moulding separates bow from triangular foot. Foot's right lower corner worn away. Trapezoidal catchplate continues as small ridge to area below waist moulding. Traces of tinning on right outer edge of spring cover, probably also once present on foot (corroded traces of this probably visible near lower edge). Copper alloy. L. 36.7 mm. Weight 6 g.

This brooch belongs to the trumpet-headed variant of Riha's *brooch with broad foot*, type 4.8.2 (Riha 1979, 109; 1994, 95–6). Feugère (1985, 278 pl. 101, 1326–8) classes it as his type 18a2. The type is widely distributed in central and eastern Gaul and the upper Rhine. The double waist moulding is derived from the brooches with a leontomorph bow Feugère type 18b, which start in the second decade BC but continue for most of the 1st century AD. Type 18a2 appears not to start much before the second decade AD and continues into the third quarter of the 1st century AD (*ibid*., 285). Finds from Britain are most likely of Claudian date and include examples from Colchester (Hawkes and Hull 1947, 320, pl. 95, 115), Woodcuts and Hod Hill, both Dorset (Brailsford 1962, 8, fig. 8, C43).

Figure 3 Brooch ON 92

Snaffle-bit ON 22, Context 25047, Ditch 25046
The round-sectioned links have loops which are closed but not welded; the longer link has its loops set at right angles to each other. The rings are rather slight (Diam. 38.4 mm and 38.8 mm). All parts still moving freely. Iron. L. (overall, with rings extended) 191 mm; L. of links 137.2 mm; Weight 71 g.

The simple two-link snaffle-bit was in use in the Iron Age and the Roman period both in Britain and on the Continent. Complete snaffle-bits are comparatively rare finds, but a very close comparison for this example was found at Hod Hill and consequently dated to the period of the Roman Conquest (Brailsford 1962, 19, pl. 13, K29; Manning 1985, 66–7, pl. 28, H12).

Pottery

By Grace Perpetua Jones

MT05 produced a total of 727 sherds (7622 g) from 37 contexts, ranging in date from the Iron Age to the Roman period, with a single post-medieval sherd from the subsoil. The Romano-British pottery that could be assigned to phase belongs to the early Romano-British period (late 1st–2nd century AD); no diagnostic middle or late Romano-British period pottery was recorded. All prehistoric pottery, and key groups (defined as more than 25 sherds per context) of Romano-British pottery, were fully recorded (556 sherds, 5405g, from six features), following the standard Wessex Archaeology recording system for pottery (Morris 1994). The remaining smaller groups of Romano-British pottery have been recorded to the minimum standards recommended for the archiving of Roman pottery (Darling 1994).

Early Iron Age pottery

The earliest pottery is probably of Early Iron Age date, but there were few diagnostic traits amongst the material. Pit 25032 contained 252 sherds (1137g) of pottery, but nearly all are body and base fragments in a silty fabric with fine flint inclusions, with a single rim fragment (R13). Twenty sherds (157g), in a very similar fabric to the pottery in pit 25032, were unstratified. A single sherd from ditch 25076 may also be of Early Iron Age date.

Fabric definitions and descriptions are given in Appendix 1. Sandy fabrics dominate the prehistoric assemblage from MT05 (Q1, Q5, Q10–12), with the majority of sherds also containing sparse amounts of fine flint temper. Ten sherds are characterised by more frequent flint inclusions (F1).

Appendix 2 contains the vessel form definitions and descriptions; only two forms are represented at MT05, by one example each: a possible fineware bowl (R9), and a slack-shouldered vessel with everted rim (R13).

Romano-British pottery

Fabrics

The Romano-British fabrics are dominated by sandy greywares (Q100) and the related micaceous sandy ware (Q105), many of which may come from the Alice Holt industry. Other fabrics include flint-tempered wares and general sandy wares. A single sherd of South Gaulish samian was also recovered. Fabric totals are given in Table 1.

Forms

A total of 29 Romano-British vessels was recorded by rim form from the key groups of MT05 (Table 2). The most commonly occurring is the bead rim jar (R100), of which eight examples are present, four in a sandy greyware fabric, three flint-tempered vessels and one in a micaceous sandy fabric. Also relatively common is the necked, cordoned jar (R104), probably a product of the early Alice Holt industry (Lyne and Jefferies 1979, Class 1A). Three small, necked jars with rounded shoulders are also present (R106). There is one everted rim jar (R101), a single lid-seated jar with rilled exterior (R107), both in greyware fabrics, and a jar with small, beaded rim and high, carinated shoulder (R114). Bowl and dish/platter forms are also represented, including three shallow vessels with upright walls, carinations and plain rims (R105). A dish with internal moulding, imitating a *Gallo-Belgic* form (R112), is probably also an Alice Holt product (Lyne and Jefferies 1979, Class 6). The bowls include an example with concave neck and carinated body (R113); a plain-rimmed vessel (R108); and a round-bodied bowl with short, everted rim and footring base (R116). The body of the latter has been perforated post-firing.

Table 1: Late prehistoric and Romano-British fabric totals (MT05)

Fabric	*No.*	*Wt (g)*
Prehistoric		
F1	10	42
Q1	17	22
Q5	18	47
Q10	18	256
Q11	168	708
Q12	42	224
Sub-total	*273*	*1299*
Romano-British		
E301	1	46
F100	50	791
G100	8	150
Q100	116	1285
Q103	41	704
Q104	3	33
Q105	64	1097
Sub-total	*283*	*4106*
TOTAL	556	5405

Table 2: Number of Romano-British vessels present by rim type and by fabric (MT05)

Form Code	*F100*	*Q100*	*Q103*	*Q105*	*Total*
R100	3	4	–	1	8
R101	–	1	–	–	1
R104	–	3	–	2	5
R105	–	2	–	1	3
R106	–	2	–	1	3
R107	–	1	–	–	1
R108	1	–	–	–	1
R109	–	1	–	1	2
R110	–	1	–	–	1
R112	–	–	–	1	1
R113	–	–	1	–	1
R114	–	–	–	1	1
R116	–	–	1	–	1
Total	4	15	2	8	29

Key groups

Ditch 25199 [25182] contained 60 sherds (982g) of pottery dating to the middle of the 1st century AD. The assemblage comprises grog-tempered and flint-tempered pottery including three bead rim jars and a jar with small rim and high, angled shoulder. Ditch 25099, which was probably part of the same field system, also contained a group of 1st century AD pottery (28 sherds, 592 g), including much of a round-bodied bowl with short, everted rim and footring, and at least six post-firing perforations through the body, possibly to repair the vessel.

Ditch 25167 contained a good group of mid to late 1st century AD pottery, probably dating to around 70/80AD. It comprised 98 sherds (1656g), many from the Alice Holt industry, including four upright-necked cordoned jars (R104), one with a lid-seating (Lyne and Jefferies 1979, Class 1A); two rims broken at the neck probably also from necked cordoned jars (R109); two bead rim jars (R100); two necked jars with short, out-turned rims (R106); a lid (R110); an imitation *Gallo-*

Belgic dish/platter (R112); two carinated dish/platters (R105); and the neck from a flagon with the remains of at least one cordon.

Ditch 25067 is of late 1st century AD date, with a high concentration of Romanised greywares, including three bead rim jars (R100); a necked, cordoned jar (R104); a carinated bowl/dish/platter (R105); and a small, rounded, necked jar (R106). Part of a South Gaulish samian form 18R platter and a small number of flint-tempered and sandy body sherds were also recovered. In total, ditch 25067 produced 53 sherds, weighing 545 g.

Ditch 25119 contained a group of 44 sherds (331g) of pottery, probably of 2nd century AD date. It included part of an overfired waster with warped, rilled rim (R107); part of an everted rim jar (R101); and a plain rim from a bowl/dish (R108).

Of the features that produced smaller quantities of pottery, ditches 25059, 25101 and 25176 contained vessels of mid–late 1st century AD date, including two *Gallo-Belgic* dish copies from 25059. Features more generally dated to the early Romano-British period include ditches 25046, 25084, 25103, 25115, 25130, 25159 and 25180, pit 25090 and post-hole 25097.

Summary
The earliest pottery from MT05 is of probable Early Iron Age date, although few diagnostic features were present. The sherds came predominantly from pit 25032, with a single sherd from ditch 25076. The rest of the assemblage is of early Romano-British date. It contains a higher proportion of greywares (64% by count) and Romanised forms than the early Romano-British phase of MT09 (see below). Although much of the pottery represents local manufacture, necked and cordoned jars and a dish imitating a Gallo-Belgic form are products of the Alice Holt industry. No middle or late Roman pottery was identified, nor anything post-dating the Roman period, apart from a single post-medieval sherd.

Human Bone

by Jacqueline I. McKinley

Three inhumation graves were excavated in MT05, the bone from one of which (25040) was radiocarbon dated to the Middle Iron Age. The two remaining graves, 25056 situated *c*. 5 m to the south and 25078 *c.* 84 m to the north-east, are assumed to be of a similar date by association.

Methods

Age was assessed from the stage of skeletal and tooth development (Beek 1983; Scheuer and Black 2000), and the patterns and degree of age-related changes to the bone (Brothwell 1972; Buikstra and Ubelaker 1994). Sex was ascertained from the sexually dimorphic traits of the skeleton (Bass 1987; Buikstra and Ubelaker 1994; Gejvall 1981). The variable integrity of the attributed sex is denoted in Table 3 as; '??'most likely, '?' probable and unquestioned.

Measurements were taken where possible (Brothwell and Zakrzewski 2004) to enable the calculation of various skeletal indices including stature and cranial index (Trotter and Gleser 1952; 1958: Brothwell 1972, 88; Bass 1987). Non-metric traits were recorded in accordance with Berry and Berry (1967) and Finnegan (1978). The degree of erosion to the bone was recorded using the writer's system of grading (McKinley 2004a, fig. 6).

Results

Disturbance and condition

Two of the inhumation graves (25040, 25056) had survived to depths of 0.17 m or more, only one (25078) being reduced to less than 0.10 m. None of the graves was cut by a later intervention. The low level of skeletal recovery from grave 25078 (Table 3) is largely due to the loss of bone (especially from the uppermost right side and skull) as a result of plough damage. Most of the skull and lower limb bones from grave 25056 had also been removed by ploughing.

The percentage of skeletal recovery from the inhumation graves ranged from 25% to 92%. In the two cases of lowest skeletal recovery some bone had clearly been lost due to plough disturbance, but in all three graves the condition of the bone was very poor with extensive root erosion/degradation (grades 4–5) and particularly poor survival of trabecular bone. The bone from the deepest grave is in slightly better condition (25040; grades 3–4).

A variety of factors may affect bone preservation, the most important of which generally comprise the nature of the soil matrix and water permeability (Henderson 1987; Nielsen-Marsh *et al.* 2000; Millard 2001). In this instance, it appears that the alkaline burial environment (chalk) coupled with its effect on the water permeability has had a particularly deleterious affect, especially on the trabecular bone. Much of the surviving bone is fragmented, the condition of that from grave 25040 being exacerbated by the damaging effects of having large flint nodules placed directly over the buried remains.

Table 3: Summary of results from analysis of human bone (MT05)

Context	*Cut*	*Deposit type*	*Date*	*Quanti-fication*	*Age/sex*	*Pathology*
unburnt bone						
25043	**25040**	***in situ***	**MIA**	***c.* 92%**	**adult *c.* 35–45 yr female**	***ante mortem* tooth loss; calculus; *cribra orbitalia*; sacralised L6; Schmorl's node - T7-L3; osteoarthritis - 6 right costo-vertebral; osteophytes - C1 anterior facet, L6, left acetabulum; enthesophytes - left prox. humerus, calcanea; morphological variation - wormian bones**
25058	**25056**	***in situ***	**?MIA**	***c.* 25%**	**adult *c.* 35–45 yr female**	**fracture - proximal foot phalanx; surface defect - left acetabulum; cortical defect - left proximal femur; osteophytes - S1 bsm, right rib facet**
25079	**25078**	***in situ***	**?MIA**	***c.* 45%**	**adult >40 yr ?male**	***ante mortem* tooth loss; abscess; caries; degenerative disc disease - 1L; pitting - 2T rib facets; enthesophytes - right lateral scapula, proximal finger phalanx, prox. femoral shafts, calcanea**
25079b	**25078**	**?redep.**	**?MIA**	***c.* 5% l.**	**adult >18 yr ??female**	

KEY: MIA - Middle Iron Age; l. – lower limb (skeletal area recovered where all is not represented); C = cervical; T = thoracic; L = lumbar; S = sacral; prox. - proximal; bsm = body surface margins

Demographic data

The bone assemblage comprises the remains of four individuals. Two mature adult females (graves 25040, 25056) were buried in relatively close proximity to one another (5 m). The pair of femora from the second individual within the heavily truncated grave 25078 (Table 3, 25079b) were recorded on site as the 'disarticulated right arm' of the recognisably *in situ* burial remains (most of this individual's right arm bones are missing). This suggests the two bones lay adjacent, and although they may have been redeposited, given the shallow surviving depth of the grave they could have been all that remained of an almost fully ploughed-out additional *in situ* deposit.

Small burial groups such as these are common in the Iron Age, Hampshire examples including the Early/Middle Iron Age inhumation burials from Weston Down Cottages, near Winchester (Gibson and Knight 2007).

Skeletal indices and non-metric traits

The poor condition of the bone severely limited the number of measurements it was possible to take; the stature could be estimated for only one individual. The female from grave 25040 had an

estimated stature of 1.54 m (*c*. 5′ ½″) which is at the bottom of the recorded range (1.54–1.64 m) for Iron Age females given by Roberts and Cox (2003, 103; from sample of 72 individuals). It is, however, the same as that of one of the two Early/Middle Iron Age females from Weston Down Cottages (McKinley 2007), both they and this individual having slightly greater estimates than the mean of 1.53m observed in the females from Danebury, Hampshire (Hooper 1991, table 8.7). Since stature is affected by childhood nutrition, amongst other factors, this apparently consistent lower than the average rate (1.62 m; Roberts and Cox 2003, 103) for the county may reflect some localised variation in the social status of young females; alternatively it may reflect homogeneity within the wider population group within the region.

The platymeric index (demonstrating the degree of anterior–posterior flattening of the proximal femur) was calculated for three of the four individuals. Both females fell in the platymeric range (74.5–68.9). The male index (88.8) fell in the eurymeric range. Both femora could only be measured in one case (25040) and there is little discrepancy between the readings, suggesting equality in the stresses placed on the two sides.

The platycnemic index (illustrating the degree of meso-lateral flattening of the tibia) was calculated for three individuals (both females and one male). The indices were all relatively close, 61.7–67.9 (mean 65), the two females falling in the mesocnemic range and the male in the platycnemic.

In some cases variations in the skeletal morphology may indicate population diversity or homogeneity (Tyrrell 2000), but some traits have also been attributed to developmental abnormalities or mechanical modification (*ibid*., 292). The partial sacralisation (coalition rather than fusion; only left side recovered) of a sixth lumbar vertebra from female 25043 represents a developmental defect which may have caused the individual pain and discomfort. Roberts and Cox record seven Iron Age examples of the condition (2000, table 2.36) which is more common in females in both the ancient and in contemporary populations (*ibid.*; Aufderheide and Rodríguez-Martín 1998, 66). None of the few recorded traits can be used to indicate homogeneity or lack of it.

Pathology

Pathological changes were observed in the remains of three adults; the pathological lesions observed and the bones affected are summarised in Table 3.

Dental disease

All or parts of three erupted permanent dentitions were recovered, comprising 62 teeth (25; 4; 33) and 56 socket locations (14; 8; 43). Slight-mild dental calculus (calcified plaque/tartar) was observed in one dentition but the frequency may be misleading since this material can easily be dislodged in burial environments adversely affecting the bone.

The *ante mortem* loss of two teeth (maxillary molars) was recorded (5.9%). The rate is higher than the TPR (true prevalence rate) of 3.2% given by Roberts and Cox for their Iron Age sample (10 sites; 2003, table 2.51), but it could be unrepresentative given the small size and condition of the assemblage. Slight dental caries was recorded in one tooth from 25078 (mandibular M3; 3.0%). The rate is close to the 2.9% for the period given by Roberts and Cox (*ibid.*, table 2.46) but could, again, be misleading. A small dental abscess in one dentition, from 25078 (2.9%), is most likely to have been associated with the dental caries but the associated tooth is missing post-mortem.

Trauma

The mature adult female from grave 25056 had a well-healed transverse mid-shaft fracture to a proximal foot phalanx. Such fractures most commonly result from a heavy object dropping onto the foot, and can result in severe pain and swelling (Adams 1987, 290). A cortical defect in the left proximal femur of the same individual probably reflects soft tissue trauma to the thigh muscles. Enthesophytes (bony growths which may develop at tendon and ligament insertions on the bone) recorded at between one and six sites in two of the adults are most likely to reflect repetitive minor traumatic stress, the evidence for which tends to increase with age (Rogers and Waldron 1994, 24–5).

Joint disease

The poor condition of the bone resulted in the recovery of very few joint surfaces (T123) and vertebrae (T48 from three spines). Consequently, the potential for recording joint disease was severely limited and the recorded data may be unrepresentative. Some lesions were, however, recorded in the three adults from which joint surfaces were recovered (Table 3).

Similar lesions – osteophytes (new bone growth on joint surface margins) and other forms of new bone development, and micro- and macro-pitting – may be formed as a consequence of one of several different disease processes (Rogers and Waldron 1995). Schmorl's nodes (a pressure defect resulting from a rupture in the intervertebral disc; Rogers and Waldron 1995, 27; Roberts and Manchester 1997, 107) were recorded in one spine (25040), affecting *c*. 18.7% of the vertebrae. Degenerative disc disease, reflecting age-related degeneration of the vertebral discs (Rogers and Waldron 1995, 27), was recorded in one spine (25078, TPR 2%). Lesions indicative of osteoarthritis (Rogers and Waldron 1995, 43–44) were seen in the remains of one individual (25040), affecting *c*. 4.9% of the extra-spinal joints.

Lone osteophytes often appear to be a 'normal accompaniment of age', reflective of 'wear-and-tear' (Rogers and Waldron 1995, 25–6). Lesions were recorded in the females (6.2% spinal and 1.6% extra-spinal joint surfaces). Pitting in the surfaces of synovial joints may develop in response to a number of conditions but it is probable that most, as with some of the lone osteophytes, reflect the early stage of osteoarthritis. Lone extra-spinal lesions were seen in the remains of one male (TPR 1.6% extra-spinal joints).

Metabolic conditions

Cribra orbitalia is generally believed to result from a metabolic disorder primarily associated with childhood iron deficiency anaemia (Molleson 1993; Roberts and Manchester 1997, 166–9). Slight bi-lateral porotic lesions were recorded in the orbits of one female (25040); no orbits were recovered from the other burial remains of this date.

Miscellaneous conditions

Poor skeletal recovery and the small size of this assemblage preclude much general comment on the health status of the group. The absence of dental hypoplasia (developmental defects in the tooth enamel reflective of periods of illness or nutritional stress in the immature individual; Hillson 1979) and paucity of *cribra orbitalia* suggest the individuals were relatively well-nourished as children. The slight calculus deposits (if genuine) and low caries rates suggest a moderate self-cleaning diet reasonably high in meat protein.

Other Finds

Other finds from this Mitigation Area (worked flint, worked stone, worked bone (Fig. 11, below), animal bone) are not reported on in detail here; details can be found in the project archive.

Mitigation Area 08

Mitigation Area 08 (NGR 433677 125865; 60 x 46 m; Fig. 4), was situated on land south of Staff Road, Michelmersh. A uniform topsoil/subsoil overburden *c*. 0.20–0.25 m overlay Upper Chalk. A series of Early Iron Age pits, several post-holes and tree-throw hollows were excavated. One tree-throw hollow produced a single sherd of Late Bronze Age pottery and evidence of potential *in situ* burning.

Metalwork

by Grace Perpetua Jones

Pit 28039

An iron chisel was recovered from the lowest secondary fill of the pit (ON 83; Fig. 5). The object is 124 mm in length, and approximately 4 mm thick. It is of square cross-section with an oblique end. The other end, which would have been inserted into a handle, is slightly bulbous. No mineralised remains were present to indicate the material used for the handle. The cutting edge is formed by a bevel on one side, at approximately 45°, and is 5 mm in length. The modern-day equivalent of this

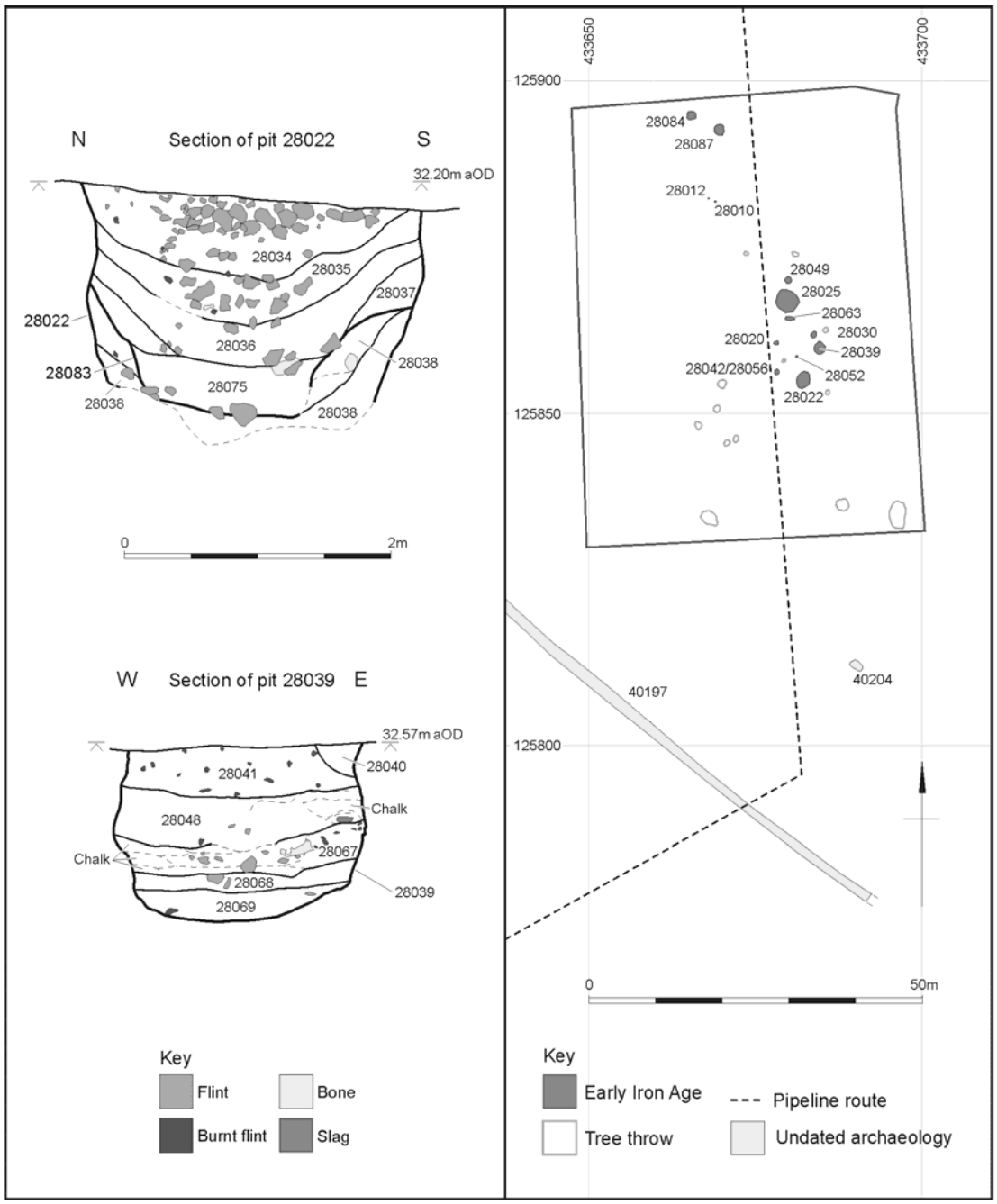

Figure 4 Plan and pit sections: MT08

tool would be a sash-mortising chisel, so called as they are used to cut the relatively shallow mortises found in wooden windows. Chisels have been recovered from other Iron Age sites in the region, including Danebury (Cunliffe 1984, 351), although none of reports consulted illustrate comparable examples. A radiocarbon date of 790–530 cal BC (SUERC-26245; 2510±30 BP) provides a date range for this chisel.

The uppermost secondary fill of this pit (context 28041) produced two metal objects (ON 73 and 71). Object 73 is a copper alloy ring-headed pin of wire construction. The pin is 61mm in length, the end is broken. The head is 28.7 mm wide and 26 mm high. The wire is thicker in the area of the head, up to 5.8 mm, compared to 3.9 mm on the shank. The head is plain. The pin is probably an early example of the type, retaining the bend in the shank, characteristic of the swan-neck pins they derive from (Seager Smith 1984, 24). The pin has been shaped from wire, rather than cast as is more commonly seen for later types, and is therefore of a type assigned to the 4th century BC by Dunning (1984, 274). The presence of this pin in the upper fill of a pit dated to the 8th–6th

Figure 5 Iron chisel ON 83

centuries is therefore significantly earlier, and the pottery suggests all fills are broadly contemporary in date.

Similar pins have been found at a number of sites across the region, many of iron, including at least four examples from Hampshire (Bramdean; King John's Hill, East Worldham; Old Down Farm, Andover, Seager Smith 1984). Ring-headed pins are thought to have been used to fasten items of clothing (Seager Smith 1984).

A tapering rod/shank fragment from a second iron object, 8 mm in length and 5 mm thick, was also recovered from this fill (ON 70).

Pit 28059

This pit contained a small fragment of sheet copper alloy, <1 g, with a curved edge, 0.8–1.1 mm thick; one edge is slightly coiled (ON 76); and two small fragments of mineral-preserved wood, weighing 7 g (ON 75).

Slag

by Thérèse Kearns

The excavations at MT08 yielded approximately 66 kg of slag, the majority of which is derived from iron smelting, as well as a few fragments of iron ore. The slag is indicative of smelting in a non-slag tapping, slagpit, furnace. This type of furnace consisted of a pit under a super structure generally thought to be of the low-shaft kind — the pit was used to collect slag as it formed during the smelt (Paynter 2007).

The assemblage consists of a number of 'furnace bottoms' which are more or less plano-convex in shape. Also present are substantial blocks of flow slag with clear flow structures which in many cases have been in contact with relatively large pieces of either wood or charcoal which was used to fill the pit.

There is little evidence of smithing from the site; however, one small plano-convex cake (160 x 100 mm) closely resembles a smithing hearth bottom and therefore may point to small scale smithing activity on site.

The evidence for prehistoric iron manufacture at MT08 is of considerable importance. The archaeology of Iron Age Wessex has been the subject of considerable study which has had an

impact on the Iron Age of most of the British Isles. Prehistoric iron artefacts from the region have been studied intensively (Ehrenreich 1985; Hedges and Salter 1979) but very few iron production sites are known.

Only a handful of iron production sites have been identified within Wessex and many of these do not stand up to close scrutiny. Evidence for prehistoric iron smelting has been claimed for Cow Down at Longbridge Deverill and All Cannings Cross (Tylecote 1986, 139) but none of the claimed slag has been accessioned by Wiltshire Heritage Museum and it cannot now be traced.

Hedges and Salter (1979) examined the slag inclusions in iron currency bars from a hoard excavated within the hillfort at Danebury and compared the results with currency bars from Beckford and Hunsbury. The compositions of the slag inclusions for each hoard were distinguishable from each other and, while local ore sources could easily be suggested for both Beckford and Hunsbury, the source of the Danebury currency bars was not identified. Ehrenreich (1994) notes that few iron production sites are known in Wessex and suggests that most iron was imported into the region. The detailed investigation of the iron smelting slags from Michelmersh provides an opportunity to examine prehistoric iron manufacture in this important region.

Further study of the assemblage is being undertaken and will be published elsewhere. This will include a detailed investigation of the various types of slags (furnace bottoms, flows and possible smithing hearth bottom) as well as the ore. Chemical analysis and metallographic examination of slag, furnace lining and ore will be used to identify possible ore sources, smelting procedure and possible types of product (iron/steel). The results will be compared with data from the Danebury currency bar hoard as well as other prehistoric iron smelting slags (Paynter 2006).

Stone Objects

by Rob De'Athe, with geological identifications by Kevin Hayward

Ten quernstone and possible quernstone fragments were recovered from MT08. These comprise five saddle querns, from pits 28025, 28039, 28084, and 28087 (two examples), and five fragments of unknown quern type, from pits 28025, 28039, 28059, 28083, and 28084.

The saddle querns are in three different lithologies. Two examples (pits 28039, 28087) are in greensand, possibly from the Upper Greensand in the Vale of Wardour near Shaftesbury, Dorset; two (pits 28084, 28087) are in sarsen, from Tertiary deposits within the Hampshire Basin; and one (pit 28025) is in a ferruginous sandstone, possibly from the Agglestone Grit (Barton Beds) in the Swanage/Poole area. All of the miscellaneous fragments are in greensand, again possibly from the Upper Greensand of the Vale of Wardour.

Thus, the majority of the quernstones (60%) potentially originated from the Swanage/Poole district, 20% originated from somewhere in the Hampshire Basin, and 20% in the Upper Greensand of the Vale of Wardour. At Danebury, the majority (78%) of all worked stone was sourced from the Greensand outcrops in the Vale of Wardour (Brown 1984, 407). The use of Upper Greensand for quernstones was questioned at Danebury, as the stone is not as suitable for grinding cereals as the harder Lower Greensand (*ibid.*). From the small assemblage at MT08 it may be suggested that the inhabitants of this area during the Early Iron Age preferred to source the coarser grained sandstone from the Swanage/Poole area.

Pottery

by Grace Perpetua Jones

MT08 produced a total of 1141 sherds, weighing 12,781 g. The material was recovered from 33 contexts across 11 pits (28020, 28022, 28025, 28030, 28039, 28042, 28049, 28059, 28083, 28084, and 28087; Table 4). All pottery from this area dates to the Early Iron Age and has been fully recorded, as for MT05, following the standard Wessex Archaeology recording system for pottery (Morris 1994), which accords with nationally recommended guidelines for prehistoric pottery (PCRG 1997).

Table 4: Quantification of pottery in each pit, by sherd number, weight and rim type (MT08)

Feature	*No.*	*Wt. (g)*	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*	*R10*	*R11*	*R12*	*R13*	*R21*
Pit 28020	1	63	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Pit 28022	3	112	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Pit 28025	78	1083	–	–	2	2	–	–	–	1	1	1	–	–	–	–
Pit 28030	19	114	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Pit 28039	206	2428	1	–	3	1	–	–	–	–	–	–	–	–	–	2
Pit 28042	4	42	–	–	–	–	–	–	–	–	1	1	–	–	–	–
Pit 28049	387	4143	2	1	–	1	–	–	–	–	–	–	–	–	–	–
Pit 28059	30	73	–	–	–	–	–	–	–	–	–	1	–	–	–	–
Pit 280 83	46	953	–	–	2	–	–	1	1	–	–	–	–	–	–	–
Pit 28084	156	1697	1	–	–	1	1	–	2	–	–	–	1	1	–	–
Pit 28087	211	2073	1	–	1	2	1	–	–	–	1	1	1	1	1	–
Total	1141	12,781	5	1	9	7	2	1	3	1	3	4	2	2	1	2

Table 5: Pottery fabric totals (MT08)

Fabric	*No*	*Wt (g)*
C1	4	11
F1	1	2
F2	13	228
Q1	305	3471
Q2	430	3259
Q3	46	265
Q4	18	133
Q5	35	791
Q6	31	525
Q7	1	6
Q8	34	525
Q9	28	517
QS1	2	16
QV1	177	1946
S1	16	1086
Total	1141	12,781

Fabrics

Fifteen fabrics were identified amongst the Early Iron Age pottery from MT08 (Table 5). The assemblage is dominated by sandy wares (81.4% by count, 74% by weight), with smaller quantities of quartz and organic-tempered (15.5% by count, 15.4% by weight). Shell-tempered wares (1.4% by count, 8.6% by weight), flint-tempered (1.2%/1.8%), quartz and shell-tempered and other calcareous wares formed minor components of the assemblage (<1%). Identifying sources for the sandy fabrics is notoriously problematic, but it is reasonable to assume that most if not all represent local procurement and production. Dark, glassy grains visible in several fabrics may represent glauconite, but positive identification in the hand specimen or even with a binocular microscope at x20 can be difficult and more detailed analysis is beyond the scope of this project. The nearest source of glauconite is the glauconitic sand and clay of the Bracklesham Beds, located approximately 5km to the south of the site. The very fine fabrics, Q3 and Q4, are probably one and the same, but in the latter the iron inclusions are more obvious. They are equivalent to Danebury fabric group E0, identified as made from brickearth from the Salisbury area (Brown 2000a, 84), approximately 20 km to the west. Without recourse to petrological analysis, identifying the source of the shell in the S1 fabric is not possible. However, it appears to be from a fossil rather than a

fresh source (J. Russell, C. Stevens and S. Wyles pers comm.), possibly the fossiliferous shell in the Barton Clay, located approximately 15 km to the south-west of the site. This distance is greater than the 10 km maximum radius for the procurement of materials for local pottery production suggested by Arnold (1985).

Table 6: Number of vessels present in each rim type, by fabric (MT08)

Form Code	*F2*	*Q1*	*Q2*	*Q3*	*Q4*	*Q5*	*Q6*	*Q7*	*Q8*	*Q9*	*QV1*	*S1*	*Total*
Jars													*16*
R4	–	2	1	–	–	1	1	–	1	–	1	–	7
R6	1	–	–	–	–	–	–	–	–	–	–	–	1
R7	–	2	–	–	–	–	–	–	–	–	1	–	3
R8	–	1	–	–	–	–	–	–	–	–	–	–	1
R12	–	1	–	–	–	–	–	–	–	–	1	–	2
R21	–	–	–	–	–	–	–	–	–	–	–	2	2
Neutral profile													*2*
R5	–	–	1	–	–	–	–	–	–	–	1	–	2
Bowls	–	–	–	–	–	–	–	–	–	–	–	–	*8*
R1	–	3	–	1	–	–	–	–	–	1	–	–	5
R9	–	2	–	1	–	–	–	–	–	–	–	–	3
Uncertain form													*16*
R2	–	–	1	–	–	–	–	–	–	–	–	–	1
R3	–	3	2	–	1	–	–	1	–	–	1	–	8
R10	–	2	–	–	–	–	–	–	–	–	1	1	4
R11	–	1	–	–	–	–	–	–	–	–	1	–	2
R13	–	1	–	–	–	–	–	–	–	–	–	–	1
Total	1	18	5	2	1	1	1	1	1	1	7	3	42

Forms

Fourteen forms were identified amongst the MT08 pottery (Table 6). Jar forms dominate the assemblage (R4, R6, R7, R8, R12, R21; 16 vessels), with one only one (R1; five vessels) or possibly two (R9; three vessels) fineware bowl forms and one form of neutral profile (R5; two vessels). The remaining forms are too incomplete to ascertain the type of vessel they originated from and have not been illustrated (R2, R3, R10, R11, R13). The most commonly occurring jar form, R4 and the related R7, is slack-shouldered and has an upright or slightly concave neck and squared rim. This type of vessel is paralleled at Danebury (form JB2; Cunliffe 1984, 259, figs 6.29), and other sites in the region such as Winnall Down (Hawkes 1985, fig. 53.36, forms 10 and 11). Three early jar forms include two forms with upright necks, probably from shouldered vessels, and one form with a hammerhead rim. The upright-necked forms are decorated with fingertip impressions, the R8 on both the rim top and the shoulder, and the R12 on the interior edge of the rim. The hammerhead rims (R21), in a densely shell-tempered fabric, are also paralleled at Danebury (JA2; Brown 2000a, fig. 3.14). The similarity in fabric and form of this very distinctive vessel type may be evidence of a single production site. Other jar forms include a single shouldered vessel (R6), similar to examples from Runnymede (Longley 1991, 543, fig. 101, form 9/12).

The R1 bowls are a very distinctive type, paralleled at Danebury by type BB1 (Cunliffe 1984, figs. 6.57-58). Scratched decoration is common on this type of vessel at Danebury, and they are often termed 'scratched-cordoned bowls' (*ibid.*, 254, fig. 6.22). The Barton Stacey examples have upright necks and beaded rims, faceted shoulders emphasised by cordons, and the shoulders are red-finished (haematite-coated). Although none of the R1 vessels represented by their rims display any form of decoration, several angled body sherds with red-finished exteriors have

decoration scratched onto their surfaces in the same way as the scratched-cordoned bowls. At Danebury this form relates to ceramic phase 3, dated 470–360 BC (Cunliffe 1995, 17). It is thought to originate from the earlier furrowed bowl tradition (Brown 2000a, 121). At Barton Stacey, however, a significantly earlier date can be attached to at least one of the BB1 bowls, which was recovered from the lowest fill of pit 28039; a radiocarbon date of 790–530 cal BC (SUERC-26245; 2510±30 BP) was obtained from one of the overlying fills. This would place it within the Earliest Iron Age ceramic phase as defined, for example, at Houghton Down (Brown 2000b).

Three different fabrics were used in the manufacture of the bowls (Table 6). One vessel was made from the very fine, silty fabric Q3/Q4, possibly from the brickearth (see above), but the other four bowls are in more general sandy wares that without thin section were indistinguishable from fabrics used for the jars. It seems that similar clay sources, or perhaps the same clay source, were being exploited to make a range of vessels. Distinctions of coarse and fine therefore become related to the form of the vessel and the treatment of the vessel's surface, with the coarser jars left rough whilst the finer bowls were burnished and a red slip applied to the exterior. Two everted rims in quite fine fabrics may also be from bowls.

Two vessels of neutral profile are present amongst the assemblage (R5), possibly proto-saucepan pots of the 5th to 4th century BC. Many of the rims were too incomplete to ascertain the form type, but the small size of the two R11 rim diameters (80mm and 90mm) suggest they may have been cups.

Surface treatment

There are 15 recorded instances (79 sherds) of red-finishing on the exterior of a vessel, and four of these records (24 sherds) are associated with burnishing on the interior or traces of red-finish on the upper interior. Traditionally termed 'haematite-coating', this surface finish is relatively common on pottery from this period from sites in central southern and south-eastern England, particularly the Wessex region (Middleton 1995, 203). This finish can be achieved in two ways. True haematite-coating is produced by applying powdered iron oxide or ochre when the vessel is leather hard and burnished, or applied as a slip or slurry. An oxidised stage during firing ensures the red colour. Alternatively a ferruginous clay slip was applied and oxidised (*ibid.*). External, and occasionally internal, wiping was recorded in eight instances, including two R5 neutral-profile vessels and one R7 jar. An R4 jar was wiped on both surfaces. Burnishing was used as a sole treatment for the exterior of four vessels, including the R6 shouldered jar, and both surfaces of another vessel.

Decoration

Little decoration is present on the Early Iron Age pottery. Fingertip/fingernail impressions were recorded from an R8 jar on the top of the rim and the shoulder, and on the rim top of an R12 jar. Fingertip impressions are also present on a body sherd, and fingertip and nail impressions on a

shoulder sherd, both in sandy fabrics. Body sherds from scratched-cordoned bowls were present in pits 28084 and 28087 and are described below. The sherds from pit 28087 are red-finished, and that from 28084 may be too, but it is burnt and any surface treatment is no longer visible. Another red-finished body sherd from 28087 is cordoned. A carinated body sherd from pit 28084 had been incised with diagonal lines crossing vertical ones.

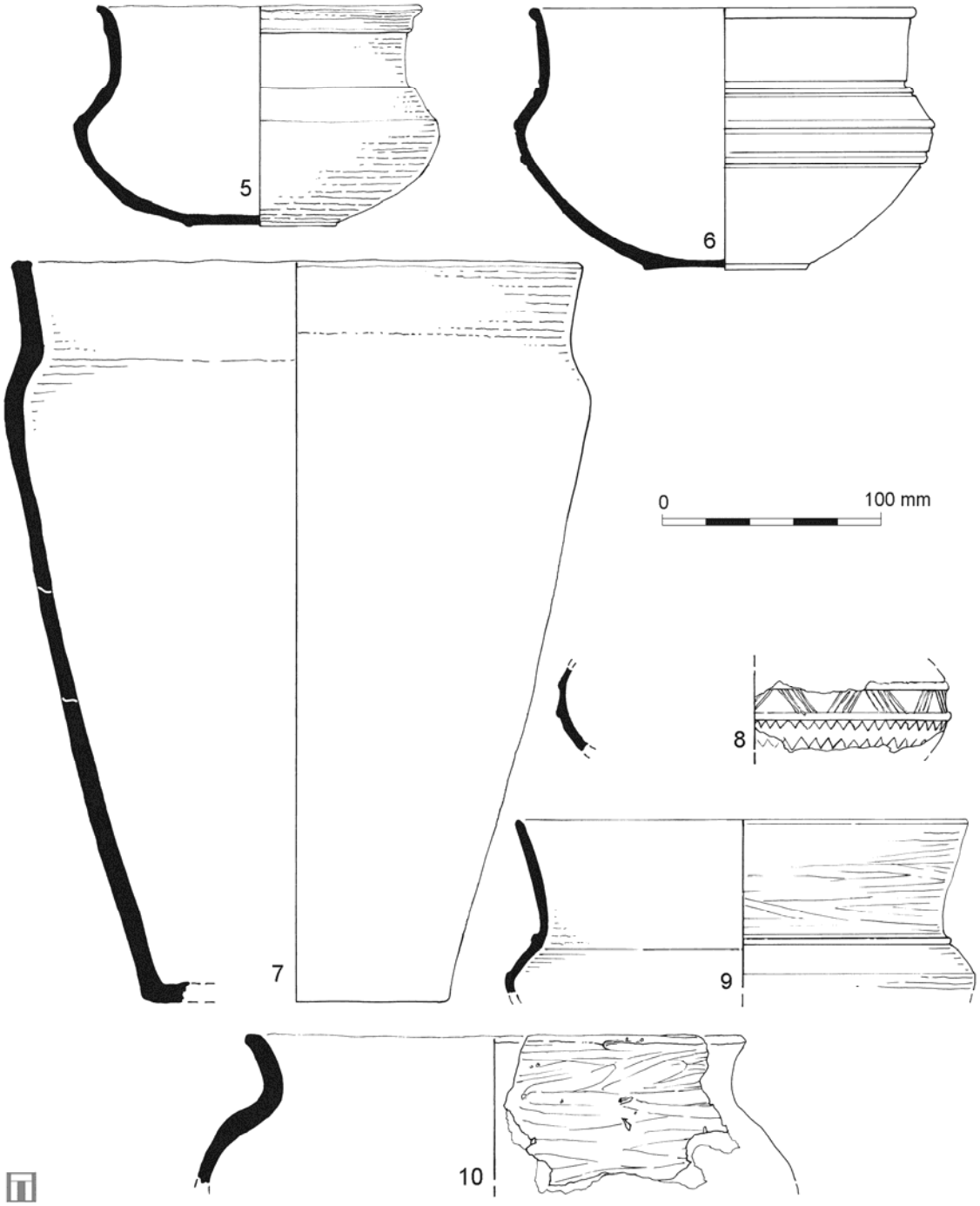

Figure 6 Iron Age pottery from MT08

***5**. Tripartite bowl, R1, Q1, ON 68, PRN 1, context 28050, pit 28049. **6**. Tripartite bowl, R1, Q1, ON 71, PRN 2, context 28050, pit 28049. **7**. Shouldered jar, R4, Q2, PRN 10, context 28050, pit 28049. **8**. Decorated body sherd, Q3, PRN 137, context 28092, pit 28087. **9**. Tripartite bowl, R1, Q3 fabric, PRN 13, context 28069, pit 28039. **10**. Shouldered jar, R4, Q6, PRN 34, context 28048, pit 28039.*

Vessel size
None of the vessel forms were present in sufficient quantities to be statistically reliable, however a general summary of the size of vessels in the assemblage can be presented. The slack-shouldered jar forms R4 and R7 are mostly between 200–260 mm in diameter (at the rim), with one larger example of 360mm. Smaller jars include the R6 shouldered vessel, 130 mm diameter (all diameters are external). Upright-necked jar R12 was present in two sizes, of *c.* 200 mm and 400 mm, although the fragments were so small that a true measurement was problematic. The jars with hammerhead rims (R21) are very large, 360 mm in diameter, similar to a vessel of this type illustrated from Danebury (Brown 2000a, fig. 3.14, DA1110). The R1 bowls are 150–200 mm, while possible bowl form R9 is 100–130 mm in diameter.

Evidence of use
There is very little evidence of the actual use of these vessels, with only five instances of external soot deposits, three of internal burnt residue, and one with deposits on both surfaces. The sooting occurred on single examples of the R4 and R7 jars and a small R11 vessel, all other instances were body sherds.

Key groups
Pit 28049
The largest group of pottery came from pit 28049 (387 sherds). It contained two almost complete bowls, a fragmentary jar and the bases of two other vessels. The bowls are of different sizes and display varying states of preservation. One (ON 68; Fig. 6.5) has an upright neck and flaring, moulded rim (R1). The shoulder is faceted and defined by cordons. The base has the remains of a footring but is very worn, particularly in the centre. The exterior had been red-finished and the interior burnished. The vessel does not show any signs of decoration. An area of fire-clouding on the exterior suggests vessel was over-fired, old cracks in the vessel may have happened during firing, although the wear on the base indicates the vessel was still used despite this (Figs 7 and 8).

The second bowl (ON 71; Fig. 6.6; Fig. 7; R1) is in a more fragmentary state and shows very obvious signs of over-firing, with more than half of the vessel being grey in colour. The base has spalled (Fig. 8) and this vessel is probably a waster. It is of the same form as the other bowl (ON 68) but is slightly larger. The fabric is similar but not identical, but both are sandy wares which were used for fine and coarser vessels.

Figure 7 Tripartite bowls ON 68 and 71 from Pit 28049

Figure 8 Top) Base of ON 68; bottom) base of ON 71

The jar was very fragmentary (Fig. 6.7) and made from a sandy fabric. The sherds were very variable in size, many were small (30 x 40 mm) but there were also some much larger pieces (for example, 100 x 100 mm, 140 x 80 mm). They are now covered in post depositional concretions. Just over half of the rim is present (R4), and the complete profile can be estimated.

The base from a small, over-fired vessel was also present in the pit. Fire-clouding was evident on the exterior. Fragments from the base of another heavily oxidised and over-fired vessel and several unoxidised body sherds were also recorded. Two rim fragments were too small to ascertain their type (R2, R3).

Pit 28087

A large group of pottery was recovered from pit 28087 (211 sherds, 2073 g), much of which was covered in post-depositional concretions. Many appear to be body sherds from a single vessel, and were probably from the same vessel as an R4 jar rim recovered from this pit. The rim from a red-finished bowl was recorded in fabric Q1, and there was also a cordoned body sherd in a much finer, red-finished ware (Q3). Two joining body sherds (Q3) from a red-finished bowl (probably an R1 form) are decorated (Fig. 6.8). The decoration has been scratched on the exterior, and consists of a cordon, then four to six diagonal lines, going one way and then the other in a zig-zag fashion

(Cunliffe 1984, fig. 6.57, 750), and then another cordon and below that two continuous zig-zag lines (*ibid.*, fig. 6.58, 733). The decoration is the same as that present on a burnt body sherd in pit 28084, but this does not conjoin.

Other rim fragments are also present, however the forms of few can be identified. A plain, undifferentiated rim fragment from a very small vessel, only 80 mm in diameter, is probably a little cup (R11). Other rims come from upright-necked and slack-shouldered jars. One rim is decorated with fingertip impressions on the interior and belongs to a large vessel (R12).

Pit 28039

The third largest assemblage came from pit 28039, including parts of a red-finished bowl, two shell-tempered, hammerhead rim jars and another coarseware jar. The lowest fill (28069) produced the rim, and several body and base sherds from a red-finished bowl (Fig. 6.9) in the very fine/silty fabric Q3/Q4. A hammerhead rim from a very large jar was also present (360 mm in diameter), in a densely shell-tempered fabric (Fig. 9.11). Overlying fill 28068 produced another shell-tempered hammerhead jar (Fig. 9.12). Above this, fill 28067 produced more fine and coarse sandy body sherds, including a small number of red-finished ones. Overlying fill 28048 contained the rim from a coarseware sandy jar (Fig. 6.10), and more sherds from the red-finished bowl recorded from primary fill 28069, suggesting this pit was infilled quickly, in several episodes but utilising refuse from a similar source. The final fill, 28041, contained more sandy body sherds and a few red-finished ones in the fine/silty fabric Q3/Q4.

Pit 28084

Pit 28084 contained mostly sandy body sherds, some of which are burnt. Identified vessels include an R4 jar, 220 mm in diameter, with traces of sooting on the exterior, and a rim and shoulder sherd from a red-finished bowl (R1). A vessel with a flat-topped, slightly beaded rim and slack profile, gently curving at the shoulder area (R7) has been wiped on the outside; the inside is relatively smooth. Also present is a flat-topped rim with irregular lip on the exterior, and in places on the interior, from a neutral-profile vessel (Fig. 9.14). The exterior surface has been wiped. Other jar rim fragments are present, but are too incomplete to ascertain their form. One small vessel (R11, 90 mm diameter) may be a cup. The complete, plain and flat base of a small vessel is also present, probably a little jar. The external walls are burnished, with very clear vertical burnishing lines, the interior left rough. Traces of sooting are present of the upper part of the vessel. A rim fragment, slightly squared on the interior and rounded on the exterior, may be from the same vessel, but a complete profile could not be reconstructed.

Decorated body sherds from contexts 28099 and 28098 (Fig. 9.13) are probably from R1 bowls. The two from 28099 are carinated, with scratched decoration on one side of the carination. This comprises incised diagonal lines crossing vertical ones, although there does not appear to be any specific motif on these fragments. Instead it looks similar to wiping but there are more frequent lines and they are more deeply incised. The sherd from context 28098 is burnt (grey in colour) and displays scratched decoration in the form of two rows of zig-zag lines and one of diagonal lines, on either side of a cordon, the same as the decorated sherds in pit 28087.

Pit 28025

Pit/shaft 28025 contained pottery in five out of nine fills, including two necked jars (R4) and a small, shouldered jar with fingertip impressions on the rim top and shoulder (Fig. 9.16).

Pit 28083

Pottery was recovered from four fills of pit 28083. It includes a small, shouldered jar with short, everted rim (Fig. 9.15); a slack-shouldered jar (Fig. 9.17) and three very fine/silty sherds (Q3/Q4 fabric), one of which is a red-finished rim fragment (R3). Cross-context joins were present across fills 28036 and 28075.

Other features
Pits 28020, 28022, 28030 and 28042 each contained less than 20 sherds, although the pottery from 28030 included several body sherds from R1 bowls, some with evidence of a red finish. Pit 28059 contained a larger group, with 30 sherds, but these were sandy and shelly body sherds and one unidentified rim fragment.

Discussion
The pottery from MT08 is all of Early Iron Age date, and was recovered exclusively from pits. Cross-context joins in several of the pits indicate they were infilled fairly rapidly. Four contained large assemblages of more than 150 sherds (28049, 28087, 28084, and 28039). One absolute date was obtained from pit 28039, indicating a date in the 8th–6th centuries BC for that feature, and, by association, for most of the assemblage due to the similarity of fabrics and forms of the pottery across the features. The vessel forms present find parallels amongst other regional assemblages, most notably from Danebury.

Significant vessels include the tripartite bowls (R1) and jars with hammerhead rim (R21). The bowls belong to the 'scratched-cordoned bowl' tradition, examples are found on many other sites in the region, such as Winnall Down (Hawkes 1985) and Meon Hill (Liddell 1935). The form at Danebury (BB1) relates to ceramic phase 3, dated 470–360 BC (Brown 2000a, 121). One of the bowls from Barton Stacey was found in pit 28039, along with two hammerhead jars, a type also found among the Danebury vessels, dated to the 7th–5th centuries BC (Brown 2000a, 86). A radiocarbon date of 790-520 cal BC from pit 28039 provides evidence of the earlier production and use of scratched-cordoned bowls and indicates that an overlap in the currency of the two forms is possible (L. Brown pers. comm.).

Sandy wares dominate the pottery, and although it is very difficult to provenance such fabrics, it seems likely that much of the Barton Stacey Early Iron Age pottery was locally made. However, a source for the fossil shell present in the fabric of the hammerhead jars was not locally available and these vessels were probably bought to the site from elsewhere as finished products, rather than the clay or temper being brought in. The strong similarity between these vessels and the examples from Danebury, in both fabric and form, hint at a single production source for this type of jar. The similarity of the Barton Stacey silty Q3/Q4 fabric to fabric group E0 at Danebury, identified as brickearth from the Salisbury area (Brown 2000a, 84), is also suggestive of regional trading patterns rather than on-site or local manufacture for these vessels. Morris (after Cunliffe 1984) states that the scratched-cordoned vessels were produced in a single location and distributed to sites up to 40 km away, 'for immediately local use and for a non-hierarchical, intra-regional exchange network' (Morris 1996, 43). Cunliffe's analysis of the distribution of scratched-cordoned bowls found the eastern limit to be the Test, and suggested that the Test may have been 'a significant divide' (Cunliffe 1984, 259). The Barton Stacey examples therefore add to the picture of these vessels, as they were recovered from an area located immediately to the east of the Test, and are therefore beyond this boundary.

The assemblage from pit 28049 represents a special deposit, with nearly all the pottery coming from five different vessels. Two bowls were almost complete (ONs 68 and 71), although one is now quite fragmentary. One (ON 68) had cracked in antiquity, probably during firing, but was still well used. The rim is slightly wonky and fire-clouding is evident on the exterior. The other bowl had been over-fired and the base had spalled, it may therefore represent a waster (ON 71, Fig. 8). Much of a large jar was present, but is in a very fragmentary state (ON 69). Two bases were also present, fire-clouding was evident on the exterior of one and the second was heavily oxidised and over-fired. The sherds in this pit all appear to come from these five vessels, rather than a collection of domestic refuse. The fabric of the bowls from this pit is coarser than those of the Danebury scratched-cordoned bowls which are predominantly, although not exclusively, made from fine, clean fabrics, similar to the Barton Stacey Q3/Q4. However, only one of five bowl rims from Barton Stacey was made in this fabric (Table 5, Fig. 6.9), and two decorated sherds (Fig. 6.8). The coarser, sandy fabrics (Q1, Q9) were also used for the jar forms, the difference was in the treatment

of the surfaces, with the bowls red-finished or burnished. The manufacturing defects evidenced on the two R1 bowls from pit 28049, and the coarseness of the fabrics, suggest they were locally made and are wasters. However, at least one of these bowls was actually used (ON 68), despite a crack, as the base is completely worn. They may represent an attempt to copy a regional form, examples of which have been recorded from the site in the finer Q3 fabric.

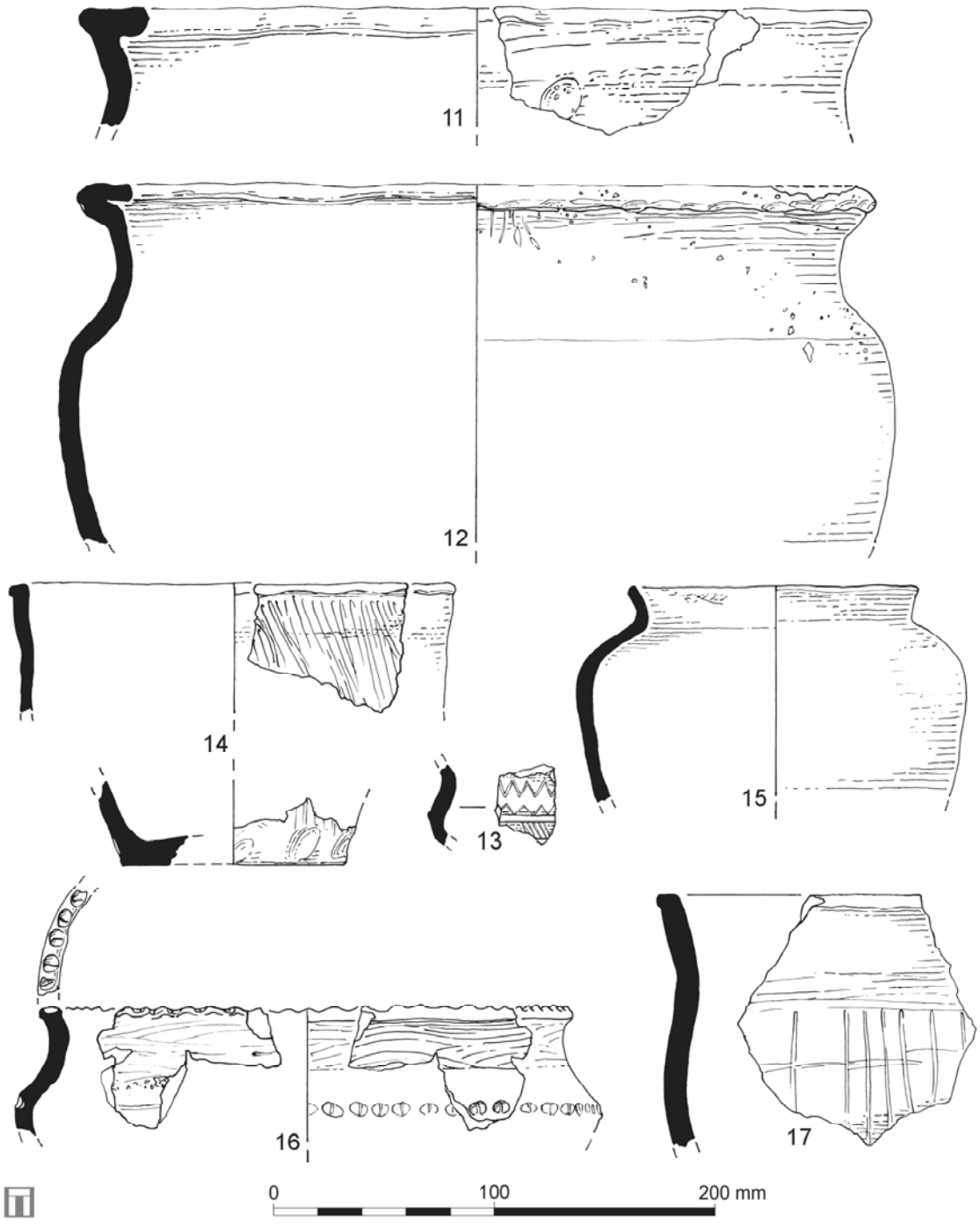

Figure 9 Early Iron Age pottery from MT08

***11**. Hammerhead jar, R21, S1, PRN 17, context 28069, pit 28039. **12**. Hammerhead jar, R21, S1, PRN 20, context 28068, pit 28039. **13**. Decorated body sherd, Q1, PRN 47, context 28098, pit 28084. **14**. Neutral profile vessel, R5, Q2, PRN 48, context 28098, pit 28084. **15**. Small, shouldered jar, R6, F2, PRN 72, context 28036, pit 28083. **16**. Carinated jar, R8, Q1, PRN 87, context 28070, pit 28025. **17**. Slack-shouldered jar, R7, QV1, PRN 80, context 28036, pit 28083.*

Human Bone

by Jacqueline I. McKinley

Part of a skull (cranium) was found in a deep pit (28022; depth 2.35 m), of Early Iron Age date. The cranium appears to have formed a placed deposit in the lower fill of the feature; the upper fills of the pit (above the deposit of human bone) had been truncated by a re-cut.

Methods of analysis for the skull follow those outlined for MT05 (see above).

Results

The results of analysis are summarised in Table 7. The skull is significantly better preserved than the bone from elsewhere on the site (grade 1–2) suggesting, since it was clearly deposited as dry bone (no mandible and some of the maxillary sockets are empty), that it had been originally deposited in a different microenvironment to the other human remains from MT05.

The skull is that of an adult (*c.* 18–25 years) ?male. The cranial index is 75.4, placing it in the mesocranial range.

Table 7: Summary of results from analysis of human bone (MT08)

Context	*Cut*	*Deposit type*	*Date*	*Quanti-fication*	*Age/sex*	*Pathology*
unburnt bone						
28079	**28022**	**placed**	**EIA**	***c.* 15% s.**	**adult *c.* 18–25 yr ?male**	**calculus; sharp weapon trauma - frontal vault; endocranial depressions; micro-porosity - vault; dental modification; morphological variation - wormian bones, ossicle at partial notch**

KEY: EIA – Early Iron Age; s. –skull (skeletal area recovered where all is not represented)

Of particular interest is a lesion indicative of an unhealed sharp-weapon trauma to the left side of the frontal bone (Fig. 10). The 59.3 mm long, clean sharp cut, extends 2.9 mm through the exocranial vault and most of diploe. There is an uneven jagged edge to the endocranial plate indicating that it was broken-off, possibly at the time of impact, rather than having been cut. The cut extends *c*. 40 mm anteriorly from the coronal suture and a probable impact fracture extends from the inferior-anterior end of the cut to supra-orbital margin. The blow had been made at a *c*. 60° angle from the superior right front, with a sharp and relatively heavy blade (?short sword). The bone on the lateral side of the cut (away from the direction of the blow) is partly missing but probably spalled-off as a result of the blow as the remaining edge extends further endocranially than exocranially. Although the visible trauma inflicted on this individual was clearly peri-mortem the absence of the rest of the skeleton means it cannot be stated whether this represented the fatal blow.

There is limited recorded evidence for weapon trauma in the Iron Age, this case apparently representing the only example of sharp-weapon trauma from the early part of the period. Boylston (2000) records 17 cases of weapon-related trauma from Iron Age sites, all Middle–Late Iron Age in date. The skull was most frequently involved (11 cases; although damage to other parts of the body may not be as readily apparent) and the frontal was affected in five cases. All except a possible example (healed) of the latter represented the effect of blunt force rather than sharp-weapon trauma. Where the sex of the individual is shown (*c*. 50% cases), males are more frequently affected than females but there is no consistent pattern in the age of the individuals.

Figure 10 Sharp-weapon trauma on skull 28079

Skulls with evidence of sharp-weapon trauma have been recorded from at least two other Middle–Late Iron Age sites; at Stanwick, Yorkshire a decapitated skull had 'lethal axe-wounds' (Wheeler 1854 in Whimster 1981, 187; Craig *et al.* 2005), and three skulls with sword-cuts were recovered at Glastonbury, Somerset (Bulleid and Gray 1917 in Whimster 1981, 187). In both of the latter examples there was evidence to suggest the severed heads had been displayed on poles/spears (*ibid.*). A recent re-examination of the human bone from the Early–Middle Iron Age deposits at Maiden Castle, Dorset, identified four cases of peri-mortem blunt-force trauma to the skull; the single case with cut marks indicates modification associated with secondary mortuary rites rather than peri-mortem weapon trauma (Redfern 2008, table 2).

The endocranial surface of the skull has micro-pitting/porosity in the superior portion of the occipital and frontal, and to either side of the sagittal line of the parietal vault. The lesions are indicative of increased vascularity and suggest the individual suffered from chronic head-lice, the scratching associated with which increases the blood supply to the affected area (Capasso and Di Tota 1998). The same individual has a nick in the dorsal occlusal surface of the maxillary left 2nd premolar that is likely to have developed due to the use of the teeth as a tool. Unfortunately the adjacent tooth is missing post-mortem but the repeated passage of a thread or fine line through the teeth is suggested.

Formation processes

The incomplete skull comprised the almost entire cranium (intact prior to excavation), missing only part of the right anterior temporal bone, right sphenoid wing, right maxilla and some of the left maxillary teeth, and the mandible. It appeared to have been placed on its base, close to the edge of the shaft, resting on one of the layers in the lower one-third of the fill. The skull had clearly entered the pit as dry bone and its condition compared with that of the other human bone from the site indicates it had not been residing in a similar burial environment to the latter prior to its final deposition. This suggests it had either been exhumed, possibly from some distant grave, or curated. It does not have the appearance of having endured any prolonged period of surface exposure (no bleaching or weathering) and there is no evidence to indicate it had been 'displayed' either by suspension (as, for example, cases from Hunsbury, Northamptonshire and Hillshead, Caithness (Pitt-Rivers 1892, 286; *Proceedings of the Society of Antiquaries of Scotland* 1909; Roberts and McKinley 2003, 68 and 75; Whimster 1981, 185)) or on a pole/shaft (see above). This does not,

however, negate the probability of deliberate retention and curation. The individual clearly died as a result of the observed injuries or others sustained at the same time, probably in combat (though execution or sacrificial dispatch cannot conclusively be excluded); and he may have been decapitated but evidence for such an action is unlikely to show in the recovered elements.

Finds of fragmentary human bone are not unusual on Iron Age sites and the potential significance of such deposits – particularly of skulls or fragments thereof – has been the subject of much discussion (e.g. Whimster 1981, 177–89; Woodward 1992; 1993; Redfern 2008). Ross (1974, 94–171) has written extensively on the Celtic 'head cult' and gives numerous examples of the deposition of skulls and other human bones in Late Iron Age and Early Romano-British 'votive shafts and wells in Britain' (Whimster 1981, 183). Woodward noted that disarticulated skull fragments were most frequently recovered from contexts within or associated with hillforts (1993, 5). Most examples of this kind of deposit are of Middle–Late Iron Age date but a few earlier cases are recorded such as the Early–Middle Iron Age examples from Maiden Castle hillfort (Sharples 1991, 63–98; Redfern 2008) and the Early Iron Age skull from Wishaw Hall Farm, Warwickshire (incomplete and minus the mandible; older adult, probably female) which appeared to have been curated and, in its final context, represented a placed deposit rather than some form of incidental inclusion within the pit (pers. obs.; Trevarthan 2008, 360–2). It has been suggested that the remains of individuals who had died in specific ways, such as in combat, may have been preferentially selected for curation of this kind (Redfern 2008) and such may be the case with respect to the skull placed in the shaft at Barton-Stacy.

Worked Bone

by Jessica M. Grimm and Lorraine Mepham

Seven pieces of worked bone and antler were recovered from MT08. Four, possibly five of the pieces represent pointed implements. Two (ONs 80 from pit 28083 and ON 95 from pit 28039; Fig. 11, 2–3) fall within the category of 'gouges' of class 1 as defined at Danebury (Sellwood 1984, fig. 7.33), with long pointed terminals and raised flanges at each side. Both were made from the proximal parts of sheep/goat metatarsi (the Danebury examples were made far more frequently from sheep tibiae). These two examples are complete, apart from slight damage to one tip, and both have perforations at the upper end, in one case two opposing, and in the other two opposing pairs. Both implements show surface polish, although one is now quite badly abraded.

While these gouges could have fulfilled a number of different functions, a use in the weaving process, as shuttles or pin-beaters, was suggested for the Danebury examples on the basis of the wear patterns (Sellwood 1984, 387). As for the perforations, at Glastonbury these were considered to result from the attachment of these implements to wooden shafts (Bulleid and Gray 1917, 419–21), but the absence of any sign of metal rivets at Danebury suggested that this was not, in fact, the case. The Danebury examples have a chronological spread spanning the Iron Age, although with a concentration in the Early Iron Age (Sellwood 1984, 382). A number of gouges have also been found at Maiden Castle, mainly in contexts associated with the extended Middle Iron Age hillfort; Wheeler (1943, 303) claimed that those made with proximal heads (as the complete Barton Stacey gouges are) generally occurred later than those with distal heads, and later excavations have broadly confirmed this chronological trend, although with a period of overlap (Laws 1991).

One object (ON 66; Fig. 11.1), from pit 28025, can be described as an awl, although the point is blunted rather than sharp – this may have occurred through use, as there is some surface polish at this end. The implement is made from a splinter from the long bone shaft of a large mammal, retaining part of the end of the bone as the butt. Again, numerous parallels are known from Danebury (Sellwood 1984, fig. 7.36). Another possible awl tip (ON 87) was found in pit 28084, made from the shaft of a long bone of a medium mammal.

Two pieces of antler, comprising a tine tip from pit 28083 (ON 81) and a scorched crown from pit 28049 (ON 74) could represent evidence of antler-working, although neither shows obvious signs of working. A cattle rib fragment with multiple parallel transverse cut marks (ON 86) from pit 28084 is of unknown function, but could be an offcut from bone-working.

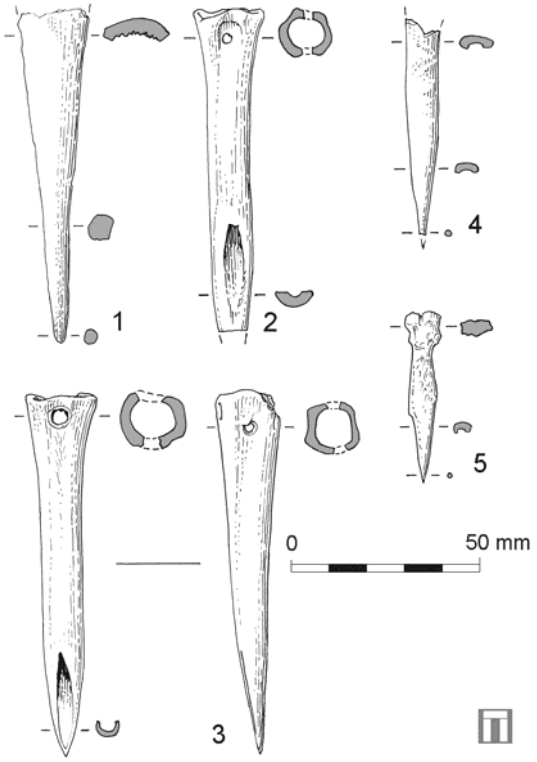

Figure 11 Bone Objects from MT05 and MT08

Animal Bone

by Jessica M. Grimm

All 904 animal bones recovered from MT08 came from nine pits dating to the Early Iron Age. The bone was hand collected only. Research on Iron Age assemblages from Britain by Hambleton (1999, 40) has shown that assemblages with a combined NISP for cattle, sheep/goat, and pig below 300 are probably not representative. A combined NISP of no less than 500 is considered to be better. With a combined NISP of 338, this condition is thus met, though by only a small margin.

For each animal bone fragment, the following characteristics were recorded where applicable: species, bone element and side, fusion (Habermehl 1975), mandible wear stages (following Habermehl 1975, Grant 1982 and Jones 2006), sex and measurements (Von den Driesch 1976). For the distinction between sheep and goat, the data published by Prummel and Frisch (1986) and Payne (1985) was used. The positions of butchery marks (following Lauwerier 1988) and burnt areas (Wahl 1981) were described. Evidence of gnawing, condition (very poor, poor, fair, good, and excellent) and completeness (zonation after Serjeantson 1996) was also recorded. Conjoining fragments were counted as one bone in order to minimise distortion. Fragments that could not be identified to species or family were recorded as small, medium or large mammal. The database with details on each analysed bone fragment can be found in the archive.

Taphonomic analysis showed that reworking and scavenger activity was minimal. This indicates that the pits were quickly filled with waste and made inaccessible to scavengers. Only a

small proportion of the bone had been lying around on the surface for a while before deposition. The roasting of meat and the possible burning of waste was demonstrated by scorched and calcined bone fragments.

Table 8: Fauna list per period according to NISP, BW and MNI (MT08)

Species	*Middle Iron Age*		
	NISP	*BW*	*MNI*
Mammals			
Horse (*Equus caballus*)	6	1623	2
Cattle (*Bos taurus*)	125	5049	5
Sheep (*Ovis aries*)	5	60	12
Goat (*Capra hircus*)	3	9	
Sheep/Goat (*Ovis*/*Capra*)	173	756	
Pig (*Sus domesticus*)	31	219	2
Dog (*Canis familiaris*)	2*	93	2
Dog/Fox (*Canis familiaris*/*Vulpes vulpes*)	1	1	–
Red deer (*Cervus elaphus*)	2	67	1
Wild boar (*Sus scrofa*)	2	49	1
Bank vole (*Clethrionomys glareolus*)	70	3	5
Field vole (*Microtus agrestis*)	69	–	7
Wood mouse (*Apodemus sylvaticus*)	21	1	1
Common shrew (*Sorex araneus*)	1	–	1
Common frog (*Rana temporaria*)	45	1	3
large mammal	178	312	–
medium mammal	147	56	–
micro mammal	13	1	–
anura	10	–	–
Total	904	8300	42

*Two more or less complete skeletons

Species proportions

According to NISP, sheep/goat bones are most common, followed by cattle, with small proportions of horse and pig (Table 8). It should be kept in mind that different feature types may produce different species proportions, with sheep/goat and pig being generally relatively more numerous in pits and cattle and horse being more numerous in ditches (Maltby and Coy 1991, 100). All the MT08 material came from pits and this might thus favour sheep/goat (and pig). Cattle, followed by horse and sheep/goat lead the ranking according to the Bone Weight method. As Bone Weight is correlated to live weight, beef appears to have been more important than horse meat, mutton or pork. The MNI suggests that sheep/goat, followed by cattle were the most numerous animals kept.

Hambleton (1999, 46) found in her study of husbandry strategies in the Iron Age that sites in Wessex and Central Southern England are dominated by sheep, slightly less cattle and low percentages of pig (see also Table 9). The manure of these large sheep flocks maintained soil fertility for arable production. Apart from the meat obtained from the domesticates, milk from cattle and sheep would have been used fresh and turned into butter and cheese to prolong its keeping (Wood 2003, 75–79). The wool obtained from the sheep would have provided a trade commodity.

Table 9: Cattle, horse, sheep, pig and dog proportions (%) for other EIA/MIA sites (MT08)

Site	*Author*	*Period*	*Type*	*NISP*	*Cattle*	*Horse*	*Sheep*	*Pig*	*Dog*
A303 Stonehenge	Grimm 2007	EIA/MIA	Enclosed settlement	360	32	7	31	5	25
Danebury	Grant 1991	EIA–LIA	Hillfort	241,530	21	3	61	12	3
Down Farm	Grimm 2008	EIA	Settlement	80	19	2	63	16	–
Houghton Down	Hamilton 2000	EIA/MIA	Enclosed settlement	3569	22	4	50	7	17
Suddern Farm	Hamilton 2000a	EIA/MIA	Settlement	6521	25	8	52	10	6
Michelmersh	This report	EIA	Settlement	556	36	2	52	9	1
Nettlebank Copse	Hamilton 2000b	EIA	Settlement	2217	12	4	53	19	11
Warren Hill	Powell *et al*. 2006	EIA/MIA	Enclosed settlement	310	40	5	43	10	2
Coombe Down South	Powell *et al*. 2006	EIA/MIA	Settlement	826	34	5	48	8	5

Apart from a very large fused right *suid* calcaneus and articulating talus in pit 28039, which are tentatively identified as wild boar, and two pieces of red deer antler in pits 28049 and 28083; all wild species consist of micro-mammals and frogs. This suggests that the Middle Iron Age people using these features as a rubbish dump relied mainly on their livestock for their protein requirements. The absence of deer bones other than antler fragments suggests that shed antlers were collected rather than deer hunted. Bank vole, field vole, wood mouse and shrew are all burrowing animals and thus they might have ended up in the soil archive at a more recent date. Together with the common frog, they form a very common background fauna.

Husbandry strategies

Bearing in mind that there might be a bias towards the bones of mature animals as well as the small number of ageable bones, cattle seem to have been primarily killed at over 36 months of age. Cattle killed at the end of their useful lives would have served as dairy and fertiliser producers, beast of burden and reproduction facilities. The limited ageing data available for sheep/goat indicates the presence of juvenile, subadult and adult animals. They represent a non-specialised husbandry strategy (Hambleton 1999, 74). The sheep were clearly bred in the vicinity of the settlement as neonate bones were found. Pigs were killed at the optimum slaughter age of around two years and this tactic was common practice in the Iron Age (Hambleton 1999, 69). All horse bones were fused and no bones of subadult or juvenile animals were found. The vast majority of horse remains at Danebury (Grant 1991, 476), Nettlebank Copse (Hamilton 2000b, 109), Houghton Down (Hamilton 2000a, 138), Stonehenge A303 (Grimm 2007a) and Suddern Farm (Hamilton 2000b, 188) also came from adult animals.

Phenotype

Due to the fragmented nature of the small assemblage from MT08, no bones were complete enough for an estimation of height at the withers. The few measurements of cattle and sheep/goat together with the data found in ABMAP (http://ads.ahds.ac.uk/catalogue/specColl/abmap/index.cfm?CFID=1546987&CFTOKEN=66981600) and WAMAP (http://ads.ahds.ac.uk/catalogue/collections/blurbs/818.cfm) showed that both species became continually smaller from the Neolithic until the Late Iron Age/early Romano-British period. The measurements fit well with other sparse metric data for the Early Iron Age. Neither online source, however, holds metric data for pig from the early Iron Age. The greatest length of pig calcanei recorded on ABMAP and WAMAP lies well below the value recorded for the probable wild boar from MT08.

Animal health and welfare
Two zygomatica of adult cattle showed profound periostosis on the inside (lower half of eye socket). This is probably the result of an inflammation of the eye. A similar specimen was found at the Romano-British site of Hallaton, Leicestershire from a deposit dated AD 70–130 (R. Thomas pers. comm.).

Butchery and deposition
The presence of most parts of the cattle, sheep/goat and pig skeletons indicate that they were processed on or near the site. The same might be true for horse as well. The presence of whole carcasses and the lack of trade in meat cuts are characteristic of the Iron Age (Hambleton 1999, 31). It seems that preserving meat on a large scale for trading activities was less profitable than trading animals on the hoof. The many butchery marks seen on the cattle, sheep/goat, pig/wild boar and horse bones were mainly inflicted by knives. Similar styles of butchery were also seen at Houghton Down (Hamilton 2000a), Nettlebank Copse (Hamilton 2000b, 103), Stonehenge A303 (Grimm 2007b) and Suddern Farm (Hamilton 2000b, 179). Some chop marks indicated the removal of the horn cores of cattle, sheep and goat for either reasons of skin identification or horn working.

Although the animal bones found at MT08 consist of a mix of butchery and kitchen waste, mainly of the domesticated animals, three pits stand out as having more unusual fill sequences or special deposits. The fill of pit 28049 has been described by the excavators as a 'closing deposition event'. It contained a sheep/goat tibia fragment, the crown of a red deer antler (ON 74) and an unidentified large mammal fragment. The tibia fragment and the antler show signs of scorching.

Pit 28022 contained an immature dog skeleton (4–5 months). Other bones include fragments of cattle femur and cranium, fragments of sheep/goat mandibula, ulna, metacarpus, tibia, calcaneus and metatarsus as well as the remains of common frog and field vole (both likely intrusive). None of the bones shows signs of butchery or burning. As dogs were mainly born in April and May, the deposition might have taken place in late summer/early autumn.

Pit 28083 contained the skeleton of a neonate dog (Grimm 2007a) as well as an antler tine tip of red deer (ON 81) and a piece of worked bone (ON 80; see above). The rest of the fill contained bone fragments of horse, cattle, sheep/goat, and pig. These probably represent ordinary butchery and kitchen waste as many show butchery marks and two are burnt.

Mitigation Area 09

MT09 (NGR 431869 124801; Fig. 12), just to the west of Awbridge House, was positioned on a low knoll of the lower western slopes of the Test valley, measured 190 x 26 m and was orientated north-east to south-west. An average of 0.20–0.45 m of undifferentiated topsoil/subsoil overlay sandy silt with pockets of sand, clay and gravel. The area sloped from a high point (63.5 m aOD) in the north-east down to the south-west (60.9 m aOD). Archaeological remains comprised a possible Late Iron Age/Romano-British double ditched enclosure with associated features. Activity dating the medieval period was also identified but was confined to the south-western portion of the area. Ditches dating to the Late Iron Age were also excavated to the north and south of the principle double ditch enclosure and several pits some containing industrial waste, were also identified to its north.

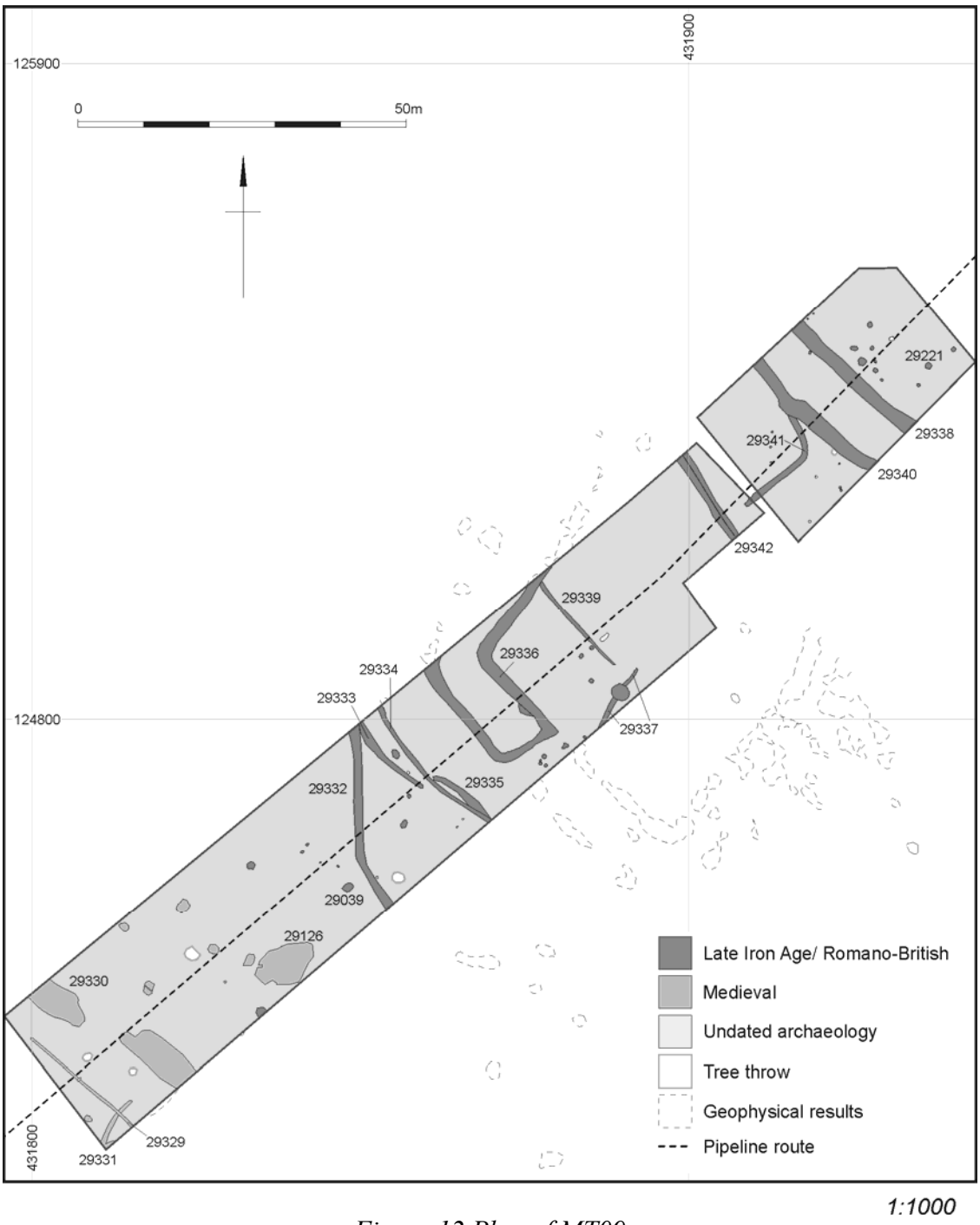

Figure 12 Plan of MT09

Pottery

by Grace Perpetua Jones

A total of 1778 sherds of pottery, weighing 29,828 g, was recovered from 76 contexts in MT09. The assemblage ranges in date from the Middle/Late Iron Age to the medieval period. All prehistoric material and any pottery assigned an Object Number (ON) was fully analysed. The 13 contexts (nine features) that produced more than 25 sherds of prehistoric or Romano-British pottery were also fully recorded. In total, 64% of the assemblage was analysed, and the remaining 36% was recorded to the recommended minimum standards (Darling 1994).

Middle/Late Iron Age

Fabrics and forms

The Iron Age pottery was dominated by the quartz and organic-tempered fabric QV3 (267 sherds, 1648 g). Flint-tempered fabrics also play a key role (168 sherds, 2065 g). Other wares occur in very small quantities, with four sandy sherds and one grog-tempered. The similarities between the 2nd/1st century BC and 1st century AD fabrics has led to the same fabric codes being used for these periods (Table 10), with the exception of those associated with an S-profiled jar from ditch 29336 (F7).

Four vessel forms were identified, each represented by a single vessel: R14 (Fig. 13.20), R22 (Fig. 13.18), R23 (Fig. 13.19) and R24 (Fig. 13.21); see Appendix 2).

Table 10: Iron Age and Roman fabrics (MT09)

	Iron Age features		*RB features*	
Fabric	*No.*	*Wt (g)*	*No.*	*Wt (g)*
F7	92	1450	–	–
QV3	267	1648	47	267
F100	82	897	47	1082
G100	1	41	66	2071
Q100	–	–	122	1244
Q101	–	–	10	216
Q103	4	92	408	7714
Q106	–	–	1	23
S99	–	–	1	21
Total	446	4128	702	12,638

Key groups

Iron Age pottery was recovered from ditches 29336 and 29334 and pit 29212.

Ditch 29336 produced mostly flint-tempered wares with only a few sandy sherds. The flint-tempered pottery included an everted rim/s-profile jar decorated with four rows of stamped dots, irregular burnished lines ran diagonally between the rows, in alternating directions to create a herringbone effect. Patches of burnish survive on both surfaces (Fig. 13.21). The vessel form is paralleled at Danebury (JD3, dated 310–50 BC; Brown 2000a, 87), as is the decoration (*ibid.*, fig. 6.48, 613). A second jar with everted rim, and a bead-rim jar were also recorded. The association of the decorated vessel with a bead-rim jar suggests a date towards the end of the 2nd century or first half of the 1st century BC.

Pit 29212 contained very abraded sand and organic-tempered body sherds. A few were better preserved with smoother surfaces. Two vessels were identified, both with proto-bead rims and rounded bodies (Fig. 13.18–19). They are similar to Danebury form JC2.1, dated 350–50BC. This group again dates from the end of the Middle or beginning of the Late Iron Age.

Ditch group 29334 contained flint-tempered pottery and one sherd of grog-tempered. Most are probably from a single vessel (ON 61), a necked jar with squared bead rim and angular shoulder. The surface of the jar was horizontally scored on the upper surface and vertically scored on the lower surface (Fig. 13.20). This vessel is of Late Iron Age date, possibly from the 1st century BC.

Romano-British

Fabrics and forms

The most commonly occurring fabrics are the sandy wares, accounting for 58% of the assemblage by count (Table 10). Only 17% are greywares; 9% are grog-tempered; 7% are flint-tempered and 7% contained sand and organic temper. Romanised oxidised wares represent 1% of the assemblage.

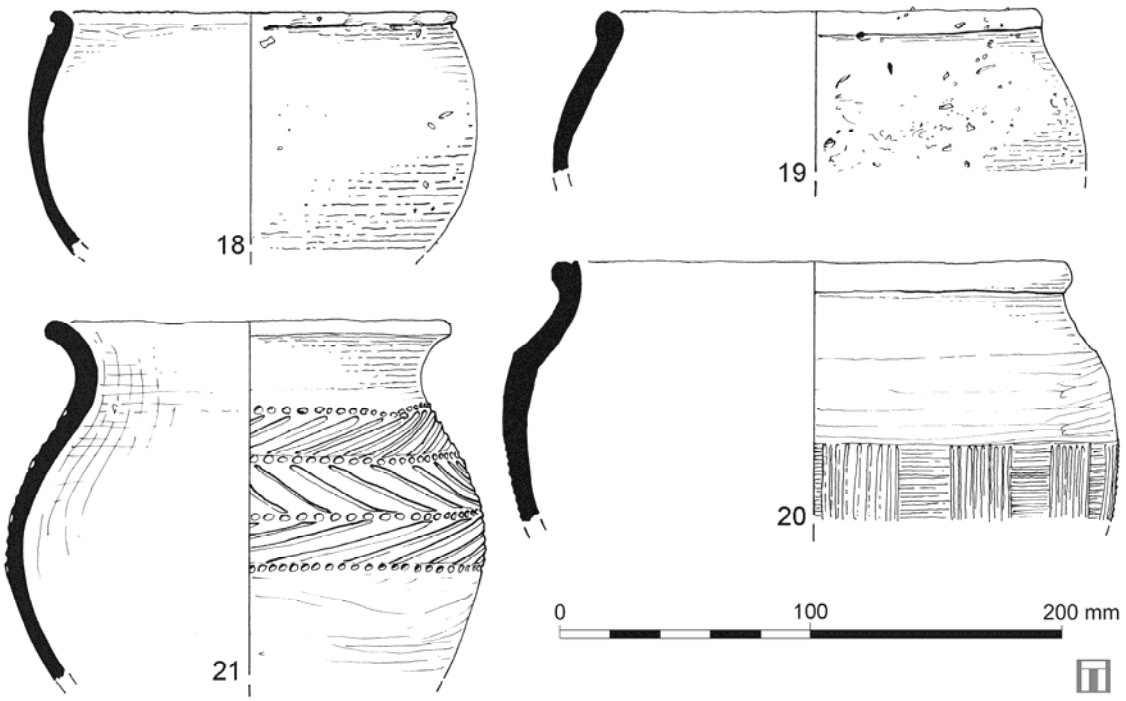

Figure 13 Late Iron Age/early Romano-British pottery from MT09
***18**. Round-bodied bowl/jar with slightly beaded rim, R22, QV3, PRN 297, context 29215, pit 29212. **19**. Round-bodied jar with proto-bead rim, R23, QV3, PRN 296, context 29215, pit 29212. **20**. Necked jar, R14, F100, PRN 316, context 29254, intervention 29253, ditch 29334. **21**. S-profiled jar, R24, F100, PRN 310, context 29238, intervention 29235, ditch 29336.*

The early Romano-British assemblage from MT09 is dominated by bead-rimmed jars (R100) in sandy (ten vessels) and flint-tempered (four vessels) fabrics (Table 11). Four everted rim jars (R101) were also recorded, in sandy, flint-tempered and greyware fabrics. Two small, necked jars (R106) were present in a sandy ware, however all other forms were represented by single examples. They include a copy of a *Gallo-Belgic* platter (R103), a necked jar with a beaded rim (R115), and a small, bead rim jar with a high shoulder (R117). A plain rim on a long neck probably derives from a beaker of some form (R118).

Table 11. Correlation of Iron Age fabrics and forms (MT09)

	Iron Age		*Romano-British*				*Total*
Fabric/form	*F7*	*QV3*	*F100*	*Q100*	*Q103*	*Q106*	
R10	–	1	–	–	–	–	1
R14	1	–	–	–	–	–	1
R22	–	1	–	–	–	–	1
R23	–	1	–	–	–	–	–
R24	1	–	–	–	–	–	1
R100	–	–	4	–	10	–	14
R101	–	–	2	1	1	–	4
R102	–	–	–	1	–	–	1
R103	–	–	–	–	1	–	1
R106	–	–	–	–	2	–	2
R115	–	–	–	–	1	–	1
R117	–	–	1	–	–	–	1
R118	–	–	–	–	–	1	1
Total	2	3	7	2	15	1	30

Key groups
Ditch 29049 contained three bases, two bead-rim jars and an imitation *Gallo-Belgic* platter. The bases (ONs 43, 46 and 47) had all been perforated after firing. Two are in a sandy fabric and one contains inclusions of grog and iron. The bead-rim jars are both in a sandy ware. One has been wiped on the exterior and 55% of its rim was recovered (ON 44; body sherds recorded as ON 45 are probably also from this vessel). The platter is paralleled in the *Camulodunum* series, CAM 21 (Hawkes and Hull 1947). This group of pottery dates to the middle of the 1st century AD.

Key groups of pottery were recovered from three interventions through ditch 29342. Most is of late 1st century AD date, possibly extending into the early 2nd century. The fabrics are predominantly sandy wares with some flint-tempered, greywares and oxidised wares. Bead rim jars dominate the forms, in flint-tempered and sandy fabrics. They include two large vessels that may have been used for storage (360–400 mm rim diameters), and five smaller bead rim jars, one with burnished lattice decoration. Three everted rim jars were recorded, in a flint-tempered fabric, sandy ware and greyware, the latter exhibited firing shadows. Other vessels include a necked jar in a sandy fabric; a long-necked rim, probably from a beaker, in a fine micaceous greyware; and several sherds from the neck of a flagon. The pottery from intervention 29315 comprises sandy body sherds with organic inclusions and a leached shell-tempered fabric. Only one small flat-topped rim fragment was present, but the profile and part of the external surface have not survived. As such the group is difficult to date but the fabric would appear to be slightly earlier than that from the rest of the ditch, perhaps of 1st century BC date or earlier.

Ditch 29332 contained the upper part of a bead rim jar in a sandy fabric (ON 50); a second, larger, bead-rim jar (ON 48); part of a sandy ware base (ON 49) and a small necked jar with rounded shoulder. The group is of mid to late 1st century AD date. Pottery from ditch 29231 indicates a 1st century AD date and includes a flint-tempered bead-rim jar and a sandy necked jar. Ditch 29072 is probably also of 1st century AD date. The pottery includes the lower part of a large, thick-walled grog-tempered vessel, probably a storage jar (ON 8), and a sandy bead-rim jar. The group from ditch 29286 comprised flint-tempered and sandy body sherds, one of which appeared to be from the base of a vessel and had been perforated with two post-firing holes. It could not be dated more closely than Late Iron Age/early Romano-British. That from ditch 29337 included greyware, oxidised ware and sandy body sherds of Romano-British date.

Other pottery
All other Romano-British pottery dates to the early part of the period, or could not be closely dated. No diagnostic middle or late Romano-British material was present. Medieval pottery was recorded from the following features: ditches 29004, 29006, 29009, 29011, 29013, gullies 29196, 29198, pits 29015, 29134, 29155, 29180, 29257, waterhole 29126, tree-throw hole 29171, and feature 29255. The assemblage mostly consists of locally made coarseware jars, including a sand and flint-tempered fabric, probably of Kennet Valley type (11th–13th century), a coarse sandy fabric, possibly of Laverstock type (12th/13th century) and a small group of glazed and decorated fineware jugs, including a Laverstock jug (ON 65) with mottled green and yellow/clear glaze over applied vertical slip bands and pellets. A second jug has a clear/green flecked glaze over an applied slip design, possibly foliage.

Summary
Three features produced pottery of 2nd–1st century BC date (ditches 29334, 29336, and pit 29212). The late Middle Iron Age pottery includes an S-profiled jar, typical of pottery of ceramic phase 7 at Danebury and the region in general, ‘flint-tempered ware vessels typically decorated with shallow-tooled line and dot motif’ (Brown 2000b, 78), usually well-finished/burnished. This again points to the regional exchange networks visible in the Early Iron Age assemblage at Barton Stacey.

No contexts could be positively assigned to the second half of the 1st century BC or 1st half of the 1st century AD. Whilst this could suggest a hiatus in occupation for up to a century, the assemblages are far too small to positively identify this. Ditches 29049, 29332, 29231, and 29072

are all of mid to late 1st century AD date, ditch 29342 may be slightly later, of the late 1st–early 2nd century AD. The Romano-British assemblage is dominated by locally produced coarsewares, with few Romanised vessels. Only 17% of the sherds from the early Romano-British features are greywares, and 1% are oxidised. No samian or other imported pottery was present. However, a copy of a Gallo-Belgic platter suggests that more Romanised forms were in circulation and being imitated. This was recovered from ditch 29049, along with three bases with post-firing perforations, and may represent a purposeful deposit.

Early Bronze Age Burials and Middle–Late Bronze Age Pottery groups from the Evaluation and Watching Brief

The evaluation stage of the project was undertaken between August and December 2007 during which 173 trenches were targeted on areas of high archaeological potential, 106 of which contained archaeological remains, mostly of Iron Age or Romano-British date (see Fig. 1). Early Bronze Age cremation burials and a Saxon ditch were also identified. The watching brief, on approximately 45% of the route, produced further ditches and features of Iron Age and Romano-British date as well as (NGR 441216 133942) a possible pit mine/well 40152 with adjacent shallow feature 40166.

A single Early Bronze Age inhumation burial (40172; NGR 438921 131932) was radiocarbon dated to 2270–2030 cal BC (SUERC-26241; 3730±30 BP). The inhumation burial, the bone of which was in very poor condition, was of a female adult aged *c*. 18–25 years who had suffered from a dental abscess.

Two cremation burials (NGR 439193 131951) occurred *c*. 8.50 m apart, comprised an unurned burial (11204) of a possibly female subadult/adult aged greater than 13 years, radiocarbon dated to 1880–1660 cal BC (SUERC-26238; 3435±30 BP), and a redeposited burial (11203) probably also originally made within an urn. The latter, of a mature, possible female adult of 35 or more years, also incorporated the unburnt remains of a foetal/neonatal individual *c*. 36 weeks *in utero*/1 week newborn. The two are unlikely to have been buried at the same time but given that the remains as a whole were redeposited this possibility cannot be entirely dismissed and their close association suggests a temporal proximity, possibly of related individuals. The adult was radiocarbon dated to 1750–1530 cal BC (SUERC-26239; 3370±30 BP). The 99 sherds of pottery (1945 g) associated with these remains are from the base and lower wall of a single urn (though no sherds refit), possibly an Enlarged Food Vessel, which also indicates redeposition.

The watching brief, evaluation, and Mitigation Areas 1–4 and 6, all produced pottery ranging in date from the Early Bronze Age to the post-medieval period (Table 1). Of particular interest is a small group of Middle and Late Bronze Age pottery from two pits and a probable well.

Earlier Prehistoric Pottery

by Matt Leivers

Feature 11203 (in evaluation trench 112) contained 99 sherds weighing 1945 g from the base and lower wall of a single urn. The base (of which less than 25% of the diameter survives) is flat, with a slight foot in places. The lower wall is entirely plain, and the change in angle from expanding to vertical is marked by a horizontal moulding (probably an applied strip) which defines the bottom of a shallow cavetto. Approximately 40mm higher up the wall is a second similar moulding, which may mark the top of the cavetto (no individual sherd has more than two horizontal strips, but there may have been more). No decoration is present on any of the sherds, but above the cavetto the vessel is likely to have been decorated. There were no upper body or rim sherds present in the feature.

The fabric is rather coarse, and very friable, and no sherds can be refitted. In total, approximately one quarter of the vessel below the cavetto survives, and virtually none of it from above. Given this, it seems highly unlikely that the feature was a grave containing a cremation burial under an inverted urn. If the urn had been mouth-down, then an entirely different portion of the vessel could have been expected to have survived, with rim and upper body sherds present, and base and lower wall sherds absent (or less well represented). The fragment of the vessel surviving seems more likely to result from redeposition than from an *in situ* burial in 11203.

In the absence of any sherds from above the cavetto, it is difficult to identify the urn to type with any certainty. The most likely possibility is an Enlarged Food Vessel: similar entirely or largely plain examples with horizontal mouldings are known from the south of England, for instance a very large vessel from Old Sarum (WA 2006). Another possibility is a Wessex Handled Urn: the vessel in question has certain similarities with the lower two-thirds of an example from Corfe Castle, Dorset (Longworth 1984 plate 81a). In either case, a date in the first half of the 2nd millennium BC would be likely.

Human Bone

by Jacqueline I. McKinley

Cremated bone, dated to the Early Bronze Age, was found in two features (six contexts) set within *c*. 8.50 m of each other. The remains represent those of an unurned burial and a redeposited burial probably originally made within an urn. The latter also included the unburnt remains of a foetal/neonatal individual dispersed amongst the cremated bone (four contexts) and presumably of a commensurate date.

A single inhumation grave (40172) lay *c*. 1 km to the south-west of the cremation-related deposits and has been radiocarbon dated to the same Early Bronze Age period.

Recording and analysis of the cremated bone followed the writer's standard procedure (McKinley 1994, 5–21; 2000). Other methods follow those outlined for the Middle Iron Age human remains from MT05 (see above). The results of analysis are summarised in Table 12.

Table 12: Summary of results from analysis of human bone (EBA burials)

Context	*Cut*	*Deposit type*	*Date*	*Quantif-ication*	*Age/sex*	*Pathology*
cremated bone						
11205-8	**11203**	**redep. ?urned burial**	**EBA**	**334.5 g**	**adult >35 y. ??female**	**osteophytes - C articular process**
11209-10	**11204**	**unurned burial**	**EBA**	**66.0 g**	**subadult/adult >13 yr ??female**	
unburnt bone						
11205-8	**11203**	**redep. ?urned burial**	**EBA**	***c*. 15%**	**foetal/neonate *c*. 36 weeks *in utero*/ 1 week newborn**	
40173	**40172**	***in situ***	**EBA**	***c*. 55%**	**adult *c*. 18–25 yr female**	**?dental abscess; morphological variation - mandibular M1 small 4-cusp**

KEY: EBA - Early Bronze Age; C - cervical

Results

Disturbance and condition

None of the features containing human bone had been cut by later interventions. Cremation grave 11204 had been subject to substantial plough damage, reducing the surviving depth of the feature to 0.03 m and probably removing a large proportion (more than half) of the original bone deposit. Pit 11203 had survived to a relatively substantial depth (0.17 m), but the nature and distribution of the surviving pottery, together with that of the bone, clearly indicated that the remains were redeposited. It is probable that, as with the pottery, some of the bone from the original burial deposit is missing.

The condition of the bone from inhumation grave 40172 is very poor, as for the Middle Iron Age graves from MT05 (see above). The neonatal bone from cut 11203 is in slightly better condition than most of the unburnt bone. The cremated bone is in good visual condition and includes some trabecular bone as well as the more taphonomically stable and robust compact bone.

Demographic data

The unburnt remains of a neonate and young adult female are joined by those of two cremated individuals, both possible females, one a mature/older adult and the other greater than 13 years of age. All were recovered from features within a relatively confined area (*c.* 1 km) of the pipeline route (see Fig. 1). The neonatal remains, found mixed in with those of the cremated adult, are unlikely to represent those of an individual who died at the same time as the cremated individual - although given that the burial remains as a whole were redeposited this possibility cannot be dismissed with absolute confidence – but their close association suggests a temporal proximity, possibly of related individuals. The two cremated individuals could be contemporaneous, but the radiocarbon dates from both indicate they post-date the inhumed adult by at least 150 years.

Singletons and small burial groups such as these are common in the Bronze Age, Hampshire examples including the Early Bronze Age cremation burial at Mockbeggar Lane, Ibsley (Coles 2004). Larger Bronze Age cemeteries are, however, also known from the county, for example the Early–Middle Bronze Age mixed rite cemetery at Twyford Down, Winchester with a MNI of 40 (Walker and Farwell 2000).

Skeletal indices and non-metric traits

The poor condition of the unburnt bone severely limited the number of measurements it was possible to take. The platymeric index (demonstrating the degree of anterior-posterior flattening of the proximal femur) was calculated for the adult female, which fell in the platymeric range. The index for this individual is considerably greater than that of the Middle Iron Age individuals from MT05 (81.9 compared with 74.5–68.9).

The platycnemic index (illustrating the degree of meso-lateral flattening of the tibia) was also calculated for the adult female. The index is in the platycnemic range, but the figure is much higher (83.7) than that for the two Middle Iron Age females from MT05 (see above). The results suggest a lack of homogeneity between the two temporal groups.

Pathology

Pathological changes were observed in the inhumed adult female (Table 12). A small dental abscess is most likely to have been associated with dental caries but the associated tooth is missing post-mortem.

Pyre technology and cremation ritual

Although most of the cremated bone is white in colour, indicating a high level of oxidation (Holden *et al.* 1995a; 1995b), some slight variation (grey, blue, and some black (charred)) reflective of incomplete oxidation was observed in some fragments of skull and limb bone (mostly femora) from cut 11203. This level of variation is unlikely to be indicative of any unusual aspects in the

cremation process or rite, areas of the body set on the pyre's peripheries and those with dense soft tissue coverage most commonly showing such variation (McKinley 2008).

Both cremation-related deposits had been subject to disturbance and an unknown quantity of bone is likely to have been lost, rendering the recovered weights unrepresentative of the original deposit. The majority of the bone from the redeposited urned remains was recovered from the 10mm sieve fraction (*c*. 60%) whilst most of that from the unurned burial (*c*. 55%) fell in the 5 mm fraction; the maximum fragment sizes are 65 mm and 34 mm respectively. The unurned status of 11209/10 together with the obvious severe truncation of the deposit has resulted in increased fragmentation of the bone. There is no evidence in either cases to indicate deliberate fragmentation of the bone occurred prior to burial.

As is commonly observed, identifiable fragments from all skeletal areas were included in both burials (*c*. 28–53% of bone by weight identifiable to skeletal element). The paucity of axial skeletal elements seen in 11205–8 (3.8% identifiable bone), largely at the expense of lower limb elements (49.7%), is a common observation and is more likely to represent poor bone survival than deliberate selection. Similarly, the high proportion of skull elements from grave 11204 (41.2% identifiable bone) reflects the ease of identification of skull elements even as small fragments compared with other, less easily distinguished elements of long bone shaft. Some tooth roots and small bones of the hands and feet were recovered from both deposits (three-eight), but due to the level of disturbance and probable loss of some bone, the data has been judged too unreliable to use as a possible reflection of the mode of collection for burial (see McKinley 2004b, 300–1).

Formation processes

During excavation, the deposit within cut 11203 was believed to represent the *in situ* remains of an urned burial made in an inverted vessel; later analysis of the remains (cremated bone and pottery) and careful examination of the context demonstrated this could not be the case and that the material was redeposited. The surviving segment of the vessel (25%; Levers, above) is laid external side uppermost, spread across the length of the feature at a higher level than the bone; there is no rim and the base was lost to recent plough damage or machine stripping. The loss of most of the vessel must have preceded its final deposition since had it been knocked-over *in situ*, the sherds below the bone would have been preserved not those above it. Most of the bone (*c*. 69%) lay 'external' to the vessel, the south-western half of the cut containing the largest proportion of the bone (*c*. 60%), the majority of which was 'outside the vessel' (*c*. 47% of total weight recovered).

Fragments from most skeletal areas of the unburnt neonatal infant (Table 12) were recovered from all four sub-contexts within the fill of pit 11203, the density of distribution corresponding with that of the cremated bone (ie, most from the areas 'external' to the vessel and predominantly in the south-west half). The distribution suggests that the already disarticulated neonatal bones were mixed together with the cremated remains prior to their final redeposition. Since an unknown quantity of both the cremated and unburnt bone from the original deposit could be missing from this feature it cannot be stated with confidence how much of the neonate was included in the original deposit. That the inclusion was deliberate is implicit (see above), but which of the individuals died first and the length of time separating their deaths can only be answered by radiocarbon dating.

There are numerous examples of deliberately placed deposits of cremated bone being recovered in direct contact with the remains of inhumation burials, e.g. the two immature individuals from the Early/Middle Bronze Age grave at Roundway Down, Wiltshire (McKinley 2002) and the cremated infant remains laid directly over the *in situ* unburnt remains of the juvenile in the Beaker/Early Bronze Age grave at Boscombe Down, Wiltshire (McKinley 2009). The occasional re-use of graves for later depositions of either cremated or intact corpses is a recognised phenomena within the Bronze Age. There are, however, no previous references to a deposit of the type indicated here; an urned cremation burial inclusive of the – probably token though a fairly substantial proportion - remains of an unburnt neonate/infant.

Other Objects from the Evaluation and Watching Brief

Metalwork
by Jörn Schuster

Iron currency-bar
The upper end of a spit-shaped currency bar (ON 97, Context 40199) was recovered from the upper fill of a medieval field boundary recorded during the watching brief. The upper *c*. 30 mm are pinched together and slightly bent to one side, the parallel-sided bladed is broken off at the other end and appears to have rounded edges, but the radiograph shows the break to be irregular. L. 61 mm; W. 24.9 mm; T. 4 mm; Weight 30 g.

The width of just under one inch puts this fragment into Allen's group of spit-shaped bars, which are between a half and one inch [12.7–25.4 mm] wide (Allen 1967, 310–1). Due to its fragmentary condition, it is difficult to place it confidently in Crew's more detailed typology, but the treatment of the pinched end corresponds best to types E, F, or H (Crew 1995).

Iron currency bars are assumed to have been produced and deposited in the Middle Iron Age (250/200 and 50–1 BC, Hingley 1990, 92; 111; 1997, 13). They are found mainly in southern Britain and the West Midlands, while the spit-shaped variety is more confined to the Severn area (Allen 1967, 313 fig. 2; Hingley 1990, 93 fig. 1; 96 fig. 2). Considering the possible symbolic/ritual character of such bars, and their frequent deposition in liminal contexts such as hill-fort ramparts or settlement boundary ditches (Hingley 1990; 1997), it is interesting to note that ON 97 was found in ditch. However, the ditch has been assigned a medieval date, and the bar fragment comes from a secondary fill, probably derived from a colluvial layer.

Pottery
by Grace Perpetua Jones

The watching brief, evaluation, and Mitigation Areas 1–4 and 6, all produced pottery, ranging in date from the Early Bronze Age to the post-medieval period (Table 13). Of particular interest is a small group of Bronze Age pottery from the watching brief; key groups of Middle and Late Bronze Age pottery were recovered from three features. Very small quantities of probable Late Bronze Age pottery were present in several other pits and ditches, but these produced a maximum of six sherds and are not reported here.

Pit 40078
Pit 40078 (NGR 444504 139263) contained a Middle Bronze Age barrel urn (Fig. 14.1) of 'South Lodge' type (Calkin 1962, 20), spread across contexts 40080 (69 sherds, 2562 g) and 40082 (44 sherds, 1757 g). The base was found *in situ* in 40080 (ON 41) and most of the upper sherds were in 40082, although two of the rim fragments were in 40080. The vessel has a heavy, flat-topped and expanded rim, decorated with a band of fingertip and fingernail impressions at the uppermost point of the internal and external vessel walls; a second band of the same is present immediately below this on the exterior. A further 90mm below this is a third row of fingertip/nail decoration. Just above the third band of decoration there is an internal applied cordon/bevel (a maximum of 16 mm thick), probably used to strengthen the otherwise thin walls (*c.* 9 mm, and <11 mm towards the base). The internal rim diameter is 380 mm (18% present), and the top of the rim is 30 mm wide. Unusually, the base (14 mm thick) also has two applied cordons decorated with fingertip/fingernail impressions, forming a cross in the centre. The vessel is irregularly fired, but particularly oxidised on the upper interior and base interior. It is slab-built, and the upper part of the vessel has broken into some quite large pieces. The exterior is carefully finished, smoothed with some evidence of wiping.

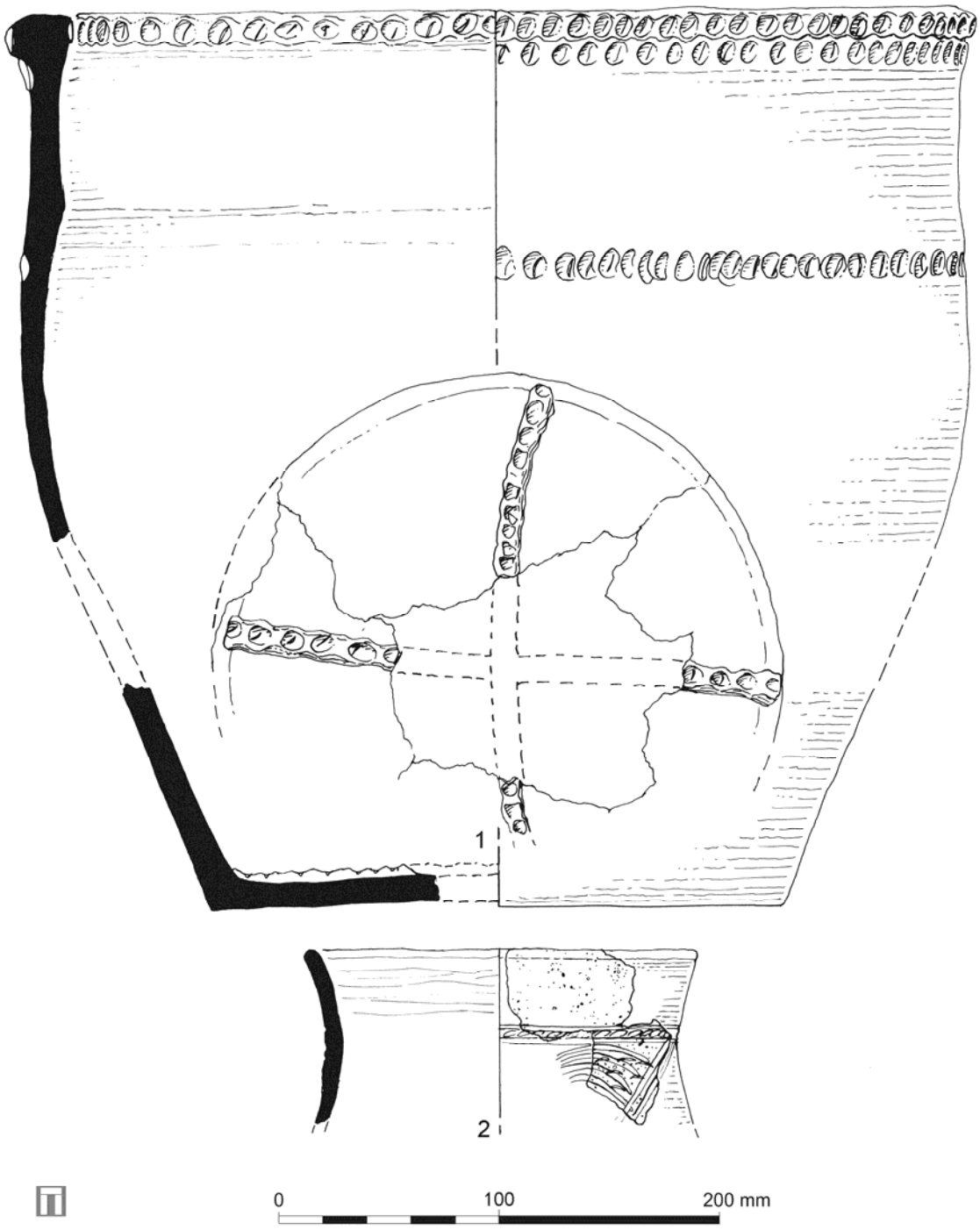

Figure 14 Early Bronze Age pottery from the watching brief
***1**. Barrel urn, R15, F3, ON 41, PRN 185-7, contexts 40080 and 40082, pit 40078. **2**. Globular urn, R18, F5, PRN 200, context 40082, pit 40078.*

There were also nine sherds (150 g) containing much finer flint temper, including a globular urn rim with flattened top (Fig. 14.2). The body has tooled decoration, both linear and curvilinear, in a band around the neck and shoulder.

Well 40152

Well 40152 (NGR 441216 133942) contained 48 sherds (381 g) of Late Bronze Age pottery, including a rounded, undifferentiated rim, tip curving under, probably from a hooked rim jar (R16); two rounded, undifferentiated rims, probably from neutral-profile tub-shaped vessels (R17); a flat-topped rim, vessel profile unknown, and a footed base.

Table 13: Quantification of pottery from other areas of the site

		Mitigation Area								
Broad Period	*Data*	*1*	*2*	*3*	*4*	*6*	*U/S*	*Watching Brief*	*Evaluation*	*Total*
Early Bronze Age	No.	–	–	–	–	–	–	–	28	28
	Wt (g)	–	–	–	–	–	–	–	344	344
Middle Bronze Age	No.	–	–	–	–	–	–	100	–	100
	Wt (g)	–	–	–	–	–	–	3242	–	3242
Middle/Late Bronze Age	No.	–	–	–	–	–	–	–	9	9
	Wt (g)	–	–	–	–	–	–	–	39	39
Late Bronze Age	No.	–	–	–	–	–	–	787	6	793
	Wt (g)	–	–	–	–	–	–	6930	28	6958
Early/Middle Iron Age	No.	–	–	–	–	–	–	–	24	24
	Wt (g)	–	–	–	–	–	–	–	290	290
Middle Iron Age	No.	–	–	–	–	–	–	–	8	8
	Wt (g)	–	–	–	–	–	–	–	31	31
Iron Age	No.	–	–	–	–	4	–	–	51	68
	Wt (g)	–	55	–	–	23	–	–	658	713
Prehistoric (unspecified)	No.	2	–	–	–	–	7	5	–	14
	Wt (g)	6	–	–	–	–	30	16	–	52
Roman	No.	13	77	–	202	–	–	42	175	509
	Wt (g)	19	959	–	6026	–	–	390	2712	10,106
Saxon	No.	–	–	–	1	5	–	–	1	7
	Wt (g)	–	–	–	2	25	–	–	654	681
Medieval	No.	–	–	–	–	–	–	–	2	2
	Wt (g)	–	–	–	–	–	–	–	8	8
Post Medieval	No.	–	–	–	–	–	–	2	–	2
	Wt (g)	–	–	–	–	–	–	15	–	15
Unknown	No.	14	4	3	–	1	1	3	–	26
	Wt (g)	50	10	6	–	4	4	22	–	96
Total sherds		29	98	3	203	6	8	939	304	1590
Total wt sherds (g)		75	1024	6	6028	29	34	10,615	4764	22,575

Pit 40166

The single fill of pit 40166 (NGR 441209 133941) contained 773 sherds (9027 g) of Late Bronze Age pottery. The only other finds in this pit were 11 fragments of animal bone, probably burnt, and four pieces of burnt flint. The pottery was all made from a coarse, flint-tempered fabric (F4). No attempt has been made to sub-divide the assemblage into different fabric types as variability was apparent in the fabric of a single vessel, and there were not enough differences in the size and density of inclusions in the hand specimen to warrant further division.

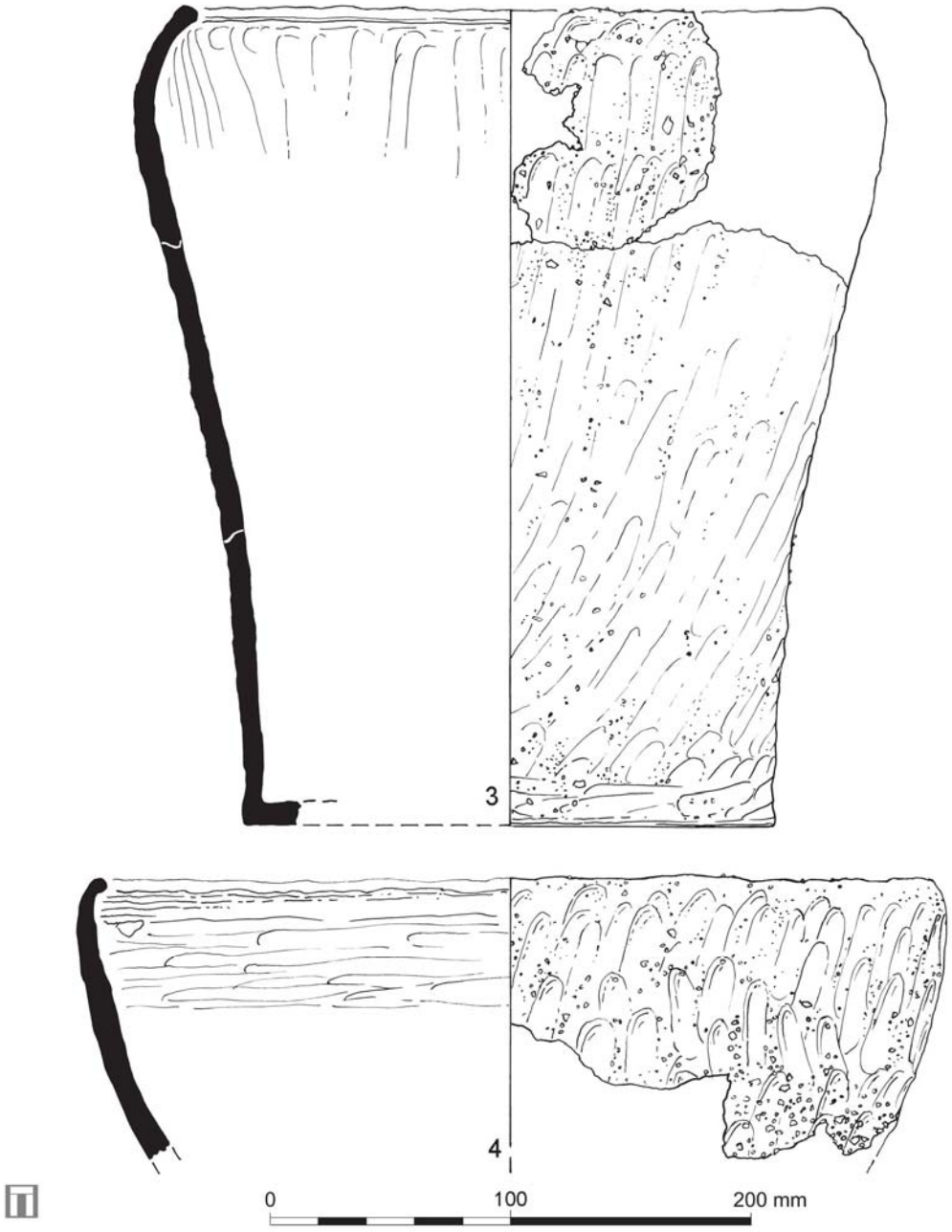

Figure 15 Late Bronze Age pottery from the watching brief
3. *Hooked rim jar, R16, F4, PRN 193, context 40167, pit 40166.* ***4.*** *Hooked rim vessel, R17, F4, PRN 194, context 40167, pit 40166.*

One complete profile could be reconstructed, from a hooked rim jar with a slightly 'waisted' profile (Fig. 15.3). A second vessel is represented by six conjoining rim sherds, from a convex bowl with inturned or hooked rim (Fig. 15.4). Both vessels show finger-smearing on both exterior and interior surfaces. A further 21 rim sherds are plain, undifferentiated and rounded. They may have come from either of these two vessels, or from further vessels; the presence of three other bases indicates that the pit contained the remains of at least four vessels.

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APPENDIX 1: POTTERY FABRICS

Prehistoric

C1: Irregular chalk inclusions in sandy clay matrix.

F1: Soft, rough; common (20%) calcined flint, angular, <1 mm, poorly sorted; v common (30%) coarse & v coarse-grained quartz, rounded to sub-angular, moderately sorted.

F2: Soft, rough; moderate (15%) calcined flint, <2 mm, angular, poorly sorted; sparse (5%) medium to coarse-grained quartz, rounded to sub-angular, moderately sorted, silty clay matrix.

F3: Soft, rough; abundant (40%) calcined flint, angular, >2 mm, poorly sorted; occasional sub-angular medium to coarse grained quartz.

F7: Soft, sandy; common (20–25%) calcined flint, ≤3 mm, angular, poorly sorted; sparse (5–7%) coarse-grained quartz, sub-rounded to sub-angular; sparse (3%) ferric inclusions, sub-rounded, ≤1 mm.

Q1: Soft, sandy; abundant (40%) quartz, sub-angular, medium-grained, moderately sorted, occasional larger rounded quartz granules <3 mm.

Q2: Soft, sandy; v common (30%) quartz, mostly medium-grained and sub-angular, larger sub-rounded clear, milky, rose-coloured grains, <1.5 mm; sparse (5%) rounded red fe oxides <2 mm; rare detrital flint,<3 mm.

Q3: Soft, silty, clean; no obvious inclusions, clay matrix of abundant silt-sized quartz, sub-angular to angular, occasional fine-sized grains.

Q4: Soft, silty; cf Q3 but ?sparse (3–5%) red fe oxides, <1.5 mm, rounded.

Q5: Soft, sandy; abundant (50%) quartz, sub-angular, medium to coarse-grained, moderately sorted; rare fe oxides, <1 mm, rounded.

Q6: Soft, sand; moderate (10%) sub-rounded coarse-grained quartz in v fine/silt-sized sandy clay matrix inc. sparse fine to medium-grained rounded glauconite grains; sparse (3–5%) quartzite, angular, <10 mm, poorly sorted.

Q7: Soft, sandy; abundant (40%) medium to coarse-grained quartz, poorly sorted; moderate (15%) glauconite, rounded, medium-grained.

Q8: Soft, sandy; abundant quartz, medium-grained, sub-rounded to sub-angular, well sorted, occasional sub-angular to angular grains; sparse (3–5%) flint, angular, 1 mm, well sorted; rare rounded red fe oxides, <1 mm.

Q9: Soft, sandy; common (25%) quartz, fine to coarse grained, moderately sorted, sub-angular to angular; rare (2%) red irfeon oxides, rounded, 0.5 mm.

Q10: Soft, silty; moderate (10–15 quartz, sub-angular to angular, coarse-grained, moderately sorted; sparse (5–7%) flint, <10 mm, angular, poorly sorted; sparse (3%) voids from organic inclusions; fine sandy clay matrix (MT05 EIA).

Q11: Soft, sandy; common (20–25%) quartz, sub-angular to angular, medium to coarse-grained, well sorted; sparse (7%) flint, 1 mm, angular, well sorted (MT05 EIA).

Q12: Soft, sandy; v common (30%) quartz, sub-rounded to angular, fine to coarse-grained, poorly sorted; moderate (10–15%) flint, angular, <4 mm, well sorted.
QS1: Coarse, sandy; abundant (40%) medium to coarse grained quartz (sub-angular) with glauconite (rounded), well sorted; sparse (7%) crushed shell, ≤4 mm, poorly sorted.
QV1: Soft, sandy; abundant (40%) medium-grained angular quartz, well sorted; sparse (5–7%) voids from organic inclusions, ≤2 mm; rare red fe oxides, rounded, ≤1 mm; rare detrital rock frags, ≤5 mm, sub-rounded.
QV3: Soft, sandy; abundant (40%) quartz, sub-angular to angular, medium-grained, well sorted; moderate (10–15%) of linear voids from organic inclusions.
S1: Soft, soapy; abundant (40–50%) crushed shell, up to 4 mm but dominated by frags ≤1 mm, poorly sorted.
S99: Leached, shell-tempered; uncertain date.

Romano-British
E301: South Gaulish samian.
F100: Flint-tempered fabric.
G100: 'Catch-all' grog-tempered fabric.
Q100: 'Catch-all' sandy greyware.
Q101: 'Catch-all' oxidised ware.
Q103: 'Catch-all' sandy ware.
Q104: Coarse sandy ware with sparse flint.
Q105: Micaceous sandy ware.
Q106: Fine, micaceous greyware

APPENDIX 2: POTTERY FORMS

Prehistoric
R1: Tripartite bowl, cf Danebury BB1 (Cunliffe 1984).
R2: Rim with flattened top, internally expanded, profile unknown.
R3: Undifferentiated rounded rim, profile unknown.
R4: Upright-necked jar; rounded shoulder, variable rim (flat-topped, some with int. lip, or rounded), cf Danebury JB2 (Cunliffe 1984).
R5: Neutral profile vessel; flat-topped rim, irregular lip on ext and in some parts of int.
R6: Small, shouldered jar; short, everted rim, cf Runnymede 9/12, shouldered bowl/jar (Longley 1991, 543, fig. 101).
R7: Slack-shouldered jar; squared rim, slightly concave neck, cf Danebury JB2.1 (Cunliffe 1984).
R8: Upright-necked, carinated jar; fingertip décor. on rim top & shoulder, cf Danebury JB1 (Cunliffe 1984).
R9: Everted rim, probably from fineware bowl.
R10: Flat-topped rim, unknown profile, may have int. or ext. lip.
R11: Small; slightly flattened rim, poss. cup.
R12: Flat-topped rim, upright neck, prob. shouldered jar (similar to R4). Fingertip impressions on int. rim, int.broken but poss. expanded, cf Danebury JB1 (Cunliffe 1984).
R13: Short, everted rim from slack-shouldered vessel.
R14: Necked jar; squared, bead rim, angular shoulder, 'rilled' body: upper part horizontally, lower part vertically.
R21: Jar; flat-topped, hammerhead rim, cf Danebury JA2, 7th–5th centuries BC (Brown 2000a, 86).
R22: Round-bodied bowl/jar; slightly beaded rim.
R23: Round-bodied jar; proto-bead rim.
R24: S-profile jar; everted rim and rounded body.

Romano-British
R100: Bead-rimmed jar.
R101: Everted rim jar.
R102: Jar rim frag.
R103: Copy of Gallo-Belgic platter (CAM 1), CAM form 21, poss. CAM21A.
R104: Necked, cordoned jar (Alice Holt class 1A; Lyne & Jefferies 1979).
R105: Bowl/dish/platter; upright wall, carination, plain rim.
R106: Small, necked jar; rounded shoulder, out-turned rim.
R107: Lid-seated jar; rilled exterior.
R108: Plain-rimmed bowl/dish.
R109: Upright-necked jar; beaded or figure-7 rim, prob. R104 but broken at neck.
R110: Lid; expanded, triangular rim.
R112: Dish; int. moulding, imitating Gallo-Belgic form. Alice Holt class 6 (Lyne & Jefferies 1979).
R113: Bowl; concave neck, carinated body.

R114: Jar; small, beaded rim, high carinated shoulder.
R115: Necked jar; beaded rim.
R116: Round-bodied bowl; short, everted rim, footring base. Post-firing perfs through body.
R117: Small, bead rim jar; high shoulder.
R118: Long-neck, plain rim, prob. beaker.

PART 2: ENVIRONMENTAL REPORTS

Charred Plant Remains

Ruth Pelling

During excavation of sites along the course of the proposed pipeline, bulk samples were routinely taken for the extraction of charred plant remains. Following assessment of all samples a small selection of Iron Age and Romano-British deposits were chosen for more detailed analysis from sites MT05, MT08 and MT09 as follows:

Site	*Date Range*	*Feature types*	*No. samples*	*Total volume (l)*
MT05	Romano-British	Ditch	2	20
MT08	Early Iron Age	pits	4	110
MT09	Late Iron Age/Romano-British	Pits/ditch	3	85

Samples assessed but not included in the full analysis are referred to below where necessary. Generally these samples produced small, background scatters of charred plant remains. Those samples selected for full analysis were from well dated or phased contexts and were shown at assessment to contain useful quantities of plant remains. The samples together provide a useful body of data with which to compare with sites from the M3 excavations to the south east as well as the Danebury and Danebury Environs sites to the west and northwest of the Test Valley.

Methodology

Bulk samples were processed by standard flotation methods; the flot retained on a 0.5 mm mesh, residues fractionated into 4 mm, 2 mm and 1mm fractions and dried. The coarse fractions (>4 mm) were sorted, weighed and discarded. Selected flots and residues greater than 2 mm were sorted under a x10–x40 stereo-binocular microscope for the recovery of charred grain, chaff, seeds and other quantifiable plant remains. Large flots or those particularly rich in plant remains were fractioned as necessary, the details of which are given in the text. Identification follows well established morphological criteria and by comparison with modern reference material. Detailed results are given in Table 14. Nomenclature and taxonomic order follow Stace (1997). Grain is quantified on the basis of whole grains or embryo ends for fragmented grain. Chaff is counted on the basis of rachis, glume base or spikelet fork, culm node etc. In any quantification comparisons the total number of glume bases is used where one spikelet fork consists of two glume bases. Nut

shell fragments are quantified on the basis of fragments. All other items, particularly weeds are quantified on the basis of seed, nutlet, etc, unless otherwise stated.

Table 14 Charred plant remains

	Site		MT 05	MT05	MT08	MT08	MT08	MT08	MT09	MT09	MT09	MT09	Watching B	
	Date		RB	RB	EIA	EIA	EIA	EIA	IA	IA	IA	IA		
	Sample		65	66	117	108	113	115	130	130	131	116	68	69
	Context		25166	25165	28021	28027	28030	28051	29224	29224	29223	29319		
	Feature		25159	25159	28022	28025	28025	28049	29221	29221	29221	29321		
	Feature Type		Ditch	Ditch	pit	pit	pit	pit	pit	pit	pit	ditch		
	Volume		10	10	40	20	40	10	70	70	5	10		
	Fraction								2 mm	0.5/1 mm				
	% sorted								100	10				
Triticum cf. *spelta*	Spelt wheat grain		–	–	–	–	–	–	–	–	–	17*	–	–
Triticum cf. *spelta*	Spelt wheat germinated grain		–	–	–	–	–	–	–	–	–	3*	–	–
Triticum spelta	Spelt wheat glume base		5	1	–	3	–	1	–	36	7	6	–	1
Triticum spelta	Spelta wheat spikelet fork		–	–	–	–	–	–	–	1	1	–	–	–
Triticum spelta	Spelta wheat spikelet fork + rachis		–	–	–	–	–	–	–	–	–	–	–	–
Triticum cf. *dicoccum*	Emmer wheat grain		–	–	–	–	–	–	4	–	–	–	–	–
Triticum dicoccum	Emmer wheat glume base		–	–	–	–	–	–	–	137	37	–	–	–
Triticum dicoccum	Emmer wheat spikelet fork		–	–	–	–	–	–	2	58	10	–	–	–
Triticum dicoccum	Emmer wheat spikelet fork + rachis		–	–	–	–	–	–	–	–	1	–	–	–
Triticum spelta/dicoccum	Spelt/emmer wheat grain		3	–	1	–	–	–	1	2	2	9*	–	–
Triticum spelta/dicoccum	Spelt/emmer wheat glume base		333	39	–	49	6	4	15	80	34	6	–	2
Triticum spelta/dicoccum	Spelt/emmer wheat spikelet fork		4	–	–	2	1	–	–	35	8	4	–	–
Triticum sp. Tetraploid	Emmer/Rivet wheat rachis		–	–	–	–	–	–	–	1	1	–	–	–
Triticum sp. Hexaploid	Spelt/bread type wheat rachis internode		–	–	–	–	–	–	–	–	–	–	–	–
Triticum sp.	Wheat, grain		1	1	–	–	1	–	11	–	–	14	–	–
Triticum sp.	Wheat rachis node		–	–	–	–	–	–	–	2	–	–	–	–
Triticum sp.	Wheat, basal rachis		–	–	–	–	–	–	–	–	–	–	–	–
Triticum sp.	Wheat, rachis internode		–	–	–	–	–	–	–	11	6	–	–	–
Secale cereale/Triticum sp.	Rye/Wheat grain		–	–	–	–	–	–	1	–	–	–	–	–
Hordeum vulgare sl.	Barley, hulled grain		–	–	–	–	–	–	6	–	1	3	–	–
Hordeum vulgare sl.	Barley grain		2	1	7	–	–	–	13	–	–	8	2	3
Hordeum vulgare sl.	Six-row barley rachis		–	–	–	–	–	–	–	42	14	–	–	–
Hordeum vulgare sl.	Barley rachis		–	–	–	–	–	–	–	15	11	–	–	–
Cerealia indet	Indeterminate grain		23	23	5	–	1	–	19	9	5	30	–	2
Cerealia indet	Indeterminate rachis internode		–	–	–	–	–	–	–	1	–	–	–	–
Cerealia indet	detached embryo		–	–	–	–	6	–	–		–	–	–	–
Cereal sized culm node			–	–	–	–	–	–	9	4	–	–	–	–
Cereal sized basal culm/rhizome			–	–	–	–	–	–	–	–	–	–	–	–
			–	–	–	–	–	–	–	–	–	–	–	–
Prunus spinosa L.	Sloe, stone	??	–	–	–	–	–	1	–	–	–	–	–	–
Malva sp.			–	–	–	–	1		–	–	–	–	–	–
Ranunculus subgen *Ranunculus*		88	–	–	2	–	–	–	–	–	1	–	–	–
Papaver somniferum L.		102	–	–	1	–	65	–	–	–	–	–	–	–
Papaver rhoeas/dubium		103	–	–	–	–	15	–	–	–	–	–	–	–
Fumaria sp.		107	–	–	–	–	–	–	–	–	–	–	–	–
cf. *Urtica dioica* L.		117	–	–	–	–	8	1	–	–	–	–	–	–
Corylus avellana L.	Hazel nut shell frag.	127	1	5	–	–	–	1	22	3	1	–	–	–
Chenopodium album L.		139	–	–	–	–	16	19	–	13	3	–	–	–
Atriplex sp.		142	–	–	–	–	1	–	–	1	–	–	–	–
Chenopodiacea		145	–	–	–	–	33	10	–	19	10	–	–	–
Montia fontana subsp. *Chondrosperma*		157	–	–	–	–	–	1	–	–	–	–	–	–
Stellaria media L.		162	1	–	–	–	–	1		1	–	–	–	–
Cerastium sp.		163	–	–	–	–	–	–	–	–	–	–	–	–
Spergula arvensis L.		171	–	–	–	–	–	1	–	3	4	–	–	–
Agrostemma githago L.		174	–	–	–	–	–	–	–	–	–	–	–	–

Silene dioica L.		177	–	–	–	–	–	–	–	–	–	–	–	–
Caryophyllaceae		175	–	–	–	–	–	2	–	–	–	–	–	–
Caryophyllaceae/Chenopodiaceae			–	–	–	1	–	–	–	1	–	–	–	–
Persicaria lapathifolium (L.) Gray		183	–	–	–	–	–	1	–	–	–	–	–	–
Persicaria maculosa Gray		183	–	–	–	–	–	–	–	3	–	–	–	–
Polygonum aviculare L.		186	–	–	2	–	–	–	–	4	1	–	–	–
Fallopia convolvulus		187	2	–	–	–	–	–	1	8	–	–	–	–
Rumex sp.		188	–	–	–	1	–	1	–	7	1	–	–	–
Rumex acetosella agg.		190	–	–	–	–	–	–	–	1	–	1	–	–
Polygonaceae		192	–	–	–	–	–	3	–	5	–	–	–	–
Polygonaceae/Cyperaceae		193	–	–	–	–	–	–	–		–	–	–	–
cf. Hypericum sp.		205	–	–	–	–	–	–	–	1	–	–	–	–
Reseda lutea/luteola L.		282	–	–	–	–	–	–	–	–	–	–	1	–
Anagallis type		301	–	–	–	–	–	–	–	–	2	–	–	–
cf. *Aphanes arvensis* L.		354	–	1	–	–	3	1	–	–		–	–	–
Vicia/Lathyrus sp.	Vetch/Vetchling, small seeded	413	–	1	5	1		2	6	46	11	–	–	–
Medicago/Trifolium/Lotus sp.		419	–	–	1	2	1	1	–	–	–	–	1	–
Aethusa cynapium L.		506	–	–	–	–	4	–	–	–	–	–	–	–
Conium maculatum L.		507	–	–	–	–	1	–	–	–	–	–	–	–
Appiaceae		510	–	–	1	2	4	2	–	–	–	–	–	–
Appiaceae	Large seeded		–	–	–	–	1	–	–	–	–	–	–	–
Galeopsis sp.		562	–	–	–	–	–	–	–	5	2	–	–	–
Plantago lanceolata/media		584	–	–	1	–	6	–	–	2	–	–	–	–
Odontites vernus/Euphrasia sp.		622	–	–	1	–	16	–	–	–	–	–	–	–
cf. *Sherardia arvensis* L.		644	–	–	1	–	–	–	–	10	1	–	–	
Galium aparine L.		649	1		6	1	–	4	–	–	–	–	2	1
cf. Galium sp.			–	–	–	–	32	–	–	–	–	–	–	–
Galium sp.	small seeded		–	–	–	–	–	1	–	–	–	–	–	–
Sambucus nigra		651	–	–	–	–	1	2	–	–	–	–	–	–
Valerianella dentata		659	–	–	–	–	–	–	–	–	1	–	–	–
Lapsana communis L.			–	–	–	–	3	–	–	–	–	–	–	–
cf. *Lapsana communis* L.		684	–	–	–	–	1	–	–	–	–	–	–	–
Tripleurospermum inodorum		736	–	–	–	–	16	–	–	18	5	–	–	–
Asteraceae, small seeded		750	–	–	–	–	11	–	–	1	–	–	–	–
Eleocharis palustris		796	–	–	–	–	1	–	–	–	–	–	–	–
Carex sp.	Sedge, 3 sided		–	–	–	1	–	3	–	–	–	1	–	–
Carex sp.	Sedge, 2 sided	812	–	–	–	–	1	–	–	–	–	–	–	–
Poa annua/Phleum sp.		858	1	–	–	–	30	–	–	2	1	2	–	–
Lolium/Festuca sp.			–	–	–	–	–	–	–		–	2	–	–
Avena fatua L.	Wild oat floret base	864	–	–	–	–	–	–	–	1	–	–	–	–
Avena sp.		864	–	–	–	–	–	–	17	8	2	3	–	–
Avena sp.	Oats, awn fragments		3	–	–	–	–	–	–	–	–	–	–	–
Arrhenatherum elatius	False oat grass tuber	864	1	–	–	–	–	–	–	–	–	–	–	–
Bromus sp.		884	1	–	–	–	–	–	7	7	1	1	–	–
Poaceae	Grass, small seeded	900	20	2	2	–	70	1	–	3	–	–	–	–
Poaceae	Grass, large seeded		1	1	1	1	–	–	–	–	–	–	–	–
Ignota			2	–	1	2	56	15	–	–	2	1	4	–
Tuber A			–	–	–	–	3	–	–	–	–	–	–	–
Tuber A? internal spores>?			–	–	–	–	12	–	–	–	–	–	–	–
Tuber B			–	–	–	–	–	–	18	–	–	–	–	–
Tuber C/Nut?			–	–	–	–	–	–	1	–	–	–	–	–
Indet	leaf bud		–	–	1	–	–	1	2	4	–	3	–	–
Fungal spores			–	+	–	–	–	–	–	–	–	+	+	–
Insect head, charred			–	–	–	–	1	–	–	–	–	–	–	–

Mitigation Area 05

Samples were taken from Iron Age and Romano-British features at the site. A background trace of indeterminate grains was present in the Iron Age features. Two Romano-British samples, both from ditch 25159 (contexts 25165 and 25166) produced an assemblage dominated by the chaff of spelt/emmer wheat (*Triticum spelta/dicoccum*) and presumably derived from the same deposit of material. Sample 65 from context 25166 appears to have contained the bulk of the deposit and produced over 300 glume bases. Context 25165 produced a very similar range of material but in much small quantities, including 40 glume bases. Moderate quantities of grain were also present, most of which were indeterminate, but included emmer or spelt (*Triticum spelta/dicoccum*) and barley (*Hordeum vulgare*). While the majority of the glume bases were not identifiable to species a small number could be identified as spelt wheat (*Triticum spelta*). No definite evidence for emmer wheat (*Triticum dicoccum*) was recovered. A small number of weed seeds included small seeded vetches/vetchlings/tares (*Vicia/Lathyrus* sp), black bindweed (*Fallopia convolvulus*), chickweed (*Stellaria media*), goosegrass/cleavers (*Galium aparine*) and small seeded grasses. This assemblage appears to consist of the waste product produced during the processing of hulled wheat, presumably spelt wheat, which is dominated by glume bases but includes occasional grain and weed seeds. The presence of barley would suggest some waste from other processing episodes has been incorporated in the fill.

Spelt wheat and barley are the two principal cereals of the Romano-British period of the majority of southern Britain. The presence of processing waste does imply some level of cereal processing was taking place on the site, although it is not possible to comment further. The range of weed seeds present is typical of disturbed ground including arable fields. The relatively low number of seeds would imply some level of processing had taken place elsewhere to remove the bulk of the weeds. As hulled wheats tend to be stored in spikelet form (in their glumes) and processed prior to milling or consumption (Hillman 1981; 1984) it is likely that an initial cleaning episode took place prior to storage. The final removal of glumes and weed seeds occurred on site presumably shortly before use, the waste product possibly being used as fuel before being deposited in the ditch.

Mitigation Area 08

A total of 19 bulk samples were taken from site MT08, all from features of Early Iron Age date. Small quantities of cereal remains, including fragments of barley and hulled wheat grains and glume bases, were recorded in 13 of the samples. Four samples, all from pits, were selected for more detailed analysis (features 28022, 28025 – two samples, and 28051).

All four samples examined in detail were dominated by cereal chaff and/or weed seeds. Cereal grains were present in small numbers only suggesting all four deposits contain cereal processing waste rather than the product. In addition fragments of hazelnut shell (*Corylus avellana*) and a stone of sloe (*Prunus spinosa*) may represent wild collected food resources or may derive from wood collected for fuel.

The two samples from pit 28025 (samples 108 and 113) appear to derive from two stages of crop processing; one (sample 108) dominated by glume bases, the other (sample 113) by weed seeds. Sample 108 (context 28027) produced 56 glume bases, with no grain and 17 weed seeds. While the number of items is modest in this sample, the dominance of glume bases would suggest it consists of the processing waste of de-husking hulled wheats. Spelt wheat is the only wheat species identified in this sample. Sample 113 from the same pit (context 28080) conversely produced only very few cereal remains consisting of 2 grains, and 8 glume bases, although a small number of detached embryos suggest the grain may be slightly under-represented. This sample did however produce 411 weed seeds. Many of the weed seeds, such as scentless mayweed (*Tripleurospermum inodorum*) and opium poppy (*Papaver somniferum*) were small. However, the deposit included large numbers of certain species suggesting that many of these seeds derive from seed heads or

capsules. If hulled wheats are stored in spikelet form (as opposed to fully processed grain), they may be processed in two separate phases. Prior to storage the early stages of threshing, winnowing, and sieving may take place to reduce the bulk going into storage or for transport elsewhere, and to remove the large bits of chaff, rachis and many of the weeds and weed heads. De-husking and final cleaning (often fine sievings) are then likely to occur as spikelets and are removed from storage and prepared for milling/consumption. It has been suggested (Stevens 2003) that the level of processing prior to storage could be related to available labour at harvest. While it is difficult to establish the stage at which the weeds in this sample have been removed, the very limited number of glume bases would suggest that it occurred at a separate stage to de-husking, and therefore possibly prior to storage.

The range of weed species represented in sample 113 include taxa indicative of well-drained sandy soils such as the poppies, parsley piert (*Aphanes arvensis*), and scentless mayweed (*Tripleurospermum inodorum*), as well as species of nitrogen rich disturbed soils including stinging nettle (*Urtica dioica*), fool's parsley (*Aethusa cynapium*) and hemlock (*Conium maculatum*). This raises the possibility that the cereals were cultivated on alluvial soils towards the River Test rather than on the chalk immediately around the site, or indeed that they were imported from further afield. The presence of opium poppy is of some interest and may be indicate its cultivation locally as an oil crop. It was also present on the Danebury Environs sites from the Early Iron Age (Campbell 2000). Finally a number of unidentified objects were present in context 28080 which appear to be associated with a tuber type structure. The presence of tubers would suggest some uprooting of crops and/or weeds.

The remaining samples from this site, both those which were analysed in full and those assessed only, produced small numbers of cereal grain and chaff of both spelt wheat and hulled barley. The sample from pit 28049 (sample 115) again produced a relatively large number of weed seeds dominated by fat hen (*Chenopodium album*), a common species of disturbed fields.

Mitigation Area 09

A total of 19 samples were examined from site MT09, of which ten were from features of Late Iron Age date, three were Romano-British and the rest medieval or undated. Low levels of cereal remains were present in the majority of samples, some also producing evidence of recent contamination. Two Iron Age samples were sorted more fully, both from pit 29221, and both rich in cereals. A sample from a Romano-British ditch (feature 29319) was also sorted.

The two samples from pit 29221 produced large flots, with abundant charcoal and large quantities of cereal remains. Sample 130 (context 29224) was particularly large and the 0.5 mm and 1 mm fractions were therefore sorted only in part (10% of each fraction). Table 14 shows the counts generated by sorting the entire >2 mm fraction and 10% of the 0.5 mm and 1mm fraction, while the total figures are adjusted to show the projected total quantities for the entire sample. While the numbers are far greater in sample 130 the overall assemblage is broadly similar in both samples: grain is relatively rare, while chaff, particularly glume bases but also barley rachis, is abundant and weeds are numerous. There is a greater range of weed species in sample 130 but this is likely to reflect the greater number of weeds seeds over all rather than any significant difference in the assemblage. Given the similarity in species, plant parts and proportions of the various elements, it is assumed that these two samples are derived from the same assemblage.

The two samples from pit 29221 produced a large quantity of the chaff of glumed wheats, of which both emmer (*Triticum dicoccum*) and spelt wheat (*Triticum spelta*) are represented by well preserved glume bases and spikelet forks. Emmer wheat outnumbered spelt quite significantly in this deposit. The rachis of six-row hulled barley (*Hordeum vulgare*) is also well represented in the samples. Occasional culm nodes could derive from either the hulled wheats or the barley. The paucity of grain in relation to the glume bases and rachis would suggest that it is the processing by-product that is represented of all three crops rather than stored ears or spikelets. The fact that wheat

and barley chaff is present together demonstrates that the deposit represents the mixed by-product more than one processing episode: barley is a free-threshing cereal which is processed very differently from spelt and emmer which are hulled wheats and require an additional stage of processing to remove the tough, tightly adhering glumes. The presence of fragments of hazelnut shell further indicates the mixed origin of this sample. It is possible that the processing by-products of the cereals was stored and used together in the same burning episode, possibly as fuel for drying grain or similar function.

The numerous weed seeds present in the pit deposits are largely derived from ruderal species of disturbed ground including fat hen and orache (*Atriplex* sp.), field madder (*Sherardia arvensis*) and a range of Polygonaceae including red shank (*Persicaria maculosa*), knotgrass (*Polygonum aviculare*), black bindweed (*Fallopia convolvulus*) and docks (*Rumex* sp.). Also abundant were seeds of vetches/vetchlings/tares which are common in both disturbed ground and grassland habitats. A number of tubers of unidentified species were present in sample 130 suggesting at least some of the plants represented were uprooted which tends to favour the binding species such as bindweed and the vetches. There were no cereal type grass rhizomes to suggest the cereals had been harvested by uprooting. The presence of corn spurrey (*Spergula arvensis*), sheep's sorrel (*Rumex acetosella* agg) and scentless mayweed suggest the cultivation of light sandy soils. Black bindweed is particularly strongly associated with spring sown barley.

The sample from Early Romano-British ditch 29319 is quite different to those from the pit, producing a more mixed assemblage, with grain out numbering chaff elements. Given the differential survival of grain and chaff it is possible that whole spikelets were represented in which the chaff has largely been lost, although the numbers are such that it is likely that a background mix of waste by-product and accidentally lost grain or spikelets are represented. Interestingly no emmer wheat is represented in this sample, spelt wheat being the only wheat species identified. It is possible that the absence of emmer wheat is the result of a shift in crop types into the Roman period, although it is not possible to establish how typical the emmer rich pit deposit is of the late Iron Age. The limited weed assemblage in this sample is dominated by grass seeds

Discussion

The chaff rich deposit from the Late Iron Age pit at site MT09 is of interest in that is suggests emmer wheat to have been of some significance in the cereal economy of the site during the Late Iron Age. It is not possible from a single pit to extrapolate the importance of the various cereals in the overall cereal economy, but clearly it is well represented in this one feature. The relative roles of emmer and spelt wheat are not as clear cut as once believed. While spelt wheat had clearly replaced emmer wheat as the principal wheat cultivated in parts of the country during the 1st millennium BC (Jones 1981), the growing body of archaeobotanical data from southern Britain in recent years has shown this pattern to be regionally highly varied, with good evidence for the cultivation of emmer wheat from parts of Kent (Hillman 1982; Stevens 2006; 2008), Essex (Carruthers 2008), and southern Hampshire (Pelling unpubl.). That emmer only occurs as an occasional contaminant of the spelt crop on the Danebury Environs region (Campbell 2000; Jones and Nye 1991), or the Thames Valley (Robinson and Wilson 1987; Jones 1978) may in fact be the exception rather than the norm for this period. The choice of cultivation of spelt wheat or emmer may be dictated by both climatic and socio-political factors (Evans, 1975; Fowler, 1983; Jones 1984; van der Veen 1992; van der Veen and Palmer 1997) and is likely to be complex. Interestingly at Maiden Castle, while spelt wheat dominated the charred assemblage, emmer wheat formed the bulk of the wheat identified amongst the Iron Age pottery impressions recovered during Wheelers excavations at the site (Palmer and Jones 1991). This raises the possibility that the absence of emmer wheat at many sites may be the result of more subtle behavioural activities and treatment of the two cereals rather than simple regional variation. Locally spelt wheat dominated the Iron Age assemblages from sites along the M3 with the exception of Micheldever Wood (Monk 1987) which produced grain of emmer wheat, although no chaff was present on this site. Further to the south at Hedge End (Pelling unpublished), situated on sandy soils on the eastern outskirts of Southampton, emmer wheat was

well represented. It is possible that the emmer wheat was brought into the site at MT09 from some distance, particularly given the weed evidence for the cultivation of light free-draining soils.

Discussion

The three sites examined have produced some consistent patterns in their charred plant assemblages. At all three sites there was clear evidence for the processing of hulled wheat with an abundance of glume bases. In part this is likely to reflect the nature of hulled wheat, which tend to be stored in spikelet form and therefore requires the removal of the glumes prior to milling or consumption regardless of the size or status of the site. The scale of cereal processing episodes at each site is difficult to assess given the limited number of samples which produced botanical remains on any useful scale. Individual samples at site MT05 and MT09 do appear to suggest at least some cereal processing on a fairly notable scale. The samples at MT09 also suggest storage and utilization of cereal chaff from more than one processing episode (involving at least two and possible three crops) as fuel. The use of cereal chaff as fuel may be related to availability of chaff, paucity of other fuel types, or a combination of factors. It is also possible that chaff was deliberately selected as a fuel when drying or roasting cereals or firing bread ovens as it flavours the grain or bread less strongly than other fuel types.

Some differences are seen in the assemblages in terms of the weed seeds which may reflect different treatment of the cereals and different processing procedures. It has been suggested that at site MT05 the relative paucity of weeds in proportion to cereal chaff is related to separate processing episodes, the weeds having been removed at an earlier stage. At MT08 and MT09 weed seeds are relatively abundant suggesting they were removed either at the same time as de-husking (removal of the glumes) occurred, or at least in the same area. It is not possible to establish why such differences occur on the basis of such few samples, however it has been suggested that the occurrence of processing activities prior to putting cereals into storage (ie soon after harvest) is related to labour availability (Stevens 2003). The scale of harvest and subsequent processing activity may also be significant.

The weed flora at all three sites is dominated by common species of disturbed ground. At both MT08 and MT09 species of light, free-draining soil were reasonably numerous. Both sites may have received crops cultivated on alluvial soils along parts of the Test Valley. Both sites also produced a number of tubers possibly suggesting similar harvesting techniques. As neither site produced evidence for cereal rhizomes however, the tubers may simply derive from the uprooting of certain wild species, either for weeding purposes or for the collection of particular species. While the occasional seeds of eyebright (*Odontites verna*) and goosegrass/cleavers (*Galium* sp.) may suggest some cultivation of heavier soils, there is no strong evidence of such from the weed floras, in contrast to sites to the west of the Test Valley.

Most of the samples have produced evidence for the cultivation of spelt wheat and barley. In contrast emmer wheat was also well represented in samples from a pit at MT09. It is not possible to establish how representative the presence of emmer is of the site as a whole or if it represents chance preservation in one particular sample. The presence of emmer wheat on this particular site is not likely to simply be a reflection of a temporal shift from emmer to spelt cultivation being between the other two sites in date. Importantly it indicates that this part of Hampshire supported emmer wheat as well as spelt wheat during the late Iron Age in contrast to the Danebury Environs catchment (Campbell 2000). This may be related to the cultivation of lighter alluvial soils along the river valley or may also be related to other, unrecognised socio-economic factors. Emmer wheat was also significant at Iron Age Hedge End on the edges of Southampton (Pelling unpublished) suggesting this may be a wider regional trend in south-eastern Hampshire.

Wood Charcoal

Catherine Barnett

Four samples were chosen for wood charcoal analysis during assessment of the plant remains from pits of Early Iron Age and Iron Age date in MT08 and MT09. All proved to be rich in terms of volume and number of taxa represented, enabling full analysis, as reported here.

Methods

Charcoal was extracted from the 2 mm residue and flot. Fragments were prepared for identification according to the standard methodology of Leney and Casteel (1975, see also Gale and Cutler 2000), with charcoal pieces fractured with a razor blade so that three planes could be seen: transverse section (TS), radial longitudinal section (RL) and tangential longitudinal section (TL). They were examined under bi-focal epi-illuminated microscopy at magnifications of x50, x100 and x400 using a Kyowa ME-LUX2 microscope. Identification was undertaken according to the anatomical characteristics described by Schweingruber (1990) and Butterfield and Meylan (1980). Identification was to the lowest taxonomic level possible, usually that of genus with nomenclature according to Stace (1997). Individual taxon (mature and twig) were separated, quantified, and the results tabulated.

Results

As shown in Table 15, the samples examined proved to be both rich and in good condition. The substantial charred log recovered from pit 28049 (MT09), where it was associated with two fineware vessels and one coarser vessel, was of oak (*Quercus* sp.). The absence of other fragments (and other taxa) indicates that this may have been a discarded structural piece, perhaps accidentally burnt.

A minimum of 12 taxa were identified for the other three Early Iron Age/Iron Age samples. All were dominated by oak, but a variety of other taxa were also represented in each and the quantities of juvenile, roundwood and mature wood pieces differed in each pit. The greatest range was identified for pit 29212 (MT09), with oak, elm (*Ulmus* sp.) and pomaceous fruit wood (Pomoideae, a group of anatomically similar taxa such as hawthorn and whitebeam) important but also lesser field maple (*Acer campestre*), birch (*Betula pendula/ pubescens*), hazel (mature, roundwood and twigwood, *Corylus avellana*), beech (*Fagus sylvatica*), ivy (*Hedera helix*), and cherry type, including probable blackthorn (*Prunus spinosa*). A single fragment that compared well with the relatively uncommon spindle tree (*Euonymus europaeus*) was also identified. Approximately half the oak was small (juvenile) roundwood, only 2–3 years in age.

Many of the same taxa were represented in pit 28022, with the addition of hornbeam (*Carpinus betulus*), and probably bird cherry (*Prunus avium*). Cherry types and beech were more frequent but pomaceous fruit wood and oak again dominated, the latter all mature pieces. The charcoal assemblage from 29221 proved simpler, heavily dominated by oak (at 73%), including larger roundwood. Hazel roundwood of a consistent size, 2–5 years old when cut, was important, and small quantities of field maple and pomaceous fruit wood were also identified.

Table 15 Wood charcoal identifications

Mitigation Area	*MT08*	*MT08*	*MT09*	*MT09*
Feature	*28022*	*28049*	*29212*	*29221*
Context	*28021*	*28050*	*29216*	*29224*
Sample	*117*	*135*	*102*	*130*
Feature type	*Pit*	*Charcoal log in pit*	*Pit*	*Pit*
Phase	*EIA*	*EIA*	*IA*	*IA*
Sample Vol	*40*	*1*	*10*	*70*
Charcoal 4/2 mm	*10/15 ml*	*c. 1l/0*	*120/130 ml*	*230/250 ml*
Acer campestre	–	–	1	1
Betula pendula/ pubescens	–	–	2	–
Carpinus betulus	1	–	–	–
Corylus avellana	2	–	2	3
Corylus avellana roundwood	2	–	4	13*
Twigwood cf. *Corylus avellana*	–	–	–	1
cf. *Euonymus europaeus*	–	–	1	–
Fagus sylvatica	12	–	1	–
Hedera helix	–	–	1	–
Quercus sp.	42	All (1L)	29	58
Quercus roundwood	–	–	24*	15
Quercus twigwood	1	–	–	1
Pomoideae	19	–	16	7
Pomoideae twigwood	1	–	4	–
Prunus sp.	15	–	2	–
Prunus sp. twigwood	1	–	–	–
Prunus sp. cf *avium*	3	–	–	–
Prunus sp. cf *spinosa*	–	–	1	–
Ulmus sp.	1	–	–	–
Ulmus sp. rwd (vitrified & fissured)	–	–	10	–
Ulmus sp. twigwood	–	–	1	–
Unidentified	1	–	1	1
Unidentified twigwood	1	–	–	–
Total no fragments	100	(1)	100	100
% of assemblage used for ID	60%	100%	15%	15%
Comments	Small frags, moderate condition	1 large fractured piece, mature oak	Large sample good condition, large frags. *juvenile	Large sample good condition, large frags. *small 2–5 yr

Discussion

Clearly a wide variety of tree and shrub types was available for exploitation by the inhabitants of the Site. The types and varying maturity of pieces indicate the assemblage is fairly representative of the living woody vegetation of the local area during the Iron Age, with open woodland and most likely, hedgerow types taken for fuel. The presence of beech and spindle in particular indicates exploitation of nearby calcareous/ base rich soils (Stace 1997) and although other soil types may be represented, wetland taxa are notably absent.

Widespread and somewhat unfocussed exploitation is apparent, there is some concentration on oak but it seems any available species was targeted. Iron production has been found to be important at this site and if the charcoal from the pits analysed indeed relates to smelting, the range is perhaps surprising, being more reminiscent of domestic fuel use or even hedgerow clearance. The common presence of oak and hazel roundwood might suggest some deliberate management of the woodland resource for fuel and regular cutting but most were juvenile, cut earlier than a normal coppice rotation (dominated by 2–3 years rather than the expected 5–10 years), the common appearance of twigwood and again variety of taxa used also suggests that even if there was some management this was not large scale rotational cropping. Much of southern England had been affected by clearance for agriculture during the Bronze Age, with subsequent secondary woodland growth common during the Early Iron Age (see Dark 2000). The range of taxa represented here

indicates that had clearance previously taken place however, sufficient time had passed for the woodland and/ or hedgerow structure to have become quite complex and species-rich. The results are somewhat site specific but comparison with other Iron Age sites suggests this is a rather richer assemblage than usual and that the lack of wetland exploitation is somewhat unusual. The assemblage from Maiden Castle Iron Age hillfort, Dorset, also displayed common oak, hazel and cherry type (probable blackthorn) but otherwise differs from this assemblage, with wetland types such as willow (*Salix* sp.) and alder (*Alnus glutinosa*) utilised also gorse (*Ulex* sp.) and ash (*Fraxinus excelsior*) from drier acid areas (Gale 1991). Analyses of the charcoal from Ham Hill Iron Age hillfort, Somerset revealed small quantities of birch, elder (*Sambucus nigra*), pomaceous fruit wood, cherry type, hazel, alder and willow (Gale 1998) and of oak, hazel, birch, field maple, pomaceous fruit, blackthorn, ash and alder buckthorn (*Frangula alnus*) (Chisham 2006).

The types found in probable domestic contexts of Early-Late Iron Age pits and ditches at West Malling were similar to those hillfort assemblages, with ash, pomaceous fruit wood, field maple, hazel and oak common and presence of alder, birch, beech, elm, elder, cherry type, holly (*Ilex aquifolium*), lime (*Tilia* sp.) and willow/ aspen (Barnett 2009). The assemblage from a single Early Iron Age (750–400 cal BC, NZA 28619) sample associated with a possible burnt mound at Ebbsfleet had more in common with the assemblage described here. There too, field maple, hazel, hazel roundwood and pomaceous fruit wood (hawthorn type) were well represented. Small quantities of beech, cherry type and oak were also identified. These were interpreted as collection of wood for fuel from a mixed deciduous hedgerow source, with the high proportion of roundwood indicating regular cutting/coppicing (Barnett in prep.).

Radiocarbon Dating

Alistair Barclay

Five samples were chosen for radiocarbon dating. Two came from cremation burials; an unurned cremation 11204 (11210) and a Collard Urn cremation 11203 (11206). Two further samples came from inhumation burials; 25040 (25043), an adult female 35–45 years, and inhumation 40172 (40173), an adult female of 25–40 years old (see McKinley, above). The final sample came from an unidentified animal long-bone, from a reasonably large bone assemblage from pit 28039 (28067), a feature associated with metalworking slag.

Samples were sent to the dating facility at Scottish Universities Environmental Research Centre (SUERC) AMS facility where the samples were treated and prepared for dating.

Results

The returned dates were calibrated in Oxcal 4.1 (Bronk-Ramsey 1995; 2001) using the IntCal04 atmospheric curve (Reimer *et al*. 2004). The results of the radiocarbon are shown in Table 16 and Figure 16. The results show the two inhumation burials to be uncontemporary, dated to the Middle Iron Age, 400–200 cal BC (2270±30 BP, SUERC-26240) in the case of Burial 254040 and 2270–2030 cal BC (3730±30 BP, SUERC-26241), the Early Neolithic/Early Bronze Age in the case of burial 40172.

The two cremations are however more likely to be contemporary, both broadly dating to the later part of the Early Bronze Age; 1880–1660 cal BC (3435±30 BP, SUERC-26238) for the Unurned cremation burial 11204 and 1750–1530 cal BC (3370±30 BP, SUERC-26239) for the Collard Urn cremation burial 11204.

The animal bone associated with metalworking showed the feature to be of a Late Bronze Age–Early Iron Age date 790–530 cal BC (2510±30 BP, SUERC-26245).

Table 16 Radiocarbon determinations from Barton Stacy

Feature	*Context*	*Material Id.*	*Lab ref.*	*$\delta^{13}C$*	*Date BP*	*Calibration BC 2 sig. 94.5% (1 sig. 68.2%)*
Inhumation burial 25040	25043	l. humerus	SUERC-26240	-19.7‰	2270±30	400–200
Metalworking pit 28039	28067	animal indet. long bone	SUERC-26245	21.9‰	2510±30	790–530
Collard Urn cremation 11203	11206	tibia shaft	SUERC-26239	-19.8‰	3370±30	1750–1530 (1730–1620)
Unurned cremation burial11204	11210	prob. femur	SUERC-26238	-20.9‰	3435±30	1880–1660
Inhumation burial 40172	40173	l. femur	SUERC-26241	-21‰	3730±30	2270–2030

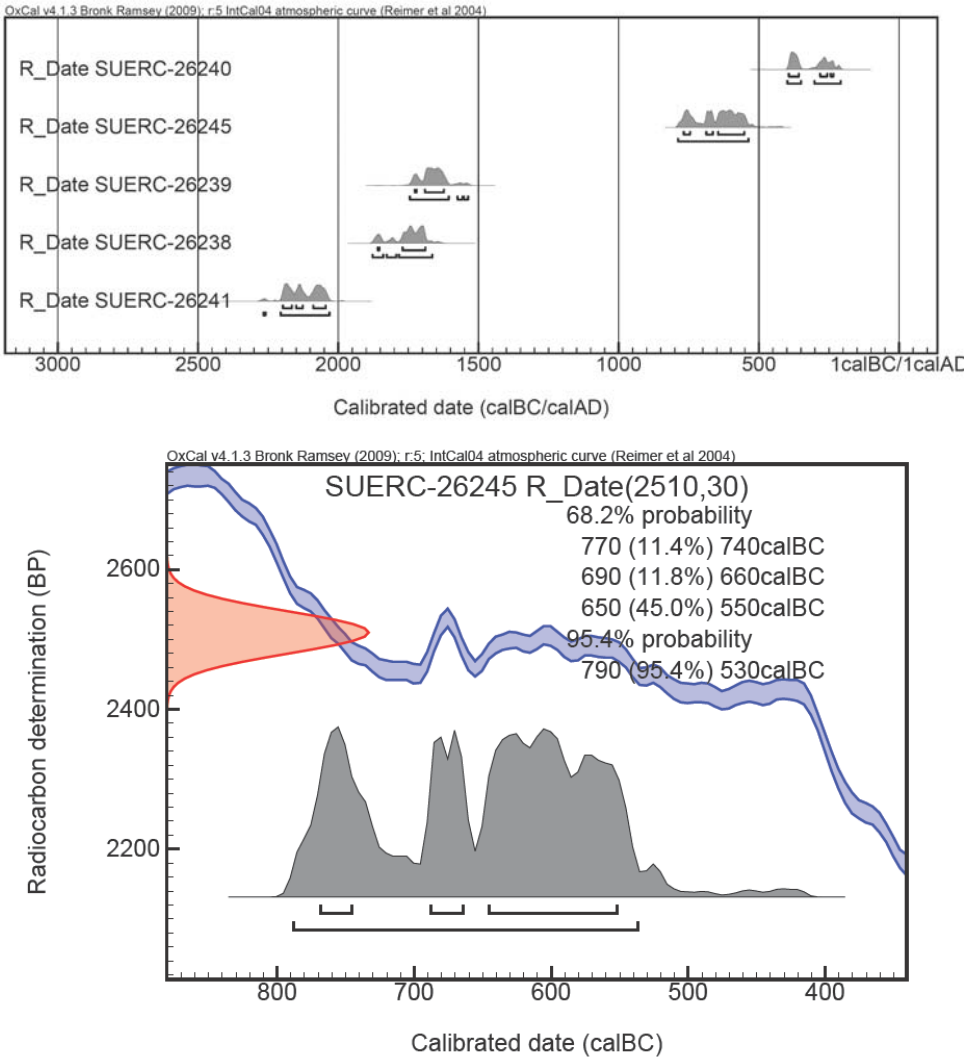

Figure 16 Radiocarbon dates

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