Chapter 3: The Iron Age

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Iron Age activity was found in most areas of the scheme, although there was a particular concentration in Sites B to E (Figs 3.1 and 3.2). There is a broad division between the generally scattered activity of the early Iron Age, consisting largely of pits and four-post structures, and the ditched enclosures of the middle and late Iron Age, although pits and four-post structures continue. Settlement of the middle and late Iron Age is concentrated on Sites B and C. For this reason, the Iron Age activity will be described chronologically, that is, divided between early and middle and late Iron Age, although on this scheme there is transitional activity both at the early–middle Iron Age boundary, and (to an even greater degree) at the middle–late Iron Age boundary. Due to the latter overlap, the description of the middle and late Iron Age activity in this area will not be separated, instead the evolution of each part of the nucleated settlement will be described from the middle into the late Iron Age/very early Roman period.

THE EARLY IRON AGE

The early Iron Age activity on the scheme was dispersed throughout much of the length of the road corridor. Due to the radiocarbon plateau between 800 and 400 BC, phasing within the early Iron Age is dependent upon either stratigraphic relationships or ceramic evidence. Despite this, a number of Iron Age pits across the site that contain large assemblages of typologically early Iron Age pottery have been radiocarbon dated, and almost all of these have produced dates centring upon the late 5th and earlier 4th centuries cal BC. The early Iron Age can therefore be considered to extend from c 800 to 350 BC.

Most features of the earlier Iron Age are either pits or postholes, and very few intercut, so pottery is virtually the only tool available for closer dating. While there are forms diagnostic of the earliest Iron Age (800–600 BC), these occur in only a limited number of contexts, and some of these are only small sherds. Nevertheless, where forms diagnostic of the earliest Iron Age are present, and there are no later forms, features have been attributed to this phase.

A number of features that lack diagnostic forms contain pottery originally described as late Bronze Age/early Iron Age on the basis of the fabrics represented. These largely occur in areas where middle and transitional middle/late Bronze Age activity has also been found (Sites C and G), and it is possible that some of this material is residual. The radiocarbon dates for later Bronze Age activity on these sites do not, however, extend beyond 1000 BC, and no conclusively late Bronze Age pottery assemblages have been identified. These sherds are therefore more likely to be Iron Age. Within the Iron Age these fabrics are not, however, exclusive to the earliest Iron Age, so features containing these assemblages have therefore been described simply as early Iron Age.

Where radiocarbon dates or forms indicate a date late in the early Iron Age, these are shown as later early Iron Age. Other than the pits that have been radiocarbon dated, however, very few features can be confidently ascribed to this sub-phase. Except where very large and fresh assemblages of pottery are present, absence of later diagnostic forms does not reliably indicate an earlier date, so unless forms diagnostic of the earliest Iron Age are present, features can only be characterised as early Iron Age.

As very few features can be dated to the earliest Iron Age, and only a small number of features to the later early Iron Age, the description is presented site by site, rather than by chronological phase within the early Iron Age.

Site K

The westernmost early Iron Age activity occurred on Site K (Fig. 3.3). This was somewhat confused by the colluvial sequence in this area, which comprised a putative buried ploughsoil (10561), overlain by deposit 10560 which in turn was sealed by colluvium 10543. Only occasionally did all three layers survive intact. The little pottery recovered from the features was either dated as late prehistoric (anywhere between middle Bronze Age and early Iron Age) or more specifically identified as early Iron Age. Therefore all the features from Site K are discussed here.

The early Iron Age features in Site K comprised a scatter of pits and postholes, along with a ditch (10563), which crossed the excavation on a NNE-SSW alignment but did not appear in the excavated area to the north (Fig. 3.3). Overall the ditch was 0.8–1m wide and 0.4m deep and other than two sherds of late prehistoric pottery produced only flint (including a core and a notched flake). Four postholes lay to the west of the ditch, and could perhaps have formed a slightly curving row, although the gaps between them (6m or more) make

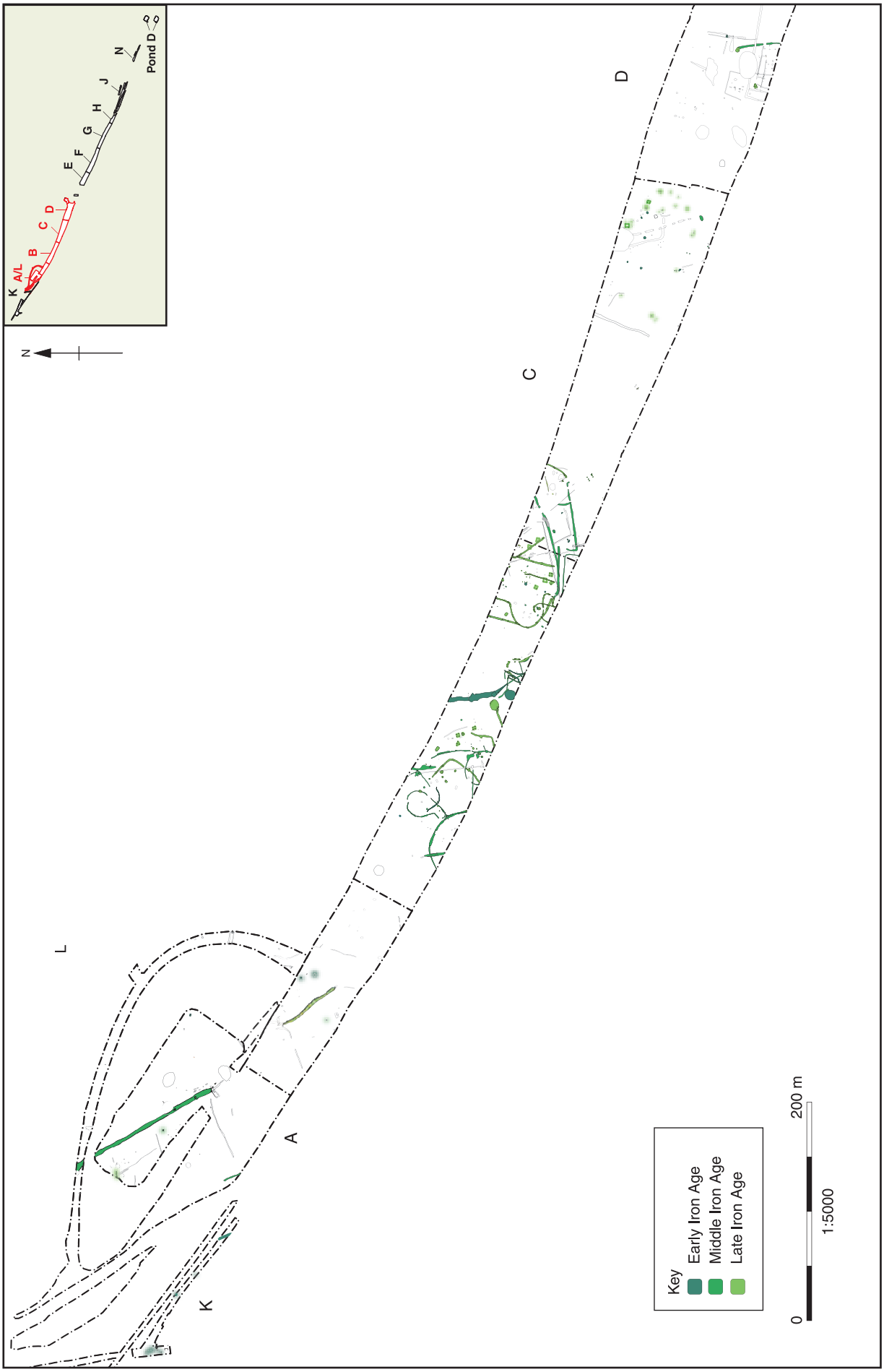


Fig. 3.1 Overall phase plan showing Iron Age features in areas K–D

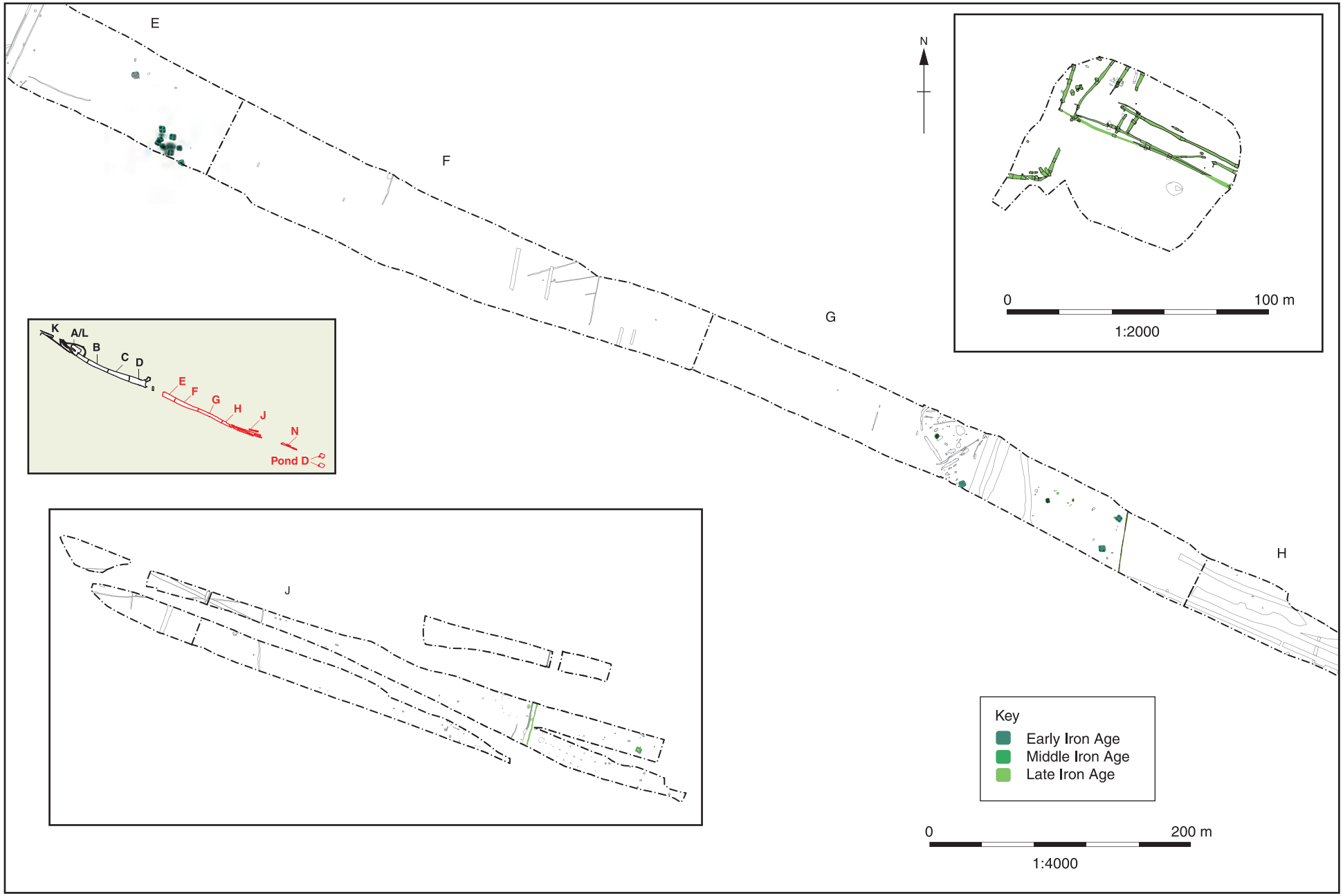


Fig. 3.2 Overall phase plan showing Iron Age features in areas E–J (and Pond D North)

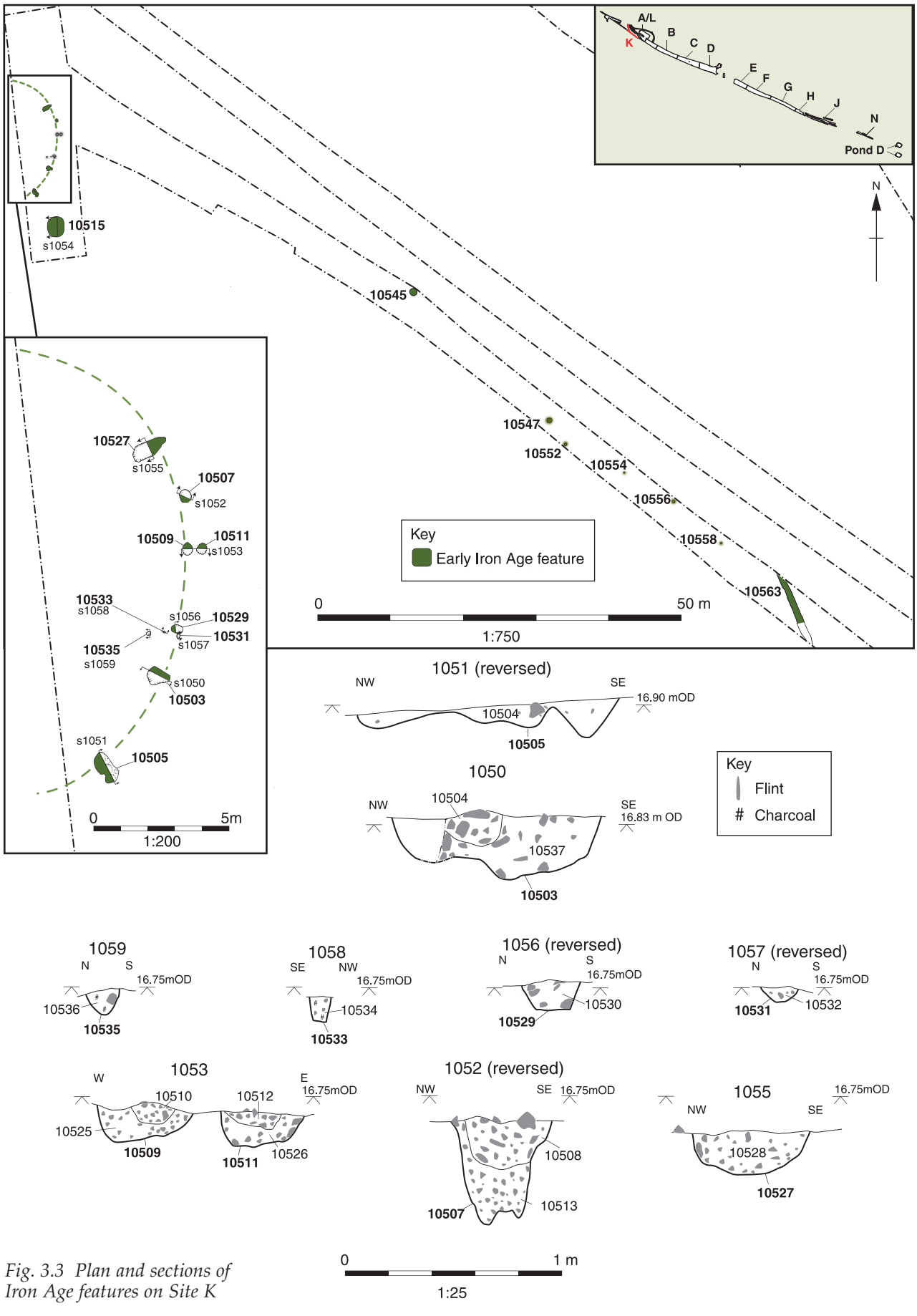


Fig. 3.3 Plan and sections of Iron Age features on Site K

it unlikely that this was a fenceline. Posthole 10556 produced flint but there were no other finds.

Two smaller pits (10545 and 10547) lay north-west of the postholes; both were circular in plan and measured *c* 1m in diameter and 0.3m in depth. These features both produced late prehistoric pottery, and 10547 was sampled due to the presence of significant quantities of charcoal. Analysis of this sample yielded a few indeterminate cereal grains and one wheat grain as well as many small charcoal fragments.

In the west of the site, a group of postholes (10538), possibly forming an arc, was found cutting the natural chalk at the base of colluvial layer 10543 (Fig. 3.3). This group consisted of nine features, which varied in character from well-defined post-holes (10507, 10509, 10511 and 10529) to stakeholes (10535, 10533 and 10531), elongated pits (10527 and 10503) and an irregular feature (10505). The nine features were clustered into six positions, spaced between 1.6m and 3.6m apart, and (with the exception of posthole 10507, which was much deeper than the others) all had their long axis roughly perpendicular to the arc, ie aligned towards its point of origin. The multiple post- or stake-holes may indicate repairs or double posts; the elongated pits may in fact have held two post-positions, as the figure-of-eight shape of feature 10505 perhaps also suggests.

If the arc was genuine, its radius was of approximately 7m, and might have belonged to a circle some 12–14m in diameter. On the north there was a wider gap between 10527 and the edge of the excavation, which may indicate either the limits of the arc, or perhaps a break in the ring. A roundhouse of this diameter would be quite considerable, towards the size range of large earliest Iron Age houses such as Bancroft (18m; Williams and Zeepvat 1994, fig. 20), Pimperne (14–15m; Harding et al. 1993), Longbridge Deverill (16m; Hawkes 1994) or Little Woodbury (15m; Bersu 1947). A smaller double post-ring roundhouse of similar date (11m in diameter) was found in the Middle Thames Valley at Dunston Park (Fitzpatrick *et al.* in Barnes *et al.* 1995, fig. 35), and in this the posts of the two rings were also quite close together.

The evidence from Site K is not sufficient to be confident of this interpretation, and it is not well-dated, as the group contained only two sherds of late prehistoric pottery and a few struck flints. The post-ring was overlain by 0.75m of colluvium before early Iron Age pit 10515 was dug (see below). It is uncertain over what period this accumulated, and it is likely that colluviation was preceded by a period of erosion, as no buried soil was found below it here. Alternatively therefore the arc could belong to the later Bronze Age, and could possibly have belonged to a freestanding timber circle rather than

Plate 3.1 Half-section of pit 10515 showing red and black fills

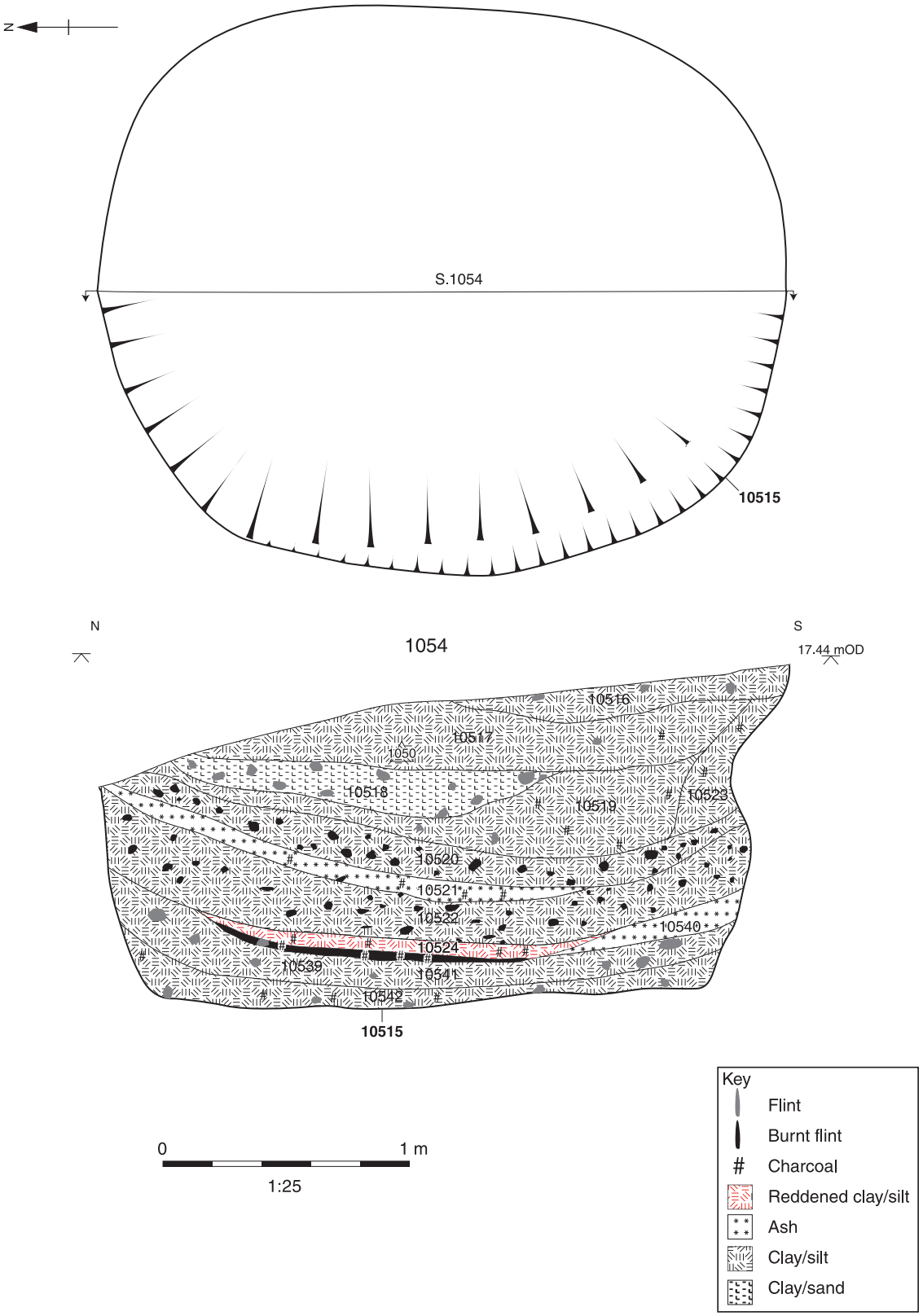


Fig. 3.4 Plan and section of pit 15015

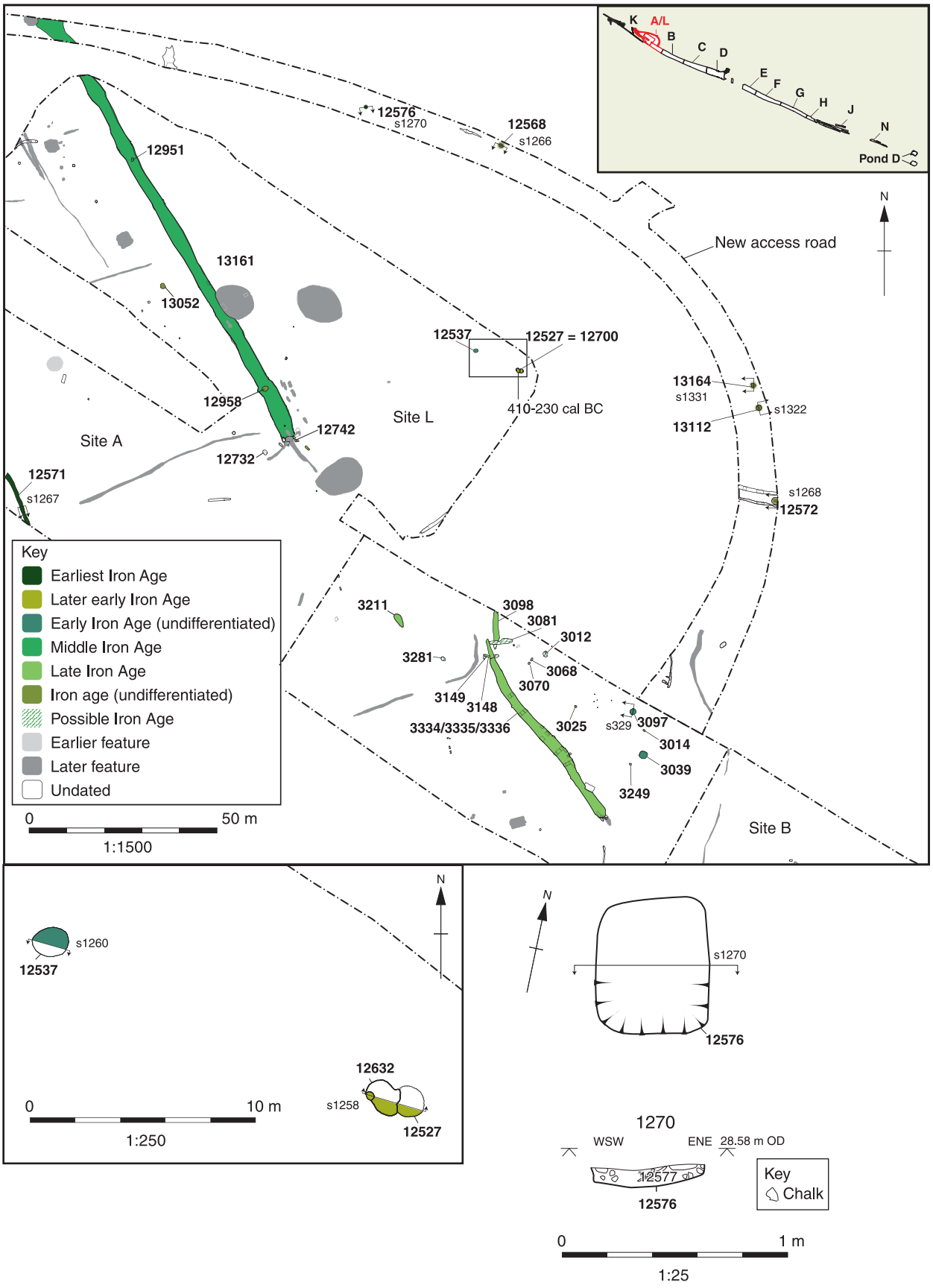


Fig. 3.5 Plan of Iron Age features in Sites L and A

a roundhouse. Examples of the middle and late Bronze Age are known in the Upper Thames Valley, that at Spring Road, Abingdon having its postholes oriented towards the centre in a similar manner (Allen and Kamash 2008). The flints, however, included two blades, and so rather than support a Bronze Age date may all have been residual. A further possibility is that the structure was even earlier, perhaps belonging with the early Bronze Age cremation found to the north-west in the HS1 excavations (Askew 2006, 13).

A large sub-circular pit (10515) immediately south of the posthole group clearly cut colluvial deposit 10543. The pit measured 2.8 x 2.3 x 1.3m deep, and had a complex sequence of 13 fills (Fig. 3.4). These were overlain by layers representing two episodes of dumping of material from an industrial process involving burnt flint. The reddening of layer 10524 suggested to the excavators that the burnt flints were still hot when deposited (Plate 3.1). One half of the pit was excavated, and produced a total of 91 sherds (969g) of pottery of early Iron Age date, along with burnt flints, three fragments of copper-alloy strip, two fragments of triangular loomweight/oven brick and other fragments of fired clay. Animal bone included pig, sheep/goat and goat, cattle and red deer. Samples from fills 10520 and 10522 produced abundant charcoal including oak, possible hazel or birch and Pomoideae, as well as hazelnut shells. Residual flint was found throughout the pit including a knife (SF 1050) from upper fill 10517.

The fills of the pit were not radiocarbon dated, and so cannot be dated more closely than early Iron Age. The structure represented by the arc appears to have been earlier than this, but could belong to an earlier phase within the early Iron Age, rather than to the earliest Iron Age or earlier.

Site L

A scatter of Iron Age pits was excavated on Site L (Fig. 3.5), one of which (12576) contained a large part (307g) of a small fineware bowl dated to the earliest Iron Age (800–600 BC), and another 13 sherds of early Iron Age character. The pit was sub-rectangular, measuring 0.5m x 0.54m but was only 0.08m deep and was therefore probably significantly truncated. The only other artefactual evidence was 168g of structural fired clay. This is the only pit on this site that can clearly be dated to the earliest Iron Age.

Pits 12572, 12568, 13164 and 13112 are dated as early Iron Age (for details see Table 3.1). These were very varied in shape and profile, although all were shallow. Pit 12572 was the most substantial, with three main fills containing burnt flints, pottery, animal bone and fired clay. Most came from the upper fill, which also contained a very small copper-alloy fragment (SF 1270) and an intrusive horseshoe nail (SF 1283). Fewer find were recovered from the other pits, though an environmental sample from Pit 12568 yielded barley, possible emmer and other indeterminate cereal grains.

About 100m west of 13112 and 13164 was another shallow pit 12537, which had clearly been truncated

Table 3.1: Early Iron Age pits on Site L

Cut No	*No Fills*	*Length (m)*	*width (m)*	*depth (m)*
12572	4	1.87 +	2.10	0.6
12568	2	1.2	0.9	0.3
13164	1	1.2	1.2	0.2
13112	4	1.55	1.5	0.35
12537	2	1.30	1.1	0.18

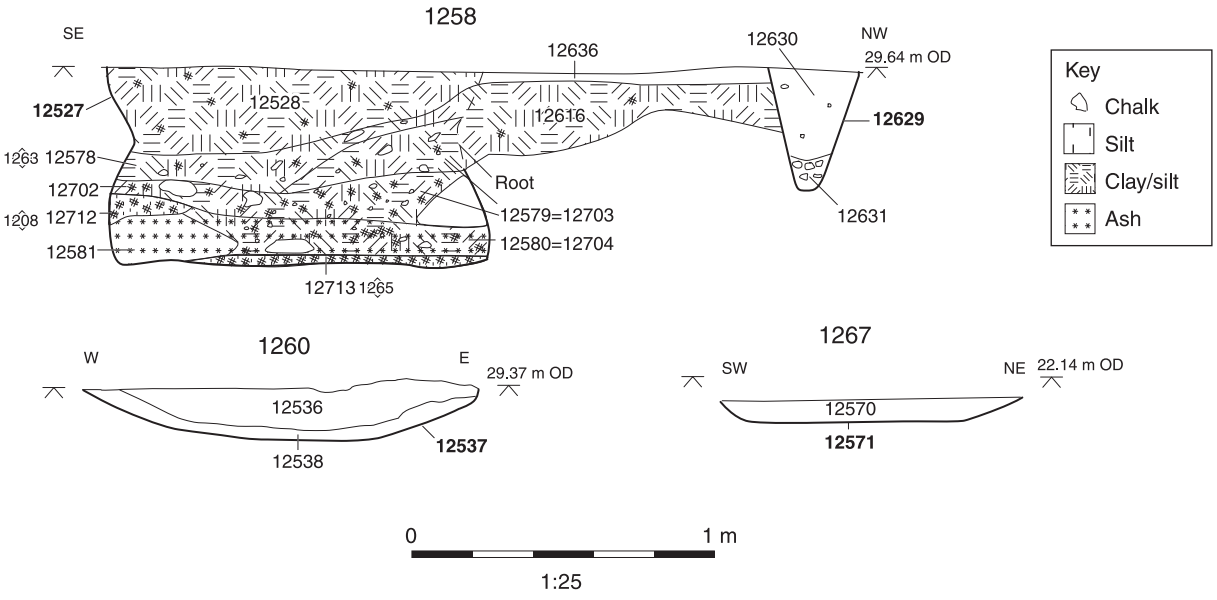


Fig. 3.6 Sections of pit 12537, ditch 12571 and pit 12527

by ploughing (Fig. 3.6). Its two fills produced 880g of structural fired clay and fragments of slag, possibly indicating some form of industrial activity nearby. It is possible that this feature was related to and contemporary with pit 12527, which lay only 13m to the east (see below).

An isolated length of ditch (12571) on the southern edge of Site L was traced for 17m (Fig. 3.6). This was 1m wide and only 0.08m deep, but produced 619g of Iron Age pottery, some of which was diagnostically early Iron Age. The ditch also contained a fragment of briquetage and over 700g of fired clay as well as a fragment of slag and medieval or post-medieval tile. Its alignment was parallel to ditch 10563 on Site K some 52m to the south-west, and the two features may have been contemporary.

One pit dated by radiocarbon to the late early Iron Age (12527) was excavated in the north-east corner of the main body of Site L, cut on its west side by well-defined posthole 12629 (Figs 3.5–6). Feature 12632 appeared to be a natural clay solution hole in the chalk, whose top remained as a hollow, into which the upper fills of pit 12527 spilled. The main pit had near vertical sides at the top becoming undercut lower down, and bottoming on a flat base, and was 1.16 x 1.05m in plan and 0.62m deep. Its sequence of seven fills contained significant amounts of pottery (including a large proportion of a fingertip-decorated jar in a localised deposit of ash), structural fired clay, a triangular loomweight/oven brick, and a quantity of animal bone including numerous sheep and sheep/goat remains representing a part-skeleton. Analysis of flots from processed soil samples identified abundant emmer wheat and barley within different fills.

Two of the lowest fills in pit 12527 (12713 and 12712) consisted almost entirely of charred grain (Plate 3.2). This type of pit is often described as a 'grain storage' pit, and deposits of charred grain at the bottom of such pits are sometimes interpreted as the result of firing the grain that had sprouted around the edges before anaerobic conditions prevented further germination (Reynolds 1974). There was, however, no sign of *in situ* burning on the base or sides of the pit, nor any evidence of sprouted grains, and this is therefore unlikely. A sample of the grain from 12713 was submitted for radiocarbon dating and returned a date of 410–230 cal BC (NZA-32308), with a 69% probability of falling between 410 and 350 cal BC, or the earlier 4th century BC.

The depositional sequence within the pit contains a wide variety of materials, mostly of domestic character, such as the pottery, animal bone and charred foodstuffs. The presence of most of a highly decorated vessel at the base (Plate 3.3) and the layers of virtually unmixed charred plant remains, however, make simply rubbish dumping unlikely. Viewed as a whole, the infilling comprised a sequence of layers of different character: first charcoal and ash layers, then a layer rich in pottery with a part-sheep skeleton and no bones of other species, then a comparatively sterile deposit with only oven brick fragments, and finally a layer composed largely of pottery and of triangular bricks or weights. This suggests a series of intentionally selected deposits reflecting early Iron Age culture.

Posthole 12629 may have acted as a marker for these features, suggesting continued significance once abandoned or closed.

Site B and the western part of Site C

Site B and the western end of Site C contained a substantial settlement of middle and late Iron Age date (for details see below), comprising ditched enclosures, four-post structures and pits either side of a cobbled road. Among these features were a number that could not be dated, but certain evidence of earliest or early Iron Age activity was relatively slight. For the earliest Iron Age this consisted solely of sherds from a single isolated hollow (7949) beneath the cobbled road (7980) in Area B and a small group of pits and postholes at the western end of Area C (Fig. 3.7).

The isolated hollow (7949) measured 4.6m in diameter with a depth of only 0.35m. A cobbled trackway (7980) had slumped into the hollow. The lowest fill contained six very small sherds (9g) of pottery in a fine flint-tempered fabric often found in earliest Iron Age vessels, as well as fired clay and a small assemblage of worked flint. Further small flint-tempered sherds of early or middle Iron Age pottery (7 sherds weighing 28g) came from the silt (7948) above the cobbled surface. The cobbled trackway divided the two halves of the middle Iron Age settlement, and was cut by a succession of gullies, some containing middle and some late Iron Age pottery, so most likely was either in existence before the settlement was established, or was created at its outset. It is tentatively considered to date to the end of the early Iron Age or the start of the middle Iron Age (for description see middle Iron Age below).

The majority of the four-post structures contained too few finds to date, and so could belong to any phase within the Iron Age, or even potentially to the late Bronze Age. One of those at the junction of Sites B and C, structure 3772, was however radiocarbon-dated to the early Iron Age (see Fig. 3.7). This was just under 3m square, with sizeable postholes *c* 0.7–0.8m in diameter, and two smaller postholes *c* 0.4m in diameter just north of the southern pair. The structure produced fragments of pig bone and charred grain including wheat. Charred grain from posthole 3733 was radiocarbon dated to 2404+/-50 BP, giving a calibrated date of 760–390 cal BC (NZA-32280), with a 72.5% chance of being between 630–390 cal BC.

Nearby features pit 3895 and ditch 7987 also produced pottery in fabrics current both in the early and middle Iron Age. The pottery from pit 3895

Plate 3.2 Half-section of pit 12527 showing charred layers

Plate 3.3 Detail of pot at base of pit 12527 and loomweight in section

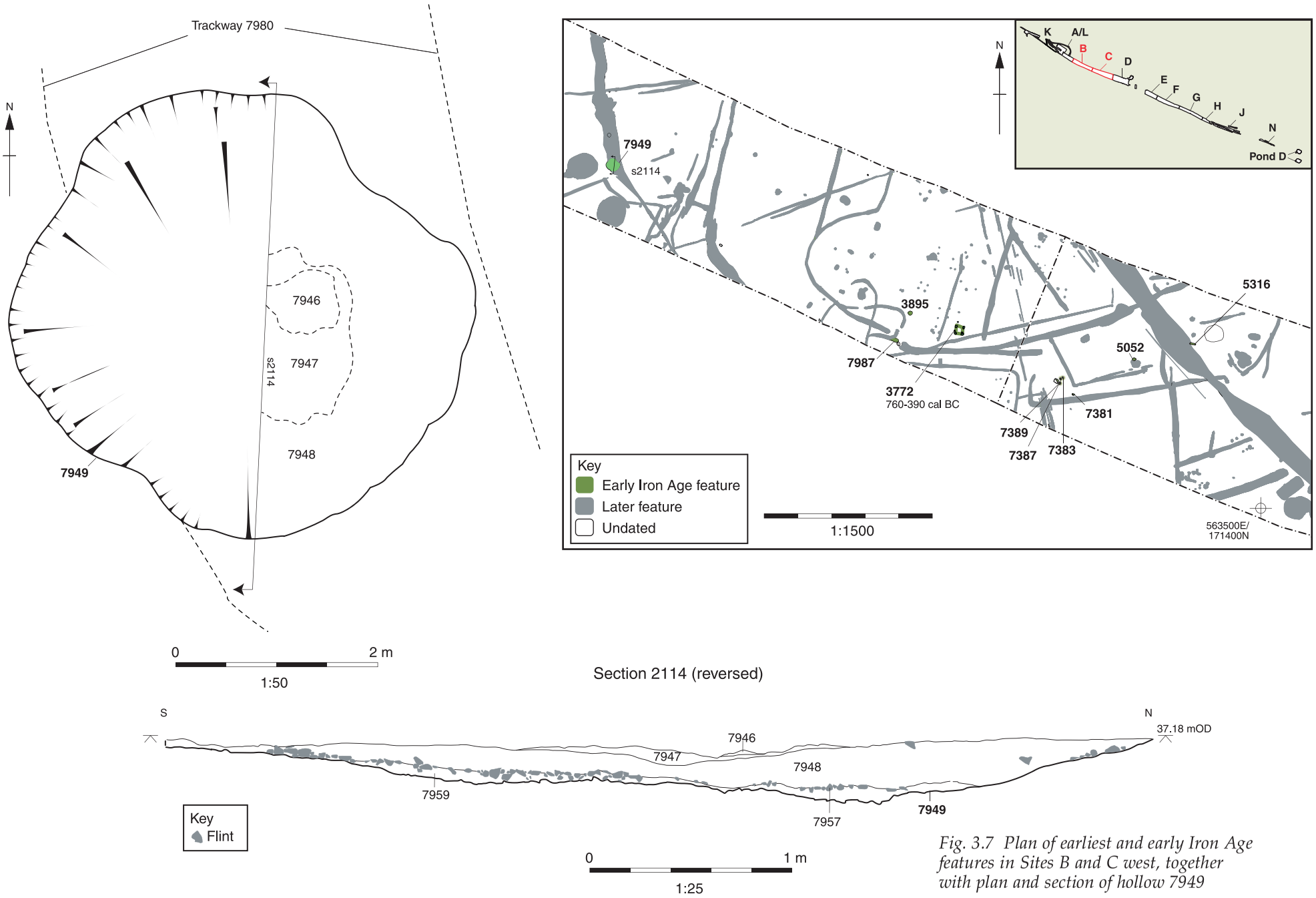


Fig. 3.7 Plan of earliest and early Iron Age features in Sites B and C west, together with plan and section of hollow 7949

included burnished sherds that suggest either a transitional early–middle or a middle Iron Age date, and the sherds from the ditch were few and worn. It is therefore possible that both belong with the middle Iron Age settlement, or if early Iron Age, date to the very end of the period. Some of the undated features may also have been early Iron Age, but in the absence of clear evidence undated features are described in the middle/late Iron Age phase.

A group of small pits and postholes were found *c* 30m further east (Fig. 3.7). Except for pit 7389 these were all *c* 0.3–0.7m in diameter and up to 0.3m deep. Pit 7389 was much larger (1.35 x 1.15 x 0.25m). Pits 7381 and 7389 both produced small amounts of pottery in fabrics current in the late Bronze Age and early Iron Age. Given the lack of clearly late Bronze Age activity found in this area, these pits probably also dated to the early Iron Age. Both these pits and nearby feature 7383 also yielded structural fired clay. A partial sheep skeleton, probably that of a yearling lamb, came from 7381, and sheep/goat bones from 7387.

A short length of ditch (5316) beneath post-medieval holloway 5306 produced similar pottery and may also belong to this phase, though it may have been a later feature containing residual sherds.

Site C east and Site D

A mixture of features of earliest Iron Age, early Iron Age and later early Iron Age date was found at the east end of Site C (Fig. 3.8), close to the later Bronze Age activity centred upon enclosure 5892 (see Chapter 2). Five pits and a posthole produced

Table 3.2: Details of Iron Age pits on Site C

Cut No	*No of Fills*	*Length (m)*	*Width (m)*	*Depth (m)*	*Proposed date*
5955	1	0.9	0.7	0.15	Earliest IA
5923	6	1.6	1.6	1	Earliest IA
7228	9	?	1.8	1	Earliest IA
7295		0.85	0.80	0.27	Earliest IA
5959	1	0.85	0.75	0.12	Early IA
5990	1	1.45	1.45	0.2	Early IA
7209	3	1.70	0.90	0.50 (max)	Early IA
5110	17	1.3	1.1	1.05	Early IA
5130	16	2.1	2.05	1.35	Early IA
5992	7	2.2	1.8	1.15	Early IA
5066	19	1.76	1.62	1.25	Early/Middle IA
5953	1	0.8	0.7	0.2	Early/Middle IA

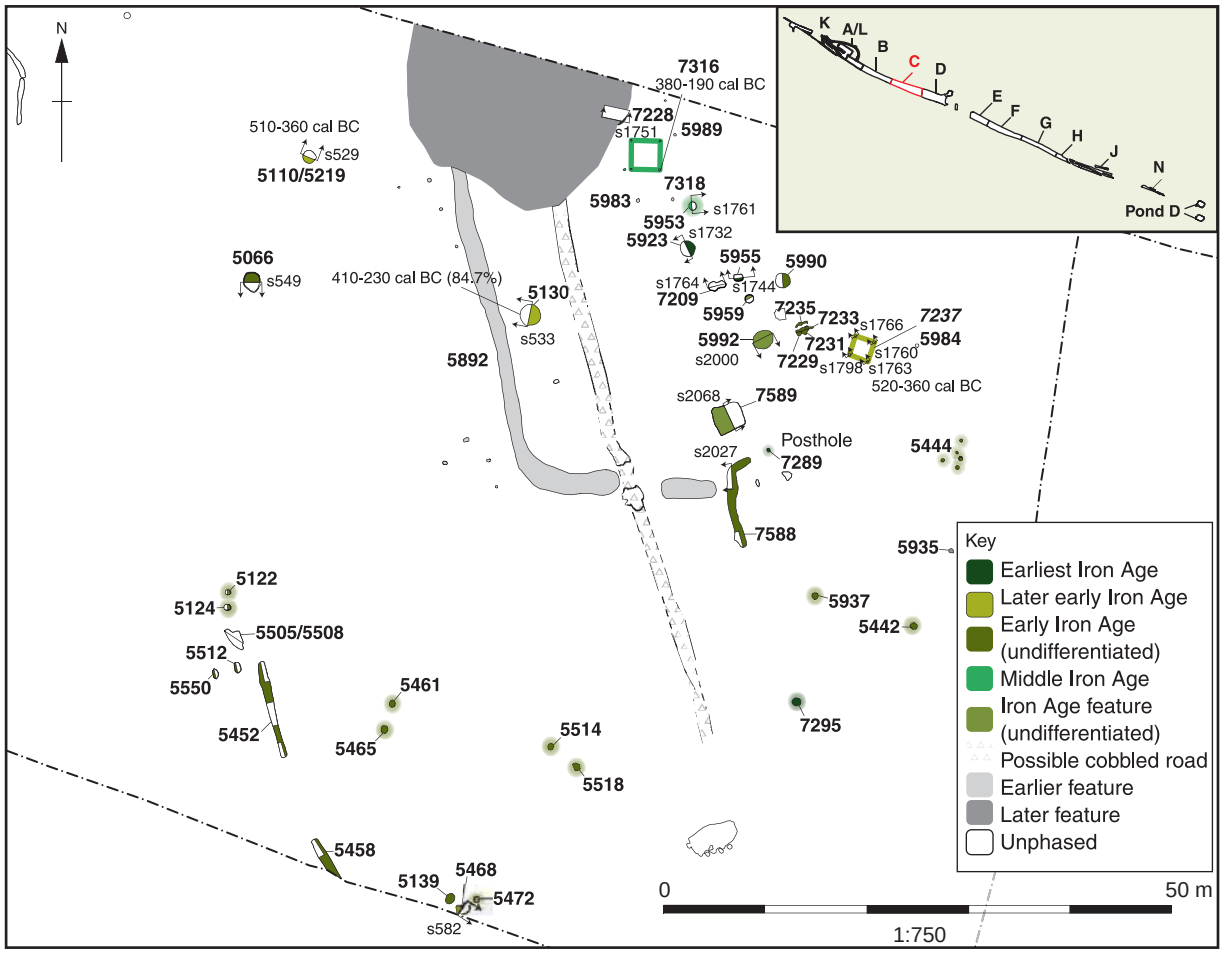


Fig. 3.8 Plan of Iron Age features at the east end of Site C

pottery specifically dated earliest Iron Age, and all but one of these pits may belong to this phase. A larger number of other features in the surrounding area contained pottery in fabrics that were used both in the late Bronze Age and the early Iron Age. In the absence of any clearly late Bronze Age assemblages this pottery is probably early Iron Age.

Earliest and early Iron Age pits are listed in Table 3.2. It seems likely that many of the pits were originally dug for storage and were later used for refuse, though there were some with definite evidence for structured deposition.

Pits with structured deposits

Four large pits (5110, 5130, 5992 and 5066; grouped as pit group 5750) spread across the northern part of Site C (Figs 3.8) varied in size but were all sub-circular in plan and had similar profiles (see Figs 3.9 and 3.10). Samples from two of the pits were submitted for radiocarbon dating, giving dates of 510–360 cal BC (NZA-32315) for charred grain from pit 5110 and 410–230 cal BC (NZA-32314) for pit 5130. There is a 84.5% probability that the date for pit 5130 lies between 410 and 350 cal BC. The other

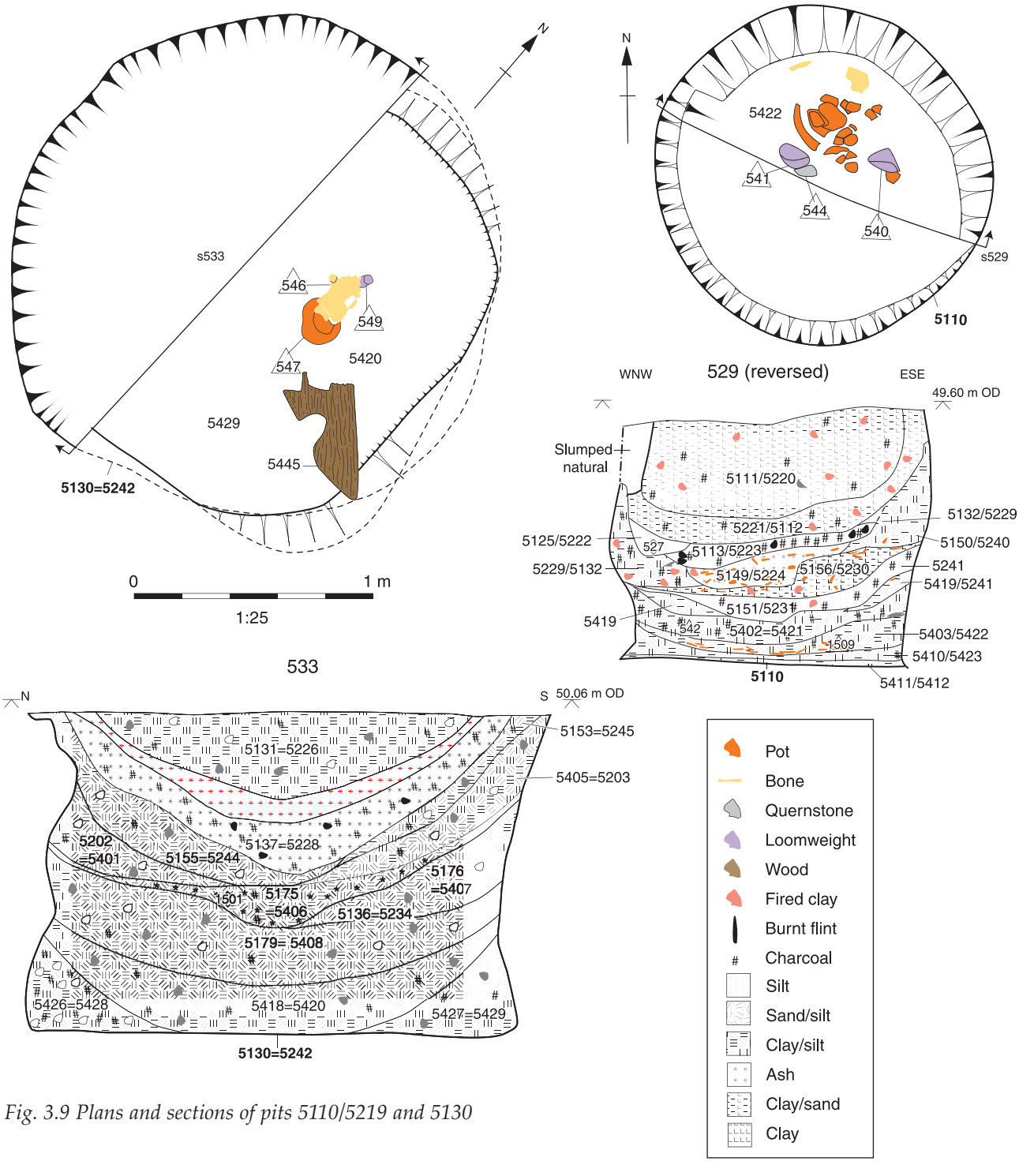


Fig. 3.9 Plans and sections of pits 5110/5219 and 5130

two pits were dated purely from the ceramic evidence, which indicated similar dates, although pit 5066 is likely to be the latest of the group, remaining partly open into the middle Iron Age.

Pit 5110 was the northernmost of the four pits, *c* 12m north east of 5066, and the smallest of the group (Fig. 3.9). It measured 1.3m x 1.1m at the surface, was 1.05m deep, with a barrel-shaped profile expanding out to a maximum of 1.45m x 1.4m approximately half way down. Its base was very flat with a further very slight undercut just above the bottom. The pit contained 17 fills, the first two of which (5411=5412 and 5410 =5423) were natural clays, but also included fuel ash slag

Plate 3.4 Briquetage/fired clay layer 5156 in pit 5110

Plate 3.5 Pit 5110: half-section showing red/black layers

and (in 5410) a few fragments of briquetage. This suggests that salt processing was taking place nearby early on in the use of the pit. These lower fills also produced a small amount of pottery and charred wheat, hazel nut shell and weed seeds. These were overlain by two very dark and rich silty fills (5403=5422 and 5402=5421). The earlier fill (5403) produced a remarkable 1520g of pottery, in addition to six loomweights/triangular oven bricks and a possible saddle quern. In contrast 5402 contained 236 fragments of briquetage weighing 632g as well as 714g of pottery. The faunal evidence included cattle, sheep and pig bones, while plant remains included charred cereal including barley, hazelnut shell and both oak and non-oak charcoal. Further fuel ash slag was found in 5402 but not 5403.

The following four layers all contained large quantities of briquetage and fired clay mixed with charcoal (Plate 3.4), but otherwise only a single sherd of pottery, a flint flake and fragments of sheep/goat bone. The uppermost of these (5235) was limited to the northern half of the pit and did not appear in section. The fired clay assemblages included a further possible loomweight/triangular oven brick from 5156. These deposits were overlain by a thin layer of charcoal (5150=5240).

The upper pit fills continued this sequence of layers of ash and charcoal interspersed with dumps of artefacts (Plate 3.5), although evidence of crop processing and animal bone was also more abundant. Silty clay layer (5132=5229) contained nearly 4kg of briquetage and over 2kg of structural fired clay as well as 33 sherds of pottery, animal bone and flint. Charred cereal was present, mostly identified as wheat, in addition to hazelnut shell and charcoal. This was overlain by large central deposits of ash (5149=5224), charcoal and burnt flint (5113=5223).

Following layer 5113 was a localised silt deposit (5125=5222) that contained 303g of briquetage, a fragment of slag and 40 sherds of mostly comminuted pottery. Clay layer 5112 above this produced 148g of briquetage and 210g of fired clay as well as 12 sherds of pottery, and substantial upper fill 5111 contained 447g of briquetage and 51 sherds of pottery. All contained animal bone in small quantities, charred plant remains including emmer and unidentified wheat, possible barley, hazelnut shell and charcoal.

Overall the pit yielded 510 sherds of pottery weighing 3.48kg and 4035 fragments of briquetage weighing 20.8kg. The industrial waste was therefore clearly preponderant, and there was less obvious domestic waste in pit 5110 than in the others in this group, with only half the amount of pottery and very little animal bone (see below). Where identified the faunal remains included a variety of domesticates but predominantly sheep/goat, but unlike the other pits it did not contain large numbers of rodent and no recognised amphibian remains, suggesting that it was not left open for long periods of time. This is reinforced by the fact that most of the fills appeared to be deliberate deposits, lacking the natural slumps of chalk found in some of the other pits.

Pit 5130, 38m south-east of 5110, was near-circular, measuring 2.1 x 2.05m in plan and survived to a depth of 1.35m (Fig. 3.9). The profile of the pit was approximately cylindrical, but narrowed slightly partway down before expanding and becoming undercut at the bottom. The 16 fills of pit 5130 appear to have formed two separate and successive sequences. Clayey slump fills (5426 and 5427) around the edges of the base of the feature had either collapsed from the sides or had been dumped into the bottom of the pit. Layer 5427 contained 508g of early Iron Age pottery and layer 5426 another two sherds (54g) of pottery and 645g of structural fired clay. Both layers also contained animal bone.

The primary deposits around the pit sides were overlain by a silty clay (5418). Close to the pit bottom layer 5418 contained a deliberate deposit (numbered 5420) consisting of the upper third of a red deer skull whose antlers had been cut off (SF 546) resting on a set of two triangular loomweights/oven bricks (SFs 545 and 549) and a pot base (SF 547) (see Plate 3.6). The fill of the pot was part of 5418, but was numbered separately 5432. Below this was a large sub-triangular piece of carbonised wood measuring 0.6 x 0.3m and only 0.01m in thickness (Plate 3.7). Unfortunately this object disintegrated during the process of lifting it and the resulting

Plate 3.6 Deer skull on top of loomweights (sf 5240) in pit 5130

Plate 3.7 Charred wooden object in base of pit 5130=5242

charcoal could not be identified to species. The red deer skull was the only bone of this species in pit 5130. Layer 5418 also included another triangular loomweight and part of a cylindrical loomweight, together with 72 sherds (1.65kg) of pottery. The pottery was predominantly large sherds from the single vessel whose base was intact. Although the pottery could only be dated broadly as late Bronze Age or early Iron Age, and the cylindrical loomweight is a later Bronze Age type, the triangular weights indicate that the deposits were certainly early Iron Age. Fill 5179 contained 0.5kg of pottery, but the sherds were much smaller. It also produced charred wheat, barley and oat/brome grass. On the south side of the pit a third, slightly siltier layer (5176) overlay 5179, and contained a similar range of artefacts and ecofacts.

Layers 5176 and 5179 were overlain by a layer of redeposited natural and ash (5175). This produced no pottery but contained a single small fragment of briquetage and two fragments of fired clay. In addition to the ubiquitous animal bone the fill also yielded charred wheat, possibly spelt. A radiocarbon date of 410–350 cal. BC at 84.5% probability (NZA-32314) was obtained on charred cereal grain from fill 5406=5175. At this point it appears that the pit may have been left open for some time, as layers of clay-silt clearly built up around the edges of the pit (5203 and 5202) containing nothing but residual flint and a few fragments of fired clay. Subsequently two dumps of material appear to have been deposited from different sides of the pit (5155 and 5153). Much of the content of these fills appeared to be domestic in nature including over 1kg of early Iron Age pottery, cattle bone and charred wheat grain. However, two large fragments of briquetage were also recovered from 5153.

The deliberate dumping continued with a layer of ash, charcoal and burnt flint in a silt matrix (5136) and a thick layer of red/pink ash (5137) both of which extended across the whole pit (Plate 3.8). Both produced very similar finds including sizeable assemblages of pottery (895g/640g), some of which was diagnostically early Iron Age. Both also contained briquetage and structural fired clay, although in very small quantities. Animal bones were more numerous in layer 5136 than in the earlier fills, and included a wider variety of taxa, though pig and sheep bones were predominant. The charred grain was again composed mainly of wheat. The last surviving fill (5131), which occupied the centre of the pit, was a layer of clayey silt that also contained pottery, burnt and unburnt flint and some charcoal, although there was no briquetage and very little animal bone. It was probably another deliberate dump.

Overall 690 sherds of pottery weighing 8.13kg were deposited in this pit. Pit 5130 also produced a small assemblage of fresh, thick flint flakes struck from fairly crude cores. It is possible that this was Iron Age knapping debris, but it is more likely that it was residual from the later Bronze Age occupation in the same area. The layers of ash and burnt material seem to indicate further dumps of industrial material, as seen in the other pits. However, it is possible that different elements of the industrial process were represented in pit 5130. This pit, like 5110 and 5066 (see below), produced briquetage, but in much smaller quantities. The layer of reddened ashy material was not paralleled on Site C, but was similar to layers in the storage pit on Site K, just as the deer skull at the base of pit 5130 was unique on Site C, but was matched by similar deposits in pits on Site G.

Located *c* 30m further east, Pit 5992 measured 2.2 x 1.8m in plan, narrowing briefly at a depth of 0.4–0.5m and having a total depth of 1.15m, with seven distinct fills (Fig. 3.10). The first significant fill of the pit (7314) comprised a mottled layer rich in cultural material. This included 118 sherds of pottery weighing 918g, some of which was diagnostically early Iron Age, as well as 570g of fired clay, a few fragments of briquetage and a number of sheep and sheep/goat bones. There were also a large

Plate 3.8 Pit 5130 half-sectioned showing carbonised deposits

number of bones of rodents, snake and amphibians that probably fell into the pit, indicating that it remained open for some time at this level.

This was overlain by a cleaner clay layer (7287) that also produced a sizeable finds assemblage. This comprised 41 sherds (403g) of pottery, including several earliest Iron Age sherds, 21g of fired clay and sheep/goat bones thought to represent the hind quarters of a single animal. There were also further amphibian/small mammal bones. Abundant charcoal was recovered from an environmental sample from this layer; both oak and non-oak species were identified. Above this clay-silt layer (7286) contained 65 sherds (328g) of pottery, 11g of fired clay and fragments of briquetage, but only a few fragments of mammal bone. Both 7286 and 7287 also produced fragments of iron resembling nail stems. It is likely that these three fills corresponded to fill 5994 on the western side of the pit, which produced a further 76 sherds of pottery weighing 440g, 209g of fired clay and more sheep/goat remains.

Layer 7286 contained a lens of green sand (7285) which also produced 80 sherds (504g) of pottery and 112g of fired clay but the faunal assemblage comprised only a small amount of cattle bone. This was overlain by a larger clay silt deposit (7284) containing a significant assemblage of 165 sherds of pottery weighing 1605g, a few dated earliest Iron Age. Fired clay from the fill weighed 521g and briquetage 29g. Animal bone comprised sheep/goat as well as pig. An environmental sample from the layer produced charred barley and charcoal. Layers 7285 and 7284 seem to correspond to 5995 on the western side of the pit, which produced a further 50 sherds of pottery weighing 456g, 84g of fired clay and sheep/goat remains.

The final clay silt deposit in the pit (7283) contained 243 sherds (1103g) of pottery, 445g of fired clay and a fragment of briquetage. Unlike the lower fills the faunal assemblage in 7283 contained all the standard domesticates (sheep/goat, pig and cattle). An environmental sample also produced abundant charcoal, hazelnut shell and plum/damson/greengage remains. This corresponded to fill 5996 which contained 75 sherds (583g) of pottery, 583g of fired clay and cattle bone.

Overall pottery from 5992 totalled 6.3kg, with 2.1kg of fired clay. The majority of the pottery could only be dated by the fabric to either the late Bronze Age or early Iron Age, although some was diagnostically early Iron Age, and a few sherds were dated to the earliest Iron Age. Although the pit had a less complex sequence than its neighbours it contained similar deposits including briquetage and was clearly significant for waste deposition.

The final pit in this group (5066) lay furthest west and measured 1.76 x 1.62m in plan, expanding to 2.1 x 1.7m at two-thirds of its depth (maximum 1.25m), with a marked undercut and slightly uneven base (Fig. 3.10). The pit contained 19 fills in total and the fills in the lower half of the pit differed from those in the upper half in a number of ways. The lower sequence comprised a number of culturally rich clay silt deposits (5433, 5431, 5430, 5416, 5425, 5415) interspersed with redeposited chalk from minor collapses (5491, 5492, 5490, 5488). Overall this suggests that dumping episodes were followed by periods of inactivity in which natural subsoil was

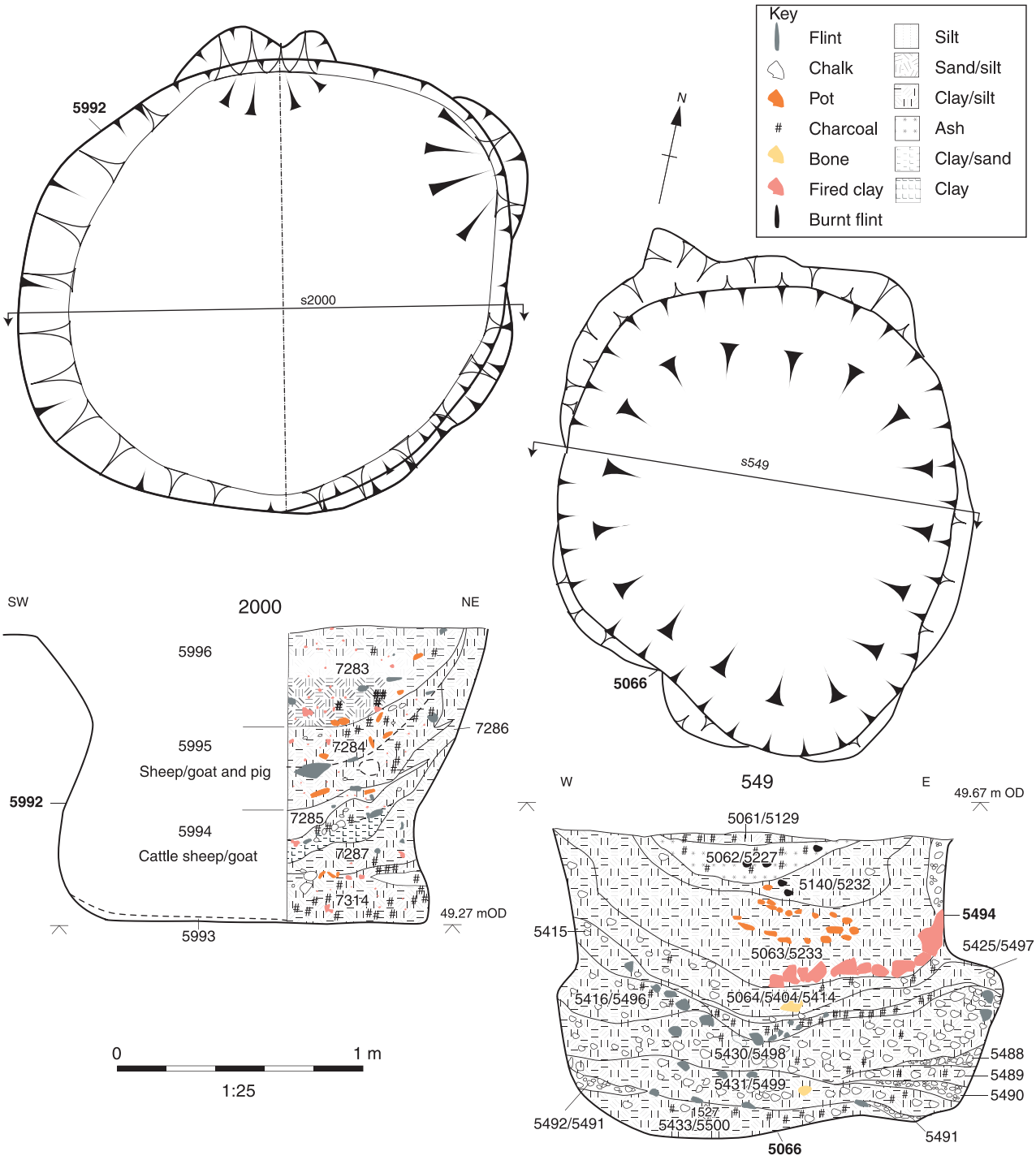


Fig. 3.10 Plans and sections of pits 5992 and 5066

able to accumulate within the open pit. This is supported by the occurrence of amphibian and rodent remains in many of the fills, probably the result of accidental pit-falls.

The dumping deposits each contained over 500g of pottery, much of which was identified as early Iron Age or early–mid Iron Age, including a near-complete cup (SF 539) from fill 5415. In all cases this was accompanied by animal bone including the standard domesticates (cattle, sheep/goat, pig) as well as red deer in fills 5433, 5431, 5430 and 5416. Other finds included a small amount of fired clay from basal fill 5433, fragments of briquetage from 5431 and 5430, slag from 5425 and crumbs of iron from 5415. Environmental samples from the lower fills produced only charred weeds and charcoal, with layer 5425 particularly rich in charcoal. In some cases processing of the samples yielded globules of fuel ash slag derived from processes involving high temperatures. These deposits reflect

a mixture of domestic and industrial activity, including the hunting of wild animals, the use of salt and iron smithing.

The nature of the fills changed above layer 5415, becoming more clayey and containing larger amounts of briquetage and charred cereals but excluding red deer bone. The upper sequence was preceded by a localised deposit of burnt material (5413) that contained no artefacts. Layer 5414 lay directly above 5413 and contained further fragments of briquetage, animal bone and a single triangular loomweight/oven brick (the only example from pit 5066). Above deposit 5414 there was further evidence of collapse of the side of the pits, possibly indicating a period of inactivity. This was overlain by a substantial, charcoal-rich fill (5063) containing a remarkable assemblage of briquetage. In total 2129 fragments weighing 22,074g were recovered, much of which appeared to have been deliberately placed along the base of the fill. A further 8kg of fired clay was also found within 5063, alongside a sizeable pottery deposit (39 sherds weighing 744g) and mammal bone. In contrast to the briquetage much of the pottery was found

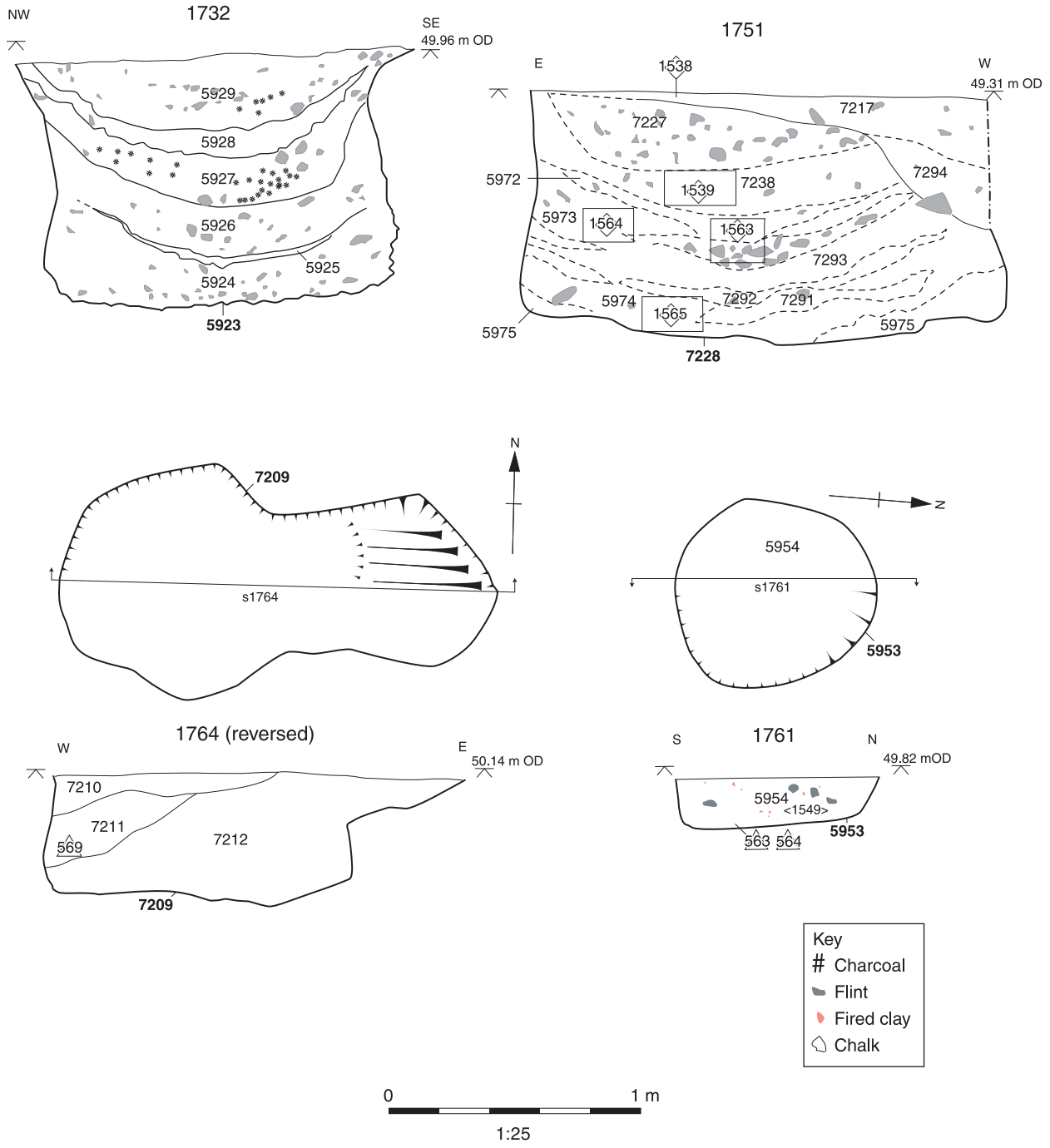


Fig. 3.11 Sections of pits 5923, 7228, 7209 and 5953

towards the top of the fill. Amongst this were sherds of several S-profiled and burnished vessels in sandy fabrics, suggesting that this layer was deposited in the middle Iron Age. Fill 5063 was the lowest fill to produce possible charred cereal and both 5063 and 5414 yielded further globules of fuel ash slag.

The uppermost three layers filled the centre of the pit top. Fill 5140 contained another 626g of pottery, 846g of briquetage and 269g of fired clay as well as animal bone and charred wheat. This was overlain by burnt layer 5062 which produced more fragmented pottery (36 sherds, 106 g), briquetage and fired clay in smaller amounts. Ecofacts included sheep/goat bone, oak and non-oak charcoal, charred hazelnut shells and barley. The last fill (5061) contained a similar amount of pottery and bone, a single charred cereal grain, charcoal and hazelnut shell as well as a fragment of slag. A few Roman pottery sherds and a fragment of Roman brick were found in these fills, indicating there was some disturbance at a later date, possibly from ploughing. Struck flint in quite fresh condition was also found throughout the pit, and may represent a very important and rare example of Iron Age flint knapping.

Pit 5066 contained over 1000 sherds of pottery weighing nearly 6kg and 2347 fragments of briquetage weighing 23.37kg. Fill 5063 contained a particularly large dump of briquetage, possibly intentionally selected. The presence of fuel ash slag and of small amounts of briquetage and charred material in most of the fills indicates that salt processing was taking place in the vicinity throughout the life of this pit. It is possible that the dump in 5063 marks the end of this activity and consequently the abandonment of related debris in this layer and in 5140 above. It is interesting that the lower and upper fills have a noticeable change in character, potentially marking changes in settlement behaviour including diet and scale of industrial production.

Both of the pits in this group that were radiocarbon-dated gave dates likely to fall in the late 5th or earlier 4th century cal BC. The pottery from pit 5066 suggests that it was slightly later, the upper fills being deposited at the start of the middle Iron Age, perhaps in the later 4th century BC. This fits with the interpretation suggested in the briquetage report (see Morris this vol.), which suggested that the briquetage deposited in 5110 was earlier than that deposited in pit 5066.

Overall pit group 5750 represents an important source of archaeological evidence. The features were all fully excavated by hand and were extensively sampled, so we can be confident that all available evidence was recovered. As a whole, it is possible that the depositional sequence in the four pits represents 'special' deposits chosen to reflect the various aspects of Iron Age life. Several of the pits had clear indicators of pauses in the depositional record such as thin layers of washed in or collapsed natural, suggesting that the deposits were separated by intervals of time, and perhaps reflected rituals performed at different times of year, or according to some other cycles of activity. The changing character of the deposits also indicates the variety of activities that were being undertaken at different times at this location.

Aside from the four substantial pits described above, there was probable earlier evidence for struc-

Plate 3.9 Half-section of earliest Iron Age pit 5923

tured deposits. Large pits 5923 and 7228 both produced sizeable assemblages of pottery (5923 – 664g; 7228 – 617g), each including a single diagnostic sherd identified as earliest Iron Age (Fig. 3.11). Structural fired clay was recovered throughout the fills, and both pits contained abundant charcoal and charred cereal grains, including barley and wheat (Plate 3.9). While, however, the pottery within 5923 was dispersed throughout the fills, that in 7228 was mainly recovered from the upper fills. Both pits contained animal bone including cattle and sheep/goat and rodent, but 7228 also produced red deer and bones of at least two neonatal pigs from fill 5974 close to the base. Another atypical find in pit 7228 was 66g of oyster shell from fill 5974. This is relatively uncommon in the Iron Age, though found with increasing frequency on sites near the Kent coast. The burial of multiple piglets at the base, red deer bones, oysters and a concentration of pottery towards the top of pit 7228, although only a fraction of the fill survived, may indicate structured deposition. The oysters and pig bone may perhaps have been the result of feasting.

Another pit containing a rather more unusual finds assemblage was 5953, the objects recovered including a Neolithic stone axe, an iron carpenter's gouge, a flint flake and hazel nut shell (Fig. 3.11). 'Curated' stone axes are quite often found in Iron Age contexts (see also Roe this vol.), and is a clear instance of structured deposition. In north-west France these objects are often reused as 'affutoirs' (sharpening or grinding stones) or 'polissoirs' (burnishing or polishing stones) in the Iron Age (Yves Menez pers. comm.). The gouge is of a type found in both Iron Age and Roman contexts, but the earliest dated parallels would appear to be of very end of the early Iron Age and of the middle Iron Age (see metalwork report below). This pit is therefore either later early Iron Age or later.

Other features in Site C

A range of other pits, postholes and gullies of early Iron Age date were revealed in the east of Site C (see Fig. 3.8 and Table 3.2). Of the other pits in the northern group, one (7209) was keyhole-shaped, and contained early Iron Age pottery, along with fragments of animal bone, oyster and briquetage, a flint flake, charcoal and large quantities of fired clay from the superstructure of an oven (see Fired Clay report below). This feature has some similarity to a keyhole oven, but there was no trace of *in situ* burning on the base or sides of the half that was excavated. Although oven superstructure was dumped in the feature (layer 7211), there was no evidence of flooring or floor supports to suggest that the fire might have been set on a raised floor. This was probably a pit with a step on one side to allow access, later backfilled with oven material. Although less substantial, it is not dissimilar in form to pit 12527 in Site L.

A single four-post structure in the vicinity of the northern pits, structure 7237, was also dated to the later early Iron Age. This comprised a square of postholes measuring 2.3 x 2.2m (Fig. 3.12). The postholes contained numerous scraps of pottery in fabrics current in the late Bronze Age and early Iron Age periods, rodent and amphibian bone, fired clay and oak charcoal, hazelnut shell and a possible haw stone. Hazelnut shell from fill 7208 (posthole 7207)

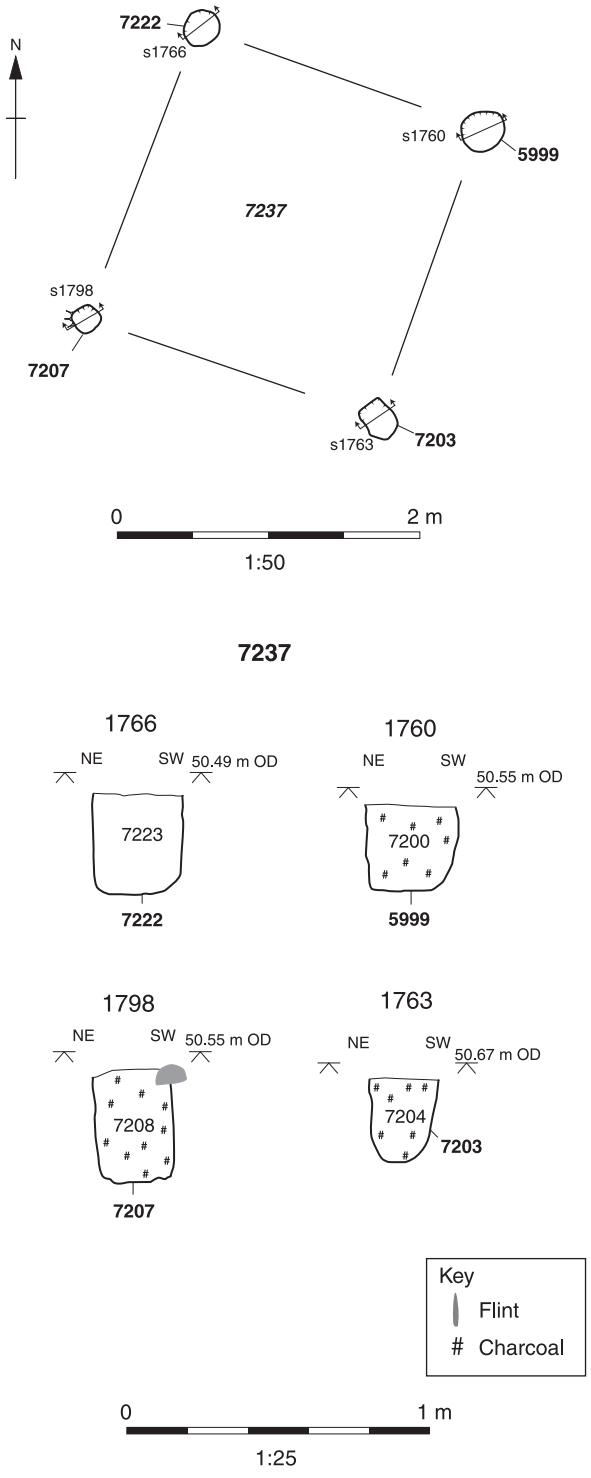


Fig. 3.12 Plan and sections of four-post structure 7237

was radiocarbon dated to 520–360 cal. BC (NZA 32307), a date very similar to that from pit 5110.

Scattered features to the south of the main northern pit group included gully 7588 and post-hole 7289. The L-shaped gully (9.5 x 1 x 0.5m deep; see Fig. 3.8) was situated at the south eastern terminus of Bronze Age enclosure ditch 5892, with posthole 7289 directly north-east of its terminus. Both features contained pottery of fabrics used in the late Bronze Age and the early Iron Age, with an earliest Iron Age finger-tipped jar identified from 7289.

Another smaller area of activity was located to the south-west (Fig. 3.8). This comprised a pair of short lengths of gully (5458 and 5452), a pit (5505) cut by a gully (5508) and in the wider vicinity four pairs of pits. A number of these features contained pottery in fabrics used both in the late Bronze Age and the early Iron Age. Other finds were scarce but included a triangular loomweight or oven brick in 5465 (see Fired Clay report), fired clay from pit 5512 and a flint flake and charcoal from 5514.

Site D pit and posthole

A single large pit (6336) and one small pit or posthole (6505) on Site D yielded pottery of early Iron Age date (for plan see Fig. 3.35 below). The pit was 2 x 1.65m in plan and a minimum of 1.2m deep but was not excavated beyond this depth due to health and safety concerns (Fig. 3.13). It had largely removed smaller pit 6339 on the east side. Pit 6336 contained eight fills to the level of excavation, including two dumps of burnt material, along with some animal bone (including dog and roe deer). The character of the pit suggests it may have originally been used for storage and at a later date was partially filled in and ultimately used to dispose of refuse, including hearth material.

Site E

Activity on Site E fell into two very distinct time periods. The ditches to the west were clearly post-Roman in date and are discussed in Chapter 5, whilst the remaining scattered activity was more characteristic of the Iron Age. Dating evidence was meagre, comprising a few sherds of pottery from three features, although this appeared to be entirely early Iron Age in date, and therefore the features are discussed here.

The Iron Age activity was located in two separate groups (Fig. 3.14). The first comprised an intercutting group of pits (7012, 7013 and 7025), a posthole (7015) and a short gully (7023). Gully 7023 appeared to be the earliest feature, and produced a sherd of early Iron Age pottery. This was probably cut by pit 7013, while the latest feature, pit 7012, contained just a few fragments of fired clay.

The second group was located 40m to the south-west, and comprised 46 postholes, all of which contained similar, single fills that were fully excavated and sampled. Eight possible post-built structures were identified within this group (Figs 3.14 and 3.15; Plate 3.10). These comprised five simple four-post structures (7095, 7097, 7098, 7099 and 7100) two similar structures with extra postholes (7179 and 7181) and a group of three postholes (7180), with a possible fourth lying beyond the site edge (Table 3.3). The structures were mostly placed on a north-south alignment, although some were more accurately described as NW-SE. This type of structure is found on many British Iron Age sites, and

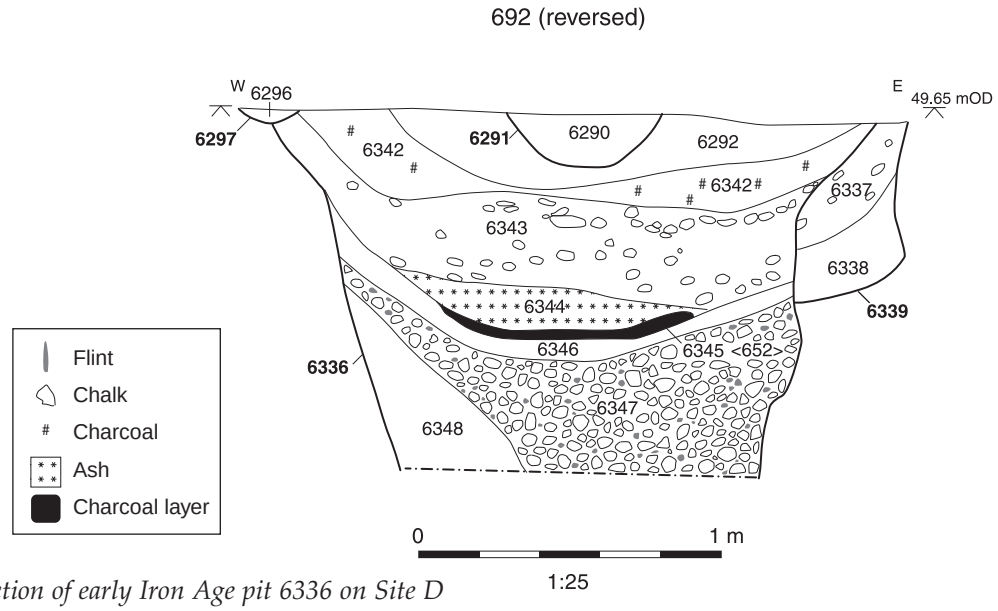
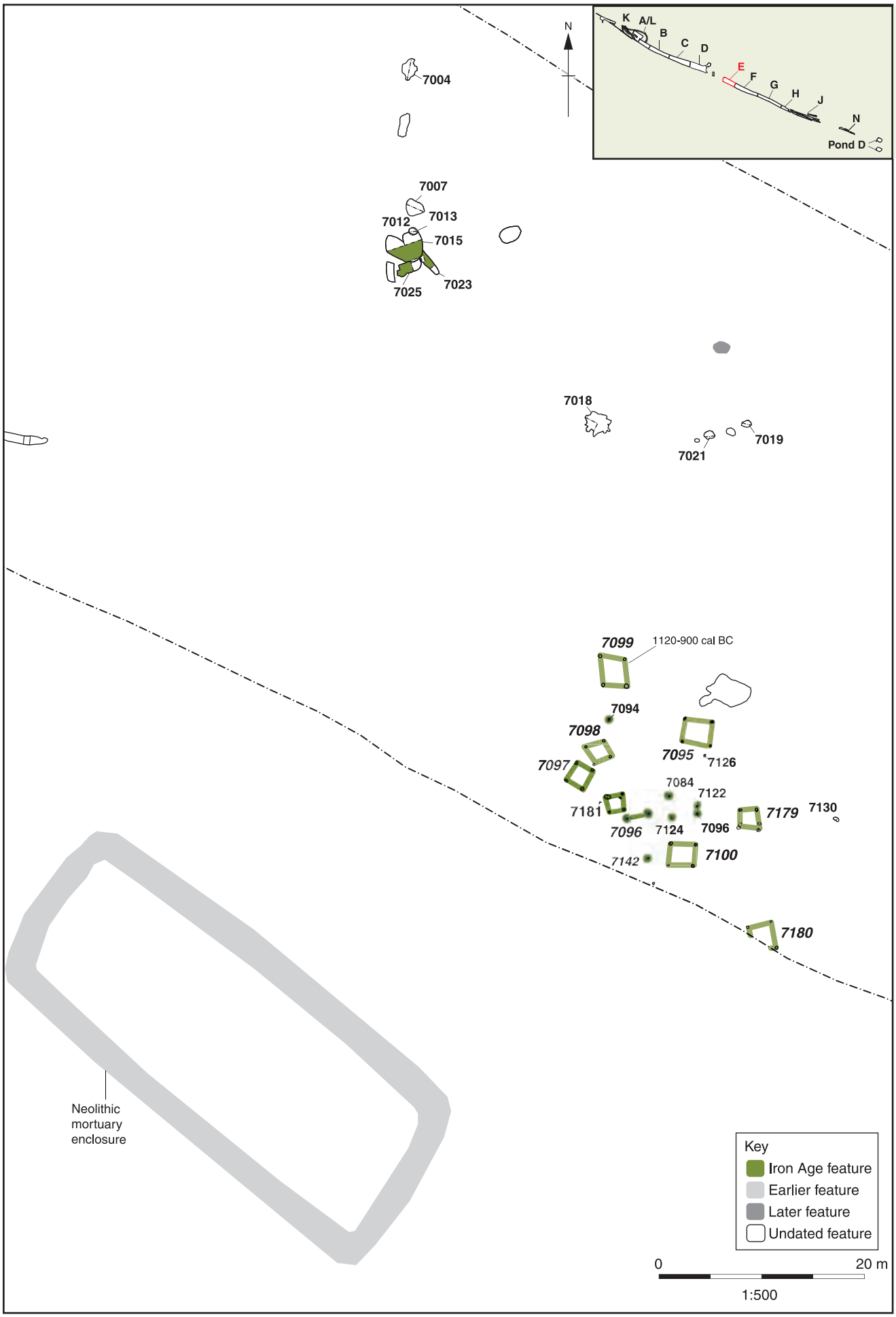


Fig. 3.13 Section of early Iron Age pit 6336 on Site D

Fig. 3.14 (facing page) Plan of Iron Age features in Site E, including Tollgate Neolithic enclosure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7018
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1120-900 cal BC
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7126
7097
7084
7122
7181
7179
7130
7096
7124
7096
7100
7142
7180
Neolithic
mortuary
enclosure
Key
Iron Age feature
Earlier feature
Later feature
Undated feature
0
20 m
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Plate 3.10 Four-post structure 7179 viewed from the north-east

they are generally interpreted as storage structures with raised floors, and particularly as granaries. A number of the postholes did not appear to belong to any obvious structures, although the surviving postholes were shallow (maximum depth 0.19m), and it is possible that others had been entirely removed by ploughing. For example, a pair of posts (7096) to the south-east of 7181 may have formed part of a heavily truncated four-post structure.

Finds from the postholes were few. Only posthole 7076 (part of 7096) produced any pottery, and this consisted of a scrap in a fabric characteristic of the late Bronze Age or early Iron Age. Other finds comprised fragments of fired clay and very small fragments of iron slag. A possible small cylindrical bone bead (SF 700; see Scott this volume) came from discrete posthole 7142.

Table 3.3: Detail of Iron Age four-post structures on Site E

Structure No.	*Overall size (m)*	*No. of postholes*	*Posthole diameter (m)*	*Posthole depth (m)*
7095	2.8 x 2.5	4/5	0.18-0.32	0.06-0.12
7097	2.2 x 2	4	0.28-0.3	0.11-0.2
7098	2.1 x 2	4	0.2-0.26	0.1-0.15
7099	3 x 2.7	4	0.27-0.4	0.1-0.16
7100	2.7 x 2.3	4	0.25-0.3	0.07-0.18
7179	2.3 x 2.2	6	0.22-0.42	0.07-0.15
7180	1.6 x 1.6	5	0.2-0.28	0.03-0.15
7181	2.8 x 2.5	3	0.14-0.39	0.03-0.11

Fragmentary, unidentifiable animal bone was recovered from all the structures except 7095, 7100 and 7180. Environmental sampling of the postholes produced charcoal in varying quantities, although none was identified to species. There were a few cereal grains including possible wheat from structures 7098 and 7099. Isolated postholes 7086 and 7124 contained larger numbers of grains, including hulled barley, indeterminate wheat, indeterminate cereal and vetch/vetchling. One of the grains from structure 7099 was radiocarbon dated and gave a calibrated date range of 1120–900 cal BC (NZA 32313), ie in the late Bronze Age (see Chapter 2).

The date of this group of four-posters is difficult to pin down, as such structures are common both to the late Bronze Age, for instance at Reading Business Park and at South Hornchurch (Brossler *et al.* 2004; Guttmann and Last 2000), and to the Iron Age. Only one charred cereal grain was dated, and none of the postholes belonging to structures contained a sizeable assemblage of grains, so these may have been residual. If the evidence of the slag were taken at face value, it would suggest an Iron Age date in preference, but none of the fragments weighed more than 1g, and all of this could equally well have been intrusive. There is no obvious

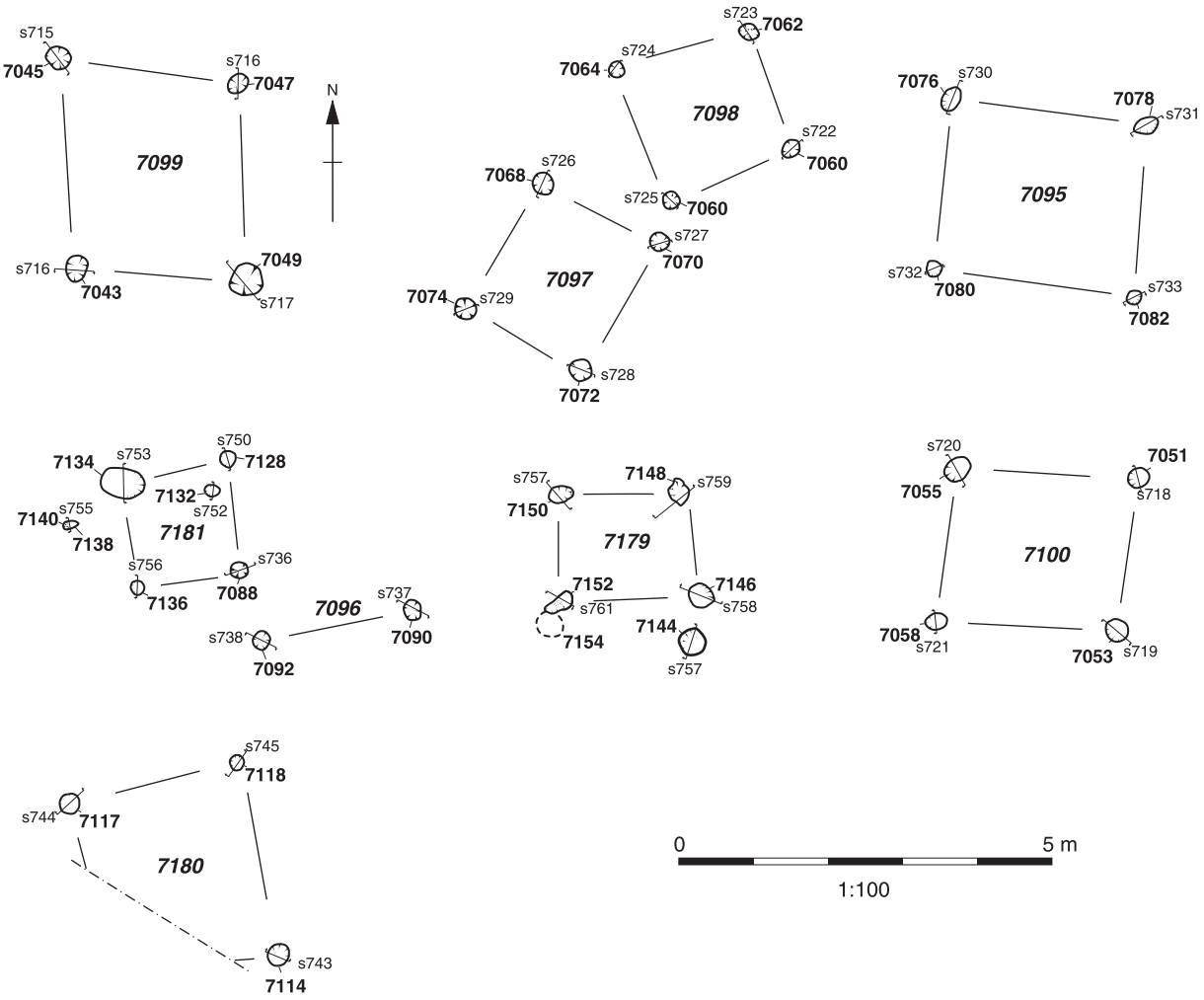


Fig. 3.15 Detailed plans of four-post structures on Site E

parallel for the tiny bone object, whose perforation was so small as to make use as a bead very doubtful. Three very small amber beads of similar size were recovered from a middle Bronze Age waterhole at Appleford Sidings, Oxfordshire (Boyle in Booth and Simmonds 2009, 51), indicating that very small beads were current in the later Bronze Age. Nevertheless, a bead as small as this could also have been residual or intrusive.

Activity in the vicinity is sparse. The nearest late Bronze Age feature found along the line of the A2 was at Site G some 600m to the east, or on Site D a similar distance to the west, where cremation 6010 was radiocarbon-dated to 1260–1020 cal BC (NZA 31264; see Chapter 2). On the adjacent HS1 excavations the nearest feature found was 2km further east (Bull 2006a, 11). In the evaluation of the Tollgate mortuary enclosure, however, flint-tempered pottery ascribed to the late Bronze Age was reported from the lower colluvial fills only 60m to the south-west of the four-post structures, with a mixture of similar pottery and middle Iron Age pottery from the upper colluvium above this (Barclay in OA 1995, Appendix 2). Flint-tempered fabrics are, however, also characteristic of the early Iron Age in this area, and such sherds were found in other features on Site E itself. It was argued that ploughing on or around the mortuary enclosure may have begun in the late Bronze Age, and have continued into the middle Iron Age (ibid, 16). This evidence can of course be interpreted either as providing a context for storage structures in the late Bronze Age, or alternatively as explaining why charred cereal grains might be available for incorporation into later postholes.

Examination of the morphology of the four-post structures on the scheme, few of which were able to be dated, does not provide any clear differentiation by date. Comparison with other sites is also not helpful; while all of the four-posters at South Hornchurch were less than 2m a side, those at Reading Business Park were varied. It is therefore possible that the four-post structures on Site E began in the late Bronze Age. Although such structures need not have been associated with large quantities of domestic debris, it is tentatively suggested that the group may represent the continuing use of such structures over a considerable

period, into the early and possibly the middle Iron Age, rather than a large group of late Bronze Age date.

Site G

A group of early Iron Age features was found in Site G, mostly in the eastern half (Fig. 3.16). The features were bounded on the east by a ditch (9609), and consisted of two four-post structures, a scatter of large and smaller pits, and a few other postholes. In the west part of Site G one large irregular hollow (9484) within the middle Bronze Age enclosure was early Iron Age, and pottery of this date was also recovered from the uppermost fills of the Bronze Age enclosure ditches. Outside the enclosure to the south-east was one further four-post structure (9221) and several small pits, mostly undated, some of which may also have been Iron Age.

Excavation in advance of the construction of the HS1 had included the stripping of much of the eastern half of Site G. This had revealed some of the pits, and these had been partly excavated, though rarely bottomed, by MoLAS. Some of the part-excavated features were not, however, included on the site plan or recorded, although pottery from the excavation was found at the bottom of the slots that had been dug.

The pottery that was recorded from the MoLAS excavation of this site was dated as early or early–middle Iron Age (G P Jones 2006), although a radiocarbon date of the earliest Iron Age 850–760 cal BC (NZA-22880) was recovered from a residue on a bodysherd from pit 374 (= pit 9054). This indicates that some activity of the late Bronze Age or earliest Iron Age was present (see also below). A further radiocarbon date of 760–380 cal BC (NZA 22866) came from pit 387 (= 9012). A few late Iron Age or early Roman features were also found during the HS1 excavations immediately to the south of the line of the new A2, so only a tentative Iron Age date can be offered for features found on Site G that did not contain diagnostic finds. As on Site C, a few features contained pottery diagnostic of the earliest Iron Age, and some radiocarbon dates and finds identified features belonging to the latest part of the early Iron Age, in the 4th century cal BC. Most of the features, however, could only be dated as belonging somewhere within the early Iron Age.

Pits with structured deposits

The most significant features on Site G were a group of large, complex pits (9010, 9053, 9052 and 9088), similar to those from Sites L and C. Around these were scattered smaller pits such as 9004, 9054 and

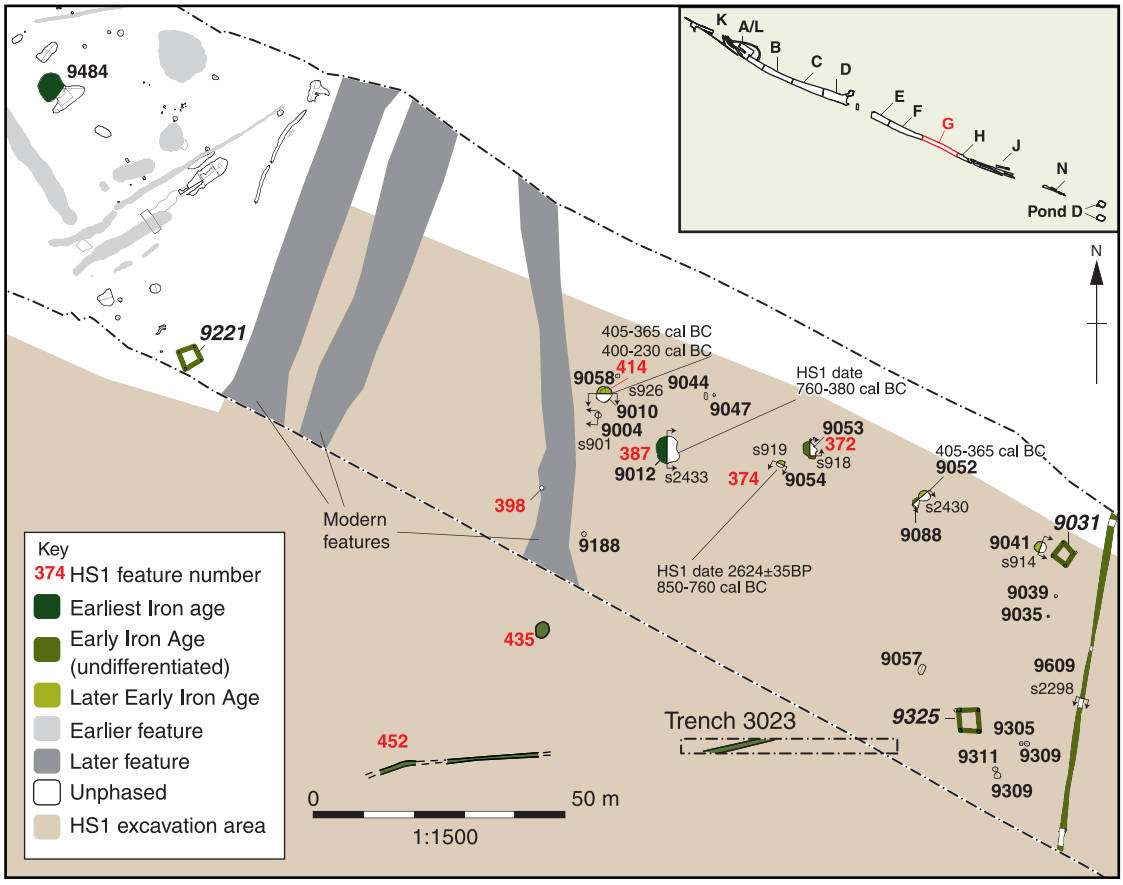


Fig. 3.16 Plan of Iron Age features in Site G

9041. On Site G, as on Site C, the pits were roughly arranged in a row, aligned WNW-ESE.

The westernmost pit was 9010, one of the largest and certainly the deepest of all the complex pits on the site. The pit measured 2 x 1.4m in plan and was 1.85m deep, containing 16 fills (Fig. 3.17). Like many of the pits discussed above, 9010 was vertical-sided at the top and undercut lower down (at around 0.45–0.65m), below which the sides narrowed again slightly to a flat base. This pit had previously been exposed during the HS1 works as pit 414, and the top fills of this pit had been partially excavated (see section 926), producing 18 sherds of early–mid Iron Age pottery and animal bones.

The primary fill of the pit (9170) contained a small assemblage of rodent and amphibian bone indicating the pit had been left open. The main part of the fill, however, consisted of a dump of over 1kg of pottery, fragments of fired clay and charred plant remains including spelt and possible emmer wheat, weed seeds and a possible tuber. This was overlain by two deposits of mixed ash and silt (9109 and 9082). Almost 15kg of pottery was recovered from 9109, with a further 3.8kg of pottery from 9082 (Plates 3.11 and 3.12). This largely belonged to three smashed vessels; a very large storage vessel (base SF 947), a highly burnished tripartite black jar (SF 958) and a small roughly-made small pot or bowl. A single fragment of human sternum was also recovered from 9109. Standing upright on top of the layer of smashed pottery on the north-west side of the pit, and within layer 9082, was a further jar with finger-tip decoration on the shoulder (pot 9151; Plate 3.13). This contained fish (a small scad (*Trachurus trachurus*) vertebra; identified by R Nicholson) and pig bone and marine shell. Layer 9082 also produced both oak and non-oak charcoal and much fuel ash slag. A total of four triangular loom-weights/oven bricks and a further unidentified

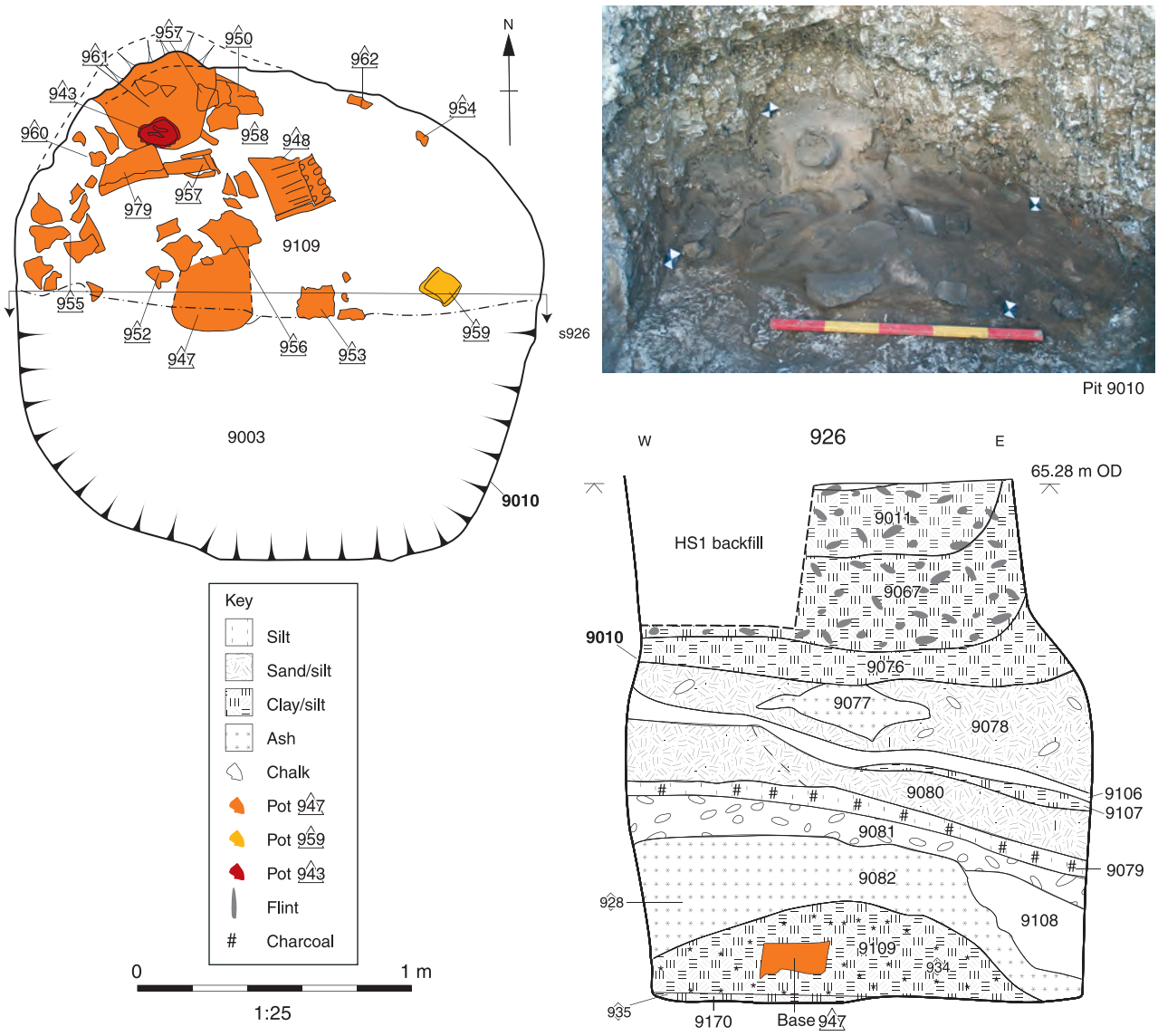


Fig. 3.17 Plan and section of pit 9010, showing approximate limits of pottery dump in layers 9109 and 9082

Plate 3.11 Pit 9010 showing layer of smashed pottery under excavation

Plate 3.12 Pit 9010 showing whole pot on layer of smashed pottery

clay object were recovered from 9082, in contrast to only a single fragment of fired clay from 9109. In addition a possible bone toggle was found in 9082 (see Scott this volume), one of very few worked bones from the Iron Age across the site.

Both layers also contained a few cattle and sheep bones, and layer 9082 included much of two pig skeletons, both sows. One of these was burnt. Bones of two other pigs were also recovered from 9082, one a burnt neonatal fragment, along with bones of

Plate 3.13 Pit 9010 showing detail of largely complete pot on burnt layer 9082

rodents, amphibians and bird, and fragments of marine shell. Charred plant remains were abundant and included wheat, possibly emmer, and barley. This phase of dumping was apparently followed by a period of disuse during which a deposit of clay silt containing rodent and amphibian bones (9108) formed around the eastern edge of the pit. This was succeeded by a thin sterile layer of chalky silt (9081) that covered the whole of the pit base, perhaps suggesting that the primary deposits in the pit bottom were deliberately sealed. Alternatively the pit sides may have been cleaned preparatory to further use.

The silt and chalk was followed by a thin layer of black soil with abundant charcoal (9079), predominantly oak with some hazel/birch and some hazelnut shell. It contained little in the way of cultural material other than a few sherds of prehistoric pottery and fragments of structural fired clay. The layer, however, contained animal bones including domesticates, roe deer and small mammals. The charcoal was followed by a thicker layer of clayey silt 9080, which contained seven sherds of pottery, animal bone and fragments of fired clay. The most unusual find from this layer was a whole limpet shell and fragments of another. Layer 9080 was once more covered by a layer of sterile silt to the east (9107), which in turn was overlain by a layer of chalk (9106) extending across the whole pit. This seems to have been another sealing layer like 9081 below.

A thick layer of silt (9078) overlay 9106. Partway through its accumulation an ash and burnt flint deposit (9077) had been dumped in the centre of the pit, and was subsequently partly sealed by further silting. Both layers produced small assemblages of pottery, structural fired clay and animal bone. Amongst the animal bone from 9078 was a complete red deer antler at one edge of the pit, and this layer also included an unfinished chalk spindle whorl (see Shaffrey this vol.). Ash layer 9077 included dog bone and a large fragment of human skull. A fragment of mussel shell and possible charred fruit was also recovered. Both layers also yielded large amounts of charcoal, oak in 9078, hazel/birch in 9077. The upper three layers of the pit (9076, 9067, 9011) were all deliberate dumps of material containing domestic waste including pottery, fired clay and animal bone.

Two radiocarbon dates were obtained from the human skeletal remains within pit 9010. The sternum fragment from context 9109, close to the base of the pit, returned a date of 400–230 cal BC (95.4%) with a 71.6 % probability of falling within the range 400–350 cal BC (NZA 32401). The skull fragment from later deposit 9077 was dated to 405–365 cal BC (NZA 32405). These dates can be interpreted in two ways. The bones could come from different individuals, suggesting that the pit was not dug much before 400 cal BC, and was at least three quarters filled within thirty years or less. Alternatively, both bones could derive from the same individual, hence the very similar date ranges. This would provide a TPQ for the filling of the pit, but the bones were deposited in successive phases of infilling divided by clean chalk including small bones that probably result from animals falling in accidentally. This suggests a gap between the phases of deposition, and thus that the human

bones had been curated. While the gap between the death of this individual and the deposition of the bones is unknown, however, the tripartite jar in layer 9109 was clearly an early Iron Age form, indicating that the filling of the pit took place in the 4th century BC, and most likely in the first half.

Pit 9010 demonstrated a pattern of probable structured deposits followed by periods of inactivity. Like the pits in Site C, the presence of ashy, burnt fills and fuel ash slag suggests industrial debris, though there was no briquetage. Other similarities include the large faunal assemblage in pit 9010, which included both domesticates and wild deer, marine shells and the presence of triangular loomweights/oven bricks. The incidence of hazelnut shell in many cases is also notable but may be a secondary product of the use of hazel wood for fuel, as hazel charcoal was frequently noted. This may reflect the local environment but may also represent human choice in selection of fuels. In contrast this is the only pit within the early Iron Age to produce human bone, although the occurrence of fragmentary human remains in Iron Age pits is not unusual. It may be significant that dog bone was also found alongside the human remains, although not typically found in these pits.

Another large pit (9053) was excavated *c* 45m east of 9010, measuring 2.6 x 1.8 x 1.3m deep (Figs 3.16 and 3.18). The pit had an irregular profile, undercut and slightly deeper to one side, and it is possible that 9053 represented two separate features. Overall the pit or pits contained a sequence of nine fills. The earliest deposits (9100, 9098, 9099, 9101) were all devoid of finds, and were likely to be natural slippage or silting.

There followed a sequence of four further silting fills, possibly entering the pit from the east. Of these, fills 9097 and 9096 produced a small amount of pottery, fired clay and animal bone. The latest dark clay/silt fill (9094) appeared to be *c* 70m thick, but had almost all been excavated as pit 372 during the HS1 excavations (Plate 3.14). The OA excavation yielded 13 sherds of pottery and a triangular loomweight/oven brick fragment, while the HS1 excavation of this deposit included 6kg of early–middle Iron Age pottery and animal bone. The faunal remains as a whole represented only the standard domesticates. Unlike the other pits in this group, pit 9053 appears to have lacked any structured deposition in the lower fills, although the quantity of pottery recovered from the upper part (nearly 7 kg), and the relatively large average sherd weight (22.8g), suggests that it did occur higher up the profile.

While pit 9053 was not dated other than by its pottery assemblage, just to the south-west was pit 9054, largely excavated during the HS1 excavations as pit 374 (Fig. 3.16). Pit 9054 measured 1.1 x 0.95m in plan, but was only 0.35m deep with a single fill. Most of the finds from pit 9054 were recovered in the HS1 excavation, and included 6kg of early–middle Iron Age pottery (G P Jones 2006); a radiocarbon date of 850–760 cal BC (NZA 22880) was obtained from sooting on a pot sherd. The pit,

Plate 3.14 Pit 9053 half-excavated showing HS1 backfill over in situ deposits

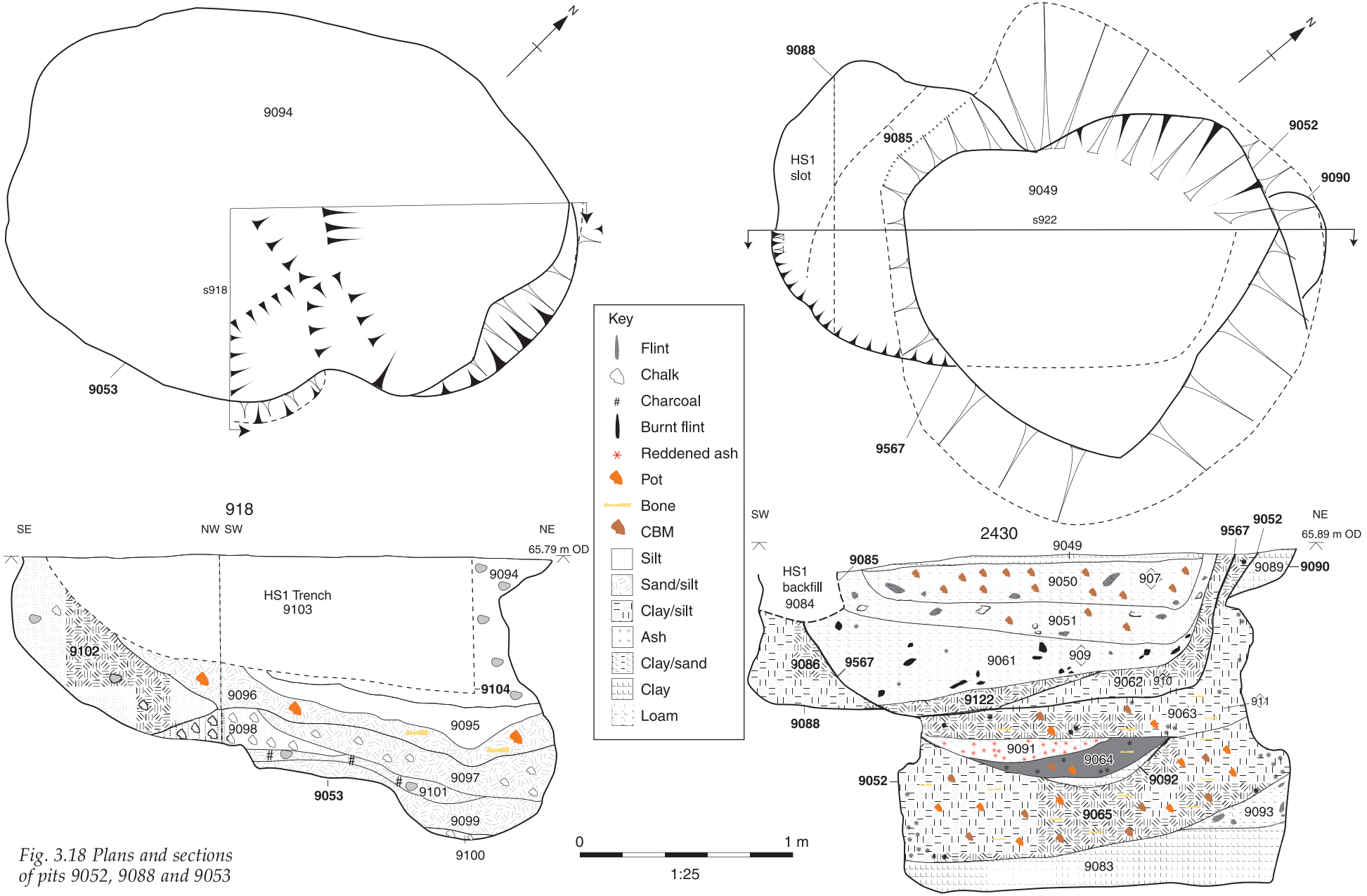


Fig. 3.18 Plans and sections of pits 9052, 9088 and 9053

however, also contained a 4th–3rd century BC La Tène 1 brooch, three iron blade or tool fragments and two fragments of worked stone probably from a quern, so the late Bronze Age or earliest Iron Age pottery is probably residual. The combination of pottery of early Iron Age type and the La Tène 1 brooch shows that this is another pit of the later early Iron Age with a high concentration of varied artefacts, probably deposited deliberately.

Intercutting pits 9052 and 9088 were located *c* 15m south-east of 9053 (Fig. 3.16). Feature 9052 was virtually square at the base, which was flat, and was undercut significantly almost all the way round (Fig. 3.18 and Plate 3.15). It measured 2.18 x 1.83 x 1.62m, and the upper part was heavily truncated by what was interpreted as a later pit 9088, recut as 9567. Unusually the base of pit 9052 was covered by a layer of clay (9083) up to 0.25m thick, within which much of the skeleton of a young red deer, and part of that of a raven, were found. Further bones of the raven were attributed to overlying layer 9065. A bone from the red deer skeleton was submitted for radiocarbon dating, giving a date range of 405–365 cal BC (NZA-32406). Three sherds of pottery were also found, with an average sherd weight of 18g. A deposit of yellow-brown clayey silt (9093) overlay 9083 on the east side, where 9083 was thickest. As this lay beneath the natural overhang of the chalk side, it is unlikely to have accumulated naturally, and could have derived from the surface of layer 9083 on the south-west, where the layer was dished and may have been truncated (see also below).

Both deposits 9083 and 9093 were overlain by layer 9065, a brown silty loam 0.3–0.5m deep. Layer 9065 included the skeleton of a pig, one bone of which was found in the underlying layer 9083, and some raven bones. The pig bone probably sank into the surface of the clay, but the raven bones are more likely to have been disturbed from the skeleton in the layer below. There were also 41 sherds of pottery with an average sherd weight of 16g, again suggesting immediate burial. Charcoal was rare within 9065 except around the edges of the pit, where it was much more common (see Fig. 3.18). This could perhaps have derived from the burning of the pit after use for grain storage, as experiment has shown that a layer of germinated grain forms around the pit edge during underground storage (Reynolds 1974). Charcoal such as this may perhaps have represented the residue of such a burning, left *in situ* when layer 9065 was deposited, but if the pit had been burnt prior to storage, then any burning on the surface of 9083 must have been removed, as this was not evident during excavation. Layer 9065 settled, and the hollow in the centre was filled first by a thin layer of clean clay (9092), and then by dumped layers of black soil with abundant charcoal (9064) and of ash (9091) (Plate 3.16). Nearly 90 small sherds of pottery (average weight 6.7g) were found in 9064, and a few larger and fresher sherds in 9091.

Plate 3.15 Pit 9052 fully excavated showing undercut sides

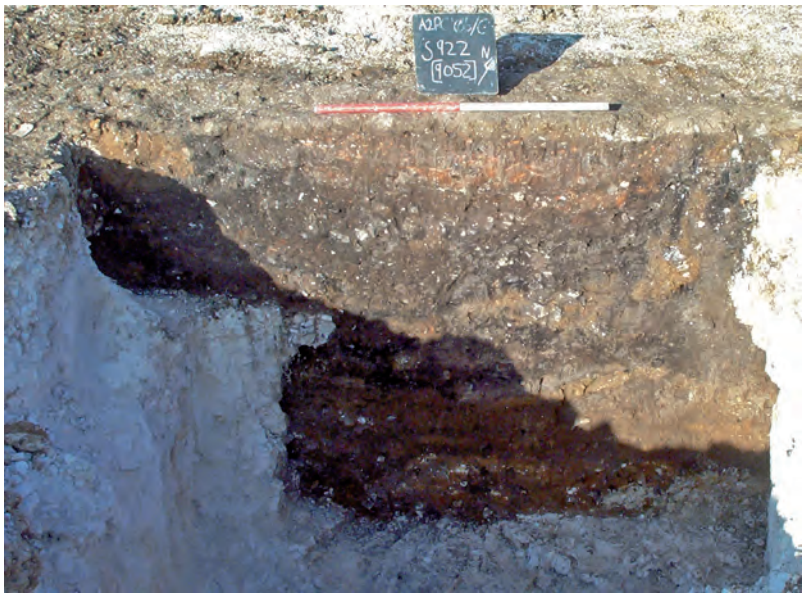


Plate 3.16 Pit 9052 half-excavated showing black and red fills

These were followed by layer 9063, which extended to the top of the pit on the north-east side. The near-vertical edge of this layer suggested that it had been cut away by pit 9567, and was perhaps originally up to 0.8m deep across the whole of pit 9052. A considerable number of very small sherds of pottery (average weight <2g) were recovered from this soil. The truncation of this deposit by pit 9088/9567 may have affected sherd size, but it remains likely that the pottery was not thrown straight into the pit, but had been exposed on a midden. Toad bones found in 9064 and 9063 may also support the idea of redeposition from a midden.

With the exception of archaeologically sterile layers 9092 and 9093 the pit fills were generally characterised by large assemblages of animal bone, with further unidentified bird bone from 9064. Pottery was present but not abundant, with a total of 2kg recovered throughout the pit, the largest deposit being 60 sherds weighing 657g from upper fill 9063. Structural fired clay came from four of the seven fills but only in small amounts, and only fill 9064 produced tiny fragments of briquetage. Processed soil samples produced small amounts of wheat, including emmer, as well as barley and abundant charcoal (oak and hazel/birch).

Pit 9088 was interpreted on site as occupying all of the broader cut above the deep pit 9052, and thus measuring 2.2 x 1.2m and 0.7m deep with a flat base. The plan, however, shows that there was a slight bulge on both edges of the pit in line with the edge of supposed recut 9567, and also a slight step down in the base, suggesting that this was a genuine cut. Pit 9088 had therefore been completely removed except at the south-west end of the pit group, and there was no surviving relationship between 9052 and 9088. It is possible that rather than being a later pit cutting both 9088 and 9052, cut 9567 may actually have been the edge of pit 9052, the vertical edge of layer 9063 being due to settling of the pit fills beneath. Some of the other complex pits, such as 12527 in Site L, also had a wide shallow cut with the deeper undercut pit proper at one end. Nevertheless, the fact that the layers in pit 9052 proper were generally horizontal suggests that slumping is unlikely to explain the angle of layer 9063, and a separate later pit is more likely.

Pit 9088 only contained one surviving fill, but pit 9567 contained six fills, most of which were deliberate dumps richer and more varied than the fills of pit 9052 below. This included 4.3kg of pottery, much of which was identified as early or early–middle Iron Age, and larger amounts of fired clay including a fragment of triangular loomweight/oven brick from 9051. The most substantial fill (9061) also produced a fragment of an iron needle and a curved fragment of copper-alloy, a piece of worked antler and 15g of briquetage. Other small deposits of briquetage (up to 76g) were recovered from fills 9086 and 9050. Fragments of iron smithing slag came from fills 9061 and 9062.

Environmental evidence from 9088/9567 was similar to that from the pit below comprising wheat, barley, oat/brome grass and abundant charcoal, some of which was identified as hazel/birch. The animal bone assemblage was smaller and included domesticates with larger quantities of horse, but lacked any small mammal or amphibian bones. The upper fills of the pit were disturbed on the southern edge by a small HS1 test slot and it is possible that the uppermost fill of the pit (9049) was also a remnant of the earlier excavation.

Other features in Site G

A range of other, generally smaller and shallower pits (9058, 9004, 9044, 9047, 9041), were found in the eastern part of Site G, generally in the vicinity of the

pits described above. Most could be dated fairly confidently to the early Iron Age. Amongst these remaining pits, pit 9012 was different in character, being large in area (3.7 x 2.8m) but only *c* 0.56m deep. Due to partial excavation during the HS1 works the pit contained modern backfill in the top and was heavily disturbed, but it is likely that five of the observed fills were genuinely Iron Age deposits. Just over 2.2kg of early Iron Age pottery was recovered, along with 829g of fired clay, animal bone (including pig, cattle and sheep/goat) and flint. Environmental evidence comprised abundant charcoal, but only a single oat/brome grass and one wheat glume base. One vessel fragment is tentatively ascribed to the earliest Iron Age, making this earlier than the other dated pits on the site, but in keeping with the date range of 760–380 cal. BC (NZA 22866) obtained from soot on a potsherd from the HS1 excavations.

Aside from pits, there were two four-post structures in the eastern part of Site G (9031, 9325) and another further west (9221) (Fig. 3.19). Just south of structure 9031 was a pair of postholes (9035/9039), possibly representing another structure. All of these were fully excavated and sampled. Structures 9031 and 9325 measured 2.5 x 2.3m and 2.6 x 2.5m respectively and postholes 9035 and 9039 were also 2.6m apart. The postholes within the eastern structures ranged from 0.34 to 0.64m in diameter, (although most were under 0.5m), and no certain post-pipes were found.

Posthole 9321 in structure 9325 had much of an early Iron Age pot crammed into the backfill (55 sherds weighing 571g), and there was also fired clay in the postholes. It was suggested that this might have filled the post-pipe, but this is not certain. This may indicate the accidental or deliberate destruction of this structure by burning. Only a little pottery came from four-poster 9031 and from posthole 9035, but this was also early Iron Age in character. All three structures also produced fired clay, flint and occasional animal bones. The few identified bones were of rodent, finch and raven but no mammals. Environmental samples from the postholes produced charcoal, which was abundant in structure 9325, and was identified as oak, possibly from the posts themselves. No charred plant remains came from either four-post structure, but single grains of charred spelt and barley came from postholes 9035 and 9039.

The western four-post structure (9221) was 2.3m square with small postholes 0.24–0.35m in diameter and 0.16-0.23m deep (Fig. 3.19). There were no post-pipes. Posthole 9219 contained tiny fragments of pottery that were more like the Iron Age material in the pits to the east than the Bronze Age vessels to the west, suggesting that the four-poster was Iron Age.

The eastern limit of Iron Age activity on Site G was marked by a single ditch (9609) that ran north-south across the excavation and continued in both directions (Fig. 3.16), although it was not recorded

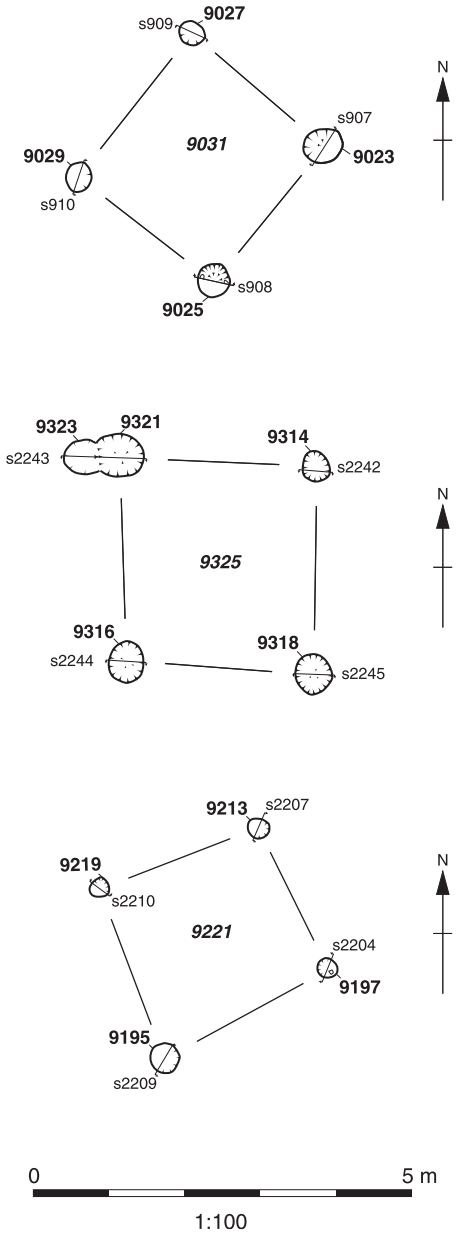


Fig. 3.19 Plans of four-post structures

within the area of the HS1 works to the south. The ditch was 0.9m wide and 0.45m deep, displaying a V' shaped profile with a slightly rounded base. The excavated sample of the ditch contained nine sherds of late prehistoric pottery, along with fragments of fired clay, flint and bone, but also produced a possible post-medieval tile fragment. As this feature marked the limit of Iron Age activity, it seems likely that the ditch is indeed early Iron Age, and that the post-medieval tile fragment is intrusive. The fragmentary remains of another possibly Iron Age ditch (10011), this time on a south-south-west alignment, were identified 170m to the east on Site H. It is possible that this feature may have formed part of a single system with ditch 9609.

THE MIDDLE IRON AGE

There was a significant change in the character of activity in the middle Iron Age, with a concentration of settlement activity in in Sites B and C, and the creation of a major land boundary on Site L (see Fig. 3.1). The settlement was characterised by large ditched enclosures and boundaries, although pits and four-post structures also continued. This settlement activity evolved into the late Iron Age and beyond, such that a number of ditches were recut, making the sequence difficult to disentangle in places. The limited number of characteristic middle Iron Age ceramic forms from the site did not help. Wares tempered with coarse shell are common, but are so likely to fragment that very few forms could be identified to corroborate the dating. Glauconitic sandy wares, particularly when used in black burnished wares, were treated as characteristic of the middle Iron Age, but were also found in association with late Iron Age wares, defined by the use of the potter's wheel and by grog-tempering. In some cases vessels in glauconitic ware were associated with potin coins (see below). Stratigraphic relationships were used wherever possible to establish the relative chronology and the evolution of the enclosure system, and in the main this was consistent with the assumptions used for ceramic dating.

Sites L and A

Boundary ditch 13161 and associated burials

On Site L a large boundary ditch 13161 was traced for 156m SE-NW, continuing across the adjacent access corridor (see Fig. 3.5 above). Cropmarks confirm that it was continuous between them, and that it continued north-west until masked by the old A2, and so was at least 220m long. The exposed lengths of ditch confirm the line of the ditch on the cropmarks, which kinked slightly eastwards and then turned back westwards beyond the current site.

A total of nine interventions averaging *c* 2m long were cut along the length of the ditch (Fig. 3.20). A Roman cemetery was identified on the north-east side of the ditch, and the uppermost ditch fills were identified as late Roman.

The ditch was cut through mixed natural geology consisting of greensands, clayey sands and chalk. Where the natural was predominantly chalk the ditch had a U-shaped profile, whereas those cuts dug mainly through clay displayed a slightly 'V'-shaped profile, presumably due to greater natural erosion of the sides. As a result of its continued use throughout the Roman period the original dimensions of the ditch are uncertain. As surviving, the ditch was up to 5m wide and 1.5m deep. At its

Plate 3.17 Section of ditch 13161 with shaft 12958 below

narrowest point (Fig. 3.21 cut 12781) it was clear that the clay edges of the ditch had slumped, but its original size was certainly at least 3m wide.

The ditch increased in surviving depth towards the south-east terminus, from 1.2m (Fig. 3.21, cut 12779) to 1.8m (Fig. 3.22, cut 12680). Approximately 15m from the south-eastern terminus of the ditch a deep shaft (Fig. 3.21, 12958) was dug into the base of the ditch, taking the overall depth at this point to 3.15m (Plate 3.17).

The depositional sequence within ditch 13161 was also complicated by the changing natural geology, but in general the basal fills probably represent periods of relatively slow natural accumulation through silting, and small episodes of collapse or slumping, likely to have derived from an upcast bank or banks. Slumping appears to occur mostly on the south-west side, although some collapse also occurred on the north-east, and it is possible that earthworks existed on both sides of the ditch.

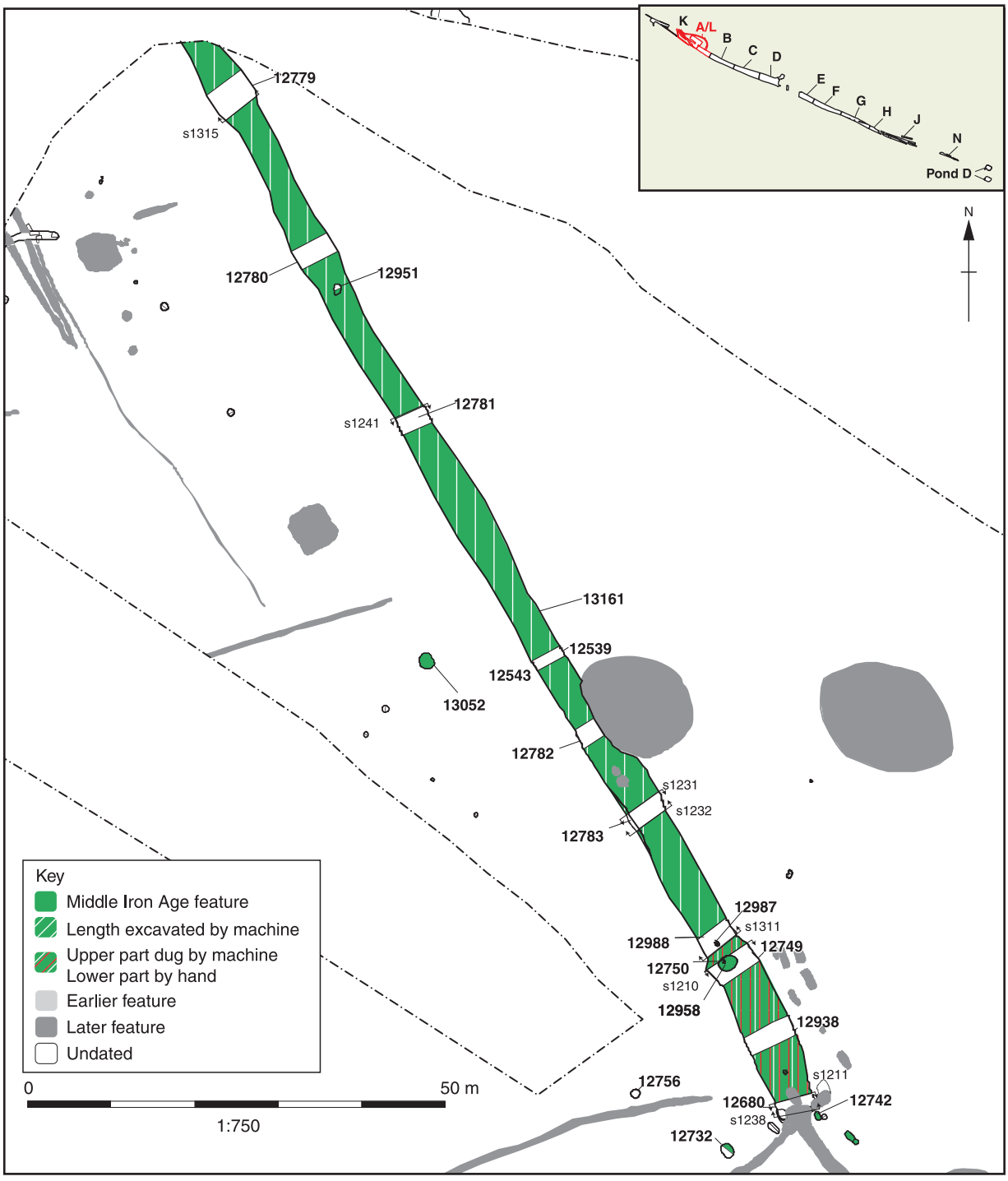


Fig. 3.20 Plan of middle Iron Age ditch 13161 on Site L showing extend of hand and machine excavation

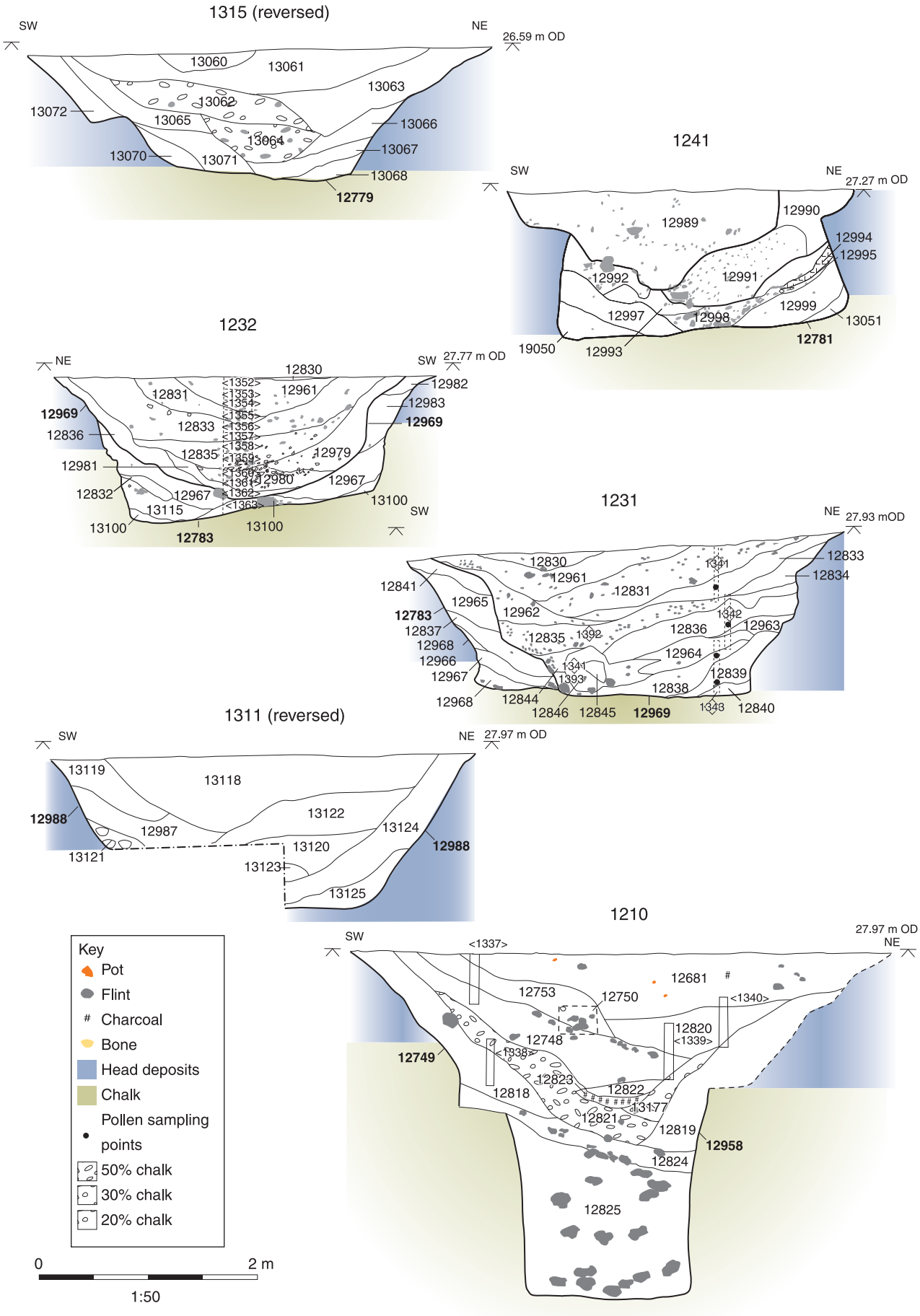


Fig. 3.21 Sections from cuts 12779, 12781, 12988 and 12749/12958 across ditch 13161

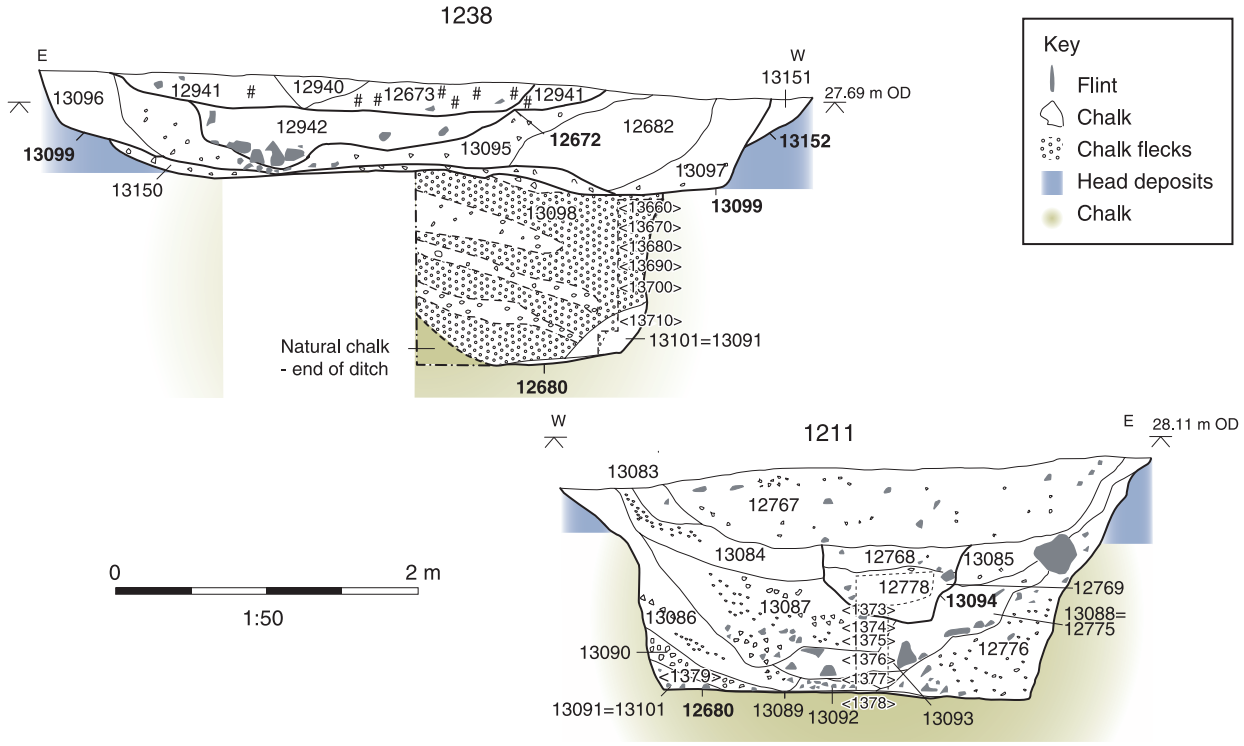


Fig. 3.22 Sections from cuts 12783, 12969 and 12680 across ditch 13161

This initial silting phase yielded few finds. These consisted of a small assemblage of undiagnostic sherds of later prehistoric pottery and three sherds of late Iron Age or early Roman date. Most of the earlier sherds were severely worn, and probably originated from features truncated by the ditch and subsequently incorporated into the bank. Other finds from this silting phase were scant, consisting of only a few bone fragments including pig, dog and horse and worked flint.

Plate 3.18 Ditch 13161 showing chalk infill in section 12782

Plate 3.19 Skeleton 12986 over shaft in ditch 13161

Following this there was a phase of rapid infilling, largely represented by chalk rubble and flint nodules that had collected in the centre of the ditch (Plate 3.18). For the most part, these deposits are too large to have derived from erosion of the ditch sides, and they probably represent collapses of bank material, or deliberate dumps of the same. As with the initial slump fills, at different locations within the ditch these collapses appeared to originate from either the south-west or north-east side of the ditch, or both. On the south-west there was a band without features some 10m wide alongside the ditch, perhaps suggesting the existence of a bank on that side. Towards the south-east terminus Roman graves came much closer to the ditch edge on the northeast side, but this does not disprove the existence of an earlier bank on this side as well.

On the whole the artefactual and ecofactual record from this phase of activity was similar to the initial silting phase. Pottery was more prolific, although still in small quantities with little over 100 sherds weighing 369g. The pottery included both residual sherds of fabrics current in the late Bronze Age and early Iron Age, and some sherds of middle–late Iron Age date. Overall the sherds were small-sized and severely abraded. Other finds included residual flint, animal bone and a small amount of fired clay.

Immediately above the chalk several small deposits of charcoal were found along the ditch (eg Fig. 3.21 section 1210 layer 12823). Soon after this an inhumation burial (12987) was inserted into the ditch. This individual was found *c* 15–20m from the south-eastern terminus, and close to the pit found in the base of the ditch (Fig. 3.20 and Plate 3.19). Skeleton 12986 was placed on the surface of fill 13123 in a crouched, prone position (Fig. 3.23), and did not lie in a formal grave cut. Both arms were flexed at the elbow, with the left hand lying below the pelvis. Parts of the skull and the lower left leg were missing, the former possibly as a result of truncation, but the latter more likely due to the differing preservation of bones surrounded by chalk, and those covered by clayey silt. The skeleton represented a juvenile of approximately 12–13 years of age. A sample of bone from this individual was radiocarbon dated to 400–350 cal BC (65.5%) or 300–230 cal BC (29.9%) (NZA 30150). This dating suggests that the ditch had been dug during the late early or middle Iron Age.

Following this burial, layer 12748 accumulated, and this clayey silt with little chalk probably represents a period of silting of unknown duration. On the surface of this layer a neonate burial (12750) was placed in a supine position with the head to the south-east (Fig. 3.23). This lay just to the south-east of skeleton 12986. All major body parts were represented although certain smaller bones were absent due to poor preservation. As the rate of accumulation of the middle silts in the ditch is uncertain, the burial may be of Iron Age or Roman date.

A further Iron Age burial (12742) was located in a purpose-dug grave less than 1m beyond the terminus of ditch 13161 (Fig. 3.20 and Plate 3.20). Like burial 12986 this was a crouched inhumation of a 12–13 year old juvenile (12744), and was placed in an oval grave pit measuring 0.9 x 0.55m (Fig. 3.23). The individual was tightly crouched and placed on its right side with the head to the north-west. A radiocarbon date range of 380–200 cal BC was

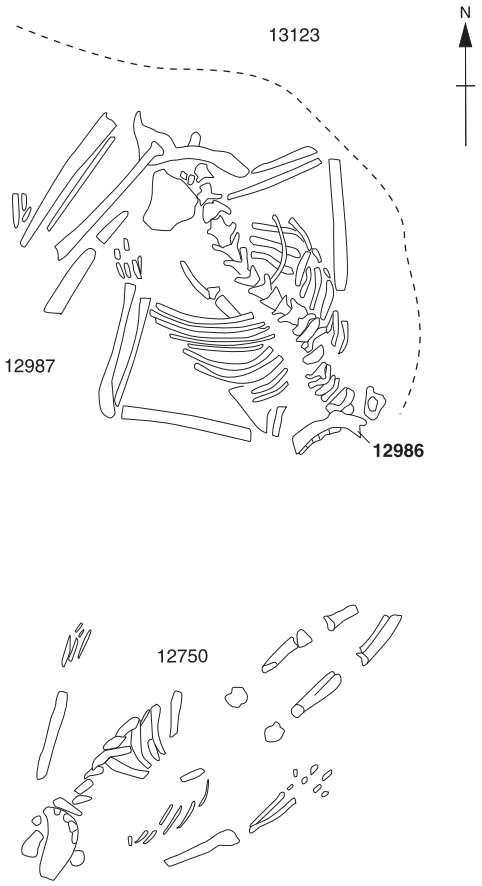


Fig. 3.23 Plans of Iron Age inhumation burials 12987, 12750 and 12744 in pit 12742

Plate 3.20 Crouched skeleton 12744 in grave at end of ditch 13161

obtained from this individual (NZA 30161). This is similar to that obtained from skeleton 12986.

The dating evidence for ditch 13161 is somewhat contradictory. It is possible that the date for skeleton 12986 is incorrect, and that this and the neonate burial 12750 in fact belong to the Roman period. This would allow the boundary as a whole to date to the late Iron Age or very early Roman period. The burial rite is, however, unusual for the Roman period, and the crouched burial just beyond the ditch terminus is also middle Iron Age. Although this might be coincidental this seems unlikely, given that it is otherwise the sole burial of this date in Sites L or A. It is also possible that the late Iron Age/early Roman pottery in both contexts 12832 and 13088, which totalled only a few sherds, was intrusive, although these deposits were in different parts of the ditch, and the sherds were larger and less worn than the earlier Iron Age sherds from the lower ditch fills.

A third possibility that should be considered is that burial 12986 had been curated for some time before burial. Recently Parker-Pearson has argued for the curation of prehistoric bodies in mummified form (Parker-Pearson *et al.* 2005, 129–46), and while his evidence came from Scotland, such a practice might explain the early date for this burial in the middle fills of the ditch, and also provide a reason

why only part of the body was present, although the rest was articulated, and there were no signs of animal gnawing or other disturbance. If true, it would indicate that this skeleton had been curated for at least 200 years before burial.

Some 80m beyond the terminus of ditch 13161 another long boundary ditch was found crossing Site A on a NNW-ESE alignment. This boundary consisted of a much smaller ditch, recut on a number of occasions into the early Roman period (see Fig. 3.5 above). Only the latest phases of the ditch (3336 followed by 3075) were dated, and these belonged in the early to middle Roman period, but it is likely that the sequence began in the Iron Age, perhaps even in the middle Iron Age. Given the very different character of this boundary to 13161, however, it appears more likely that it was not dug contemporarily with 13161, and was perhaps added later. As such this sequence is described and discussed in the late Iron Age section below.

Discrete features

A number of pits on Sites A and L were probably Iron Age, but cannot be dated more precisely. A single pit on Site L (13052) did, however, produce diagnostically middle Iron Age pottery. This was located 8.6 south west of the central part of ditch 13161 (Fig. 2.20), and measured *c* 1.6m in diameter and 0.7m deep. The pit contained seven fills and produced 63 sherds (471g) of pottery, fragments of fired clay and animal bone, including a large fragment of cow skull. Two further features (12756 and 12732), which lay 5–10m west of the south terminus of ditch 13161, may also date to the middle Iron Age, although they may be later. Feature 12756 contained a mixture of burnt clay, patches of burnt soil and charcoal, along with a burnt animal skull placed upside down in the middle. The sides of this feature were also burnt, and it seems likely that this was an oven, some of whose superstructure had collapsed or been thrown in when it went out of use.

Sites B and C

Much of the archaeology identified on Site B and the western third of Site C was middle or late Iron Age, including a series of enclosures, a large trackway and numerous discrete features (Fig. 3.24). Generally the middle Iron Age features contained less pottery than those belonging to the late Iron Age, and it is therefore perhaps more likely that the features in this area without finds also belong to the middle Iron Age. Within this area, the middle and late Iron Age activity could be separated into two halves lying east and west of the trackway. As these two middle Iron Age foci largely respected the trackway, it is assumed that the settlement grew up around it, and so the trackway will be described first.

Central Site B

The central portion of Site B contained little in the way of middle Iron Age remains with the exception of trackway 7980 and pit 3400 (Fig. 3.25). The trackway lay within a slight natural hollow running NNW-SSE in which a layer of colluvium had protected the archaeological features.

Plate 3.21 Metalled road 7980: excavation in progress looking south-east

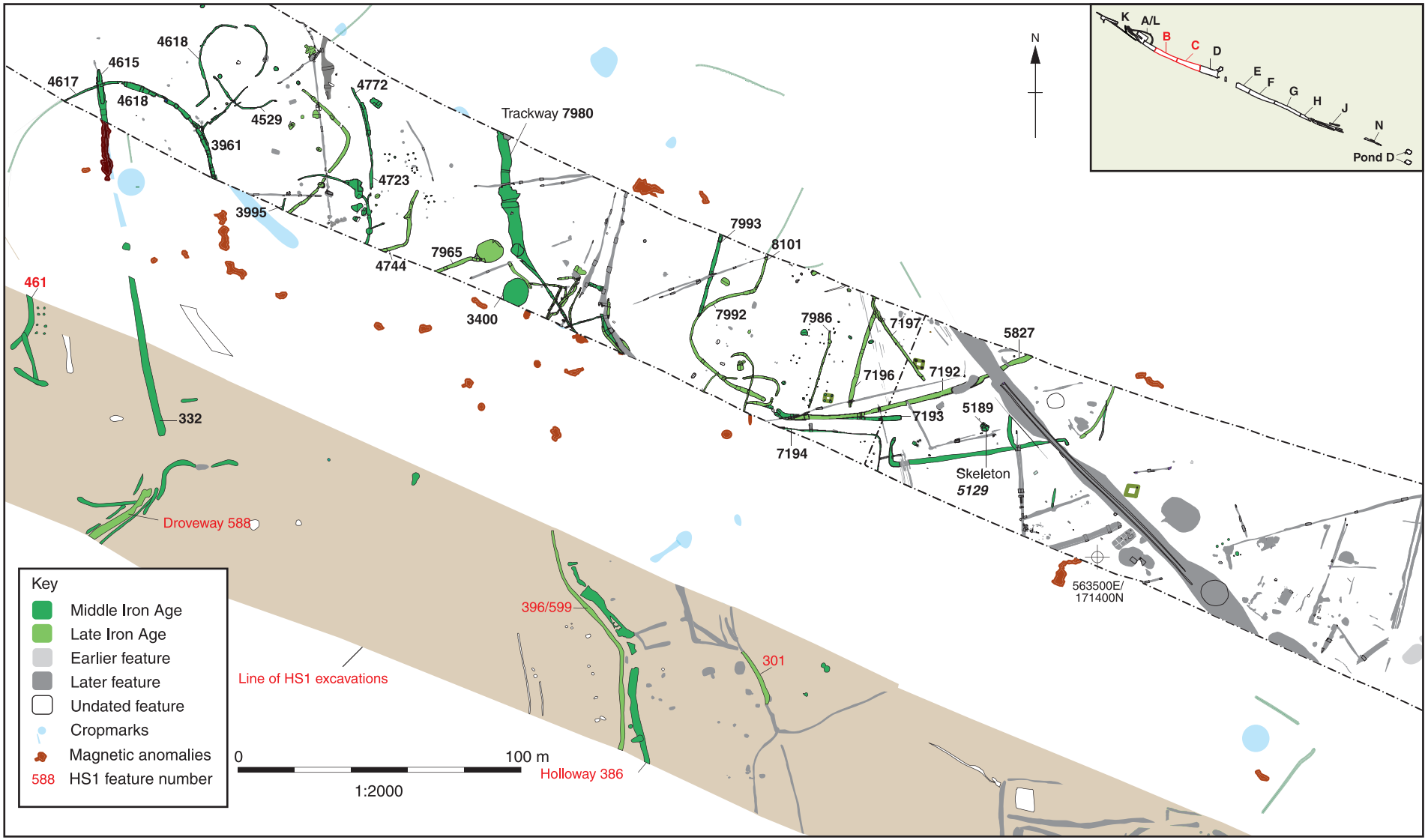


Fig. 3.24 Plan of middle and late Iron Age settlement in Site B and Site C west

Trackway 7980

The deepest part of the hollow was on the east side, and this was followed by a well-preserved cobbled/metalled surface of early–middle Iron Age date (Plate 3.21). The trackway was well-preserved in the northern half of the route, where the hollow was deepest, but further south it had been largely obliterated, partly by a complex of intercutting later ditches and partly by ploughing (Fig. 3.25). Patches of cobbles did, however, survive almost as far as the southern baulk of the site, and showed that the trackway turned south-eastwards just north of ditch 7971, which cut its south-western edge. One patch of flints extended south of 7971, clearly demonstrating that the ditch was not an original drainage ditch associated with the trackway, but was later.

The trackway consisted of a broad band of flint cobbles and pebbles forming a band *c* 5m wide, set into a clay layer contained within a shallow cut. The flints within the surface construction were closely packed, surviving up to four deep on occasion, however most of the remaining trackway survived only one or two layers deep (Fig. 3.26). In places it appeared as though an initial phase had been constructed using smaller flints, on top of which another, less well-preserved layer of large, less regular cobbles had been placed.

Possible wheel ruts were noted in the surface of the trackway, up to 0.7m long and 0.17m deep. These were overlain by a layer of accumulated silt that produced most of the cultural material. A section of the trackway was removed by machine and revealed early Iron Age hollow 7949 (see above). No other earlier features were found below it.

Cultural material from the trackway was scarce and comprised 24 sherds of worn late prehistoric pottery that could not be closely dated, unidentified animal bone, two tiny fragments of fired clay,

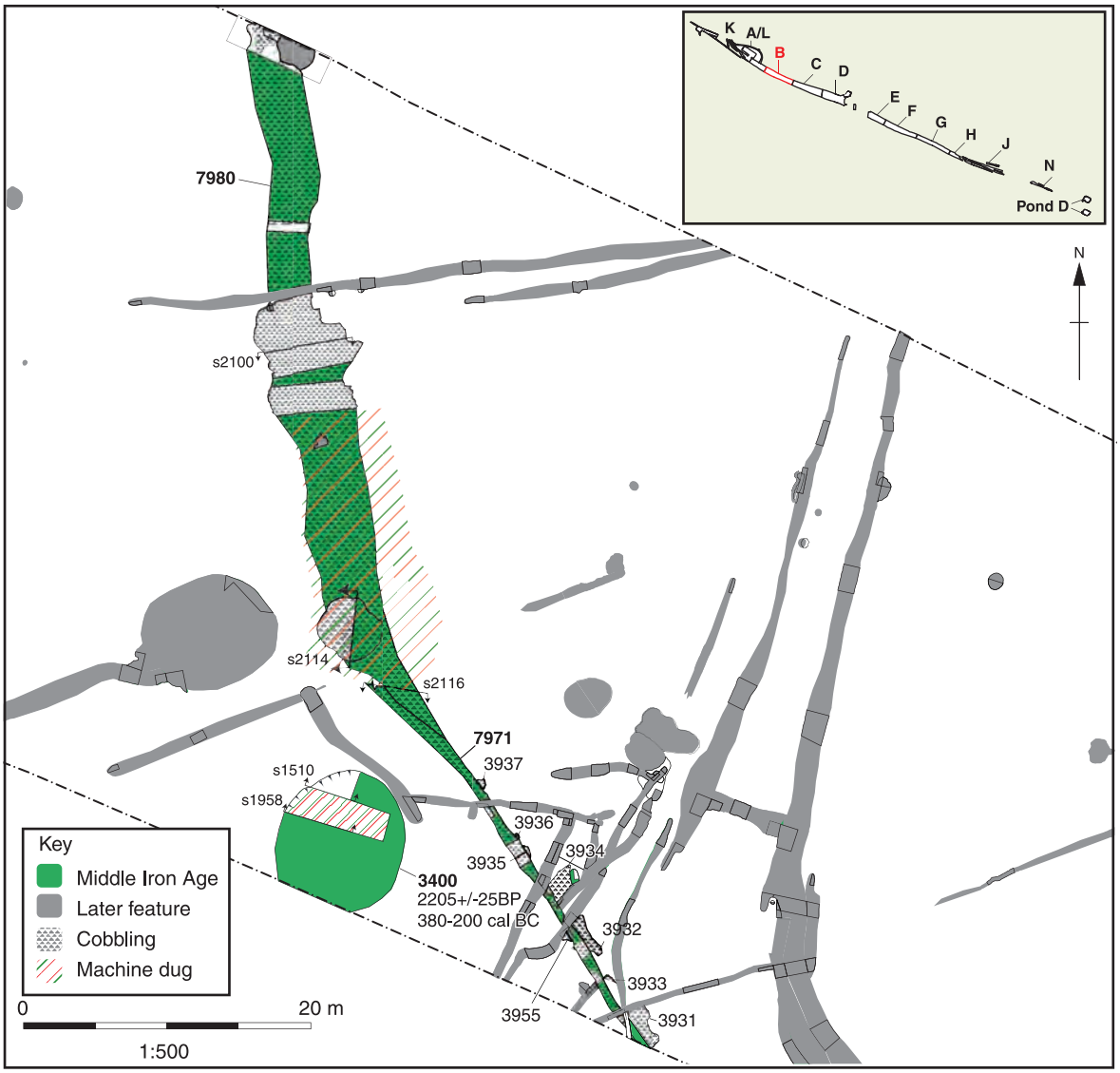


Fig. 3.25 Plan of the trackway 7980 and pit 3400

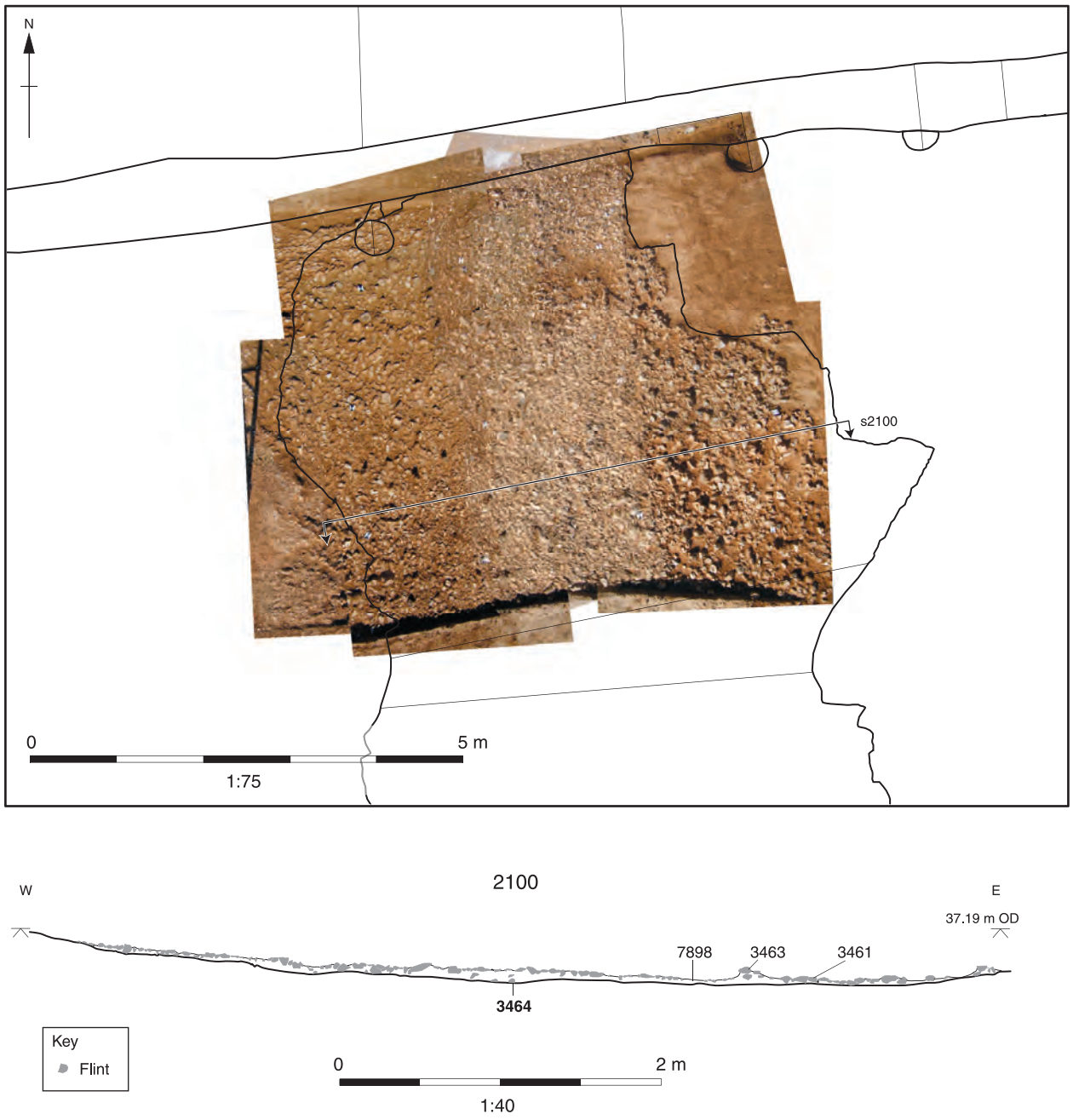


Fig. 3.26 Detailed geo-rectified plan of the cobbled trackway 7980 showing wheel-ruts, and section

fragments of an unidentifiable copper-alloy object (SF 450) and worked flint. A very small multi-coloured glass bead (SF 453) was also recovered from the surface of the trackway, but this is not a known Iron Age or Roman type, and is probably intrusive. With the exception of the fired clay and some residual worked flint the assemblage came from the accumulated soil fill (3462) overlying the trackway. The directly associated finds do not date the trackway closely, but the metalling clearly overlay early Iron Age hollow 7949 and was cut at its southern end by a number of middle–late Iron Age ditches, the earliest of which was ditch 7971. It is also on a very similar alignment to major ditch 4615 to the west, and so was probably constructed early in the life of the middle Iron Age settlement, if it did not precede it. The continuation of this trackway to the south is probably holloway 386 found within the HS1 excavation (Fig. 3.24).

Pit 3400

Approximately 4m south-west of trackway 7980 and ditch 7971, on the southern limit of the site, a very large pit (3400) was excavated. This feature measured 9 x 8.75m, but was only 1.8m deep with an irregular base. It contained a minimum of 12 fills—all appeared to be redeposited natural silty

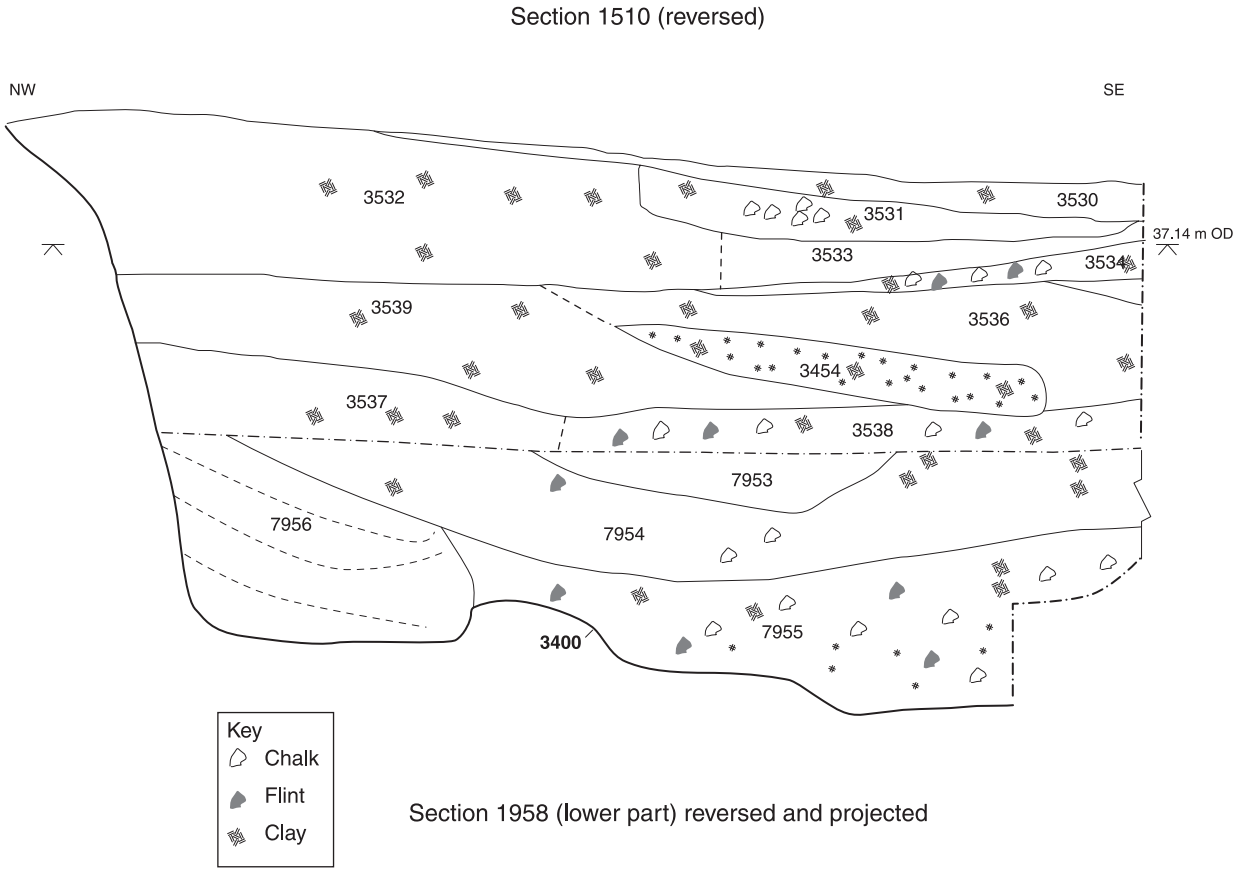


Fig. 3.27 Section of pit 3400

clays, probably representing a series of backfill deposits, with the exception of a small, central fill 3454 (Fig. 3.27). This contained the partial cremation of a probable adult human in association with early–middle Iron Age pottery, a chalk spindle-whorl, fired clay, animal bone, charcoal and flint. The pottery proved to represent most (623g) of a single bowl (Fig. 3.57), heavily fired in parts, probably on the cremation pyre. Due to the rarity of early or middle Iron Age cremations, cremated bone was sent for radiocarbon assay and returned a date of 380–200 cal BC (NZA 31265), placing it firmly in the middle Iron Age. The charcoal that accompanied the cremation was identified entirely as oak and it is likely that the scraps of fired clay also originated from the cremation process. Other finds included a complete chalk disc-type spindle whorl (SF 451; see Shaffrey this vol.), unburnt animal bone including dog and pig, and two flint flakes, some or all of which may have been associated with the cremation.

The size of pit 3400 and its mainly sterile fill might suggest that this was originally a quarry pit, possibly relating to the construction or maintenance of the trackway. It is unclear why the cremation and related objects were placed in the centre of the pit but it is possible that the feature held some ritual importance, perhaps related to its position next to the trackway, which divided the west and east halves of the Iron Age settlement.

Western Site B

Enclosures 4617 and 4518

A series of enclosures were located on a slight rise in the chalk plateau west of the trackway, at the western end of Site B (Fig. 3.28 and Plate 3.22). Stratigraphically, one of the earliest features was curvilinear gully 4529, which was cut by enclosure 4518, but no finds or environmental remains were recovered.

The ditch of a large curvilinear enclosure (4617) lay south-west of gully 4529. The earliest phase of this enclosure consisted of a relatively shallow ditch (0.75m wide and 0.45m deep) that only survived intermittently, due to recutting along its line by a series of deeper ditch lengths (Fig. 3.29). It is, however, likely that all of the surviving lengths formed part of one contemporary ditch measuring at least 60m across. No entrances were visible, but these may have existed in the areas of the later recuts. This was probably the northern part of a large enclosure, most of which lay south of the A2

excavation area. The western continuation may have been related to ditch 461 (Fig. 3.24) excavated on the line of the HS1. Little cultural material was found within the enclosure ditch, but included a few fragments of structural fired clay and animal bone.

Ditch 4617 was cut by the northern terminus of a large NNW-SSE ditch 4615. The ditch was up to 2.6m wide and 1.5m deep with a distinctive 'V' shaped profile and evidence for a possible bank on the eastern side (Fig. 3.29). The majority of the ditch fills contained small deposits of late prehistoric pottery, fired clay and animal bone. It seems likely that all this material derived from surface dumping eroding into the ditch, rather than deliberate deposits. The ditch was later cut by shallow ditch 4616 at its northern end, possibly a slight recut of the ditch terminus. A significant quantity of animal bone including cattle, pig and horse, came from this potential recut. Animal burials and significant groups of bone are often found in the terminals of enclosure ditches and this may be an example of such practice.

Ditch 4615 was picked up by the geophysical survey prior to excavation, and was traced for a further 15m to the south. It is likely that it continued as ditch 332 in the HS1 excavations to the

Plate 3.22 Aerial photographs of west part of Site B showing enclosures (a, above) on chalk and in the hollow (2970) and (b, left) on the chalk (2972)

south (Fig. 3.24), making the boundary 125m long. Both in terms of its length and size it invites comparison with the other large boundaries to the north-west, particularly ditch 13161. Although on a different alignment, it may also have been part of the same system of middle Iron Age large-scale land division.

East of ditch 4615 enclosure ditch 4617 was recut by a series of much larger ditch lengths (Plate 3.23; Fig. 3.28: 4618, 4619 and 3961) that ran for stretches of 12m, 11m and 18m respectively. These were far broader (1.4–1.9m) and deeper (0.75–0.9m) than the gullies of the earlier phase (Fig. 3.29). The deeper recuts had few fills (1–3 layers of chalk-rich clay-silt) but yielded considerably more artefactual material, perhaps indicating a shift in the function of the enclosure. There was no relationship between these recuts and ditch 4615, but the fact that it formed the western limit of these recuts suggests that they were dug after, or contemporarily with it. There was a 7m wide gap between ditch 4615 and the closest recut, and gaps of 4m between the other ditch segments. These may indicate multiple entries into the enclosure, but as this area was truncated by ploughing, it is possible that the earlier ditch 4617/4623 still existed as a shallow barrier between the recuts. These deeper lengths of ditch may alternatively have been dug largely as quarries for a bank, which could have been continuous along much of the south (inner) side. Even the wider gap between 4615 and 4617 need not have been an entrance, if as suspected there was an upcast bank along the east side of 4615.

Pottery from groups 4618 and 4619 was sparse and generally middle Iron Age in date. Ditch 3961 produced a larger assemblage of 59 sherds weighing 459g including a late Iron Age sherd, although this was from an upper fill. Ditch 3961 also produced 251g of briquetage. All three recuts produced fired clay including a pedestal base from 4618. Animal bone was recovered in some numbers and revealed the usual species: cattle, sheep-goat, pig and horse.

From its layout, 'banjo' enclosure 4518 to the north-east was clearly associated with enclosure 4617 (Plate 3.24). The 'banjo' was an oval ditched enclosure with a narrow funnelled entrance on the south-west side. Overall the enclosure was 34m long from entrance to rear and 21.5m wide. It consisted of three lengths of ditch: a curving,

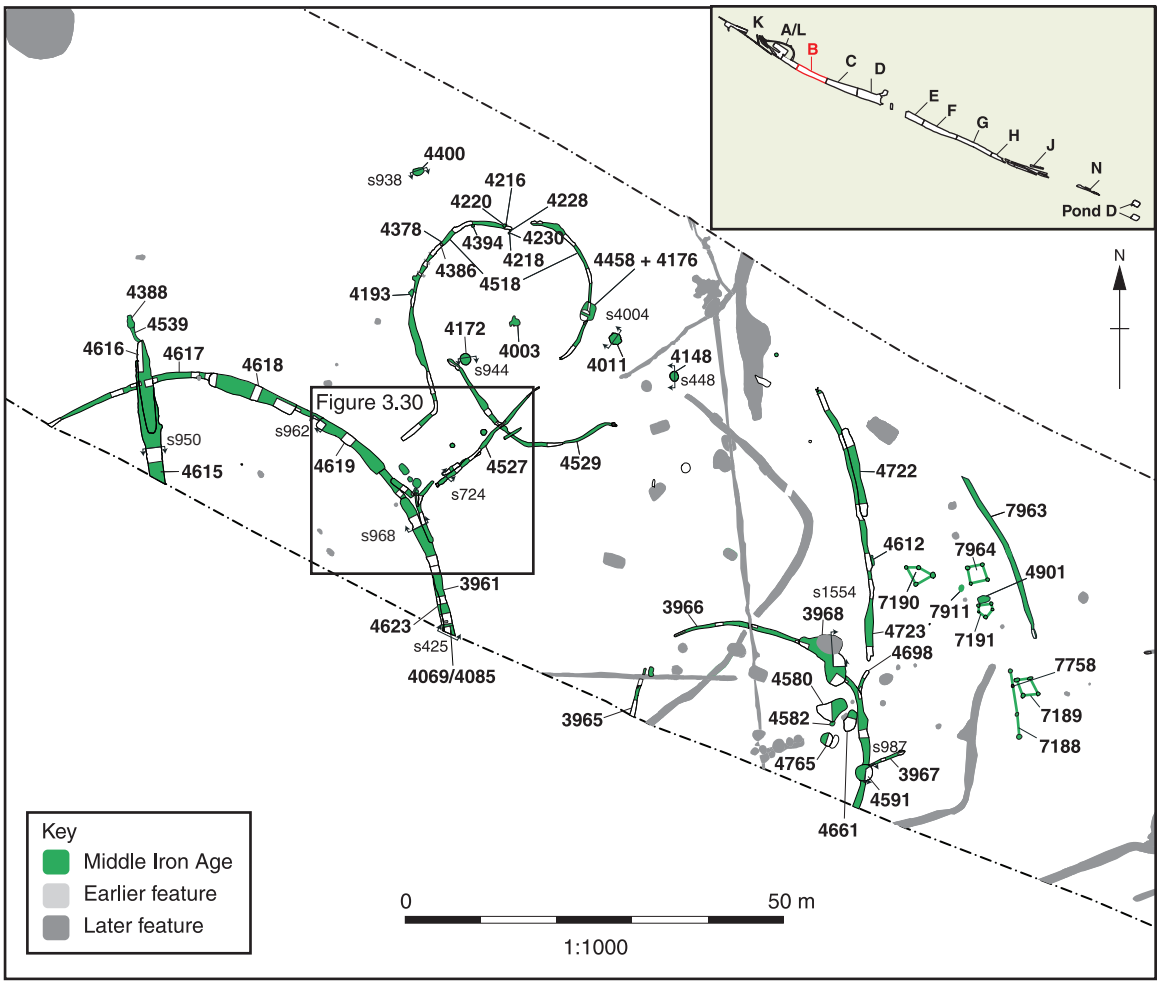


Fig. 3.28 Plan of middle Iron Age features in the western half of Site B

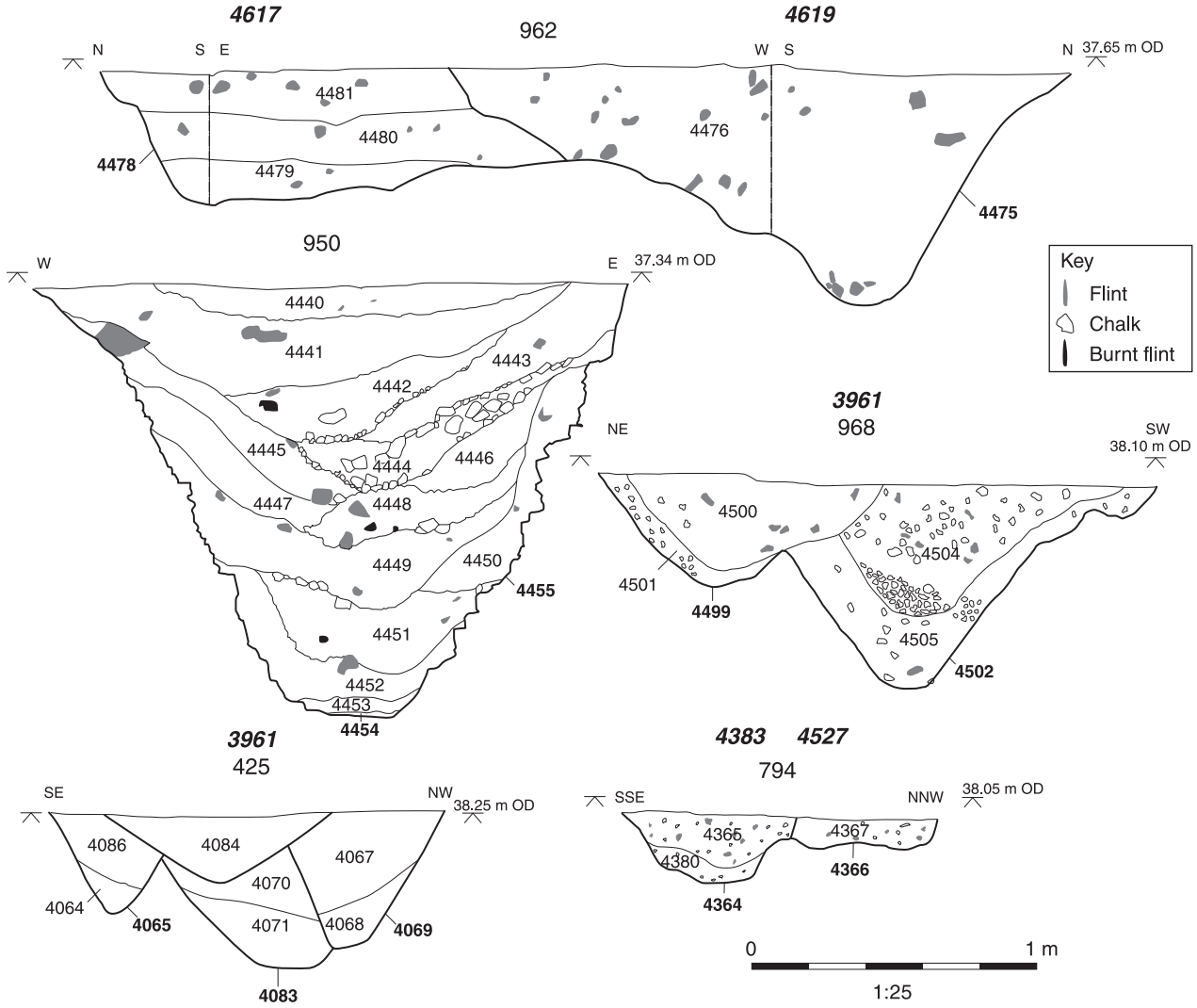


Fig. 3.29 Sections of enclosure ditches 4617 and 4619, ditch 4615, 3961 and ditches 4383 and 4527 in enclosure 4518

nearly hemispherical west side with a straight spur at the south end running south-west, a second ditch continuing the curve on the north-east and east, and a relatively straight length on a south-west alignment, parallel to the spur of the western ditch. The ditches of enclosure 4518 were heavily truncated, surviving to *c* 0.65m wide and only up to 0.3m deep and containing a single fill. Long stretches of the enclosure ditch were excavated, mostly producing only scraps of pottery, but a group of sherds of a globular jar (weighing 835g) came from context 4019, confirming a middle Iron Age date.

Despite the later truncation of the enclosure ditches, the gaps between them all probably represent genuine entrances. That on the north was 2.5m wide, and the ditches either side are not in line. The gap on the south-east is 4.5m wide, and the two ditch 'termini' are turning away from one another. In addition, large quantities of finds, in this case much of the globular jar, came from the fill of the ditch just north of the gap, and, as noted above, such deposits are common at ditch termini. The opening at the south-west entrance measured 7m across. The ditch also contained frequent animal bones, including both those of domesticated species and of roe and red deer. Other finds included a fragment of Mesolithic flint axe from the eastern side of the entranceway, small amounts of fired clay and iron crumbs.

A series of postholes ran along the north-west and north sides of the enclosure, and were mostly cut by the ditch (Fig. 3.28). This includes postholes 4218 and 4220 on the north and postholes 4386 and 4378 on the north-west, while 4228 and 4230 lay on either side of the northern entrance. The postholes were generally spaced between 1.5 and 3m apart. None contained any finds. Most of the postholes may have marked an earlier form of fenced enclosure, possibly associated with ditch 4529, or may have been marking-out posts for the construction of 4518.

The south-west end of the narrow funnel in enclosure 4518 stopped 4m from the original ditch of enclosure 4617, which had no gap in line with this funnel. There was, however, a gap 4m wide between the deeper recuts 4619 and 3961 in the second phase of 4617, which approximately aligned with the funnel (Fig. 3.30). There may therefore have been an entrance here, a possibility strengthened by a single posthole just inside (south of) the end of 3961, although this contained only burnt flints.

A series of further modifications was made between ditch lengths 4619 and 3961 (Fig. 3.30). Ditch 3961 was recut by gully 4622 at the north-west end. Gully 4622 diverged north-eastwards and turned to end 1m short of ditch 4527, and immediately west of the end of ditch 4383. During this period there might have been access between enclosures 4617 and 4518.

Subsequently, however, the gap between 4619 and 3961 was reduced by a shallow length of gully

Plate 3.23 Working shot looking west along ditch 4617

Plate 3.24 Aerial photograph of curving ditch 4618 and banjo enclosure, looking north-east

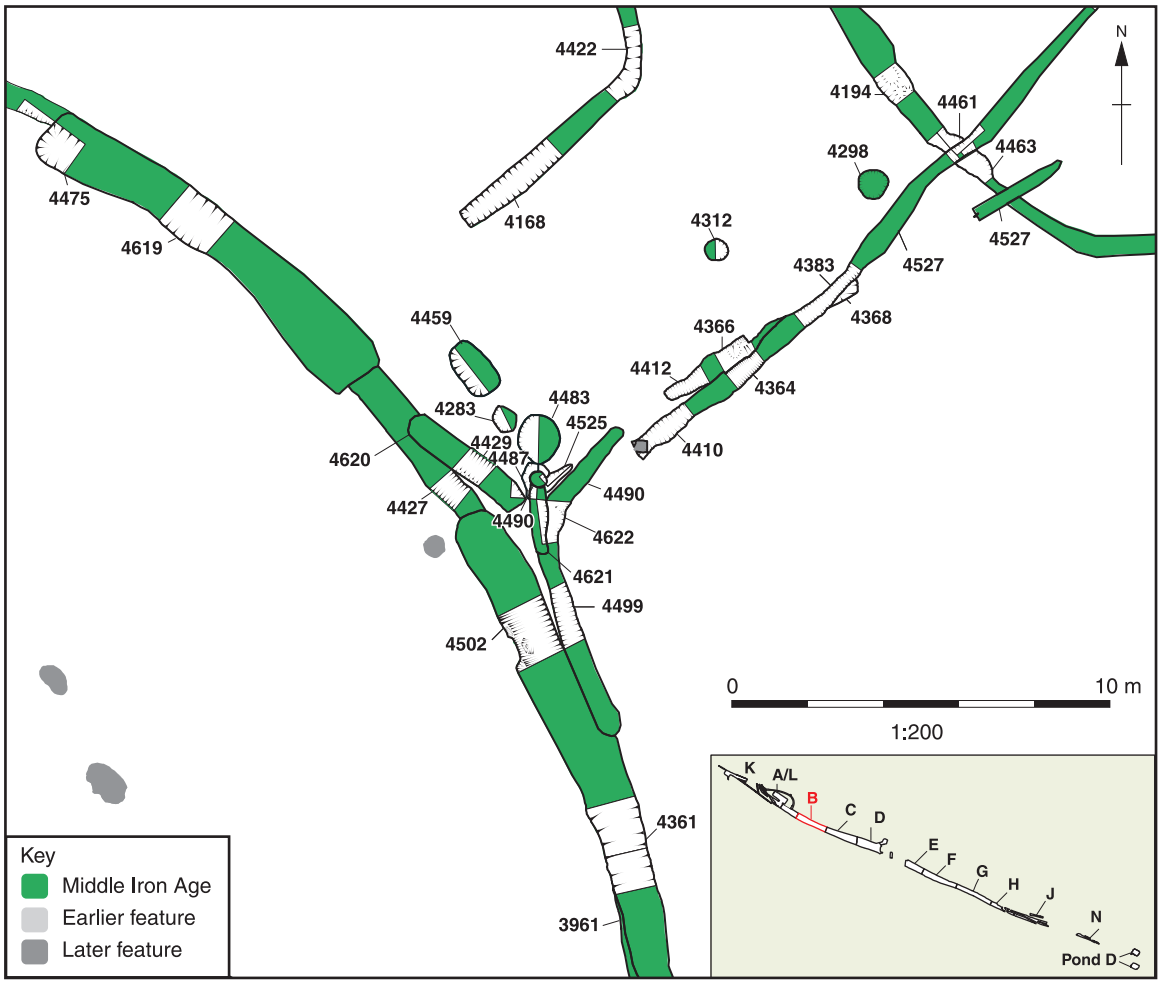


Fig. 3.30 Detail of south-west end of enclosure 4518 and the junction with curving enclosure 4617

(4620), which cut obliquely across the original enclosure ditch. This produced only animal bone and a fragment of fired clay. Gully 4622 was also recut at the corner on the south-west side by shallow gully 4621, which followed the south edge of 4622 northwestwards and continued beyond the corner for up to 1.5m, and was subsequently truncated by a series of shallow pits (Fig. 3.30). The gullies and pits overall appeared to block the eastern part of the entrance and this may have been a final modification before the enclosure went out of use.

From its position it is probable that enclosure 4518 was added to enclosure 4617, and the ditches of 4518 may have stopped short of an external bank, although the size of the original ditch of 4617 is unlikely to have generated upcast sufficient to account for the gaps. Alternatively the gaps at the end of the funnel may have been intended for access to the north-west and south-east, but not to enclosure 4617. As there was a gap between the deeper recuts (4619 and 3961) of enclosure 4617, it is more likely that enclosure 4518 was added when, or after, these were dug. At this point the upcast from the recut ditches of 4617 could have provided an external bank against which the ditches of enclosure 4518 ended, or there may have been access available in all directions. Ditch 4622 may then have been added to block off access to the south-east, leaving the north-west side open, or may simply have skirted the end of an existing bank.

Associated features

The main part of the interior of enclosure 4518 contained only a single pit (4172) and a possible tree-throw hole (4003) (see Fig. 3.28). The circular pit was located adjacent to gully 4529, and was 1.44m in diameter and 1.1m deep. Its six fills contained deliberate dumps of material including middle Iron Age pottery and fragments of fired clay in small quantities, as well as animal bones, particularly sheep. Overall pit 4172 appeared to have been used for the disposal of domestic rubbish, although little direct evidence of habitation was found in the vicinity of the enclosure.

A further sequence of two probable middle Iron Age pits (4458 and 4176) cut enclosure ditch 4518 at the easternmost point. The only other internal features in enclosure 4518 were two high status

Plate 3.25 Pit 4011 half-sectioned with dark fills at top

cremation burials (4298 and 4312) within the neck of the enclosure on the eastern side. These were late Iron Age and are therefore discussed below.

A number of circular pits containing middle Iron Age pottery, similar to 4176, were found in the vicinity of enclosure 4518. These included pits 4011 (Plate 3.25) and 4148 south-east of the enclosure and pit 4400 to the north-west (see Fig. 3.28). Three chalk weights, all with suspension loops, two of them oblong and the third triangular, came from pit 4011 (see also Shaffrey this vol. and Fig. 3.72), while a single flat linear 'potin' coin was found on the stripped surface of pit 4148, and was presumed to have derived from the upper fill. Such potin coins are dated to the end of the 2nd or first half of the 1st century BC (Hobbs 1996, 16–17), and Holman believes that these variants are late in the Class I series, perhaps dating as late as the mid 1st century BC (see Holman this vol. and 2000, 208). A second very similar potin came from the lowest fill of oval pit 4400, north-west of enclosure 4518.

The four pits just described all lay in a rough line, and shared finds that suggest placed deposits. Two (4176 and 4011) both contained base sherds with crosses, 4011 has the chalk weights, while 4148 and 4400 both contained a potin coin. Pits 4148 and 4400 also both contained a fish bone (indeterminate from 4148, and a plaice or flounder precaudal vertebra from 4400; identifications by R Nicholson), the middle fill of pit 4400 contained a large deposit of fired clay in charcoal, while the uppermost surviving fill of pit 4011 contained much charcoal and burnt flint. Larger pit 4172 within enclosure 4518 had a basal fill of charcoal and charred cereals. These deposits strongly suggest that the area of enclosure 4518 was the focus for placed deposits in the middle–late Iron Age, perhaps explaining why this was the location chosen for the high status burials of the late Iron Age (see below).

Enclosures 3966/3695 and ditch 4723/2

East of enclosures 4518 and 4617 was another curvilinear enclosure (3966), with a ditch (4723 recut as 4722) running north from it, and a group of four-post structures to the east (Fig. 3.28). There was also a scatter of large storage pits in this area. Ditch 3966 continued beyond the excavation area, but no obvious continuation was found in the HS1 works. The enclosure was smaller than 4617 to the west, forming a tighter arc 33m across. It is suggested that ditches 3966 and 3965 were both part of the same enclosure, and that this was approximately circular.

The northern side of the enclosure was formed by ditch 3966, which varied from 0.36 to 1.08m wide and from 0.13 to 0.3m deep, with a flat base. The ditch generally contained a single silting fill that produced 107 sherds of pottery weighing 607g. Much of this was diagnostically middle Iron Age in date. Animal bone was found in some quantity and included hare as well as the standard domesticates, one of only two hare bones on the site. A fragment of copper-alloy edge binding was also recovered (SF 402).

The second ditch (3965) was only visible for 6.5m, running SSW from a terminus opposite that of 3966 and continuing beyond the A2 scheme. The gap between the termini was 5.75m, which presumably

constituted an entrance to the enclosure. Ditch 3965 yielded only a single sherd of severely worn prehistoric pottery, plus charred weeds and wild seeds.

Two short lengths of narrow gully (4698 and 3967) radiated from the arc of 3966 to the north-east and east respectively, and are thought to be contemporary with the enclosure. There was a gap some 1.3m wide between the end of gully 4698 and that of ditch 4723, which continued to the north. This was probably for an entrance. Ditch 4723 ran approximately south-north, but curved slightly to the west. The ditch was *c* 37m long, 0.6–0.9m wide and 0.25m deep. Although six sections were dug across the ditch it produced only five sherds of pottery, one of which was middle Iron Age, animal bone and an iron nail.

Ditch 4723 was recut by ditch 4722 on the same alignment on the eastern side towards the northern end, over a distance of 12m. This feature was wider (1.1m) and deeper (0.4m), but had a similar profile. Only two sherds of pottery and pig bone were recovered from 4722, one sherd being late Iron Age. Ditch 4723 is interpreted as middle Iron Age in origin, as its line mirrors that of large boundary 4615 to the west. The recut 4722 is likely to have been dug in the middle–late Iron Age, and so spans both phases.

A number of pits were found within enclosure 3966, with some, such as pit 4580, being quite substantial (4.05 x 2.65 x 0.4m deep). None produced significant quantities of finds. The enclosure ditch (3966) was also cut by a complex of three intercutting pits (group 3968) to the north and by pit 4591 on the east. Group 3968 contained over 600g of pottery, much of which (including two bases decorated with burnished crosses) dated to the middle Iron Age, although a possibly Roman sherd was found in one of the upper fills. Animal bone was plentiful, but consisted only of bones of cattle, pig and sheep/goat. Fired clay was recovered in small amounts and a small deposit (4740) close to the base of 3607 yielded abundant hawthorn group charcoal and a few wild/weed seeds. The irregular profile and size of this feature perhaps suggest a quarry pit later used for occasional dumping. It is likely that most of the feature postdated the use of the middle Iron Age enclosure. The upper fills of the pit group were cut into by two smaller pits, 3630 and 3608, which clearly contained dumped material from an oven or hearth. Only four sherds of pottery came from 3630, which could have been either middle or late Iron Age. Pit 3608, however, produced over 1kg of late Iron Age pottery, and was probably associated with enclosure 4779 (see below).

Circular pit 4591 to the east measured 2.2m in diameter and 0.45m deep, and had removed the relationship between enclosure 3966 and narrow SW-NE aligned gully 3967. It contained two thick dumps of domestic rubbish (4593 and 4594) with significant quantities of middle Iron Age pottery, together totalling 174 sherds (1.2kg), and smaller collections of fired clay. Animal bone was prolific, especially in fill 4594, although only standard domesticates were present; some of the bone displayed clear evidence of butchery. A copper-alloy nail, an iron collar and a fragment of brick, possibly Roman, came from fill 4594.

An area of colluvium immediately east of enclosure 3966/ditch 4723 partially obscured and confused an area of archaeology that comprised a ditch, pits, a possible fenceline and several four-post structures. The confusion lay in the similarity between the underlying silty clay subsoil and the colluvium, so that some features belonging to probable structures appeared to cut the colluvium, while others appeared to be sealed by it. In addition, colluvial material was probably accumulating over a considerable period; Roman pit 7792, for example, was found beneath a thin layer of colluvium while several probable Iron Age features cut into it. As such, stratigraphic dating of features in this area was difficult. At least one four-post structure was, however, dated to the middle Iron Age by radiocarbon dating, and from their position and character it is likely that others also fell into this period (see Fig. 3.28).

A radiocarbon date range of 360–50 cal BC (NZA 32310) was obtained from charred grain recovered from four-post structure 7964. This structure was 2.5m square, and consisted of postholes 0.4–0.5m in diameter and of a similar depth (Fig. 3.31). This was the only posthole structure within this area to produce charcoal containing charred grain: a single charred wheat grain and an indeterminate cereal grain. Pig bones were also recovered. Four-post structure 7189 to the south-east was also *c* 2.5m square, but the postholes were less regular. This produced only animal bone and flint. Group 7190 west of 7964 was irregular in shape, and although a further posthole was sought west of 7834, none was found. Group 7191 south of 7964 consisted of five postholes arranged in a rectangle 2.1m x 1.1m, with the fifth posthole to the south.

A possible alignment (7188) of five small pits or postholes included one Bronze Age cremation burial (7758), and *in situ* burning in one of the other four undated features, so all of these are dealt with in the later Bronze Age section (see Chapter 2). Ditch 7963 was *c* 23m long, although the northern end was not properly defined and may have been truncated away. The ditch was 0.6m wide and 0.35m deep containing up to three fills. This produced only structural fired clay and sheep/goat bone but no dating evidence.

The pits east of enclosure 3966 and ditch 4723 were of varied dates, but large oval pit 4901, immediately north of group 7191, and pit 7911 to the north-west both produced scraps of prehistoric pottery and 4901 yielded abundant charcoal. These may have been contemporary with the four-post structures.

Eastern Site B/Western Site C

East of the trackway there was a further area of middle Iron Age activity straddling the Site B/Site

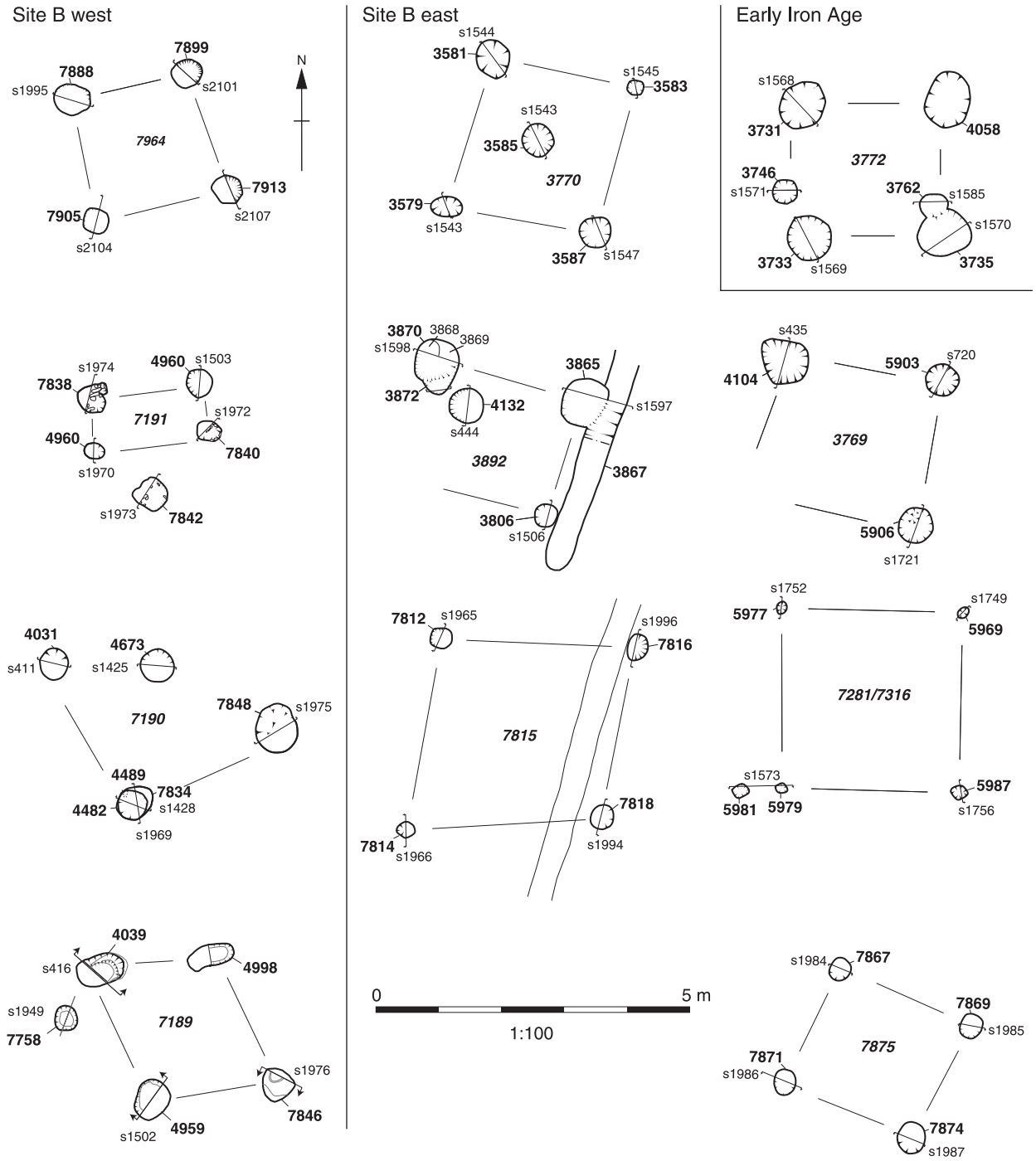


Fig. 3.31 Plans of four-post structures in Sites B and C.

C boundary, comprising enclosure and trackway ditches, numerous pits, four-post structures and a crouched inhumation burial (Fig. 3.32). Some of the ditches were modified in the late Iron Age, showing continuous occupation in this area.

Ditches

Ditches 7193, 7194 and 5910 ran west-east from the south edge of the site, and between them appeared to form the eastern boundary of the middle Iron Age activity in this area, with only a single possible contemporary pit (5265) beyond it (Fig. 3.32). Ditch 7193 lay entirely within the excavation, and ran for 45m, slightly curving northwards at its western end. It may have been added to a shorter ditch 7987 just to the west that contained early–middle Iron Age pottery.

Ditch 7193 was *c* 1.2m wide and 0.85m deep, containing 16 sherds of pottery, some of which appeared to be middle Iron Age. Other finds included animal bone, flint and fired clay. Enclosure ditch (7194) ran parallel to ditch 7193 some 4m to

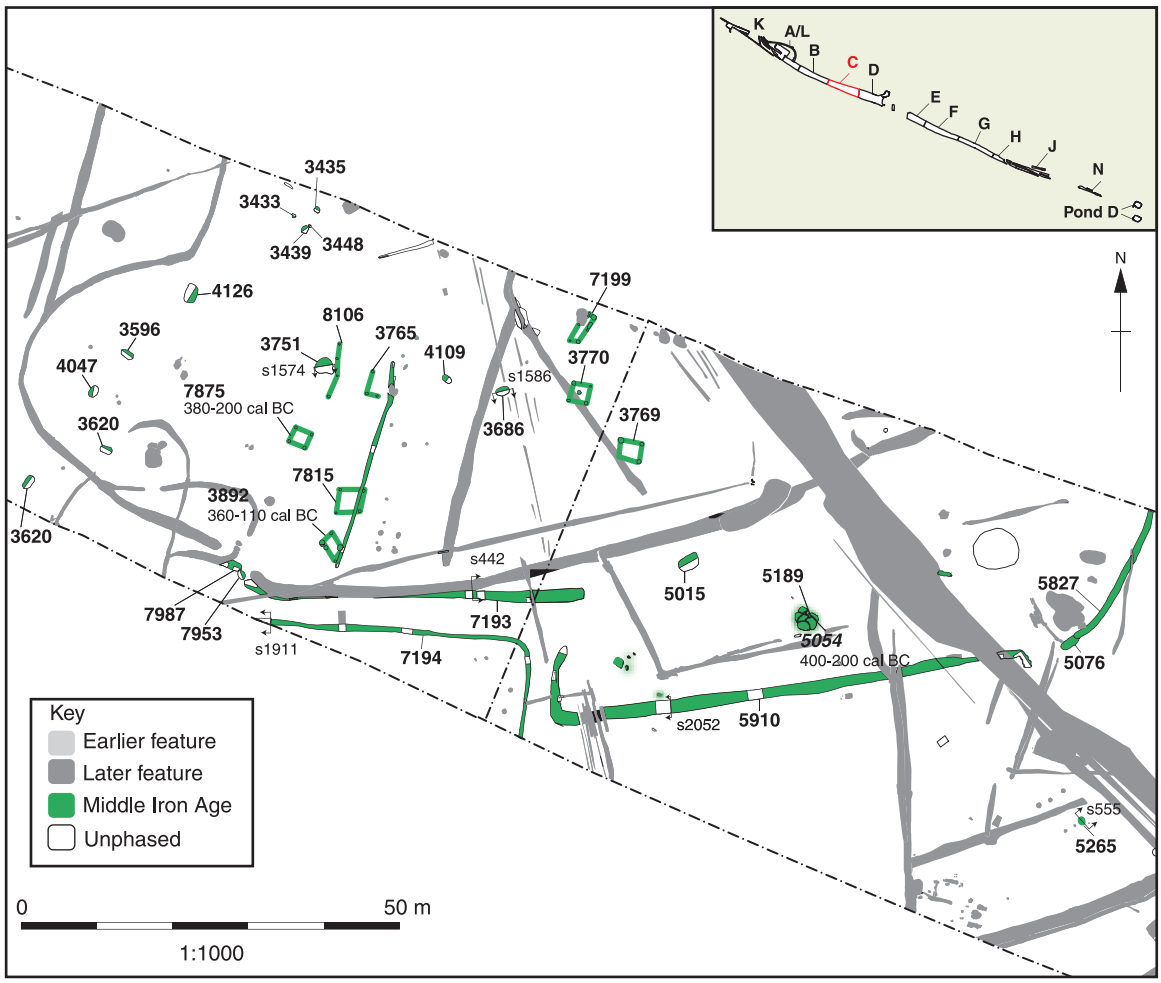


Fig. 3.32 Plan of the middle Iron Age settlement east of the trackway in Sites B and C

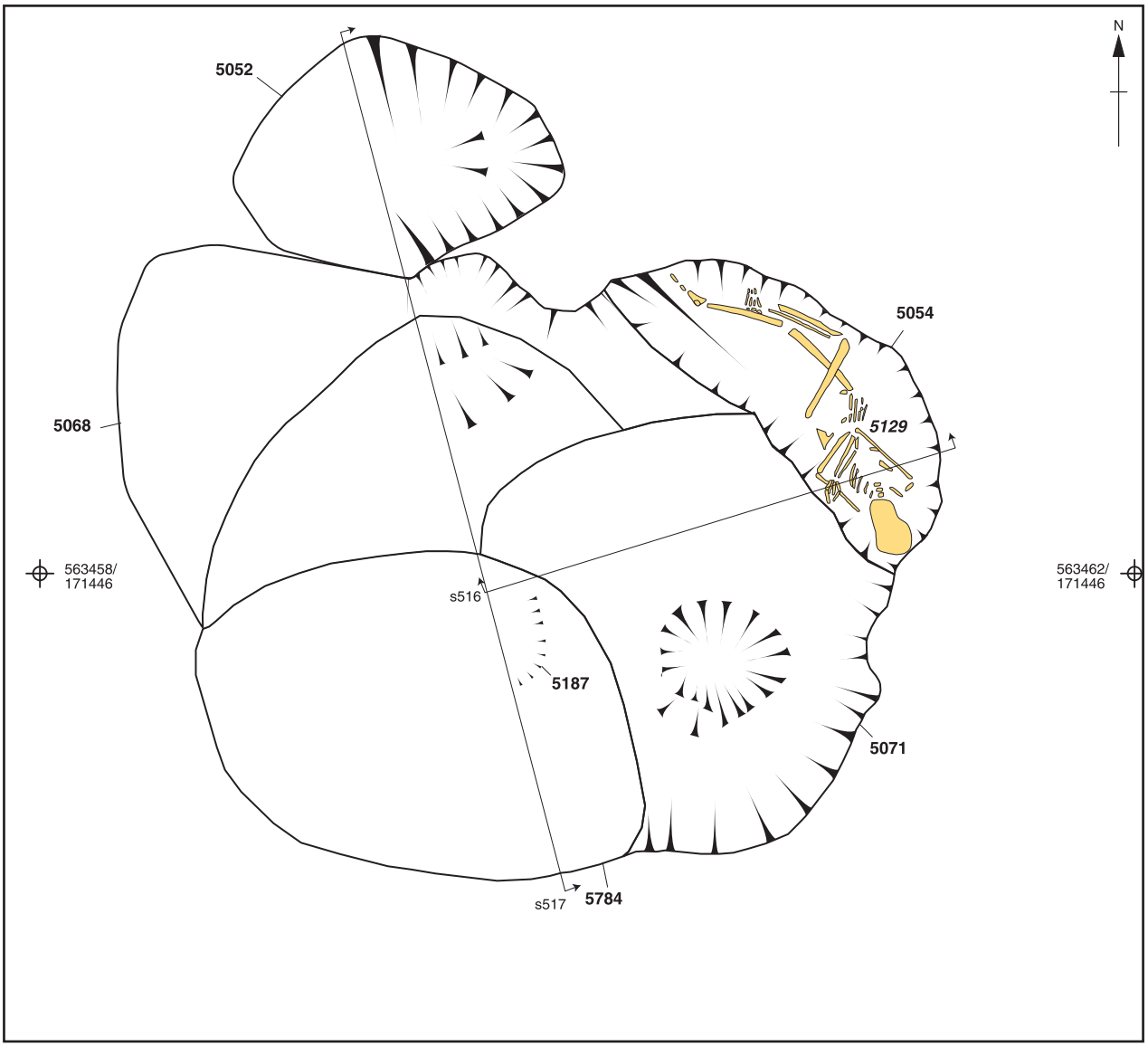
the south, before turning southwards at its eastern end and continuing beyond the southern limit of excavation. This feature was probably part of a rectilinear enclosure, although this was not visible as a cropmark, and was not picked up as far south as the HS1 works. The ditch was less substantial than 7193, measuring *c* 1m wide and 0.6m deep, and contained 31 sherds (138g) of middle Iron Age pottery and a few fragments of animal bone and fired clay. Two pairs of postholes were excavated inside the presumed enclosure, but none contained any finds.

Ditches 7193 and 7194 may have marked a corridor or trackway leading to a larger enclosure bounded on the south by large ditch 5910. This began in line with the end of ditch 7193 and the north side of enclosure 7194, and ran south parallel to 7194 for 10m, before turning ENE-WSW. It then ran for a distance of 63m, ending in a short southern projection 3m long. The ditch was up to 1.8m wide and 0.68m deep but was heavily truncated at its eastern end by medieval and post-medieval features. Finds from ditch 5910 comprised Iron Age pottery, animal bone, fired clay and flint. The pottery assemblage totalled 107 sherds (348g), most of which were small sherds in late Bronze Age/early Iron Age fabrics, but also included a few sherds in middle Iron Age fabrics. Environmental evidence from 5910 comprised a few grains of charred wheat and other cereals and of vetch/vetchling.

The western arm of ditch 5910 and enclosure 7194 were 3m apart, suggesting another funnel or trackway, and coincided with the eastern terminus of 7193. Overall this suggests that the ditches were broadly contemporary forming part of a large enclosure sequence. Some 5m beyond the east end of 5910 was pit 5076, cut by ditch 5827. The ditch, which was of similar size and depth to 5910, appears to represent a continuation of this boundary with an entrance between them.

Pits

Whilst the majority of discrete middle Iron Age features were located to the north-west of this ditch series one complex feature (5189) including an inhumation (skeleton 5129) lay only 6.7m north of ditch 5910 (Figs 3.32 and 3.33). Pit 5189 measured 3.15 x 2.7m at the surface, and had an irregular profile, with up to five different scoops (5052, 5068, 5071, 5184 and 5187) in the bottom measuring from



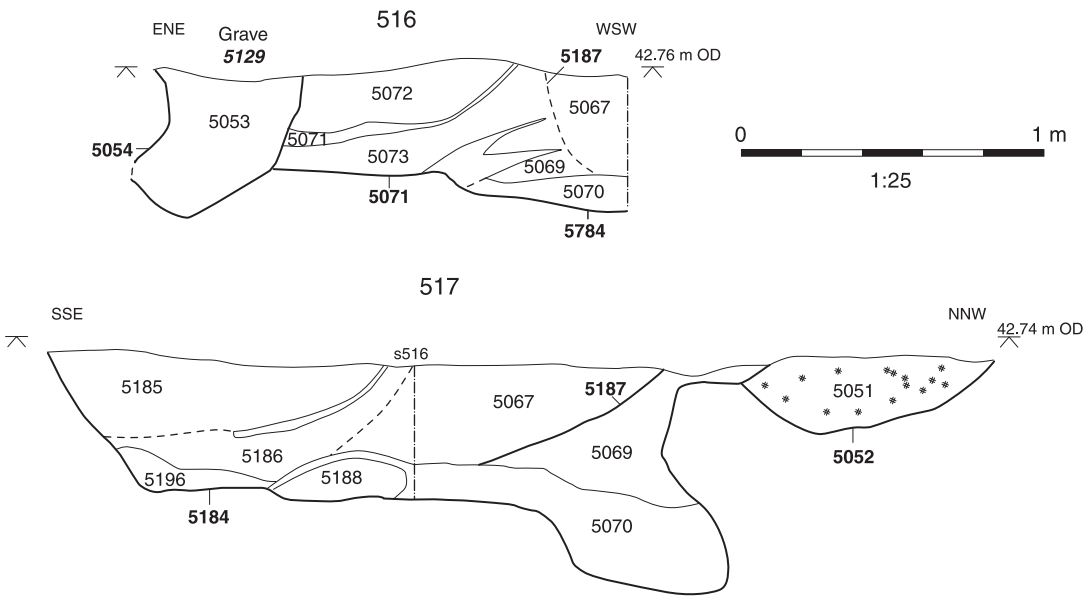


Fig. 3.33 Plan and section of grave 5054 with skeleton 5129 in pit 5189

Plate 3.26 Skeleton 5128

1.2 x 0.65m to 2.2 x 1.2m in plan and varying from 0.25–0.7m deep. These may represent a sequence of intercutting pits, but the fills suggest rather a rapid sequence of deliberately dumped backfills across the whole of the feature (Fig. 3.33). The dumping clearly slumped subsequently into the various scoops, creating localised hollows whose fills varied considerably. Only two of the scoops, 5052 and 5071, contained finds, producing small amounts of pottery in fabrics current from the late Bronze Age to the middle Iron Age. Scoop 5052 also contained animal bone, 129g of briquetage and 449g of fired clay, plus charred wheat grains and oak charcoal.

Grave 5054 lay along the eastern side, and was 1.4m long, 0.6m wide and 0.58m deep, containing the remains of a flexed individual lying on the left side, orientated north-south (Fig. 3.33). The skeleton (5129) was not identified until the bones appeared towards the bottom, but it was suggested in the section drawing that the grave had been cut through the earlier fills, and so was the latest event within this feature. Given the unusual curving shape of the grave cut, however, it is equally possible that the body was deposited into the open feature, which was then filled all at once. Some sub-rectangular pits with similar profiles were identified at Danebury as partly dug pits (Cunliffe and Poole 1991, 159). The bones were badly preserved, making ageing and sexing difficult, but were identified as a probable female aged 25–30. There were no accompanying grave goods, but bone from the skeleton gave a radiocarbon date with a range of 400–200 cal BC (NZA 30160), placing it in the early–middle or middle Iron Age.

A single pit (5265) was located 25m south-east of ditch 5910 (Plate 3.27). The pit measured 1.23 x 0.9 x 1.24m and contained deliberate deposits of charred material in the upper fills (5268, 5271, 5272) (Fig. 3.34). The pit produced 30 sherds of late prehistoric pottery (70g), including some specifically middle Iron Age material. Other finds

Plate 3.27 Pit 5265 half-excavated

included structural fired clay, bone fragments, and a little iron and slag. The location of the pit, removed from other activity and apparently beyond the settlement boundary, and the presence of charred material and slag may indicate that this feature had an industrial purpose.

Numerous pits were also located north or north-west of ditch 7193, some of which lacked any pottery. Most of the pits were, however, middle or late Iron Age, and it is likely that the undated examples were also contemporary with the ditched settlement.

As outlined above there are particular difficulties separating features belonging to the middle and late Iron Age, therefore the pits could fall into either phase. However, those features described below contained diagnostic middle Iron Age pottery. The details of these features are summarised in Table 3.4. The pits varied in size and contents, but most contained the typical contents of pottery, fired clay and animal bone.

Pit 3751 was among the largest of pits in this area, and contained a sequence of seven fills comprising natural silting or erosion deposits (3752, 3754, 3755) interspersed with lenses of charcoal-rich material (3753, 3756) containing burnt flint, and in the case of 3756 a larger amount of fired clay (Fig. 3.33). Finds from the pit were scarce, comprising 20 sherds of pottery, animal bone and fired clay.

Pit 4109 lay some 15m east of 3751, and was especially shallow, containing a burnt primary fill overlain by a thicker deliberate deposit, which comprised the remains of a pair of human feet, together with 11 sherds of middle Iron Age pottery, fragments of pig bone and fired clay. It is unclear whether the bones were part of a truncated skeleton, or were all that had been deposited. This was perhaps the most unusual find of human bone from the scheme, although it was not an uncommon practise to deposit disarticulated human remains in the Iron Age.

Pit 3686 further east was somewhat larger than 4109 with four fills (Fig. 3.33). Basal fill 3760 contained two triangular loomweights/oven bricks and a fired clay pedestal base, a fragment of greenstone saddle quern, briquetage and animal bone.

Table 3.4: Middle Iron Age pits in eastern Site B

Cut No	*No Fills*	*Length (m)*	*Width (m)*	*Depth (m)*
3433	1	0.5	0.5	0.15
3620	3	2.1	1.05	0.4
3686	4	1.8	1.2	0.65
3751	7	2.4	2.2	0.7
3833	4	1.6	1	0.6
4047	2	1.45	1.15	0.35
4109	2	0.9	0.65	0.2

Table 3.5: Iron Age posthole structures in eastern Site B

Group No	*No Posts*	*Length (m)*	*Width (m)*	*Orientation*
7875	4	2.35	2.2	East-west
7815	4	3	2.9	NE-SW
3892	4	2.6	2.4	NE-SW
3770	5	2.5	2.4	North-south
3769	3	2.5	2.4	North-south

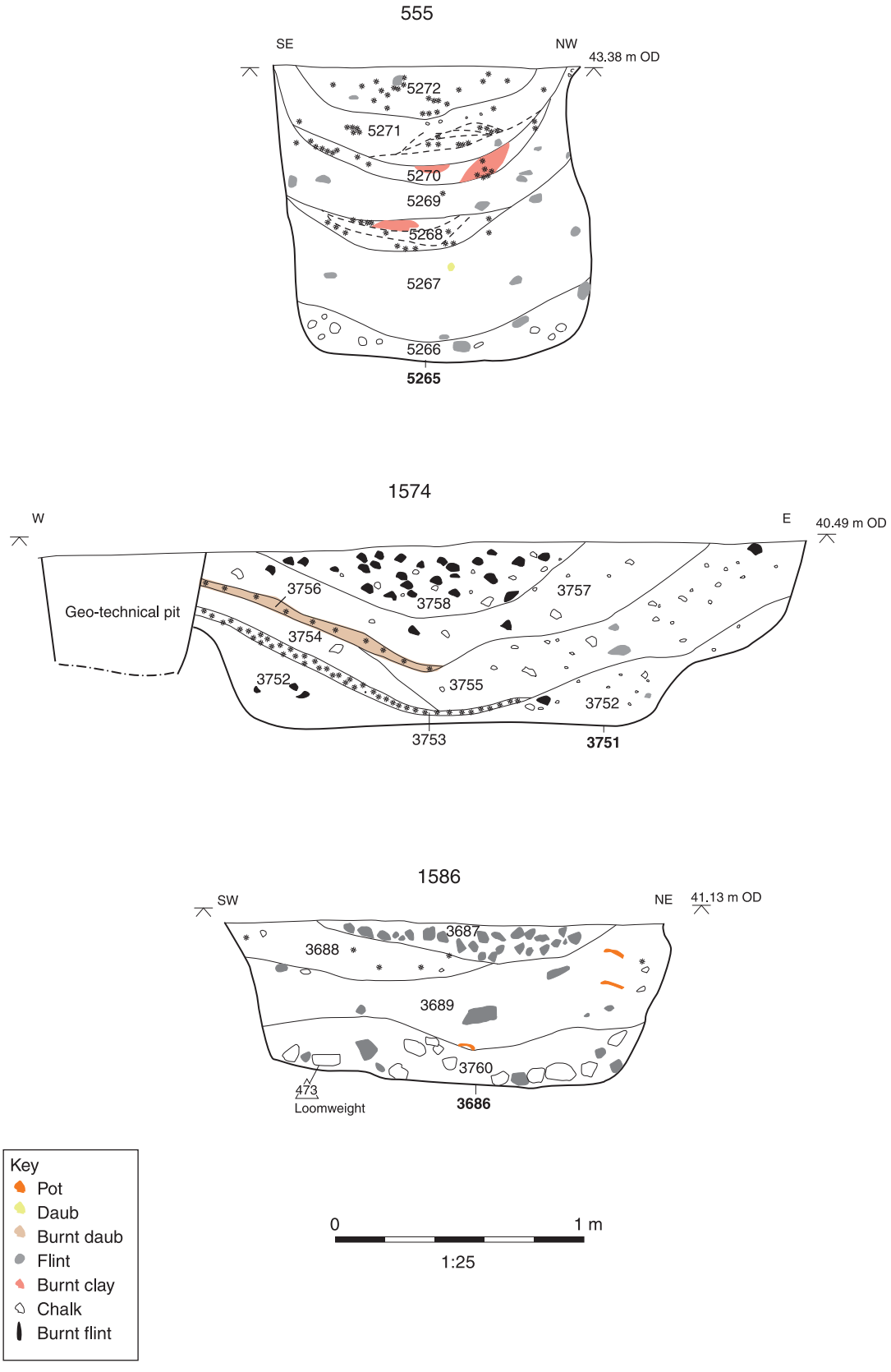


Fig. 3.34 Sections of pits 5265, 3751 and 3686

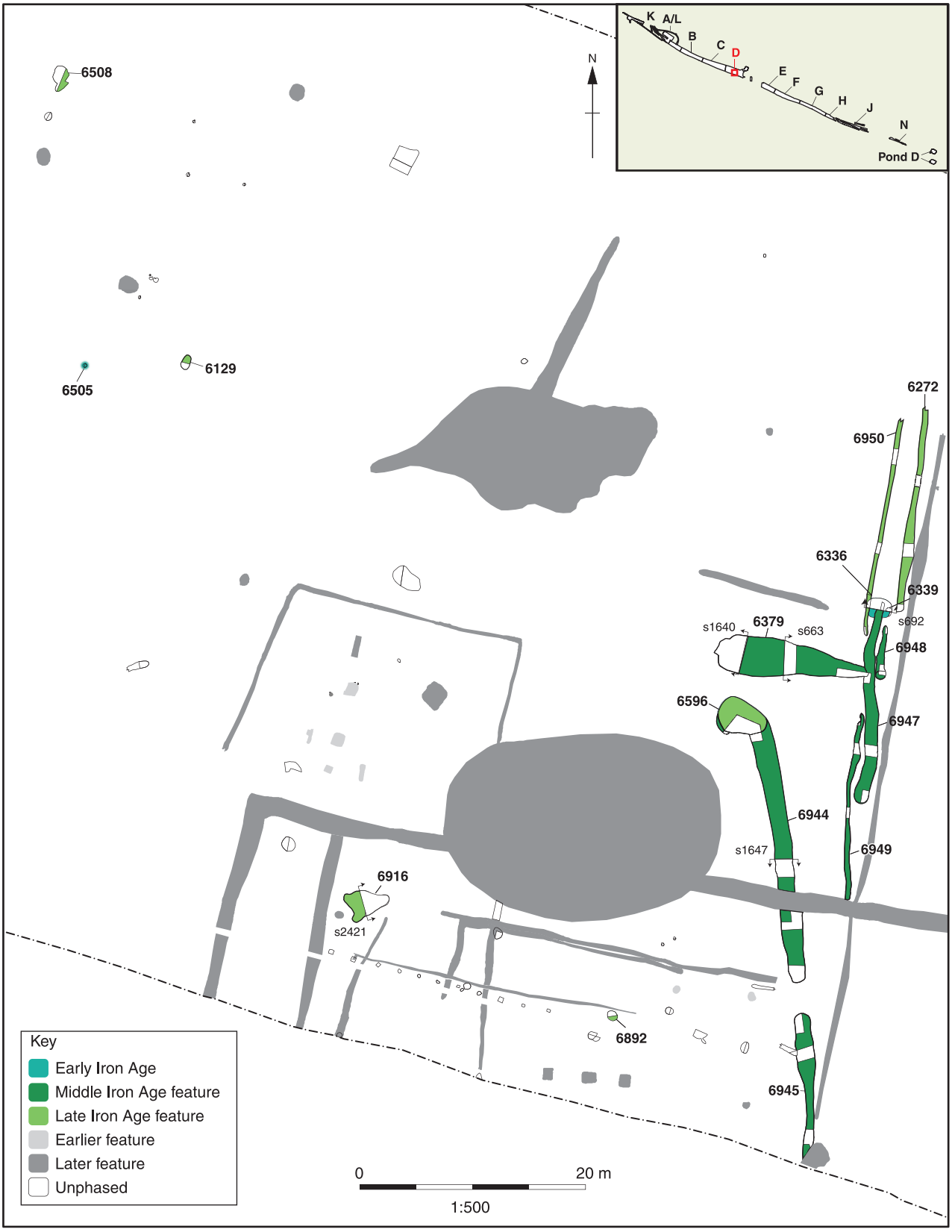


Fig. 3.35 Plan of Iron Age features on Site D

This was overlain by a second large dump (3689) that produced a triangular loomweight/oven brick and two fragments of possible sandstone saddle quern, as well as animal bone. The two upper fills had fewer finds, although three iron objects, two fragments of nail stem or spike and an unidentified object were recovered from the top fill 3687. The presence of large objects in some quantity within the pit seems to suggest the pit was deliberately and rapidly backfilled, reinforced by the large quantity of chalk rubble in upper fill 3687.

Four-post structures and other postholes

A number of probable postholes were also scattered around this area, most falling into recognisable groups or structures. This included five possible four post-structures (7875, 7815, 3892, 3770 and 3769; see Table 3.5 and Figs 3.31–2), a posthole row (8106), an L-shaped group (3765) and a rectangular group (7199).

Four-post structure 7875 was the most regular, being square with four similar-sized postholes. Structure 7815 was slightly skewed, and it is alternatively possible that its western pair of postholes were part of a row of four (7812, 7814, 7887 and 4132) continuing south, and including some thought to belong to structure 3892. This latter structure was the least convincing, forming a trapezoid rather than a square or rectangle, and with only two large postholes. This should perhaps be viewed instead as a two-post structure. Only three postholes belonging to structure 3769 were found, the fourth being believed to have been removed by ditch 7197, but the surviving three were all substantial, are at right angles and form sides of equal length, suggesting a convincing square. There were five postholes in Structure 3770, four of which form a square, with the fifth posthole in the centre. This has a similar orientation and size to structure 3769, and is therefore probably genuine.

A single sherd of late prehistoric pottery came from structure 7815, animal bone from 7875 and 3769 and fired clay from 7875. A charred seed from posthole 7871 in structure 7875 and a single charred grain from posthole 3806 in possible structure 3892 were submitted for radiocarbon dating, returning dates of 380–200 cal BC (NZA 32311) for 7875 and 360–110 cal BC (NZA 32306) for 3892 respectively. One posthole of 3769 was probably obliterated by late Iron Age ditch 7197, and structure 3770 was also crossed by this ditch, suggesting it too was earlier. A middle Iron Age date for these therefore seems likely.

The post-row (8106) consisted of four postholes just east of pit 3751, running north-south in a very slight arc for 7.5m. The postholes contained only fired clay, charcoal and fuel ash slag. Group 3765 was an L-shaped arrangement of three postholes, none of which produced any finds, east of the posthole row and measuring 3.4 x 1.7m. Two of these were in line with the western side of possible four-post structure 7815, and it is possible that they form part of a fenceline, some of whose postholes did not survive.

Group 7199 comprised six postholes and a small number of pits north of four-post structure 3770. These formed a roughly rectilinear shape, measuring 4.7 x 1.7m, around the east side of large pit 3690. Pit 3690 and posthole 3702 both produced late prehistoric pottery although this may have been residual. Other finds included part of a possible iron gouge and animal bone.

A further probable four-post structure (7316) was located at the eastern end of Site C in the area previously occupied by both earliest and early–middle Iron Age activity (see Figs 3.9 and 3.37). The postholes produced wheat and other cereal grains, possibly reinforcing the four-poster granary interpretation; environmental samples also yielded hazelnut shell, cleaver and charcoal. The group contained 29 worn sherds of pottery in fabrics characteristic of the late Bronze Age and early Iron Age, small amounts of fired clay, flint and animal bone. Unusually for this period this also included (unidentified) fish bone. A radiocarbon date of 380–190 cal. BC (NZA 32316) was obtained from charred grain from fill 5986 in posthole 5987.

Site D

A single isolated ditch on Site D, almost 200m from the nearest contemporary activity on Site C, was thought to date to the middle Iron Age (Fig. 3.35). The large segmented ditch (6944/6945) extended approximately northwards from the southern edge of excavation, and it is likely that ditch 6249, found during a watching brief south of Site D was a continuation. The ditch clearly became more truncated towards the south of the site, measuring 1.5–2m wide and 0.75m deep at its northern limit and only 0.7–1.3m wide and 0.35–0.65m deep further south.

Occasional localised dumping was found in the northern segment of the ditch, most notably in a fill rich in cattle bone (6563) and a later localised deposit (6554) of partially fired clay (490g) and burnt material. The upper fills of the ditch contained more finds than the lower ones. A total of 50 sherds (385g) of middle Iron Age pottery was recovered from the ditch. Other finds included animal bones, further fired clay and fragments of copper-alloy. The ditch was cut by Roman ditch 6941, which also contained middle Iron Age pottery at this point, and the northern terminus was cut by large pit 6596. This feature measured 4.5 x 3.2 x 0.9m deep and contained late Iron Age–early Roman pottery (see below).

THE LATE IRON AGE

Late Iron Age activity on the A2 scheme was widespread. The settlement established in the middle Iron Age on Site B continued, and the major land boundary in Site L gained a continuation in Site A.

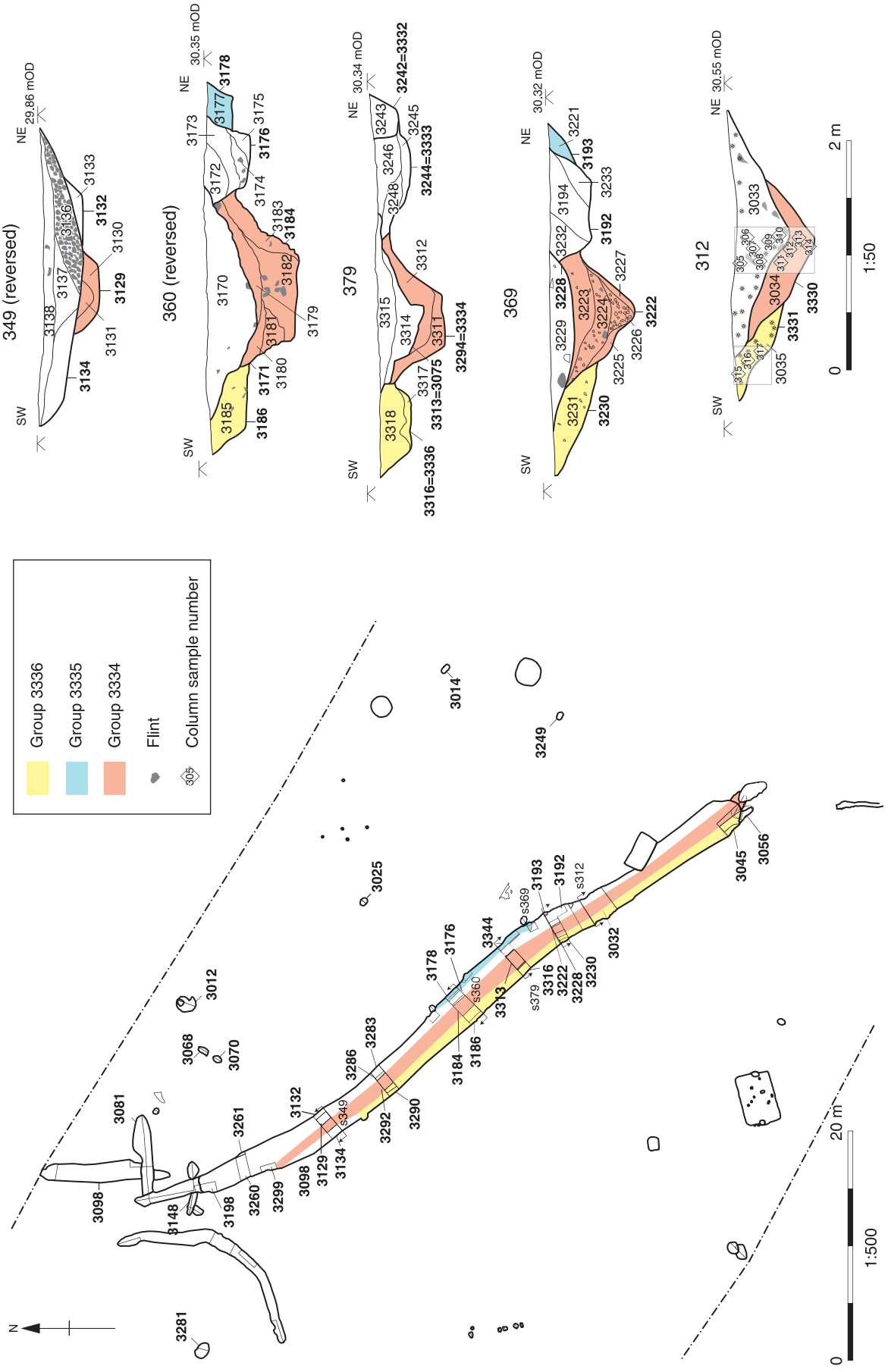


Fig. 3.36 Detailed plan of boundary ditch and sections showing late Iron Age phases on Site A

A new settlement was established at Pond D North. A combination of stratigraphic sequences, ceramic and other finds, and spatial association has enabled the broad sequence of activity to be worked out, despite the absence of diagnostic finds assemblages in many of the features.

Sites L and A

Ditch 13161 on Site L was probably cut in the middle Iron Age (see above) and continued through to the Roman period (see below) (see Fig. 3.5). The ditch was a significant boundary in the late Iron Age (*c* 3m wide and 1m deep), but no diagnostically late Iron Age pottery was recovered from it. In contrast, it is likely that the long ditch crossing Site A north-west to south-east, which may have acted as a continuation of the Site L boundary, was late Iron Age in its inception (see Fig. 3.5, and Fig. 3.36). The earliest elements of the sequence were ditches 3336 and 3335, which had no stratigraphic relationship to one another (Fig. 3.36). The ditches were traced over distances of 40 and 15m respectively, but 3335 in particular may have been longer. It is possible but unlikely that these were contemporary rather than successive boundaries. Only one virtually complete cross-section of 3336 was obtained (Fig. 3.36 Section 379), and none of 3335, but it is clear from the surviving profiles that the gap between the ditches could not have been much over 1m at ground level, and probably less. The ditches could not therefore have functioned effectively as defining a trackway, although it is possible that they ran either side of an upcast bank.

Ditch 3336 was cut by larger ditch 3334, which was a minimum of 45m long, up to 1.7m wide and 0.7m deep. The ditch contained between one and five chalk-rich fills, all of which appeared to be the result of natural erosion and silting. In particular, the lower fills more often seem to represent collapsed bank material and the upper fills natural silting. The position of the bank is problematic as the collapse seems to have entered from both sides. The only finds retrieved from the ditch were a heavily worn sherd of late prehistoric pottery and unidentified animal bone fragments.

A series of smaller features (3098, 3081, 3148) were located at the northern end of the intercutting ditch sequence. These were cut by Roman ditch 3356 and, although undated, are also likely to be late Iron Age. Gullies 3081 and 3148 may have been redefining this entrance between earlier ditches 3334 and 3098, before the boundary was extended across it in the Roman period (see Chapter 4).

A number of pits were located in the vicinity of the boundary ditch (Fig. 3.36). Shallow pits 3014 and 3025 to the north-east of the ditch both produced sherds of late Iron Age pottery; 3025 also contained cattle bone. The remaining pits in this area included three very small features (3068, 3070 and 3249) and a larger pit (3012) which produced only fragments of animal bone (3249) and a tiny sherd of medieval pottery (3068). Despite this the character of the pit is similar to other prehistoric pits in this area, and the scrap of pottery is probably intrusive. To the west of the ditch, pit 3281 and natural hollow 3211 also produced sherds of late prehistoric pottery and animal bone.

Sites B and C

The late Iron Age activity on Sites B and C represented a development of the middle Iron Age settlement and therefore fell generally into the same three zones, although there was a slight spatial shift.

Modifications to the trackway crossing central Site B

The cobbled trackway was cut across by a complex of ditches on the south side of the excavation (Fig. 3.37). These had very few finds. One of the stratigraphically earliest ditches (7971) followed the alignment of the trackway for nearly 32m, mostly cutting its western edge. The existence of a patch of the cobbled surface west of the ditch (layer 3955) however shows that this ditch was not contemporary with the trackway. The ditch survived 1m wide and 0.2m deep but produced only a single sherd of worn prehistoric pottery. This ditch was cut by all the ditches with which it intersected, and may be later middle Iron Age or late Iron Age.

Almost all of the ditches that cut 7971 were on a north-north-east alignment, or ran eastwards beyond it, such that the trackway could not have continued to function. Some of these ditches (groups 7972/3, 7974 and 7975) contained only middle Iron Age or indeterminate later prehistoric pottery. Although this material was worn, the first ditch to contain late Iron Age pottery was 7977, which cut 7975, perhaps suggesting that this part of the trackway ceased to function during the middle Iron Age.

The central zone of activity in Site B in the late Iron Age comprised a series of generally short lengths of sinuous, intercutting ditches or gullies that cut the cobbled remnants of the southern part of trackway 7980. A number of these ditches continued beyond the southern edge of excavation and may have been linked to the northern part of the late Iron Age/early Roman enclosure to the south within the HS1 works. Many of the gullies in this area were shallow (Fig. 3.37), and most were filled with soil derived from the adjacent hollow, very similar to the overlying colluvium, making them difficult to distinguish. The relationships between them were therefore not always clear, and few contained diagnostic pottery, but a plausible sequence is described in the digital report.

The area bounded by ditches 7975 and 8102 was extended in the early Roman period to form a ditched trackway running north-north-east (see Chapter 4).

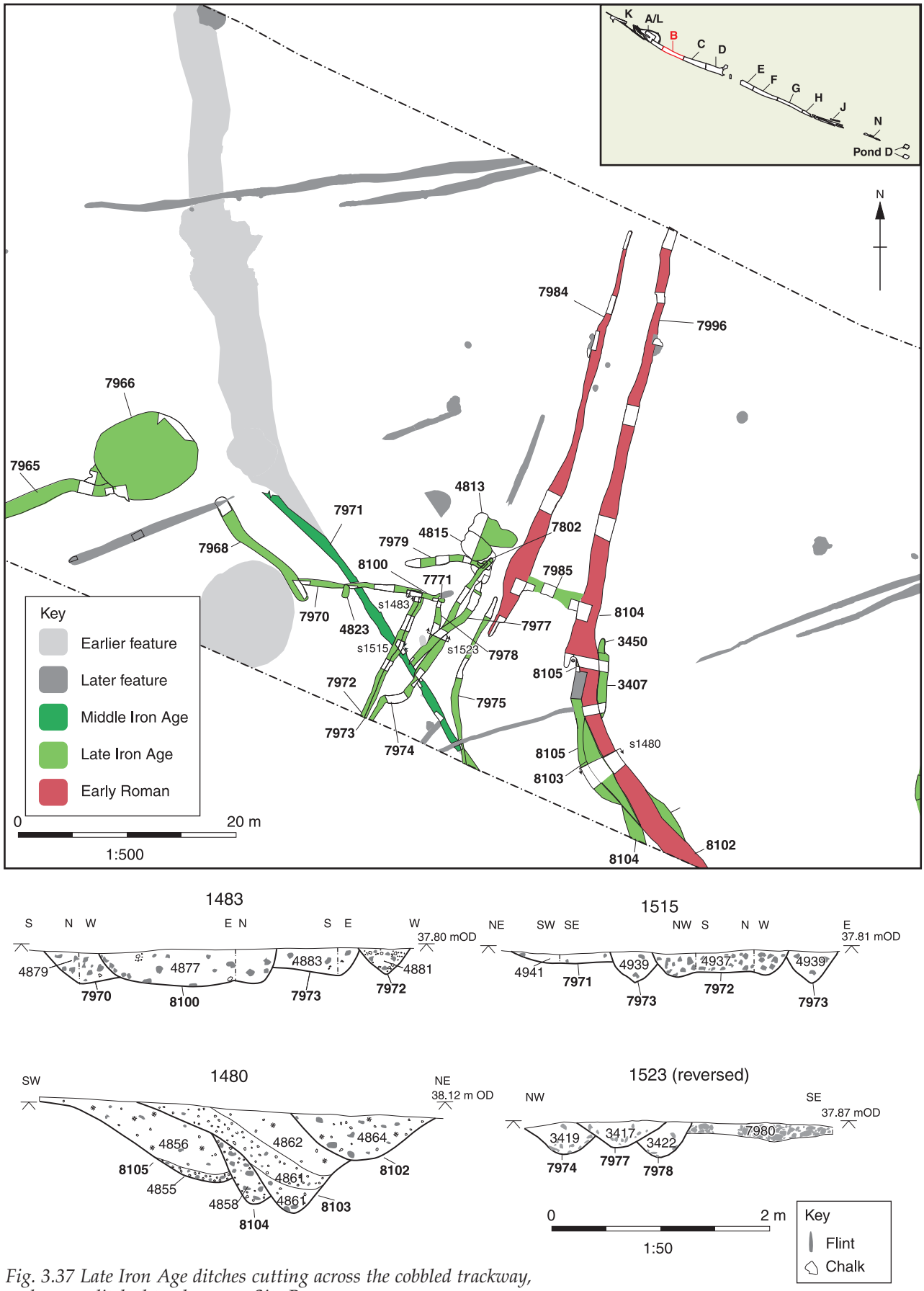


Fig. 3.37 Late Iron Age ditches cutting across the cobbled trackway, and a new ditched trackway on Site B

Western Site B

The most westerly late Iron Age features were two high status burials (4298, 4312) in circular pits found within the neck of middle Iron Age 'banjo' enclosure 4518 (Fig. 3.38). These are described separately at the end of the Iron Age description.

In the late Iron Age, enclosure 3966 was superseded by a sub-rectangular enclosure made up on the south-east and north-east sides of ditches 3963 and 4779, which blocked off the north-west entrance into the earlier enclosure (see Fig. 3.38).

Ditch 3963 ran north-east for 18m before ending just short of 3966, and after a 2.5m wide gap ditch 4779 continued for another 17m before turning at right angles to the north-west for nearly 25m. As both 3963 and 4779 ended short of enclosure ditch 3966, it is possible that this was a modification to the earlier enclosure, which continued to function to the south-east, though there were no recuts to substan-

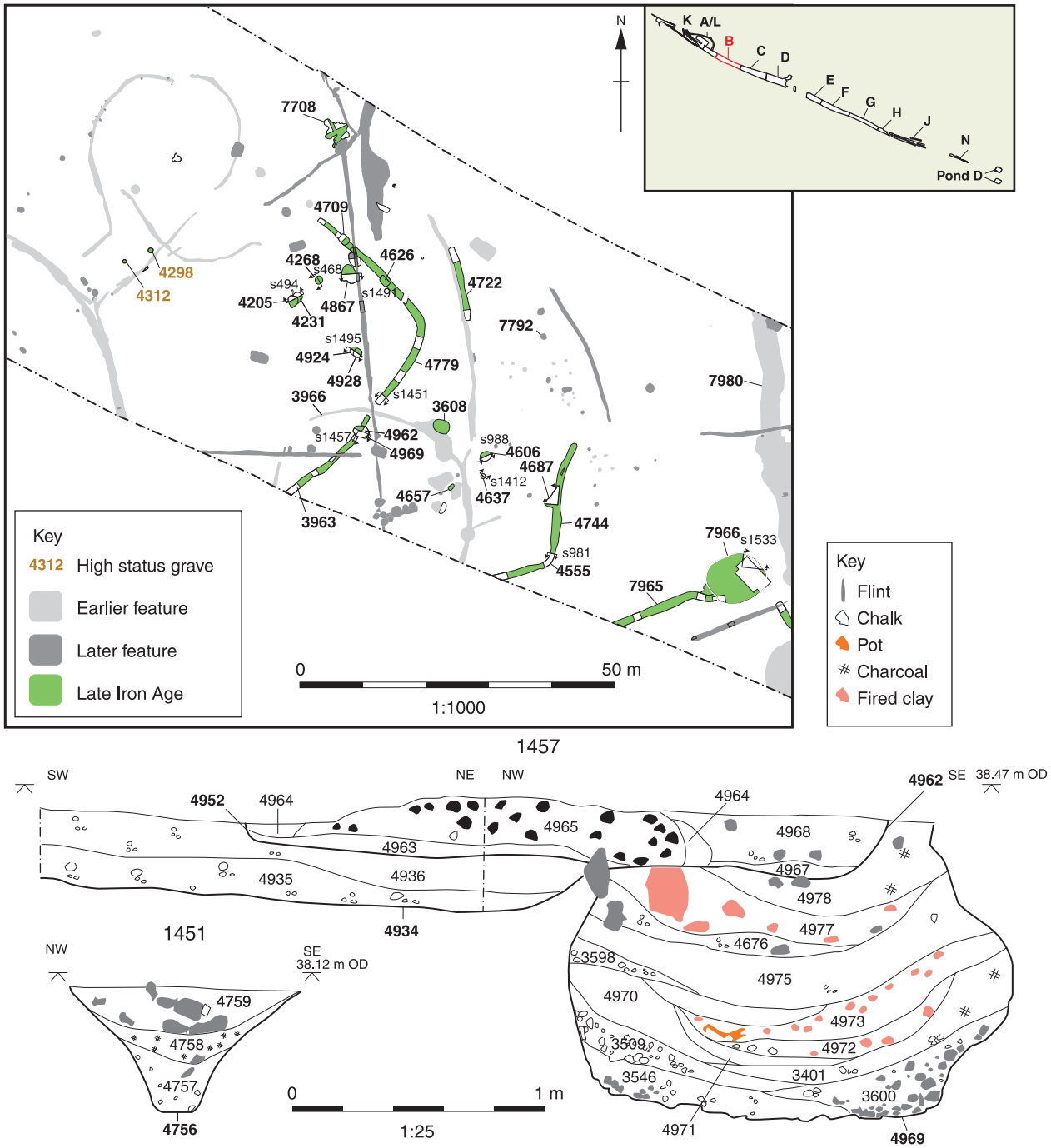


Fig. 3.38 Plan showing late Iron Age features in the western part of the settlement on Site B, together with sections of ditches 3963, 4779 and pit 4969

tiate this. It seems less likely that there should have been an entrance just where the infilled enclosure ditch crossed.

Overall the enclosure ditches produced 2.7kg of late Iron Age pottery, while animal bone was also significant and included dog and hedgehog, as well as the standard domesticates. Fired clay included a residual fragment of a perforated plate (see Fig. 2.41 no. 2). Some intrusive Roman tile and modern glass was present, the former presumably derived from the later Roman fields. A small amount of environmental evidence recovered from ditch 4779 included oat/brome grass and a plum or cherry stone with charred flesh still adhering.

The enclosure ditches were cut by three pits (4962, 4626 and 4709), clearly later than the initial ditch cuts, but still considered to be late Iron Age in date. Pit 4962 also cut pit (4969) immediately adjacent to ditch 4779, which was a beehive pit with the most complex fill sequence in this area (Fig. 3.38). This pit was 2.1 by 1.8m in plan and 1.22m deep with an undercut profile, containing a sequence of 14 fills (Plate 3.28). The basal fill (3546) notably produced a Class 1 potin, similar to those recovered in pits 4148 and 4400 (see above). Subsequent fills contained significant quantities of middle–late Iron Age pottery, charred wheat and animal bone, including most of the skeleton of a male pig (from 3401). Dumped layer 4973 contained a complete but broken fine late Iron Age necked bowl. The upper four fills of the pit were thicker than the lower layers, the earliest of which (4975) clearly represented a large dump of domestic refuse.

Pit 4969 was similar in the complexity of its fills to the middle Iron Age pits in this area discussed above, and the only other analogous contemporary pit was 3662 in the east part of the settlement. The potin in its basal fill links it to the other middle-late Iron Age pits west and east of enclosure 4518, and it was probably of similar date. The difference from these other pits, however, is the presence of clearly late Iron Age forms in the pottery within the middle and upper fills of the pit. The occurrence of the coin may represent the ritual closing of the pit. The presence of a large amount of pig bone above this, as well as the complete fine pottery vessels, may also point to ritual feasting and deposition.

A cluster of late Iron Age pits lay within the area enclosed by ditches 4779/3963. Most produced varying quantities of late Iron Age pottery, charred cereal remains and animal bone indicative of domestic waste. In addition, small, circular pit 4268 contained fragments of a cylindrical pedestal, probably from an oven.

A large (4.5m diameter), shallow (0.25m) and irregular feature (7708), some 12m north of ditch 4779 was also probably late Iron Age (Fig. 3.38). The feature, possibly a utilised tree-throw hole, produced another Class 1 potin coin, in addition to 295g of middle and late Iron Age pottery, animal bones and fragments of fired clay. The use of a tree-throw hole for deliberate deposition is relatively unusual for the late Iron Age, but the potin coin links this feature to pit 4969 and the other pits with special deposits in this area.

Plate 3.28 Pit 4969: Half-section showing large fired clay oven fragment

A second angled ditch (4744) was located *c* 30m east of 4779/3936 (Fig. 3.38). The ditch continued beyond the southern edge of excavation, therefore its full nature is unclear, although it probably formed a further rectilinear enclosure. The ditch entered the site on an east-north-east alignment, turning north after 9m and terminating 19m north of this. It was *c* 1m wide and 0.58m deep with a well-defined V-shaped profile. Overall the feature produced 550g of late Iron Age pottery, 853g of fired clay and fragments of briquetage. Animal bone included a highly fragmented cattle skull from intervention 4555, where the ditch turned. Environmental samples also yielded an assemblage of charred cereal including emmer, barley and indeterminate wheat. The ditch was cut in its northern half by a shallow pit 4687, which also produced late Iron Age pottery, fired clay, animal bone and charred plant remains, along with a virtually complete oven support or kiln bar.

Two late Iron Age pits (4606 and 4637) were located 10m west of ditch 4744 and just east of enclosure 3966. Pit 4606 was the larger of the pair (1.9 x 1.4 x 0.81m deep), and had a classic undercut pit profile. The pit contained nine fills, the first of which contained a Class 1 potin coin. The fills represent a succession of dumps of deliberate backfill containing domestic waste, comprising middle and late Iron Age pottery, animal bone and fired clay. In addition, a large number of residual fragments of perforated oven plate came from a lower fill (see Fig. 2.41, no. 1). The lower two dumps contained pottery described as middle Iron Age, the upper two late Iron Age pottery, suggesting that the pit spans the mid–late Iron Age transition. The location of the potin coin, like that in pit 4969, suggests a ritual significance in the infilling of these pits. The pit was notably charcoal-rich and analysis identified both hawthorn and oak, possibly the remains of fuel for domestic hearths. Pit 4637 was smaller and produced late Iron Age pottery, animal bone and fired clay.

North-east of these, and between ditches 4722 and 7963, was another pit 7792 that dated either to the late Iron Age or very early Roman period. The upper fill contained pottery, a flint scraper, an iron nail and a complete Langton Down copper-alloy brooch (SF 482; see Fig. 3.71, no. 1). This type of brooch is dated early-mid 1st century AD, and much of the pottery came from a single bead-rimmed jar, which could also date either side of the Roman conquest.

Some 17m east of 4744 was another length of ditch (7965) aligned ENE roughly parallel to it. This ditch continued beyond the southern edge of excavation and was truncated to the north by possible quarry pit 7966, but did not continue beyond it. At its northern end the ditch turned eastwards but appeared to be reverting to its previous alignment where cut by 7966, producing a 'kink'. The ditch was *c* 1m wide and 0.35m deep and contained 2–3 fills that produced only cattle bone and worked flint. The ditch was roughly at right angles to trackway 7980 and may have represented a boundary or element of field system.

Both L-shaped enclosure ditches, and ditch 7965, extended beyond the southern edge of excavation, but continuations of these ditches were not visible as cropmarks, nor were they picked up in the geophysical survey (see Chapter 1). None were obvious in the HS1 excavation area some 60m to the south-west.

Eastern Site B/Western Site C

Boundary ditches

The eastern part of the settlement was more extensive in the late Iron Age period than in the middle Iron Age, and comprised a number of substantial boundary ditches (Fig. 3.39). The main boundary of this extended settlement was formed by sickle-shaped ditch 7992 to the west, and slightly curving ditch 7192 to the east. The nature of the enclosure to the north is unknown.

Ditch 7992 measured up to 1.5m wide and 1m deep. The ditch was at its deepest at the southern terminal, where it contained six fills. All were interpreted as gradual deposits, although refuse in the form of late Iron Age pottery, animal bone and fired clay had been thrown into the bottom and top of the ditch. A particularly large faunal deposit was recovered from cut 3830, located at the point where the ditch changed from linear to curving (Fig. 3.39). This was dominated by the bones of domestic animals including dog and horse, but also included cat, hare/rabbit, bird, toad, lizard and rodent bones. Accompanying this was a small assemblage of late Iron Age pottery and fired clay. An environmental sample from 3829 yielded charred wheat and indeterminate cereal.

This deposit of animal bone continued south along the ditch for over 10m into cut 3906, where the bones in fill 3904 included a complete horse skull (SF746). The largest single assemblage of pottery came from cut 4116, where a deliberate dump of 108 sherds (399g) was recovered from the upper fill (4117) alongside animal remains and fired clay. Deliberate deposits also included some smaller, localised layers such as an ashy deposit (3980) within cut 3984, containing 15 sherds of pottery and faunal remains, probably representing hearth debris. An unusual chalk object (SF 472), which may have been an unfinished weight, came from fill 3771 in cut 3804, 10m from the southern terminus.

Ditch 7992 underwent a number of modifications, including recut 8101 at its northern end, the addition of a parallel boundary 7993 meeting the westernmost edge of the curve, and a series of alterations to the entrance area (see below). Ditch 7993 effectively added an annexe north of the curved enclosure, and was clearly still open in the early Roman period, as the uppermost fill in the north-

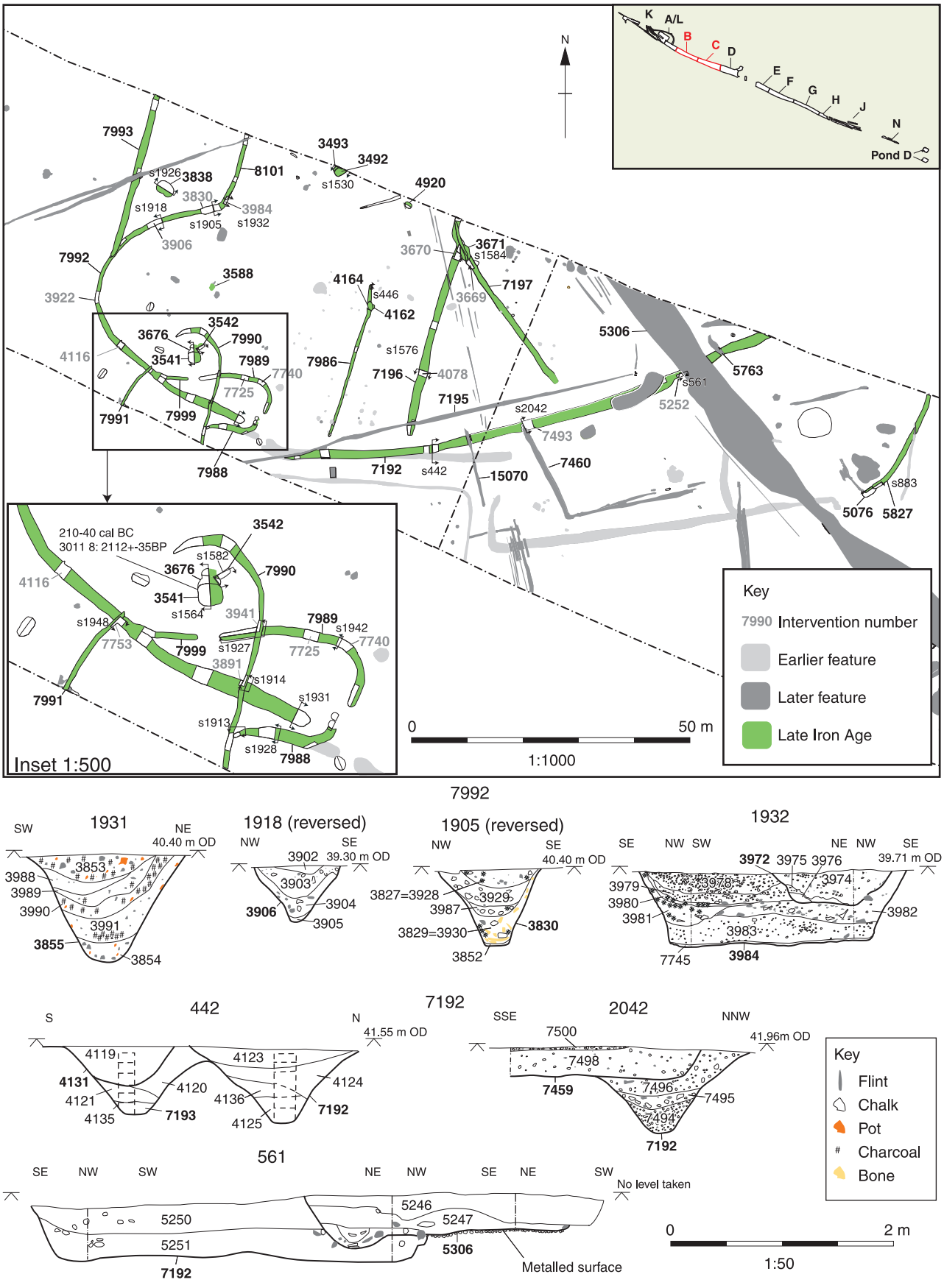


Fig. 3.39 Plan of late Iron Age features in the east half of the settlement in Sites B and C, and sections of ditches 7992 and 7192

ernmost cut (4806) contained early Roman pottery, and shallow Roman ditch 7995 ran into the open hollow of the ditch (see Chapter 4).

Continuing east beyond the terminus of ditch 7992, ditch 7192 was similar in size and profile, measuring between 1.4 and 2m wide and 0.54–0.88m deep (Fig. 3.39). Like 7992, the depth of the ditch decreased as it extended north-eastwards away from the terminus and the entrance to the enclosed area. The ditch contained between two and four fills, generally representing gradual silting with occasional deliberate deposits in the top of the ditch. Just west of the medieval holloway, and east of cut 7539, the width of the ditch decreased suddenly, possibly indicating that there had been a terminus at this point at some stage. East of the holloway, there was a corresponding widening of the ditch just beyond later feature 5763. Unfortunately these termini were not investigated, but it was suggested in cut 5252 that the character of the fills might indicate that the ditch had been deliberately backfilled. There was, however, no evidence of recutting in the ditch sections further west. Ditch 7192 produced small assemblages of pottery, animal bone and fired clay, but no special deposits. The faunal assemblage included red deer, indicative of hunting. The ditch was crossed by Roman ditch 7195 close to the west end, and was almost completely removed for a short distance by post-medieval wheel ruts in holloway 15070, and east of that by medieval gully 5763.

Entrance modifications

The first modification comprised the creation of three separate lengths of ditch/gully (7999, 7989 and 7988) arranged in a tight arc and separated by 2m long gaps, possibly restricting access at the entrance area (Fig. 3.39). The complex appears to have been a modification to an existing entrance and at its earliest may have been contemporary with the main boundary.

The three ditches were variable in nature. The spur (7999) was only 0.6m wide and 0.3m deep, containing a single fill that produced a little animal bone. Ditches 7989 and 7988 were more substantial, around 1m wide and 0.6m deep. Ditch 7988 contained 2–3 fills, predominantly the result of gradual silting, although localised dumping was observed. Three of the four excavated cuts produced small assemblages of pottery and a larger faunal assemblage came from cut 3946 towards the west end of 7988, unusually mainly composed of dog and bird bone. Ditch 7989 contained a sequence of five fills comprising gradual silting layers interspersed with intentional dumps of material. These included a whole late Iron Age pot (SF 480) from context 7782 within the southern ditch terminal (Plate 3.29; Fig. 3.62), and a second, nearly complete pot (SF 479), in context 4739 (intervention 7740). As in ditch 7792, part of a horse skull was also found in intervention 7725. Standard faunal remains, pottery sherds and fired clay fragments were recovered from other deposits.

Plate 3.29 Pot sf 480 and adjacent bones in part-excavated ditch 9789

It is likely that the pit group (3676/3540–2) located to the north of this entrance complex was dug following the construction of this enclosure and preceding the second modification discussed below. The earliest feature within the group was pit 3676, measuring 1.44 by 1.3m in plan and 1.24m deep (Fig. 3.40). The pit contained an interesting sequence of nine fills. The initial fill (3677) was a thin layer of organic, ashy silt, and was clearly a deliberate deposit placed immediately after excavation of the pit. This was overlain by a second, ash/silt fill (3678) that contained a complete saucepan pot (SF460) placed upside down (Plate 3.30). The pot was accompanied by an iron linch pin from a chariot or cart (SF 459), a triangular chalk weight (SF468) and a potin coin (SF 486) (Plate 3.31). There were also sheep bones and fired clay fragments, while an environmental sample yielded wheat grains. The deposit was overlain by two further deliberate deposits with a humic feel that suggested organic material (3679 and 3680), more localised in the northern part of the pit, in turn sealed by another ashy deposit (3681). This contained the remains of a near-complete everted rim jar, possibly smashed *in situ*, (SFs 469 and 471) and the fragmentary remains of a second chalk weight (SF 470) that was oblong

Plate 3.30 Pit 3676 half-excavated with finds at bottom

Plate 3.31 Pit 3676 showing detail of pot, chalk weight and iron linch pin

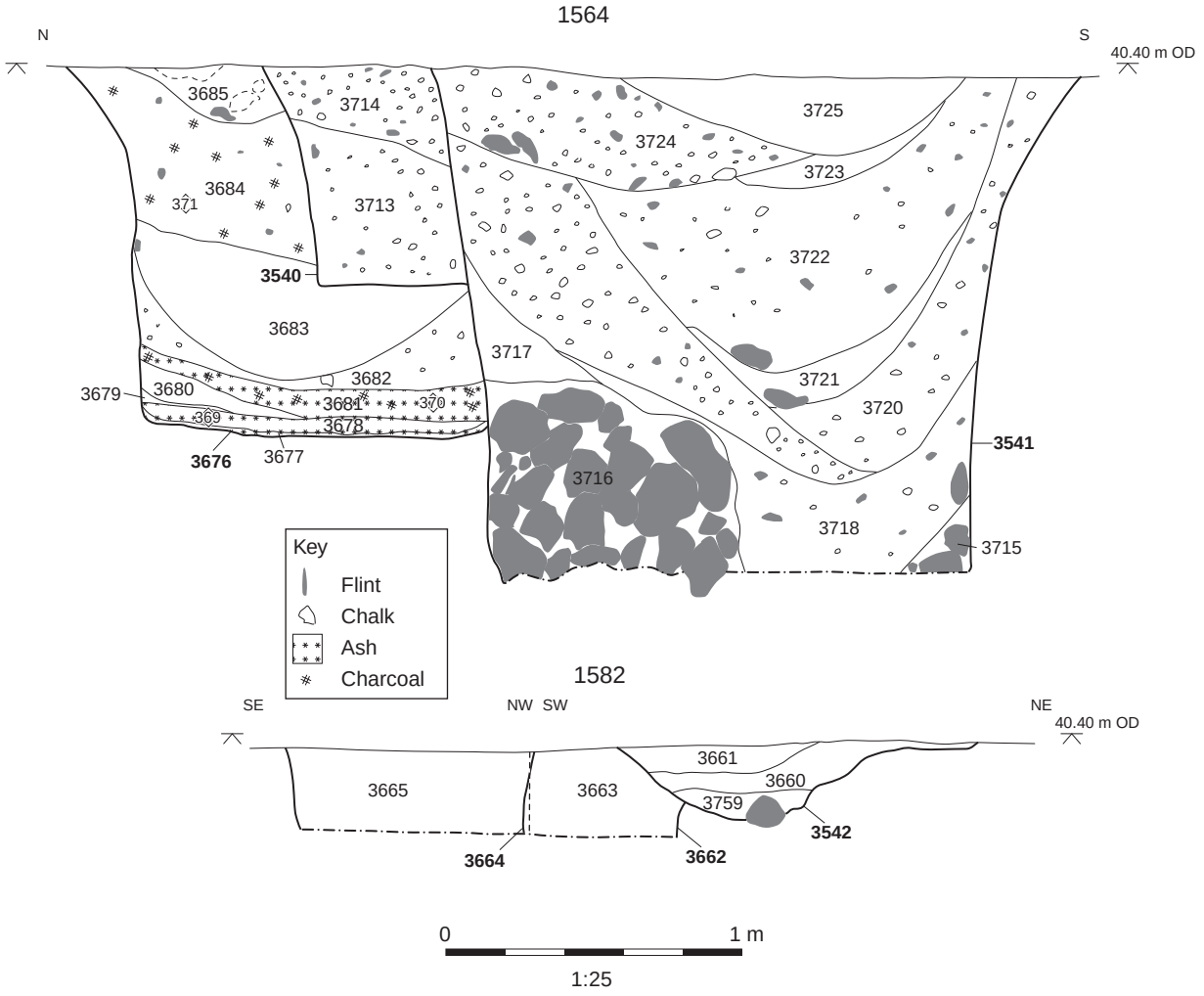


Fig. 3.40 Sections of the pit group 3679, 3540, 3541 and 3542

rather than triangular. Context 3681 also produced cattle bone and charred plant remains including emmer/spelt wheat and weed seeds. The remaining pit fills were a mix of collapse and natural silting and dumped material, among which fill 3684 contained further sherds of middle Iron Age storage jar, animal bone and charred wheat.

The pottery was almost entirely middle Iron Age in terms of forms and fabrics, including the saucepan pot. The associated potin coin indicates a date either in the late 2nd century BC, or more likely the first half of the 1st century BC (Hobbs 1996, 16–17; Holman 2000). Charred plant remains from fill 3678 were submitted for radiocarbon dating, yielding a date of 210–40 cal BC at 91.2% probability (NZA 30118). The latter half of this range is consistent with the expected date of the potin coin, and suggests that a date between 120 BC and 40 BC, ie a transitional middle–late Iron Age date, is appropriate for the filling of the pit. It is possible that the saucepan pot was curated for some time prior to deposition, but it is equally likely that pottery of middle Iron Age character was still in use in the first half of the 1st century BC.

Pit 3676 was cut by pit 3540 to the south and 3542 to the east. The former was almost identical in profile, albeit much smaller at *c* 2.05m diameter and 0.75m deep, containing only two fills, producing eight sherds of middle Iron Age pottery, cattle bone and charred wheat. Pit 3542 was different to the other pits within this sequence, bowl-shaped and measuring 1.2 x 1.04 x 0.27m. It contained three fills including a deposit of burnt material (3660) but did not contain any finds.

Only part of pit 3540 remained, the southern side having been removed by pit or shaft 3541. Like pits 3676 and 3540 this was vertical-sided, except where slightly weathered at the top. The pit was 2.4 by 2.2m in plan and over 4m deep. The base of the pit, to a depth of *c* 1m, was filled with large flint nodules and chalk fragments (3716). The upper part of the pit contained eight further fills, most of which appeared to be deliberate backfills, although some episodes of silting were observed. The upper fills produced small assemblages of pottery, including some dated middle Iron Age, cattle and sheep/goat bone and a single fragment of fired clay. The pit was clearly remarkable in terms of its size, however it

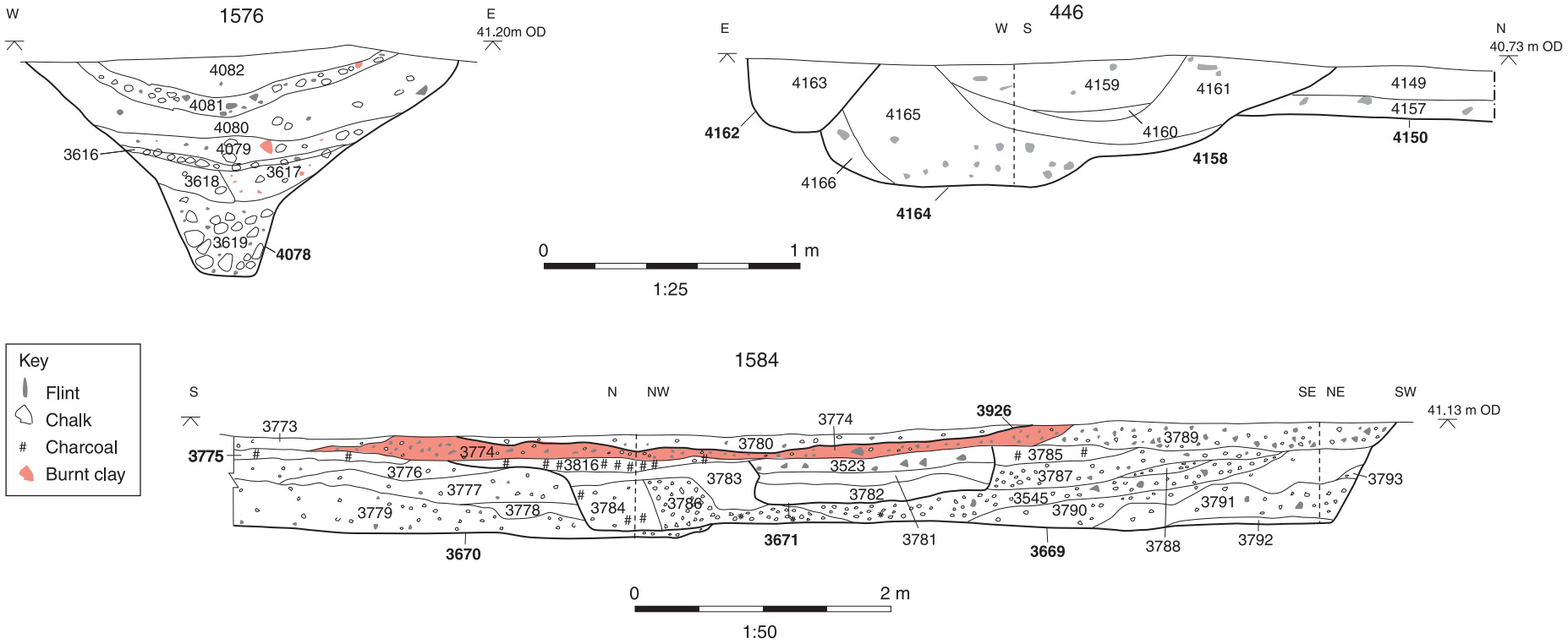


Fig. 3.41 Sections of ditches 7196, 7197 and 7986, pits 4164 and 4162

appears to have been deliberately backfilled with rubble not long after creation, possibly as a result of instability. Its original purpose is unclear although the pit may have had a ritual function related to its placement in an entrance complex.

Further modification of the entrance complex saw the creation of a similar ditch/gully enclosure to complex 7999/7989 and 7988, but this time oriented north-south, surrounding the pit group and continuing south of the large enclosure beyond the limits of excavation (Fig. 3.39). This comprised two curving ditches (7990 and 7991), 7991 ending at the north edge of ditch 7992, with an entrance gap of *c* 7m beyond it on the north-west. This enclosure cut through ditches 7992 and 7989 and the chalk spread from pit 3541.

Features 7990 and 7991 were less substantial than the preceding enclosure ditches, and both produced small assemblages of undiagnostic pottery and animal bone.

Internal features

A number of features were excavated within the main enclosure, presumably representing internal divisions and occupation activity (Fig. 3.39). This comprised three ditches (7196, 7197 and 7986) and a scatter of pits. The most substantial interior division was ditch 7196, which measured 1.1–1.7m wide and 0.64–0.86m deep with a 'v'-shaped profile and was mainly filled with natural accumulations of clay silt and chalk (Fig. 3.41).

Ditch 7196 produced 68 sherds of pottery weighing 480g, much of which came from a single vessel from context 3938 (cut 3670). The pottery, where diagnostic, was dated to the middle and late Iron Age. Animal bones included those of standard domesticate species as well as red deer. A strip of iron binding perforated by a nail hole came from the upper fill of cut 4078.

Before ditch 7196 had fully filled up it was cut by ditch 7197. This ditch entered the site from the north on the same alignment as ditch 7196, but 1m further west, and then after 6m turned sharply to the south-east across the end of 7196, and continued for a distance of *c* 33m, ending 5–6m from ditch 7192. Ditch 7197 also cut across four-post structures 3769 and 3770. The ditch measured 1.1–1.2m wide and 0.62–0.85m deep, and its fills contained a mixture of natural silting deposits and deliberate dumps including containing occasional sherds of pottery, fired clay and larger assemblages of animal bone. Cut 3669, where the ditch intersected with 7196, had 12 fills (Fig. 3.41), finds from which included 104 sherds of middle and late Iron Age pottery weighing 533g and large quantities of animal bone including horse.

The middle fills of ditch 7197 close to this intersection were cut by pit 3671, which contained an apparent deliberate deposit (in fill 3523) that included a large number of fragments of pig cranial bones from at least four individuals, and 14 sherds of late Iron Age pottery (Fig. 3.41). Pit 3671 and the adjacent lengths of both ditch 7197 and ditch 7196 were all sealed by a layer of compacted orange clay 3774, which extended to the very edges of this group of features.

A third, less substantial, 28m long ditch (7986) was located parallel to ditch 7196 and 11m to the west. No dating evidence was recovered from 7986, but it was cut on the west side by posthole 3865, tentatively associated as part of a four-post structure with posthole 3806, from which a charred cereal grain gave a radiocarbon date of 360–110 cal BC (NZA 32306). It is therefore possible that ditch 7986 was in fact a middle Iron Age boundary, associated with 7193 rather than 7192. The integrity of this four-post structure is however doubtful (see above), and given the common alignment of 7196, 7986 and 8101, it is more likely that 7986 was also late Iron Age.

A number of pits were located within the interior of the main enclosure. One isolated pit (3588) was located on the west side, contained three burnt fills, possibly rakeout from a fire. Most of the pits lay along the northern edge of the site and contained the usual assemblages of pottery and animal bone, albeit none in any great quantity.

Exterior features

An additional three features were excavated outside the main occupation area; large pit 3838 to the north-west and ditch 5827 and possible pit 5076 to the east. Pit 3838 was located *c* 3m west of boundary ditch 7992 and measured 3.3 x 2.4 x 1.35m deep. The profile was vertical-sided to the east and undercut to the west with a flat base (Fig. 3.53). It contained a sequence of 11 fills, many of which were probably the result of natural silting, and did not appear to contain any structured deposits.

Ditch 5827 and possible pit 5076 were located *c* 30m east of boundary ditch 7192. Ditch 5827 ran north-east and continued beyond the northern site edge, possibly forming an outer enclosure. The upper fills of the northern part of the ditch produced small assemblages of late Iron Age pottery and animal bone as well as a fragment of iron slag. At the south-west end, and only slightly overlapping with it, there was a slightly broader feature (5076) measuring 2.02 x 1.15 x 0.48m deep, which was interpreted on site as an earlier pit. The late Iron Age pottery from 5076 included an unusually high proportion of sherds with combed decoration, and that from the upper fills in ditch 5827 also included a combed vessel, though there were no matching sherds. This may perhaps indicate the preferential deposition of vessels of a particular character in this part of the site.

Site D

A series of scattered features on Site D are thought to have dated to the late Iron Age (see Fig. 3.35). The most substantial of these was pit or shaft 6916, situated *c* 35m west of middle Iron Age ditch 6944/6945 (Fig. 3.42). The feature measured 3.45 by

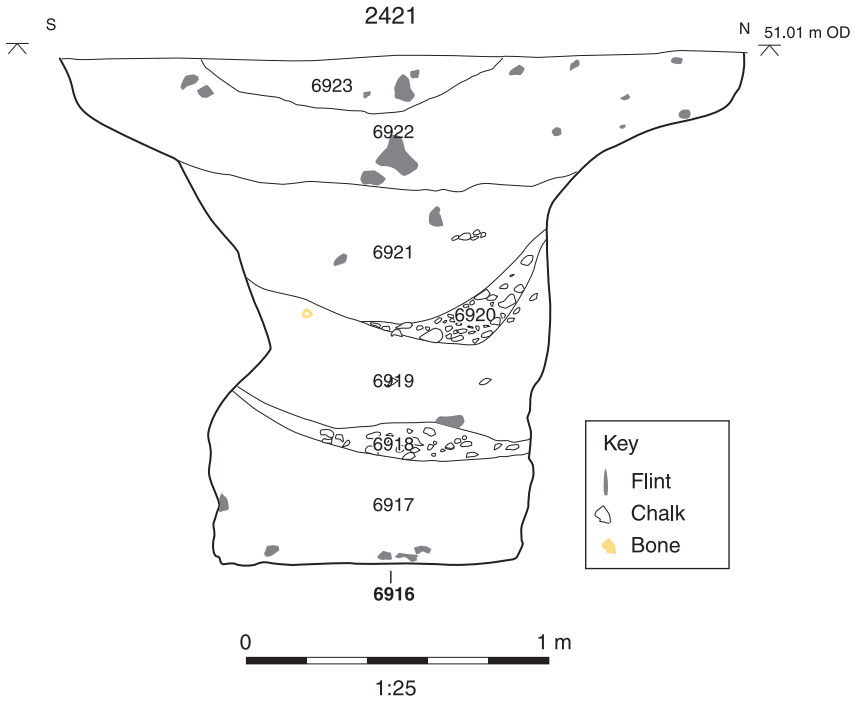


Fig. 3.42 Section of pit 6916 in Site D

2.25m in plan, narrowing rapidly to *c* 1m across at a depth of 0.4m, leaving a bowl-shaped upper part and a lower narrow shaft, with vertical sides and a flat base, reaching a depth of 1.7m. The pit contained seven fills, all of which were identified as natural silting or slump deposits. The only cultural material recovered from the feature comprised five sherds of late Iron Age pottery and animal bone fragments from penultimate fill 6922 and fragments of horse bone from lower fill 6919. Overall the pit appeared to have been dug and left to fill naturally, only incorporating a small amount of anthropogenic material. No special deposits indicative of ritual were found within it, and it may have been a storage pit rather than a ritual shaft.

Pit 6892 lay 22.5m south-east of 6916 (see Fig. 3.35). It was bowl-profiled with a single fill, and produced 11 sherds of pottery weighing 45g. Other features of possible late Iron Age date north-west of 6916 included pits 6129 and tree-throw hole 6508, while further undated pits scattered across this area (including 6386, 6461 and 6498) may also have been Iron Age, but as there was also a Bronze Age cremation burial and medieval or later deneholes and pits in the vicinity, this is uncertain.

A large teardrop shaped pit (6379) was located north of middle Iron Age ditch 6944, measuring 14m long and 3.4m wide at the western end, narrowing to just 1m wide at the east end (see Fig. 3.35). The feature consisted of a ramp running from the east end down into a vertical shaft at the west. A total of six sherds of probably prehistoric pottery was recovered, along with traces of iron corrosion. The pit may have represented a late prehistoric or Roman quarry pit with entrance ramp. Features of similar size and shape were found at the early Roman settlement at Gravelly Guy, Oxfordshire, where a series of wells were accessed by ramps (Lambrick and Allen 2004, 197–204). These were seen as part of a tradition of such features in the Upper Thames starting in the mid–late Iron Age (ibid., 203–4). It is not suggested that 6379 was a well, simply that this method of access to deep features was part of the late Iron Age and early Roman tradition of Southern Britain, to which 6379 may also have belonged. It is equally probable that this was a quarry pit for chalk. Other examples of this type of chalk quarry have been found on the scheme, but these date to the post-medieval period (see Chapter 5). It remains possible that the pottery from the backfilling was residual, but 6379 was thought to be earlier as it was cut to the east by gully 6947.

Gully 6947 was one of a series of five sinuous north-south aligned gullies (also 6948, 6949, 6950 and 6272) extending northwards from the area of later Roman ditch 6941 (see below). The date of these features was made uncertain by the presence of a modern hedge gully on the same alignment, immediately to the east. However, the westernmost gully 6949 was cut by Roman ditch 6941 at its southern end. The gullies varied in length from 4.5m to 19m and the only finds comprised worked flint, animal bone and charcoal.

Pond D North

Pond D North was a difficult site to interpret for a number of reasons. Firstly the character of the natural clayey silt underlying the site made distin-

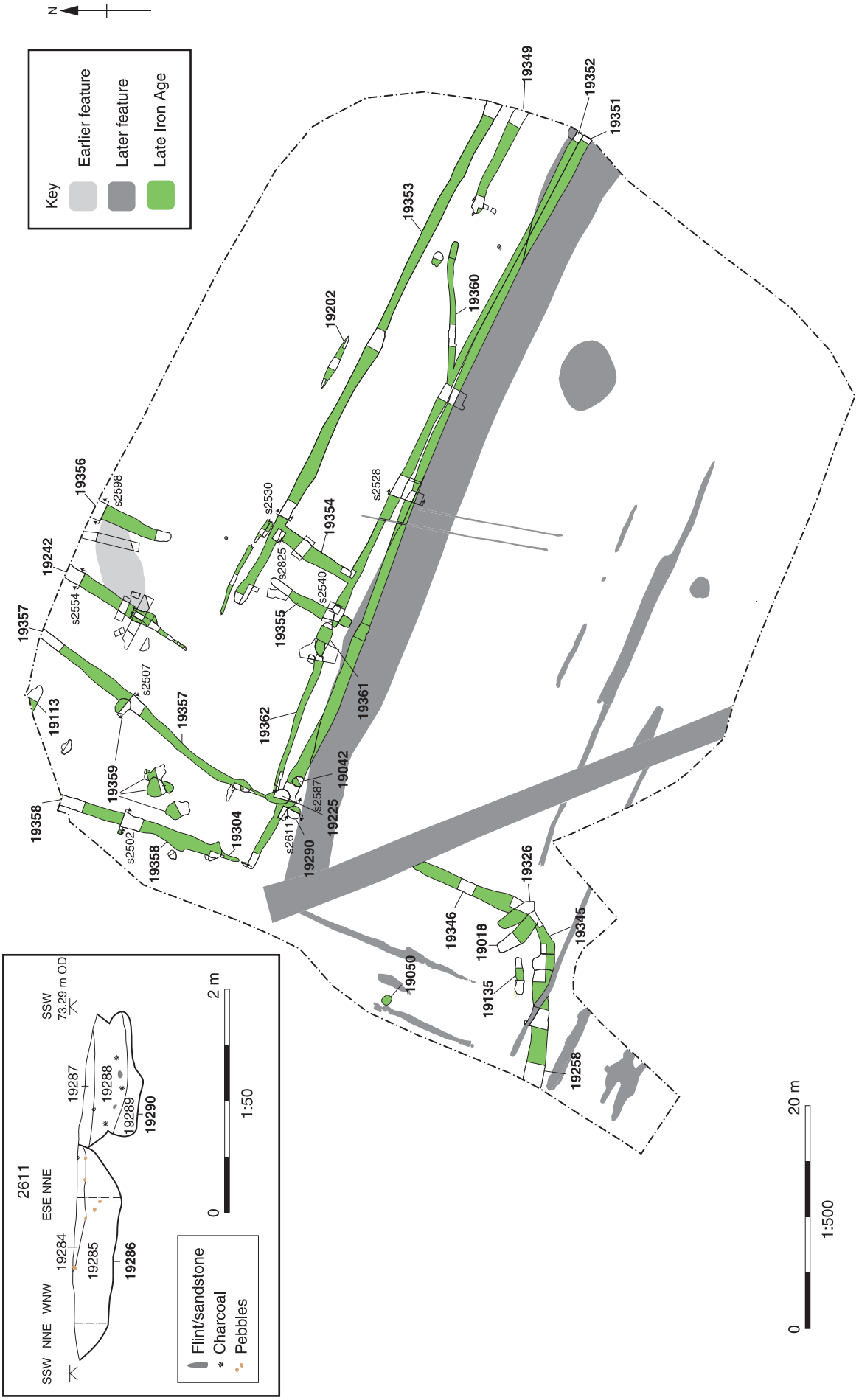


Fig. 3.43 Plan of late Iron Age settlement in Pond D North , plus section of pit 19290 and ditch 13951

guishing features and their respective fills very difficult. Few relationships could be ascertained for this reason and also as a result of the arrangement of features, which often stopped short of one another. In addition little cultural material was recovered from the site. This may have been a product of the nature of the activity and subsequent truncation but in terms of environmental material was also related to poor preservation.

The Iron Age activity in Pond D North was specifically late Iron Age/early Roman in date (Fig. 3.43). Unlike the areas discussed above there was little to indicate any earlier Iron Age activity from which the later activity evolved. Earlier pottery was found in a number of features which may have formed the earliest phase of activity, although the problems of dating highlighted above should be borne in mind.

Northern area

The earliest dating evidence consisted of 19 sherds (33g) of pre-middle Iron Age pottery found within hollow 19243 located in the north-west corner of the site. This was thought to have been a glacial feature filled naturally, and the pottery deposited accidentally, however this does indicate the existence of earlier activity within the area.

Two other features produced middle or late Iron Age pottery. The first was pit 19290 which measured 1m in diameter and 0.5m deep with a typically Iron Age undercut profile (Fig. 3.43). The second potentially earlier feature was ditch 19355.

Ditch systems

Ditch 19355 formed a small element of the ditch system which made up the majority of archaeological activity on Pond D North. The ditch was demonstrably earlier than the bulk of the complex by virtue of being cut by later ditch 19352, and produced 15 sherds (19g) of pottery including some glauconitic sandy ware, possibly dating to the middle Iron Age.

A second ditch (19356) continued the line of 19355, 9.5m to the north, extending beyond the northern edge of excavation. The ditch produced no dating evidence, but this appeared to be the first of a series of enclosures on the same basic alignment. At the very north-west corner of the site a feature which may have been a ditch terminus (19113), 1.1m wide and 0.15m deep, ran north-west and beyond the excavated area. The posited alignment of the feature indicates that it may have belonged to this first phase of the enclosure although its true nature is unclear.

A second phase saw the expansion of the enclosure within the excavated area, with the creation of two parallel ditches 19352 and 19353, over 50m long. These were aligned at right angles to 19355 and 19356, terminating just west of the earlier ditches (19352 cutting 19355), and continuing south-east beyond the site edge. The ditches were *c* 7m apart, 1–1.2m wide and 0.5–0.6m deep, producing small assemblages of pottery. The assemblage from 19352 was too fragmentary to identify, although some of the 9 sherds (72g) from 19353 were dated late Iron Age. Ditch 19352 also yielded a fragment of undateable melted glass and an iron clamp or dog. The layout of the ditches may indicate use as a trackway.

It is probable that these ditches formed part of a larger enclosure complex with ditch 19242. This was positioned at a right angle to the parallel ditches, beginning *c* 7m north-west of 19353, leaving a gap which may have functioned as an entrance to the enclosure. The positioning of the ditch may also indicate that it replaced 19356 as an outer boundary, moving the enclosure north-westwards. Group 19242 was particularly difficult to decipher but appeared to comprise a ditch 1–1.2m wide and 0.34–0.57m deep, recut to a similar width, although slightly shallower. Finally a gully was cut into the southern end of the ditch and may have represented a modification to the enclosure entrance at a later date.

A series of other gullies (19202, 19054, 19056 and 19069) running parallel to ditch 19353 may have related to this proposed modification, being of a similar nature to the gully discussed above. Gully 19202 produced a possible sandstone rubbing stone and 19054 two sherds of undiagnostic pottery. The purpose of these gullies is unclear.

A number of other features may have been broadly contemporary with this phase of enclosure. In particular ditch 19354 and ditches 19360 and 19349 were located between parallel ditches 19352 and 19353. Ditch 19354 may have served to block off the possible trackway formed by ditches 19352 and 19353.

Ditches 19360 and 19349 were located at the eastern end of the site, 19349 extending beyond the site edge. The purpose of these ditches and their date in relation to 19352/19353 is unclear although the gap between them may have served as an entrance.

A further large-scale modification to the enclosure probably consisted of the creation of ditches 19362, 19357 and 19361, once again extending the existing enclosure north and west (Fig. 3.43).

The last phase of enclosure in the north of the site comprised ditches 19351 and 19358 and gully 19364. Ditch 19351 substantially recut ditch 19352, extending slightly further southwards at its western end. It was returned north-east by ditch 19358 which extended beyond the northern site edge and extended the enclosure westwards once more. Gully 19364 may have formed an entrance feature between the two.

Despite the excavation of seven sizeable interventions in ditch 19351, no pottery was recovered. The only numerous finds were struck flints, with some animal bone (horse and hare/rabbit) and burnt stone, plus a possible sandstone processor. Ditch 19358 produced more finds than much of the

surrounding archaeology including seven sherds of pottery weighing 135g, some of which was identified as late Iron Age. Other finds included fragments of fired clay and unidentified animal bone.

Pits

A number of pits or tree-throw holes were scattered amongst the enclosure ditches, some of which had discernible relationships with the ditches. This included possible pit 19029 which cut phase 3 ditch 19357.

A small group of pits (19359) was excavated immediately east of ditch 19358. Their location may indicate that they belonged to the latest phase of the enclosure, just inside this boundary ditch. All the pits contained single fills which appeared to be natural accumulations with the exception of fill 19023, within 19022, which was a deliberate dump of burnt material. Pits 19020 and 19022 produced small assemblages of late Iron Age pottery, however the only other finds were residual flint.

Pit 19004 was located *c* 1m south-west of the main group and produced six sherds of late Iron Age pottery weighing 40g, two fragments of iron slag and a socketed iron tool (SF 1951). The contents of the pit may indicate the presence of metal-working nearby.

A large pit (19267) *c* 7.5m south of ditch 19351 (6 x 5 x 3+m) contained 12 sherds of pottery including diagnostically late Iron Age forms, as well as a coherent late Bronze Age flint assemblage. In order to clarify the dating of the feature a sample of charcoal was submitted for radiocarbon dating and returned an unexpected date of cal AD 400–540 (NZA 32549), as such the pit is discussed in Chapter 5 below.

Late Iron Age–early Roman enclosure

A separate complex of ditches was excavated in the south-west corner of Pond D North which may have related to the enclosure to the north, although the limited dating evidence suggests this was a later addition.

The complex comprised a curving L-shaped ditch sequence incorporating two or possibly three phases of ditch (19345/19346, 19258). The northern terminus of the boundary was not visible and may have been truncated by a modern feature running SE-NW through this part of the site. The visible part of the boundary ran NE-SW for *c* 12m before turning west and extending beyond the western site edge.

The ditches in this area were much richer in cultural material than the enclosure to the north. There was a notable difference between segments 19345 and 19346; 19345 produced six sherds of pottery weighing 26g in addition to the ubiquitous residual flint. In contrast 19346 contained 128 sherds weighing 1735g. These included a near complete vessel (SF1950) and large fragments of others, all dated late Iron Age or late Iron Age/early Roman. The ditch also produced fired clay and a worked sandstone fragment. The east-west ditch 19258, which truncated 19345, was more substantial than the others, and contained 151 sherds of pottery weighing 772g including a near complete late Iron Age/early Roman vessel (SF 1956) from context 19213. Other material included numerous residual flint flakes, mammal bone fragments, calcined bone and burnt stone.

The nature of the main ditches in this area and their finds assemblages may indicate that an earlier boundary (19345), possibly related to the northerly activity, was replaced by two more substantial boundary ditches (19346 and 19258). If so, the later stage of this complex would have enclosed an area to the south and east, leaving a *c* 5m possible entrance gap to the south-east.

This possible entrance was bounded on the northern side by two successive NW-SE aligned slots (19018 and 19326), although it is possible that 19018 was part of ditch 19346. This feature was relatively rich in cultural material, producing 55 sherds of pottery weighing 428g as well as fired clay and charred cereal, including wheat. The pottery was all diagnostically late Iron Age, with a possible early Roman element. Slot 19326 produced only seven sherds of undiagnostic pottery and flint. A further slot (19135) was located *c* 1m west of 19018, aligned roughly east-west and parallel to ditch 19258. This slot produced 13 sherds of late Iron Age pottery weighing 84g, 106g of fired clay and environmental evidence in the form of charred cereal and weed seeds. On the basis of the location and orientation of the slot it is likely that this was a further alteration to the posited entrance, contemporary with 19358.

A single pit (19050) was located in the vicinity of this smaller enclosure sequence, 11m north-west of ditch 19346. This feature was only 0.08m deep with a single fill which produced possible charred barley.

Site J

A number of scattered features excavated on Site J may have been Iron Age in date (Fig. 3.44). The most substantial of these was trackway 11142/11141 which comprised two roughly north-south aligned ditches, *c* 2m apart. Western ditch 11141 was slightly more substantial than 11142 at 1m wide and 0.3–0.5m deep compared to a width of 0.3–0.9m and a depth of 0.1–0.2m. The ditches yielded flint and late prehistoric pottery, some of which was identified as Iron Age. Ditch 11142 was cut by a rectangular pit which was clearly modern in date.

A small gully (11111) was excavated on the west side of the trackway, and may have been contemporary, while a group of postholes or small pits (11081 and 11083) was also located in the vicinity. Located to the east of this area, a further group of later prehistoric pits and postholes was identified including a possible four-post structure (11093). The latter measured 3.5m x 3m and the structure was flanked by two small pits (11036 and 11046) to the

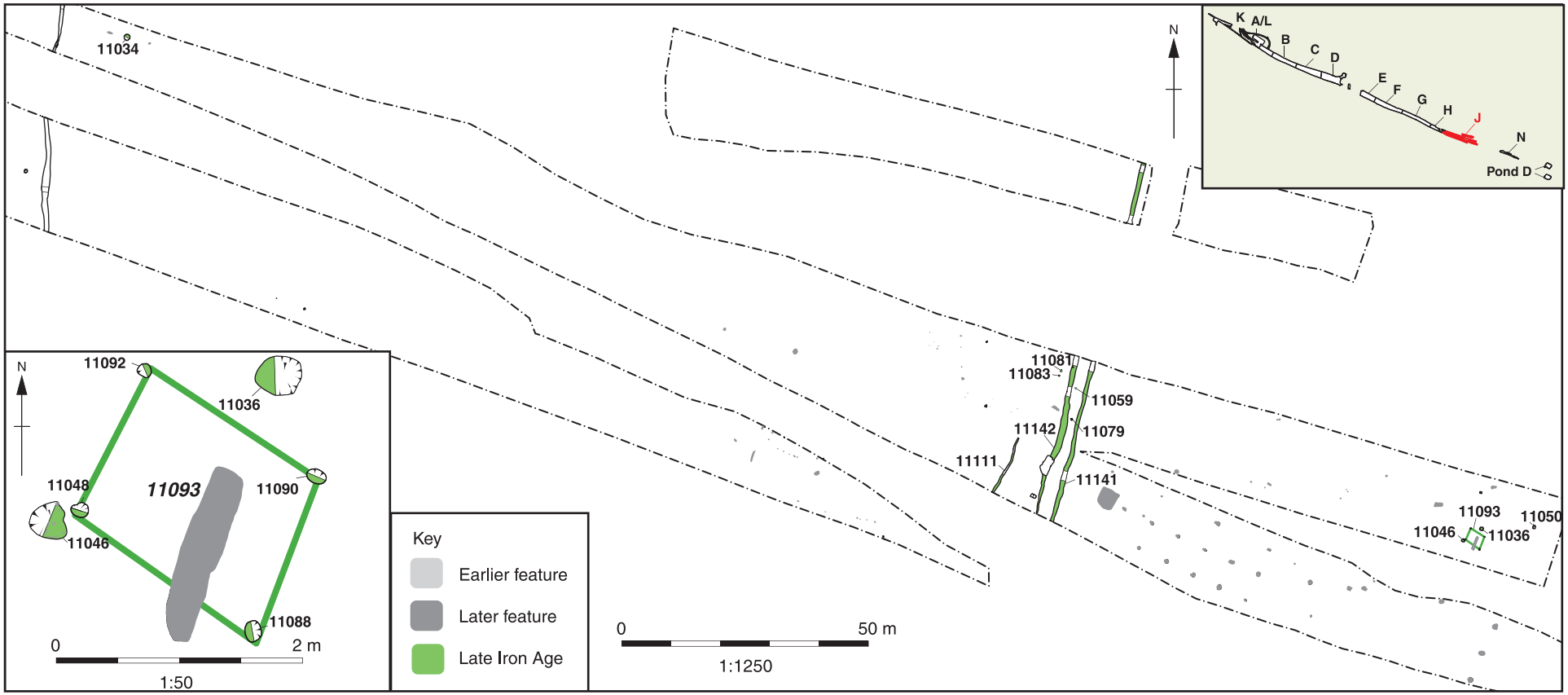


Fig. 3.44 Plan of probable Iron Age features in Site J

north and south-west respectively. Pit 11036 contained two sherds of late prehistoric pottery and worked flint. Pit 11046 contained abundant charcoal, some of which was identified as hawthorn. Pit 11050 was located *c* 9.5m north east of structure 11093 and also produced charcoal and burnt flint.

An isolated pit (11034) was also excavated at the western end of Site J. It contained a single sherd of prehistoric pottery of probable Iron Age date.

IRON AGE FINDS ASSEMBLAGE

Later prehistoric pottery *by Lisa Brown and Peter Couldrey*

A total of 17,353 sherds (122,463g) of later prehistoric pottery from nine sites along the A2 scheme was examined during analysis (Table 3.6). The material was recovered from Sites A, B, C, D, G (East and West), K, L and Pond D North. Later prehistoric pottery from sites F, J and Pond D South was recorded during assessment but not considered further.

The pottery included in this report spans the earliest Iron Age (*c* 900–600 BC) to the pre-conquest late Iron Age. Although the material is considered by period and spatial feature groups in this report, rather than purely on a site by site basis, basic quantification by site is presented here in order to show the relative concentrations of Iron Age pottery across the entire footprint of the scheme, along with the average sherd weight for each area. These figures are accompanied by an indication of the periods represented on each site.

Methodology

The pottery, including sherds recovered from environmental samples, was fully recorded on a spreadsheet by Peter Couldrey during the assessment stage of the project, following standards recommended by the Prehistoric Ceramics Research Group (PCRG 1997).

The pottery was recorded by site and within context groups, using some of the coding standards employed by the HS1 project. All sherds were counted and weighed to the nearest whole gramme. The following characteristics were also recorded: fabric, surface treatment, firing colour, shred thickness and, where applicable, form, decoration, and eves. Where possible, dates were attributed to each context group on the basis of diagnostic forms and decoration. Because the A2 scheme produced relatively little material clearly diagnostic of form, dating was often based on fabric type supported by surface treatment. This system can provide only a very broad indication of chronology.

As the condition of the much of the pottery was poor and the overall average sherd size low at only 7g, even diagnostic sherds (rims, bases, distinctive body shapes and decorated sherds) could often be defined at no higher level than 'flat base', 'everted rim', 'carinated shoulder', 'finger-tipped shoulder' and so on. Because many of these stylistic features persisted through several phases of ceramic production, it was particularly important to take into consideration a range of other factors, including context, stratigraphic position, fabric trends and associated artefacts when attempting to identify, define and date specific vessel forms and to outline the chronological development of the later prehistoric pottery across the site and within the region. This was more straightforward for some periods and types of activity (those which created substantial pit groups, for example) than others.

Fabrics and resources

Relatively little later prehistoric pottery had been recovered from west Kent prior to the main High Speed One (HS1) excavations, so no common standard exists for the region that includes the A2 site. Fabric classification of the later prehistoric pottery was, therefore, undertaken *de novo* by Peter Couldrey. Clearly, fabrics are defined by more than just the main inclusions: the size and sorting of inclusions, the degree of preparation, and other

Table 3.6: Later prehistoric pottery

Site	*Sherds*	*Wt (g)*	*% total count*	*% total wt*	*Mean Sherd Weight (ASW)*	*Date range*
A	558	1682	3	1	3	MIA and LIA
B	4822	37602	27	30	8	Earliest IA - LIA
C	5876	32032	34	26	5	Earliest IA - LIA
D	66	260	0.3	0.5	4	EIA - LIA
G (East)	3435	36139	20	29.5	11	Earliest IA - EIA
G (West)	656	1891	4	2	3	Earliest IA - EIA
K	138	1154	0.7	1	8	EIA
L	1321	8000	8	7	6	Earliest IA - MIA
Pond D North	481	3703	3	3	8	LIA
TOTAL	17,353	122,463	100	100	56	

characteristics play a part, but when small worn sherds are examined the primary inclusion is often the main indication of the fabric category. The A2 assemblage includes a large proportion of such fragments, with the inevitable result that degrees of reliability in classifying these small sherds was correspondingly lower than in the case of larger sherds and those diagnostic of form.

Over 660 individual fabrics were recorded for the later prehistoric pottery, reflecting the lack of standardisation in potting clay recipes used during some periods of the Iron Age. Descriptions of these individual fabrics are available in the digital archive and are referred to in discussion of individual vessels and in the catalogue of illustrated sherds.

The fabrics were further rationalised into five broad ware groups for the investigation of resource procurement and general reporting (see Table 3.7; for fabric proportions by site see digital archive).

Predominantly Flint

F	Flint
FS	Flint and shell
FSS	Flint and shell in sandy clay
FG	Flint and grog
FO	Flint and organic matter

Predominantly Shell

S	Shell
SF	Shell and flint
SO	Shell and organic matter
SS	Shell in sandy clay
SG	Shell and grog

Predominantly Grog

G	Grog

Predominantly Sand

Sa	Sand
SaGl	Glauconitic sandy

Predominantly Chalk

CS	Chalk in sandy clay

In some cases only a broad indication of chronology could be provided by fabric and surface treatment, due to degrees of fragmentation, abrasion, lack of diagnostic characteristics and associated dating evidence. Until more diagnostic sherds supplemented by independent dates are found the fabrics will remain fairly poor indicators of chronology. While the deliberate addition of tempering agents may have conformed to tradition, the tendency to use local clays throughout prehistory necessitates the establishment of chronological sequences at a local level. In the absence of more precise evidence, dates were allocated to sherds using the following broad criteria based on patterns of fabric occurrence within the region recognised to date:

***Flint*:** In north-west Kent flint tempering, sometimes with addition of sand, remained popular from the middle Bronze Age until the early stages of the middle Iron Age, when its use became rare (Couldrey 1988). It reappeared in west Kent in the early Roman period when it was used for 'Belgic' forms in the post-conquest Upchurch and Thameside pottery (Monaghan 1987). In east Kent it was used throughout the middle and late Iron Age, often employed for handmade 'Belgic' forms.

Table 3.7: Fabric proportions total (Sites: A B, C, D, G (East and West), K, L, Pond D North)

Fabric Group	*No.*	*Wt (g)*	*% Count*	*% Wt*	*ASW*
F	1723	7368	10	6	4
FS	2736	17356	16	14	6
FSS	195	1745	1	1	9
FO	69	304	0.4	0.5	4
FG	15	190	0.1	0.5	13
S	3014	20960	17	17	7
SF	4233	44103	24	36	10
SS	407	2162	2	2	5
SO	20	125	0.2	0.2	6
SG	1	9	0.1	0.1	9
G	1822	18449	11	15	10
Sa	707	1885	4	1.5	3
Sa glauconitic	2382	7678	14	6	3
CS	11	19	0.2	0.2	2
	17,335	122,463			

***Grog with Flint*:** Grog tempering with some added flint was used in west Kent during the transition from middle to late Bronze Age (Couldrey 1988) and became very common again in the late Iron Age in both east and west Kent when it was frequently used for mainly handmade Belgic forms (Thompson 1982). Only 15 small sherds in this fabric were recovered at the A2, from both early Iron Age and late Iron Age features.

Fossil Shell: Clays with fossilised shell were commonly used for early prehistoric pottery in west Kent, but are notably absent from local middle Bronze Age assemblages at Gravesend (Barclay 1994) and Cobham Golf Course (Mcnee and Morris 2006). They re-appeared in the late Bronze Age/early Iron Age at Darenth (Couldrey 1984b) and are then found in west Kent throughout the Iron Age, often, but not exclusively, used for larger storage or cooking jars (Couldrey 1984a; 1998). Their use continued there until the late 1st century AD (Pollard 1988, 31) and re-emerged in the late Saxon/early medieval period (John Cotter pers. comm.), when the open bonfire firing produced body sherds often indistinguishable from their prehistoric counterparts.

Fossil Shell and Flint: Clays with fossil shell and added flint are first recorded from the late Bronze Age at Gravesend (Barclay 1994). At Cobham though, they were still absent early in the late Bronze Age (Mcnee and Morris 2006), but appeared in small quantities (<3%) during the late Bronze Age/early Iron Age (Macpherson-

Grant 1996). The practice the adding of flint to shelly clays continued throughout the early Iron Age, apparently largely falling out of use in the middle Iron Age, as at Darenth (Couldrey 1998).

***Sandy Wares*:** Sandy fabrics without flint, shell or grog inclusions occurred during the middle-late Bronze Age and into the early Iron Age, though often accounting for fewer than 1% of the sherds (Couldrey 1999). They became more popular in the middle and late Iron Age, when they account for between 16%–32% of the sherds recovered (Couldrey 1991; 1998; 1999). In west Kent in particular, the use of heavily glauconitic clays is associated with everted rim/footring jars of the middle Iron Age (Couldrey 1984a) with production centred on the Medway valley, and was associated with 'Belgic' forms in the late Iron Age (Thompson 1982).

***Grog*:** Grog without additional tempering was used during the transitional middle Bronze Age/late Bronze Age at Beechbrook Wood and to a limited extent at the same site in the middle Iron Age, where it was associated with saucepan pots (Morris 2006). In the late Iron Age it is recognised throughout east and west Kent associated with 'Belgic' forms.

Manufacture and surface treatment

The early and middle Iron Age pottery was all handmade. The inclusions in the fabrics of the earliest and early Iron Age ceramics were locally available, and the differential firing exhibited on many sherds indicates that firing was likely to have been achieved in a simple bonfire type structure. In common with evidence of prehistoric pottery manufacture and firing from numerous other sites in Britain, these were probably undertaken on a domestic, perhaps household level during this early period. An absence of production equipment and permanent firing sites at the A2 suggests that pottery manufacture was likely to have been a seasonal activity, organised to take place when weather conditions were advantageous for drying and firing. A few sherds showed the bloating and warping characteristic of overfiring or refiring, but as most of these were associated with the residues of heat-related industrial activity, they are best regarded as accidental by-products of these processes.

Deliberate treatment of the surfaces of most vessels dating to the early part of the Iron Age generally involved a basic finishing-off with (evidentially) fingers and vegetation or (presumably) leather, cloth or pebbles in order to mask the worst of protruding inclusions and/or to close the clay to reduce permeability. Some sherds show evidence of the application of a clay slurry. A large proportion of smaller, finer bowls and jars were carefully soothed or burnished before firing, probably again to reduce permeability, but no doubt also to enhance their appearance. Where a clear effort to produce small water-tight vessels is evident, it could follow that they were intended as drinking vessels. A particularly well-burnished complete jar from pit 9010 (no. 9109030) is a rare example from this site of a large early Iron Age jar being afforded such treatment. It formed an element of a special deposit of what may have been a ceremonial 'set' of vessels and may have been specially produced for this purpose, although its fabric does not mark it out as singular.

By the middle Iron Age some of the raw materials and/or finished pots themselves were being brought to the site from further afield, including from localities around the Medway Valley where heavily glauconitic clays outcropped. These were also exclusively handmade but frequently burnished, whilst the more locally produced coarser vessels generally continued to be only roughly finished. Much of the late Iron Age pottery range was also handmade, but exceptions included some of the grog-tempered Gallo-Belgic inspired forms, which showed the characteristic internal striations created by turning or throwing on a wheel. Although grog temper can be prepared wherever fired pottery has been used or discarded, the grog-tempered ceramics which dominated the A2 late Iron Age assemblage were probably mostly brought in from the centralised production centres that were increasingly replacing domestic manufacture of utilitarian vessels by this time.

Form and decoration

The range of vessel forms and decorative motifs are presented by period in a separate section of this report (The Ceramic Sequence, below). A large proportion of the ceramic assemblage had been subject to high levels of fragmentation prior to deposition, with the result that the majority of sherds, even rims, were not classifiable by form. However, several pit and ditch assemblages of all periods produced substantial profiles and even some complete vessels. These have been selected for illustration and presentation as key groups, which include small, less precisely classifiable rim, base and decorated fragments. Other well-preserved fragments that occurred as part of small, mixed assemblages have also been drawn and described in order to ensure that the full range of vessel forms and decorative techniques from the site are represented.

Chronological and cultural framework

Ceramics are generally the most prolific of artefacts recovered from prehistoric excavations in the region, although some metalwork associations are available (Champion 2007). Until the recent HS1 excavations, radiocarbon dates were available from few sites, and not all of these directly associated with pottery. An understanding of the chronology of the Iron Age in Kent has, therefore, been based largely on ceramic typology.

The chronological framework used to define the A2 Iron Age pottery has been based on a combina-

tion of radiocarbon dates, stratigraphic relationships, ceramic typology and on parallels with better understood groups in Kent, southern England and on the continent. The pottery has generally been classified within the following periods: earliest Iron Age; early Iron Age; middle Iron Age; late Iron Age. The chronological ranges of some of these periods, however, remain insecure for a variety of reasons. Despite the discovery at the site of several good Iron Age closed groups, especially from pits, many other groups lacked sufficient diagnostic material or secure stratigraphic provenance to date their currency and deposition precisely. Where such adverse factors applied, definition has been less explicit using, for example, 'early/middle Iron Age' or 'middle/late Iron Age' classifications. The elisions indicate as much that the ceramic date is uncertain as that the feature or deposit may contain material that spans a transitional period.

As is well recognised, the chronological nomenclature of the first part of the Iron Age is subject to problems caused by the wide standard deviation associated with the plateau-affected radiocarbon dates for the period *c* 850–400 cal BC. The choice of nomenclature for the ceramic assemblage of any given site tends, therefore, to vary. At best it relies on associations between radiocarbon determinations and well-stratified, closed assemblages containing distinctive forms and/or representing clear events. For some site assemblages, which lack such associations, ceramic dating has been based largely on typological parallels. The often fragmentary condition, lack of diagnostic sherds and small size of feature assemblages, compounded the difficulty in refining the ceramic chronology of the A2 pottery.

Few sites in Kent have produced evidence for activity across the period boundaries defined above and there remain considerable uncertainties concerning the chronology of the Iron Age as a whole and the development of pottery forms and fabrics within this broad period (Champion 2007b). The transition from the early to middle Iron Age in Kent has been dated on the basis of typological comparisons with other regions, resulting in considerable fluctuations in the dates, and independent dated sequences for west Kent are rare. For the transition from middle to late Iron Age, evidence is beginning to emerge in east Kent, supporting the use of grog tempering as early as the late 2nd century BC, at Bigberry (Clark and Thompson 1989), and at Eyehorne Street and Beechbrook Wood on the HS1 (Morris 2006). However, evidence for such an early use of grog tempering remains elusive in west Kent. The transition from the middle to late Iron Age forms at Farningham Hill, a site lying just south of Dartford on the west side of the Darent valley (Philp 1984), was placed at *c* 50 BC, although Morris has suggested that the date should be revised back to *c* 120/100 BC (Morris 2006).

In east Kent and north of the Thames during the late 1st century BC, the arrival of Gallo-Belgic imports was accompanied by an increase in the range of forms and fabrics, especially fine 'table wares', that continued until the Roman conquest and beyond. In west Kent, however, few sites with Gallo-Belgic vessels have been excavated and imports of early Roman finewares are rare. This can make dating the use of native pottery in the periods immediately before and after the Roman conquest very difficult. Understanding the extent of continued use of native pottery within the associated native farmsteads, and the levels of social upheaval in the immediate pre- and post-conquest periods would be greatly improved with independent chronologies. Beyond merely establishing a ceramic chronology there has been some consideration of evidence for traded ceramics from Kentish sites. Most of the pottery was locally made, but possible copies of continental forms have been found (see below).

A logical springboard for investigation of chronological links between the A2 pottery and other late prehistoric assemblages is a consideration of the material recovered from other Kentish sites west of the Medway, including those excavated at the northern end of the HS1 scheme. For the purposes of chronological distinction, however, the chronological framework used for the HS1 prehistoric pottery (Morris 2006) was only broadly adhered to in analysing the A2 Iron Age pottery, for reasons set out below.

Earliest Iron Age

In ceramic terms the earliest Iron Age broadly corresponds to Barrett's Decorated Phase of the later Bronze Age (1980), a period when the ceramic style range was characterised by more highly decorated types than the preceding plainware post Deverel-Rimbury (PDR) tradition, at least in lowland Britain (Needham 1996, 137). Cunliffe's Highstead 2 style zone, based on the large pottery assemblage from this east Kentish site, corresponds to this phase, with a date of *c* 8th to 6th centuries BC generally accepted for this period, when there was a 'fundamental transformation in the use of metals to both social and technological ends' (Cunliffe 2005). The transitional late Bronze Age/early Iron phase at HS1 is defined as 'earliest Iron Age' (*c* 850–650 BC) rather than the more traditionally accepted 'decorated phase of the later Bronze Age'. This designation is based on the identification of an earliest Iron Age in parts of southern central England, including Hampshire (Davies 1981; Brown 2000), where it was linked to early use of Iron.

The frequency of decoration, however, cannot be described as high within the HS1 and A2 earliest Iron Age assemblages. Along the HS1 route, pottery dated to this period was recovered from two pits at Little Stock Farm and, less reliably, a feature at Saltwood Tunnel (Morris 2006), two sites which lay at the southern end of the route in east Kent. Other east Kent assemblages that correspond to this time frame were recovered at Monkton Court Farm,

Thanet (Perkins *et al.* 1994), Highstead Period 2 (Couldrey 2007), Minnis Bay (Worsfold 1943) and Mill Hill, Deal (Champion 1980), but at these sites they were referred to in the more traditional terminology of 'late Bronze Age/early Iron Age'.

In west Kent pottery of this date is less common, but material from Phase I at Darenth (Couldrey 1988) was dated to 900–500 BC. Small quantities of pottery from the A2 have been dated to the earliest Iron Age, based not on absolute dates (for which none associated with pottery were obtained for this period) nor on an observation of early use of iron, but on the basis that it resembled the early Darenth material. The assemblage of this date recovered at Highstead, despite its distance from the A2 and corresponding contrast of ceramic tradition, provides some basis for comparison of forms, especially of bowls with groove-decorated necks.

An earliest Iron Age date was also used to accommodate feature groups at the A2 that stratigraphically pre-dated early Iron Age activity. However, the A2 assemblage provides little evidence that could help to resolve the question of the arrival date of decorated styles in the area due to the scarcity of metalwork associations and radiocarbon dates, a common problem for this period in Kent. The recognised associations of metalwork and diagnostic pottery at Highstead, Mill Hill and Monkton Court Farm suggest that the production of distinctive pottery of this period corresponded with the end stage use of late Bronze Age metalwork, indicating that a 9th century BC date is appropriate for the appearance of earliest Iron Age pottery in Kent generally.

Early Iron Age

A comprehensive assessment by Macpherson-Grant (1991) considered the then known Kentish early Iron Age pottery assemblage within the context of the wider prehistoric ceramic range. In west Kent pottery of Period II at Keston was dated to the early Iron Age (6th–3rd century BC) (Couldray 1991; 1999) and pottery from both Keston and Darenth share form and fabric traits with early Iron Age material from the A2. Pottery of this period, including briquetage, was also recovered from Tollgate (Morris 2006, fig. 3.7b, 3.7c). To the south-east, contemporary assemblages were found at White Horse Stone, Tutt Hill and Beechbrook Wood (ibid.). Further afield comparative material has been found in Essex (eg Hedges and Buckley 1978; Hamilton 1988), Surrey (where sites of this period await publication; Poulton 2004) and further up the Thames Valley.

The HS1 pottery of the 6th–4th century BC was classed as 'early/middle Iron Age', the term adopted partly because at White Horse Stone, Beechbrook Wood and Cuxton, pottery with early Iron Age characteristics was on rare occasions associated with well-finished saucepan pots (Morris 2006, 53). These associations have not otherwise been widely recognised, and 'early', 'middle' and 'late' Iron Age ceramic classifications have been generally based on previously observed typological sequences in Kent and the surrounding regions, including Sussex and Hampshire, where saucepan pots in their developed form have been generally recognised as a middle Iron Age phenomenon. At the A2, at Tollgate and at Northumberland Bottom, no well-finished saucepan pots were found in early Iron Age deposits.

Middle Iron Age

The middle Iron Age is better represented than earlier periods of the Iron Age in west Kent. Substantial assemblages have been published from Crayford (Ward Perkins 1938), Farningham Hill (Philp 1984, 7–71), Greenhithe (Detsicas 1966) Keston (Philp *et al.* 1991; 1999) and Oldbury (Ward Perkins 1944; Thompson 1986). In east Kent a small assemblage from Bigberry hillfort near Canterbury containing S-profile jars and saucepan pots was dated to the 5th–3rd centuries BC (Thompson 1983, 254) and a ditch assemblage from Beechbrook Wood on the HS1 route included most forms typically found in middle Iron Age groups across central-southern and south-eastern England (Morris 2006). However, the range of forms and fabrics varies a great deal between these sites, probably due to several factors, including chronological, functional or local distinctions. Jars with everted rims and footring bases are known in Essex, Sussex and, less commonly, in east Kent and are also common in the Darent valley. At Farningham Hill several pits produced burnished S-profile jars in glauconitic sandy fabrics associated with coarse shell-tempered jars (Couldrey 1984, figs 12–21, table H).

For the HS1 sites, the 'middle Iron Age' was defined as a period when saucepan pots became more common than previously (Morris 2006, 67). Saucepan pots, common in central southern England as far east as Surrey and Sussex (Cunliffe 2005, fig. 5.5) are rare in west Kent, but better known in east Kent (in part as a result of the HS1 project), where they share traits with Sussex types. At Cuxton, a radiocarbon date of 400–200 cal BC was associated with a well-finished flint-tempered saucepan pot (Morris 2006, 3.8b CUX/22). Cuxton lies just to the west of the Medway River, a topographic boundary that may have notionally as well as physically separated east from west Kent, perhaps representing a boundary in terms of ceramic tradition during the later prehistoric period. The occurrence of this vessel at this location could be significant for that reason and also because the Cuxton pit assemblage is regarded as anomalous, its deposition probably representing a special event (Morris 2006, 42). At Beechbrook Wood, some 45km south of the A2, a similar date of 390–170 cal BC was obtained on material from a pit which was the site of a major deposition event incorporating saucepan pots, S-profile jars and round-bodied and ovoid bowls—a 'classic' middle Iron Age assemblage (ibid., 3.8d, e, f).

During recording of the A2 pottery four sherds were initially recorded as possible examples of saucepan pots but closer inspection verified only one (SF 460)—a complete vessel which lay at the base of a pit (3662/3676) with a relatively late radiocarbon date of 210–40 cal BC (NZA 30118), and in association with a potin coin. Two small fragments of upright rim vessels which could possibly have belonged to saucepan pots were recovered from pits 4606 and 4969, both dated to the 1st century BC on the basis of Class 1 potins lying in their basal fills.

At South-east of Eyehorne Street four pits contained middle Iron Age pottery (Morris 2006, 3.8c), and here a special deposit included an S-shaped bowl and a rusticated ovoid jar. The use of grog temper at the site during this period was confirmed by a radiocarbon date of 400–260 cal BC from a pit that contained an unusual grog-tempered conical cup (ibid., fig. 3.8c EYH/2), and a date of 390–170 BC was obtained for deposits containing grog-tempered vessels at Beechbrook Wood (ibid., 68-9).

The use of glauconite-rich sandy clays, sometimes including flint, became common during the middle Iron Age in Kent and continued into the late Iron Age, when it is associated with 'Belgic' pottery (Thompson 1982). Especially in west Kent, heavily glauconitic clays are associated with middle Iron Age everted rim/footring jars (Couldrey 1984a), but the introduction of glauconitic fabrics during the early/middle Iron Age was noted at White Horse Stone and West of Northumberland Bottom (Morris 2006, 69). To some extent the assignation of a middle Iron Age date to particular A2 context groups has relied on the presence of glauconitic body sherds with a distinctive smoothed or burnished finish, in the absence of otherwise diagnostic material, but these dates should be used cautiously as a variety of fabrics including shelly and, more rarely, flint-tempered wares continued in use from earlier periods.

The A2 middle Iron Age pottery assemblage is largely characterised by S-profile or convex-shaped jars and bowls in glauconitic sandy fabrics, some with footring bases, although earlier forms continued to be used in tandem. Rusticated treatment of surfaces appears to have gone out of favour by this time and decoration is generally uncommon, curvilinear ornament of Mucking-Oldbury style on an everted rim vessel from Site D being a rare exception (see below Fig. 3.58 no. 63760001).

Late Iron Age

The late Iron Age pottery from the HS1 excavations was considered along with the Roman pottery (Booth 2006), but here the A2 pottery from context assemblages lacking clearly Roman types has been included in the later prehistoric report.

Until relatively recently, late Iron Age pottery from non-funerary contexts has been rather uncommon, as demonstrated by Thompson's 1982 survey of grog-tempered pottery from settlement sites. However, 1st century BC domestic assemblages are known, including those from Marlow (Blockley *et al.* 1995) and Highstead (Couldrey 2007) in east Kent. In west Kent small groups include those from Crayford (Ward Perkins 1938), Farningham Hill (Philp 1984), Thong Lane (French and Green 1983), Hillside, Gravesend (Philp and Chenery 1998) and the Roman villa site at Keston (Philp *et al.* 1991; 1999). Several west Kentish sites have been included in studies of late Iron Age grog-tempered pottery (Thompson 1982), Kentish Roman pottery (Pollard 1988) and more locally, the Roman Upchurch pottery (Monaghan 1987).

Continuity of settlement occupation from the middle through to the late Iron Age has been demonstrated on only a few Kentish sites, including Farningham Hill, possibly Highstead and the HS1 site of Little Stock Farm. A case for continuity of occupation could also be made for the A2 on the basis of site morphology and the suite of radiocarbon dates. The late Iron Age settlement on Site B/C appeared to have progressed from the middle Iron Age focus, occupying roughly the same three spatial zones. However, a fairly dramatic shift in ceramic tradition occurred during the first half of the 1st century BC. A crucial change was in the choice of clays and tempering agents at about that time. The proliferation of grog-tempered fabrics had an established pedigree in east Kent, where they had been used since the later Bronze Age but, until the late Iron Age, flint, shell and glauconitic clays were the traditional material used in the manufacture of Iron Age ceramics in north-west Kent. The widespread adoption of grog temper in the late Iron Age in this region represented a major shift, arising perhaps from technical adaptations, specialisation of production and, no doubt, other less demonstrable cultural factors.

A case for the re-introduction of grog-tempering to east Kent during the later part of the middle Iron Age has been argued (Clark and Thompson 1989, 303; Blancquaert and Bostyn 1998, 133) and the middle/late Iron Age date classification distinguished by Morris on the basis of a correlation between grog-tempered wares and saucepan pot forms at Beechbrook Wood (Morris 2006) has been cited above (although these were not linked to radiocarbon dates).

However, despite a thorough search of the A2 data, no reliable evidence of the use of grog before the late Iron Age has emerged. In view of this, the middle and late Iron Age periods have generally been considered separately in this report and dating of late Iron Age features has relied to some degree on the presence of grog-tempered sherds in significant quantities relative to other fabrics, in the absence of otherwise diagnostic pottery.

The A2 ceramic sequence

All of the ceramic phases detailed below include a selection of key groups and accompanying illustra-

tions. A more detailed description of these key groups can be found in the digital archive rerport.

Earliest Iron Age (c 900–600 BC)

Geographically the closest earliest Iron Age assemblage comparable to that from the A2 is the Phase 1 pottery from Darenth in west Kent (Couldrey 1998), which resembles in some respects that from pit 12576 in Site L and from a few locations on Sites B and G. Further afield, the Phase 2 settlement at Highstead in east Kent produced a range of earliest Iron Age pottery, classed there as late Bronze Age/early Iron Age and dated to 900–600 BC (Couldrey *et al.* 2007). Because some of the early pottery from the A2 resembles the Highstead material, the slightly earlier starting point of *c* 900 BC than has traditionally been assigned (Cunliffe 2005; Morris 2006, 54) may also be appropriate for this ceramic phase.

The earliest Iron Age period at the A2 site was not very clearly identifiable in terms of ceramic style. The ceramic phase was defined largely by minor typological affinities with more substantial assemblages from stratigraphically reliable sites. This assemblage was not represented by substantial profiles, but some characteristics typical of an earliest Iron Age tradition were observed. Sherds from a thin-walled, smoothed fineware bowl with small flint 'dust' inclusions from pit 7949 (Site B) is a type common in east Kent, including Highstead (Couldrey 2007). Part of a similar fineware bowl was recovered from pit 12756 in Site L. Otherwise, fabric inclusions for pottery of this period were invariably coarser flint or flint and shell in some combination. Forms included simple, plain rims, finger-tipped decoration on body, shoulder and upright rims. Flat basal sherds distinguished by the adherence of abundant coarse flint fragments to the outer surface were common within the A2 assemblage. Flint-gritted bases are recorded from late Bronze Age deposits at several sites in south-eastern Britain, including Mucking (Jones and Bond 1980, 477), Runnymede Bridge (Longley 1980, 65) and Brooklands, Weybridge (Hamworh and Tomalin 1977, 24). At Highstead the technique spans Period 2 and 3 (900–400 BC) (Couldrey 2007).

The fingertip or nail impressed decoration frequently observed on pottery of earliest Iron Age date was common even earlier—the middle Bronze Age—and persisted into the later part of the early Iron Age in both east and west Kent, so the incidence of this particular device is not period specific.

The distribution of pottery identified as possibly of earliest Iron Age date was widespread but sparse. Material likely to be of this date was recovered from a small subrectangular feature (12576) in Site L. Pits 7228, 7295, 7949, 5923, 5955 and posthole 7289 in Sites B and C contained material probably of similar type, as did pits 9004, 9012 and 9041 in Site G. North-south aligned Ditch 5912 contained no closely dated pottery, but the absence of the very coarse temper characteristic of middle Bronze Age pottery suggests that it was somewhat later. A radiocarbon date of 1130–990 cal BC (NZA 32400) from an abraded bone from 5298, the uppermost fill of this ditch, provides a *terminus post quem* for this assemblage. A group of pits and postholes at eastern end of the settlement (Site C) similarly lacked much diagnostic pottery, but the combination of other factors, including the flint or flint and shell fabric occurrences, to the exclusion of any others, make these features candidates for an earliest Iron Age phase. These include posthole group 5444 (5931 and 5933), posthole 5983 of group 7281 and several isolated shallow hollows 5953, 5955, 5959, 5990. One of a group of four small pits (7295) located in the southern part of this area also contained distinctive early pottery, along with a sizeable collection of structural fired clay. Pit 5923, a much more substantial feature, produced a relatively large pottery assemblage (290 sherds/664g). The sherds were mostly undiagnostic, abraded scraps dispersed throughout five fills, along with structural fired clay (oven daub?), animal bone and charred plant remains. This fill sequence within this type of pit could represent domestic material quarried from an above-ground midden to backfill a decommissioned storage pit.

Sherds of possibly earliest Iron Age date from Site G would most likely have represented settlement activity separated either chronologically or at least physically from the Site C activity, as nothing of this character was found in the intervening area of nearly 1.5km. Notably, no earliest Iron Age undecorated fineware bowls of the type found in Sites L and B were found in this location, supporting an argument for functionally and/or chronologically distinct activity here. However, fill 9570 of pit 9012 produced a bowl fragment in shell- and flint-tempered fabric, decorated with faint horizontal grooves between a rounded shoulder and rim. Similar vessels In Site G East pits 9004 and 9041 produced finger-tipped jar sherds and flint-gritted bases, in both flint- and flint- and shell-tempered fabrics attributable to an early Iron Age period. Posthole group 9031 produced very small, abraded sherds consistent with a long deposition history, which could suggest they pre-dated the early Iron Age, but this is a tenuous point.

Earliest Iron Age Key Groups

Pit 12576 Site L (Fig. 3.45)
1200166 (12577) Fineware bowl. Fabric FS13
1200169 (12577) Everted rim jar. Fabric F5
1200176 (12577) Jar with carinated shoulder and upright rim. Fabric FS20
1200177 (12577) Everted rim jar or bowl. Fabric F29

Pit 7228 Site C (Fig. 3.45)
5100970 (7227) Bowl with slight carination and upright rim. Fabric F16, burnished.
5100971 (7227) Bowl with flat-topped rim and finger-tipped shoulder. Fabric SF18, slurried, wiped.
5100987 (7227) Flaring bowl rim fragment. Fabric F20, smoothed.

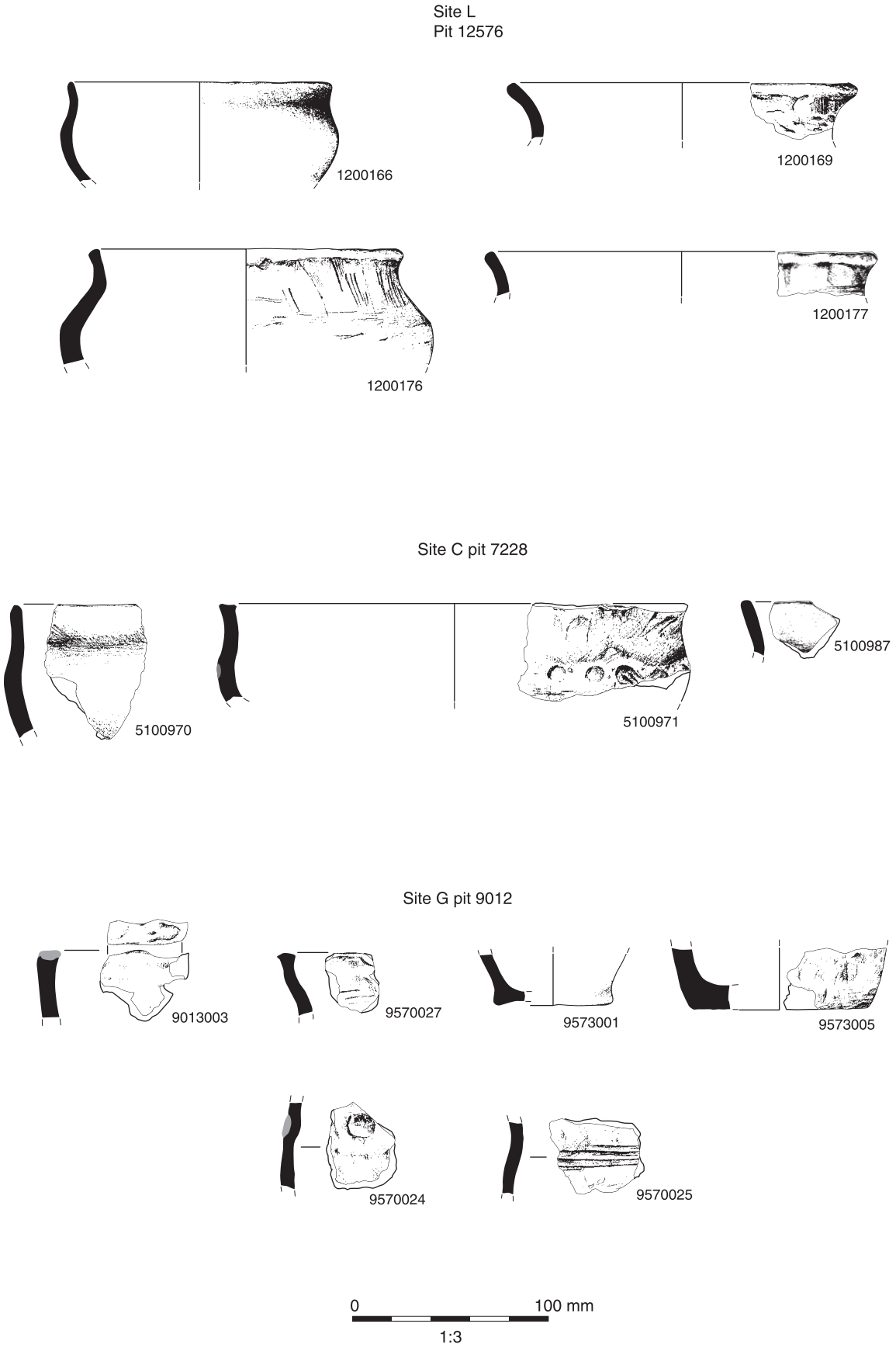


Fig. 3.45 Earliest Iron Age pit groups L-12576, C-7228 and G-9012

Pit 9012 Site G East (Tollgate pit 387) (Fig. 3.45)
9013003 (9013) Inturned rim with fingertip decoration. Fabric FS12
9570027 (9013) Flat-topped bowl/jar rim with grooves on neck. Fabric SF43
9573001 (9573) Footring base of small bowl. Fabric FS199, burnished
9573005 (9573) Flat base. Fabric S12.
9570024 (9570) Sherd with fingertip decoration. Fabric SF21
9570025 (9570) Sherd with light horizontal grooves on shoulder. Fabric SF23.

Early Iron Age (c 600–350 BC)

The early Iron Age was not signalled at the A2 by any sudden break in ceramic style from the preceding period, but rather an embedding of the existing ceramic range within an intensified settlement framework, enhanced by the introduction of a wider variety of vessel forms, decoration and surface treatments. Amongst these innovations was the imitation (albeit on a very limited scale) of continental ceramic traditions, including rustication of vessel surfaces.

In his assessment of Kentish Iron Age pottery, Macpherson-Grant noted that an 'East Kent rusticated tradition' had some close parallels with assemblages from the near continent, and he believed that the device was exclusive to east Kent and the continent (1991, 41–8). Rustication can entail a number of specific treatments—a simple deliberate roughening of the vessel surface, patterned roughening (eg finger furrows), application of clay globules or of a thick slurry, combing into leather hard surface or dense fingertip impressions all over vessel body. It probably served a dual purpose of utility (ease of shifting) and ornament.

The technique, termed on the continent *eclabousée,* occurs sporadically in Hallstatt B groups in the Low Countries, probably derived from earlier urnfield pottery in Germany (Desittere 1967; 1968). By the early La Tène period the technique had spread to north-east France (Gosselin *et al.* 1984; Leman-Delerive 1984; van Doorselaer *et al.* 1987; Hurtrelle *et al.* 1990) and in Belgium it continued in use throughout the Iron Age. Rustication was a standard surface treatment at Highstead in east Kent throughout Period 3 (Couldrey 2007, 121) and was also recorded at Keston Period II, dated to the 6th-3rd century (Couldrey 1991; 1999) and at Hawkinge Airfield, Folkestone (Thompson 2001). Along the HS1 route, rustication was common at White Horse Stone, rare at Tollgate (adjacent to the A2 site), and absent at West of Northumberland Bottom. Despite the evidence from Keston and Tollgate, Morris observed that there was 'every reason to suspect that west of the Medway Valley rustication was not viewed as an acceptable surface treatment during this period' (Morris 2006, 65).

The presence of a few sherds of rusticated ware at the A2 is, therefore, significant. Rusticated sherds were found at three early Iron Age settlement sites, in pits 5066, 5130, 5992 (Site C), in pit 6336 (Site D), and in pits 9010 and 9052 (Site G East). No rusticated pottery was found at Site L. The sherd from Site D is in a sandy ware with flint temper (FS129), as are those from pit 9010, whilst those from the other pits in Sites C and G are in shell- and flint-tempered fabrics (F23, SF7, SF8, SF22, SF26, FS39). They were probably all made locally rather than imported from east Kent as the fabrics match those of the other early Iron Age fabrics.

At Site C rusticated wares were associated with round-bodied bowls, a form generally more common in west Kent, so the connection between what is generally considered west and east Kent traditions is noteworthy. The two pits in Site G East (9010 and 9052) both had associated radiocarbon dates, providing an absolute date of between 510–360 cal BC for the arrival of rusticated wares at the site. This dating provides a more precise time frame than that suggested at Keston, although the occurrences in the undated A2 pits may, of course, have been earlier. It is possible, however, that the technique was adopted in the west of Kent only in the later part of the early Iron Age.

Another distinctive surface finish applied to vessels in parts of Kent and elsewhere in southern Britain during this period was red-finishing or painting, sometimes in the form of a true haematite coating. A small number of sherds of this type were found at White Horse Stone, dated there to the early/middle Iron Age. This technique has been identified amongst material dated to the late BronzeAge/early Iron Age at Minnis Bay (Middleton 1995) and at Highstead (Couldrey 2007). Only two or possibly three sherds displaying this treatment were identified within the A2, assemblage, all on Site L. The sherds are very small, however, and the identification is not certain.

Some characteristics of the earliest Iron Age ceramics persisted into the early Iron Age. Jars with finger-tip impressions on rims and prominent shoulders (and more rarely on the upper body) remained common. Examples of this style were found in pits 1055 and 10547 at Site K, and in large numbers at Sites L, Sites C and Sites G (East and West). Flat bases, with and without flint adhering, also continued, but a small number of sherds hinted at the development of low pedestal or foot-ring basal forms during this period, although all examples were highly abraded.

During this period finger-tipped vessels occurred in association with more rounded profile jars and bowls. Jar rims were flat-topped (some examples expanded inwards) or simple upright or everted (Sites C and G). Well-finished bowls with flaring rims and rounded or carinated bodies (Sites L, Site C, Site G) were often well-smoothed or even highly burnished. Some plain in-turned rims may represent proto-saucepan pots but were generally too fragmentary to be certain. Plain, open 'troughs' or shallow bowls were found at Site C.

Although many of the larger vessels lack distinctive surface treatment, some bear vertical brush

marks produced by wiping with grass, a common practice during the early Iron Age. An increase in the smoothing and burnishing, especially of bowls, was recorded. Other treatments were also noted for this period—coarse combing, generally diagonally applied below the shoulder (Sites K and C), and the application of shallow cordons (Site C). A small sherd from Site C bore a triangular design composed of three finger-tip impressions, which may have been part of a wider decorative scheme. More clearly visual in design are widely spaced cross-hatching and linear grooves (similar to furrowing) on bowls from Site C.

More unusual from the A2 are rims with cabled decoration, as distinct from the very common fingertipping. A bowl from Site L bore this treatment, enhanced with linear grooves on the shoulder. An open bowl (5000451) from pit 5130 (Site C) is a clear example and cabled rims were also recovered from pit 9010 in Site G (East). Parallels for this technique are to be found within the assemblages from Northumberland Bottom (Moris 2006, fig. 3.7, WNB/18) and White Horse Stone (Morris 2006, fig. 3.7, WHS/15 and /24).

Significantly, a possible rare example of a type known in Belgium and France as 'coupes à bord festonnés ('horned', crenellated or festooned bowls) was recovered from pit 9088. The flint and shell fabric in which it was produced matches that of another example from White Horse Stone, believed on the basis of fabric to be a British copy rather than a continental import, but possibly transported to the site from a production site on the south side of the Greater Thames Estuary (Morris 2006). Considering the proximity of the A2 site and White Horse Stone (*c* 15km), the two sites may have participated in a common exchange network. Since rustication is also a common feature of early Iron Age northern French pottery (and also present at White Horse Stone), the A2 examples from Sites C and D may serve to emphasise the connection.

Early Iron Age Key Groups

Pit 10515 Site K (Fig. 3.46)
10520001 (10520) Upright rim and slack shoulder with fingernail impressions. FS223.
10520002 (10520) Open bowl with curved wall and flat-topped rim. Fabric SF9, smoothed.
10520003 (10520) Combed body sherd. Fabric F21.
10520006 (10520) Small slack-shouldered jar. Fabric SS45, slurried wiped.
10520014 (10520) Pedestal base of small vessel. Fabric FS147, smoothed.

Pit 12572 Site L (Fig. 3.46)
1200140 (12573) Combed body sherd. Fabric SF11.
1200153 (12573) Body sherd with single deep groove. Fabric SF27.
1200127 (12573) Small base with projecting heel, very crudely made. Fabric SF12.
1200129 (12573) Small bowl with upright internally expanded rim. Fabric SF12, wiped.
1200144 (12573) Thin-walled vessel with flat, inturned rim. Briquetage? Fabric S7.
1200225 (12617) Open bowl with cabled rim and combed finger-tipped body. Fabric F31.

Pit 12527/12700 Site L (Fig. 3.47)
1200009 (12528) Small jar with upright rim. Fabric FS2
1200012 (12528) Pedestal base with groove above. Fabric F14
1200015 (12528) Carinated bowl with flaring rim. Fabric FS20
1200268 (12701=12528) Carinated bowl with flaring rim. Fabric FS5
1200269 (12701=12528) Carinated open bowl. Fabric FS5
1200270 (12701=12528) Carinated bowl with upright rim. Fabric FS5
1200271 (12701=12528) Bowl with upright rim on rounded shoulder. Fabric FS6
1200272 (12701=12528) Carinated bowl with flaring rim. FS25
1200273 (12701=12528) Jar rim with fingernail impressions. Fabric FS13
1200290 (12701=12528) Barrel shaped jar, fingertip impressed rim/shoulder. Fabric SF30
1200293 (12701=12528) Bowl with upright rim, pronounced rounded shoulder. Fabric SF30
1200294 (12701=12528) Lid or plain bowl fragment. Fabric FS18. Overfired or refired
1200298 (= pot 1200281) (12528) Carinated bowl. Fabric FSS8
1200197 (12579) Jar with slashed decorated rim, vertical grooves on shoulder. Fabric SF30
1200198 (? =1200197). (12579) Fingertipped rim. Fabric SF30
1200547 (12580) SF1271. Shouldered jar, fingertip decoration on neck/shoulder. Fabric SF35

Pit 5992 Site C (Fig. 3.48)
5101058 (7283) Angled shoulder of upright rim bowl. Fabric SF23.
5101076 (7283) Finger-impressed body sherd. Fabric FS103.
5101105 (7283) Everted, flat-topped rim. Fabric SF32.
5101126 (7283) SF817 Everted rim with inturned tip. Fabric SF23, wiped.
5101063 (7283) Open vessel with flat-topped, expanded upright rim. Fabric SF18.
5101064 (7283) Inturned bowl rim with finger-tipping. Fabric SF23.
5101088 (7283) Upright bowl rim. Fabric FOR7, burnished.
5101102 (7283) Upright rim wit coarse grooves below. Fabric SF23.
5100741 (5996) Open bowl with finger-tipped rim. Fabric FS104.
5100696 (5995) Upright rim of fine bowl. Fabric Sa5, burnished.
5100708 (5995) Carinated bowl with flaring rim. Fabric FS96, burnished.
5100709 (5995) Jar with flat-topped expended rim. Fabric SF2, wiped.
5100710 (5995) Shouldered bowl with upright, flat-topped rim and thumbed neck. Fabric SF9.
5100711 (5995) Open bowl with finger-tipped rim. Fabric SF28, wiped.
5100720 (5995) Open bowl with finger-tipped rim. Fabric SF17, wiped.
5101160 (7284) Jar with insloping, expanded rim. Fabric SF35, slurried wiped.

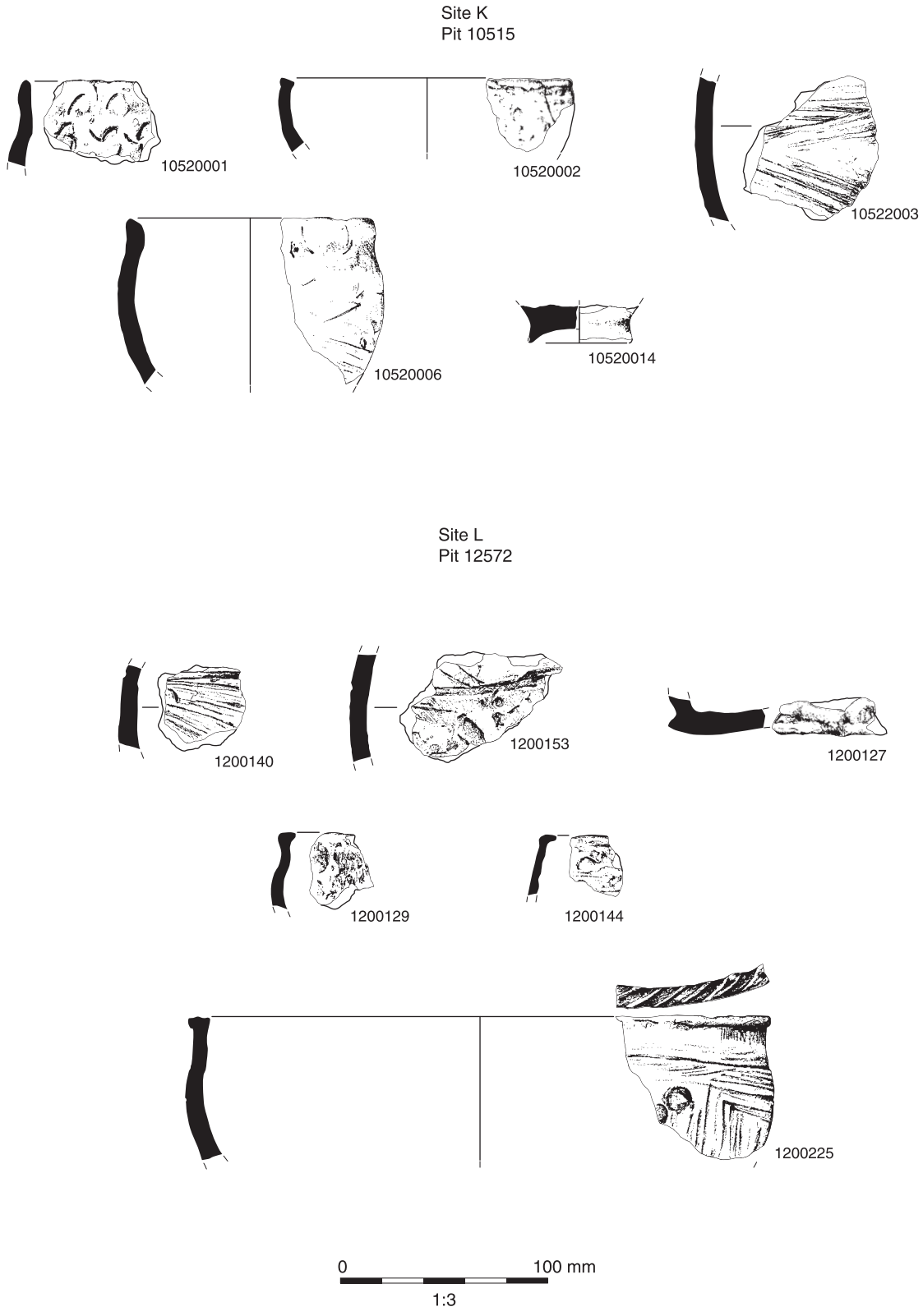
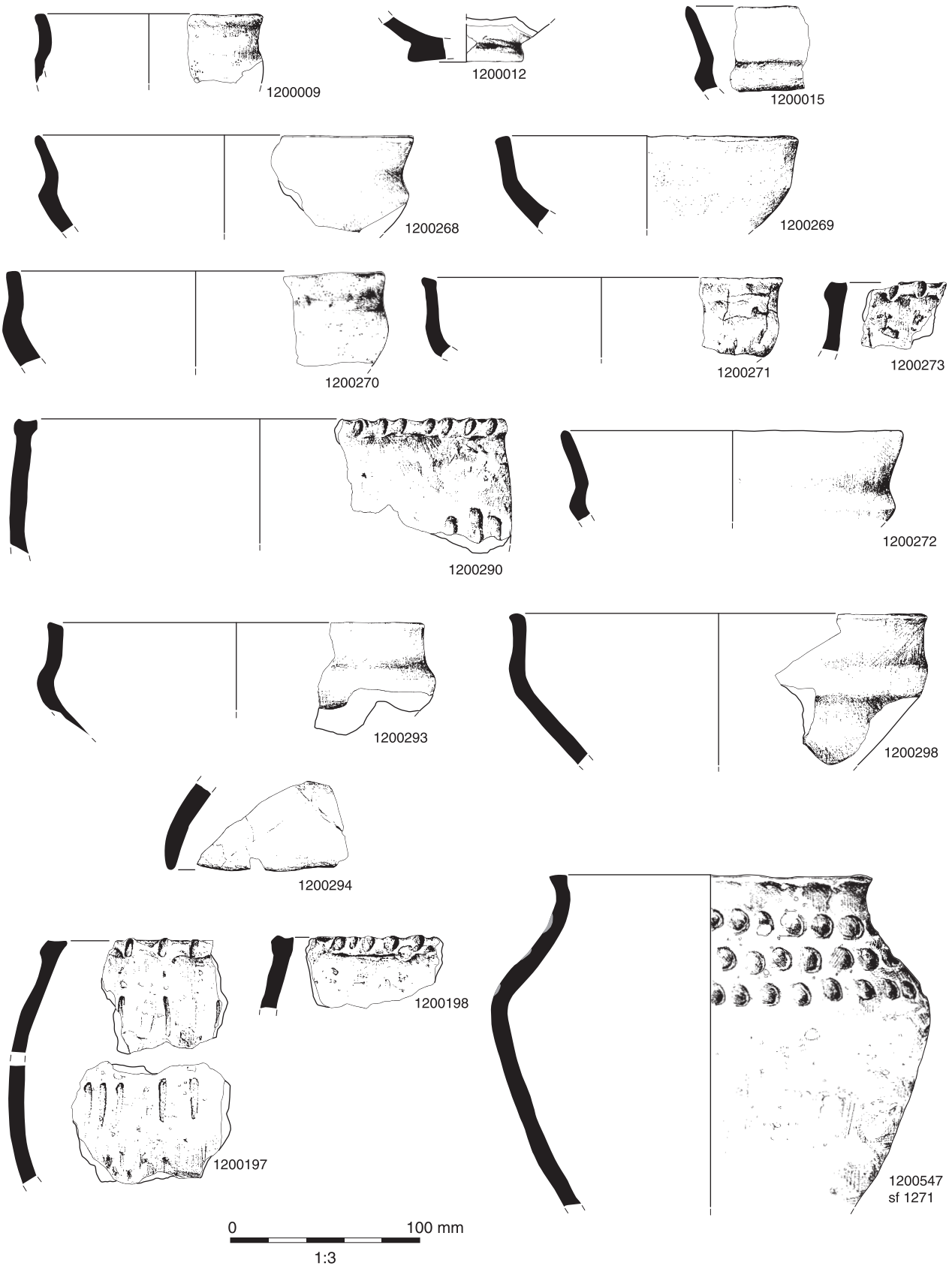


Fig. 3.46 Early Iron Age pit groups K-10515 and L-12572

Fig. 3.47 (facing page) Later early Iron Age pit group L-12527=12700

Site L
Pit 12527 = 12700



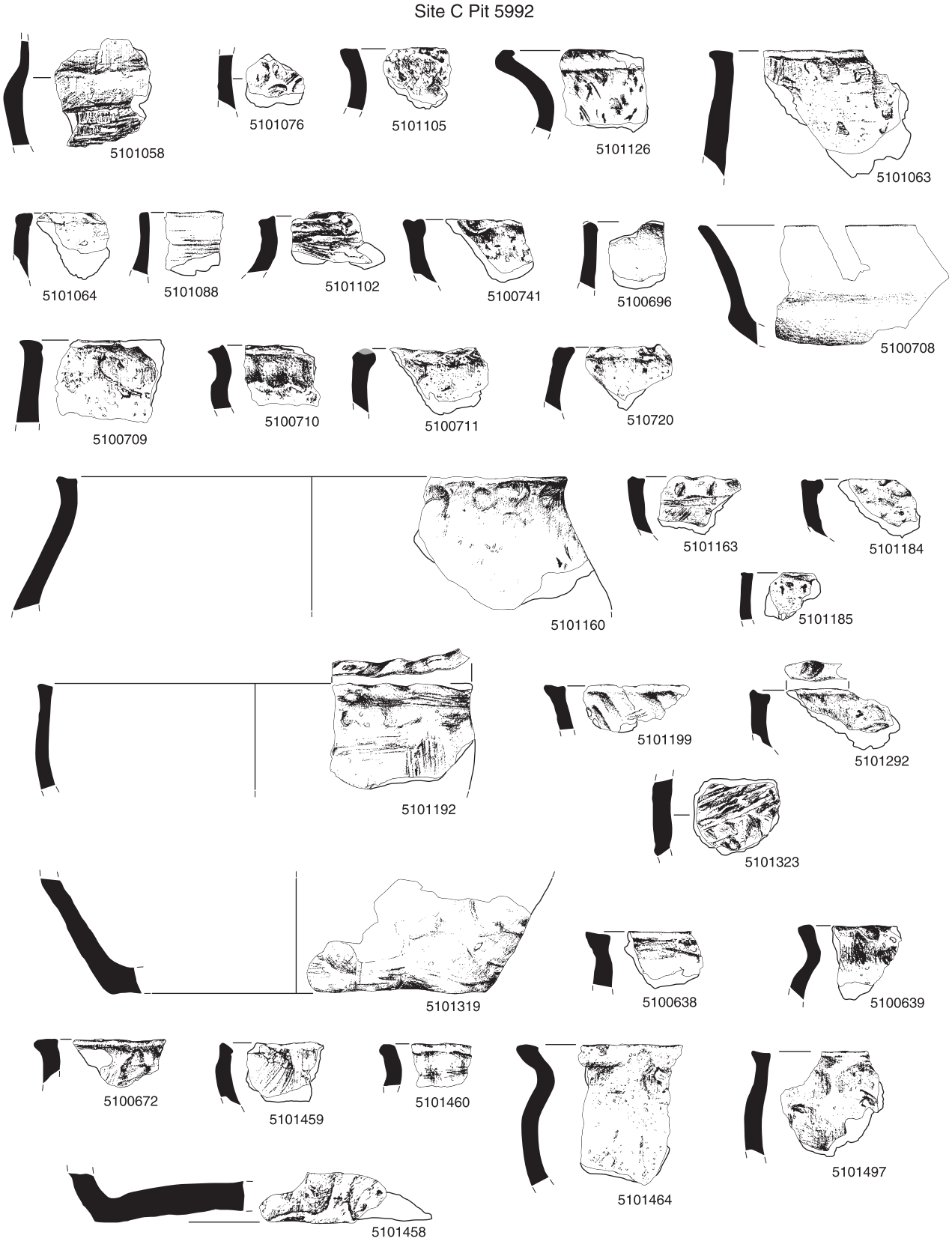


Fig. 3.48 Early Iron Age pit group C-5992

5101163 (7284) pen bowl with finger-tipping below rim. Fabric SF26, wiped.
5101184 (7284) Finger-tipped rim, probably of open bowl. Fabric SF34, wiped.
5101185 (7284) Small open bowl with flat-topped rim. Fabric SF32, smoothed.
5101192 (7284) Deep open bowl with roughly cabled rim. Fabric SF32, smoothed.
5101199 (7284) Upstanding, flat-topped rim of ?jar. Fabric S5, slurried, smoothed.
5101292 (7285) SF822 Open bowl with finger-tipped rim. Fabric SF20.
5101323 (7286) Roughly combed body sherd. Fabric FS127.
5101319 (7286) Flat base of large jar, wiped smooth underneath. Fabric FSS19.
5100638 (5994) Expanded flat-topped rim. Fabric SF7.
5100639 (5994) Everted, finger-tipped bowl rim. Fabric S7.
5100672 (5994) Expanded, flat-topped ri. Fabric SF7.
5101459 (7314) Small hemispherical bowl, Fabric FS45, wiped.
5101460 (7314) Upright rim of small bowl or jar. Fabric SF12.
5101464 (7314) Small jar with everted, folded rim. Fabric SF37, wiped.
5101497 (7314) SF842 Flat-topped, expanded rim on short neck of slack-bodied jar. Fabric SF52.
5101458 (7314) Concave jar base. Fabric St.

Pit 5110/5219 Site C (Fig. 3.49)
5000203 (5132) Fragment of shouldered bowl. Fabric Sa11.
5000204 (5132) SF 525 Everted bowl rim with slight bevel. Fabric Sa25.
5000312 (5156) Everted bowl rim. Fabric FS25.
5000565 (5402) SF 587 Jar with upright rim. Fabric FS50.
5000566 (5402) Everted, bevelled bowl rim. Fabric FS44.
5000643 (5403) Base of small jar. Fabric FS39, burnished.
5000824 (5422) Large jar with finger-tipping on shoulder and rim. Distorted, warped (refired or over-fired). Fabric SF35.
5000831 (5422) Plain rim of open bowl. Fabric FS62.
5000825 (5422) Rim and base of jar with finger-tipped rim. Fabric SF35.
5000842 (5423) Jar with finger-tipped rim. Fabric SF35. Possibly same vessel as 5000825 but finger-tipping is different.
5000843 (5423) Jar with flaring, finger-tipped rim. Fabric SF35.

Pit 5130/5242 Site C (Fig. 3.50)
5000479 (5243) SF591 Bowl or jar with flattened top and short neck. Fabric SF17.
5000395 (5137=5228) Jar base and lower wall. Fabric SF35, vertical wiping.
5000400 (5137=5228) Everted bowl rim. Fabric SF17, wiped.
5000401 (5137=5228) Upright, flattened jar or bowl rim. Fabric SF17.
5000453 (5136=5234) Upright rim of jar or bowl. Fabric SF21.
5000463 (5136=5234) Open bowl with finger-tipped rm. Fabric SF5, smoothed.
5000464 (5136=5234) Everted bowl rim. Fabric S1, wiped.
5000449 (5136=5234) Bowl with pronounced, rounded shoulder and flaring rim. Fabric SF20, wiped
5000226 (5136=5234) Flat jar base. Fabric SF34, wiped.
5000227 (5136=5234) Carinated bowl with elongated, inturned rim. Fabric FS17, burnished.
5000451 (5136=5234) Open bowl with incurving, cabled rim. Fabric FS26, vertical wiping.
5000484 (5155=5244) Small bowl with upright rim and rounded shoulders. Fabric FS60, wiped.
5000671 (5155=5244) Upright bowl or jar rim with fingertip decoration. Fabric SF21, wiped.
5000493 (5153=5245) Flat-topped rim of bowl or jar. Fabric SF17, wiped.
5000280 (5153=5245) Small bowl with upright rim. Fabric SF33.
5000281 (5153=5245) Everted bowl rim. Fabric F40.
5000282 (5153=5245) Flaring bowl rim. Fabric FS9.
5000657 (5175=5406) Rounded bowl shoulder decorated with double groove. Fabric FS63, burnished.
5000685 (5175=5406) Everted elongated bowl rim. Fabric F43, wiped.
5000688 (5179=5408) Upright bowl or jar rim. Fabric FS17, burnished.
5000322 (5179=5408) Flat base of small jar. Fabric F15.
5000690 (5179=5408) Flat-topped, recessed bowl or jar rim. Fabric SF22.
5000801 (5148=5420) Upright, flat-topped bowl rim. Fabric SF44, wiped.
5000802 (5148=5420) Upright, internally expanded rim, lightly finger-tipped. Fabric SF12
5000903 (5427=5429) Neutral form/bowl with flat, expanded rim. Fabric SF26.
5000904 (5427=5429) Jar with rounded shoulder and everted, hollowed rim. Fabric SF18.

Pit 5066 Site C (Figs 3.51–2)
5000408 (5140=5232) Jar with inturning grooved rim. Fabric SF18.
5000410 (5140=5232) Jar with upright fingertipped rim. Fabric SF20.
5000436 (5063=5233) Bowl or jar with flattened inturning rim. Fabric S12.
5000437 (5233=5063) Large necked bowl with flat-topped rim. Fabric SF30.
5000442 (5063=5233) Bowl with angled shoulder and elongated rim. Fabric FS9.
5000444 (5063=5233) Bowl with rounded shoulder and elongated rim. Fabric V.
5000106 (5063-=5233) Narrow flat base flaring to wide-bodied vessel. Fabric F36, smoothed.
5000109 (5063=5233) Elongated everted bowl rim. Fabric S5, burnished.
5000114 (5063=5233) Large bowl, upright flattened rim with diagonal slash marks. Fabric S6.
5000115 (5063=5233) Open bowl with expanded flat-topped rim. Fabric S27.
5000116 (5063=5233) Jar with upstanding, elongated rim and angled shoulder. Fabric Sa22, burnished.
5100137 (5404=5414=5493) Jar with everted rim and rounded shoulder. Fabric Sa41, smoothed (possibly MIA?).
5000719 (5404=5414=5493) Simple flat base fragment. Fabric Sa5.
5000720 (5404=5414=5493) Flat base, slightly projecting heel. Fabric Sa31.
5000721 (5404=5414=5493) Flat base, projecting heel. Fabric Sa5.
5000724 (5404=5414=5493) Small bowl with upright rim and rounded shoulder. Fabric FS34.
5100160 (5415=5495) Narrow neck jar with elongated, finger-tipped rim. Fabric SF27.

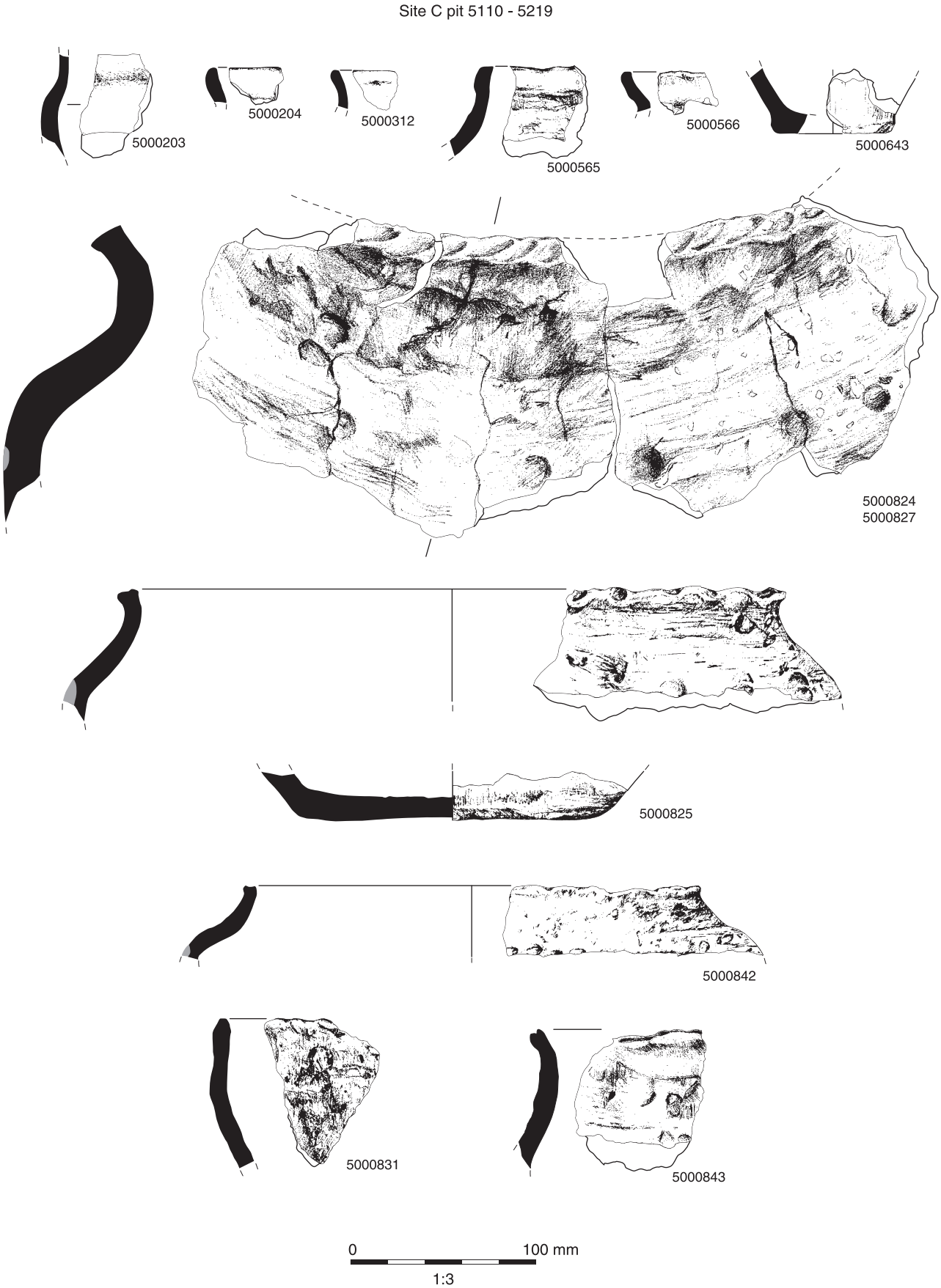


Fig. 3.49 Later early Iron Age pit group C-5110=5219

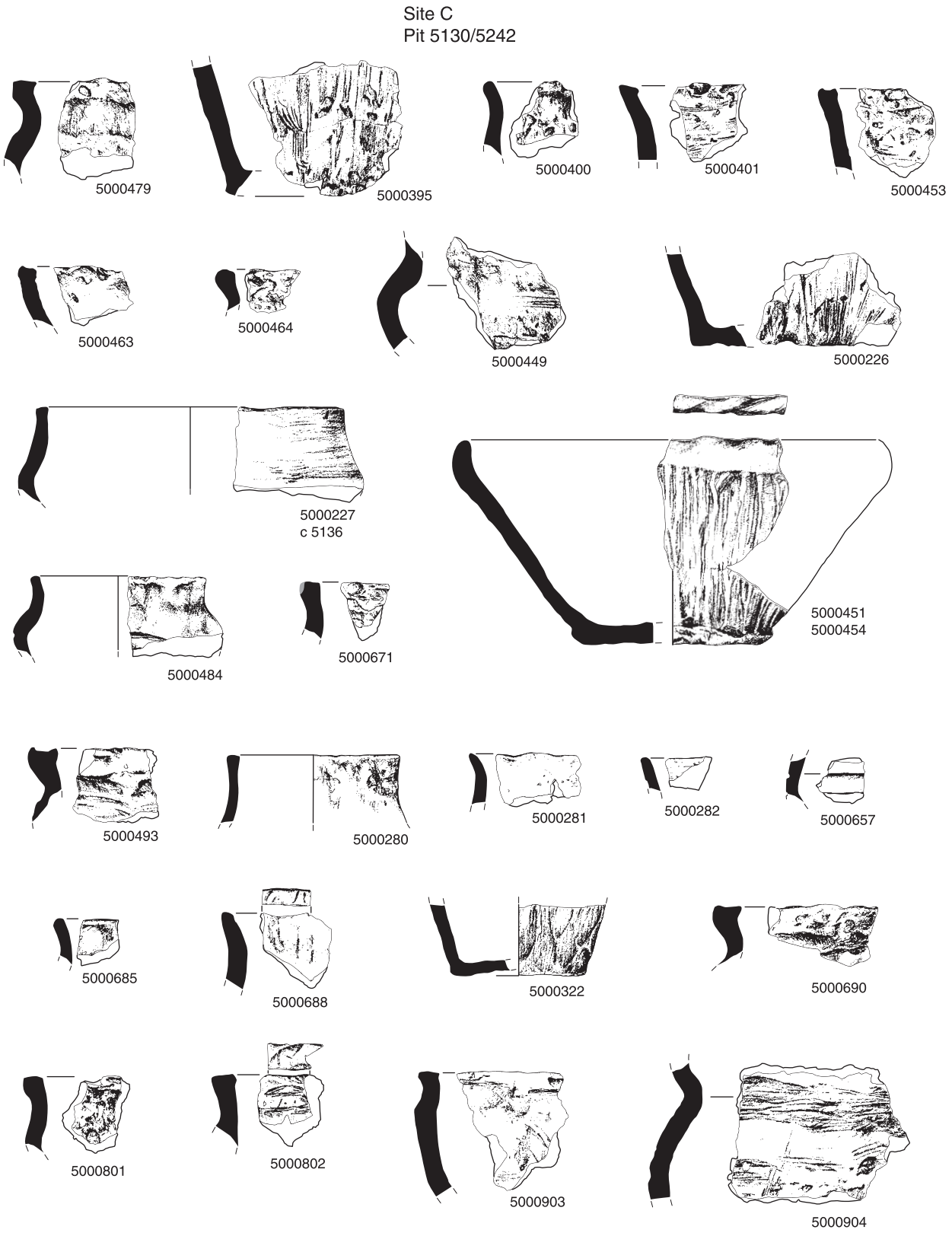


Fig. 3.50 Later early Iron Age pit group C-5130=5242

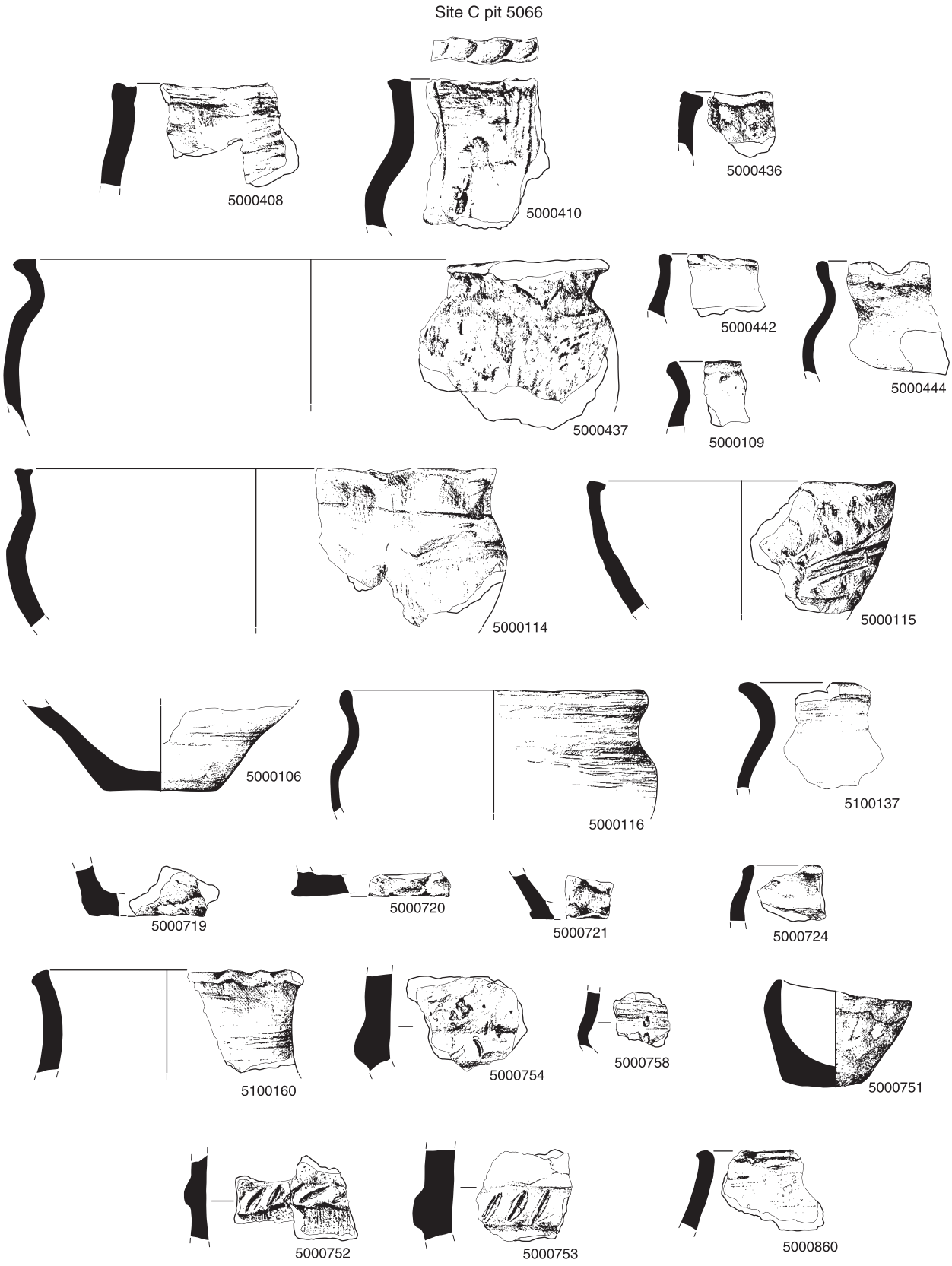


Fig. 3.51 Later early-middle Iron Age pit group C-5066

5000754 (5415=5495) Thick body sherd with wide cordon, possibly fingernail-impressed. Fabric S6. Residual MBA?
5000758 (5415=5495) Carinated bowl sherd, rim missing. Fabric SF40.
5000751 (5415=5495) SF539 Miniature pot or crucible. Fabric Sa24.
5000752 (5415=5495) Straight walled vessel with fingernail-impressed cordon. Fabric SF15. Residual MBA.
5000753 (5415=5495) Thick-walled vessel with fingernail-impressed cordon. Fabric F5. Residual MBA.
5000860 (5425) Upright jar rim with widely spaced fingertip impressions. Fabric S12.
5000865 (5425) Everted bowl or jar rim. Fabric FS17, highly burnished.
5000780 (5416=5496) Narrow base of wide-bodied jar (cf 5000106). Fabric Sa27.
5100302 (5430=5498) Round-bodied bowl. Fabric FS45.
5100309 (5430=5498) Rim of open bowl or shallow trough. Fabric Sa10.
5100330 (5431=5499) Short everted bowl rim with slight internal bevel. Fabric SF43.

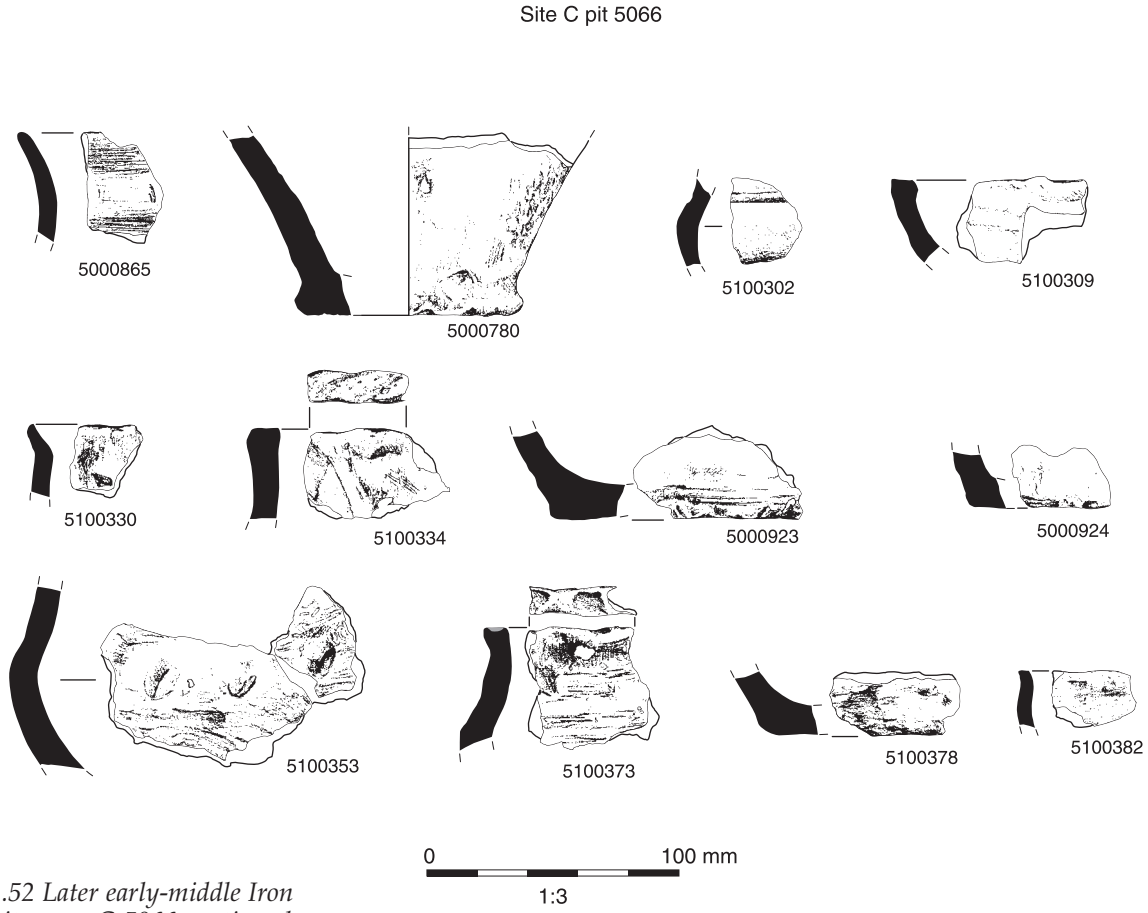


Fig. 3.52 Later early-middle Iron Age pit group C-5066 continued

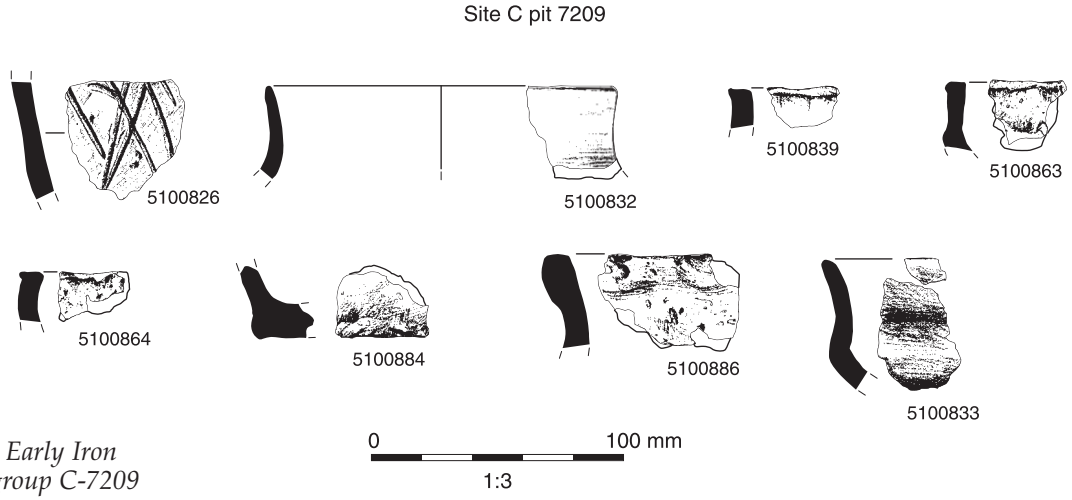


Fig. 3.53 Early Iron Age pit group C-7209

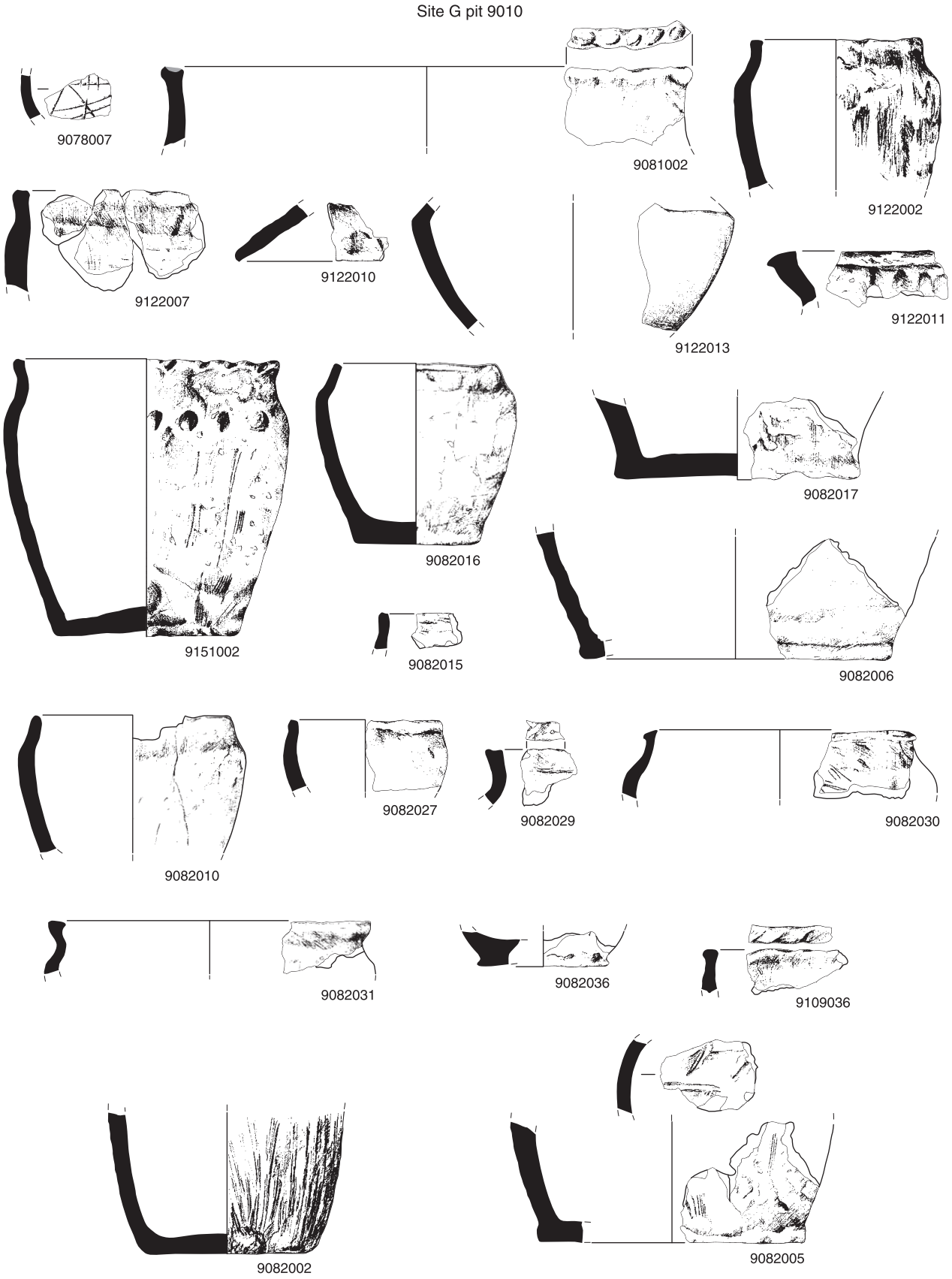


Fig. 3.54 Later early Iron Age pit group G-9010

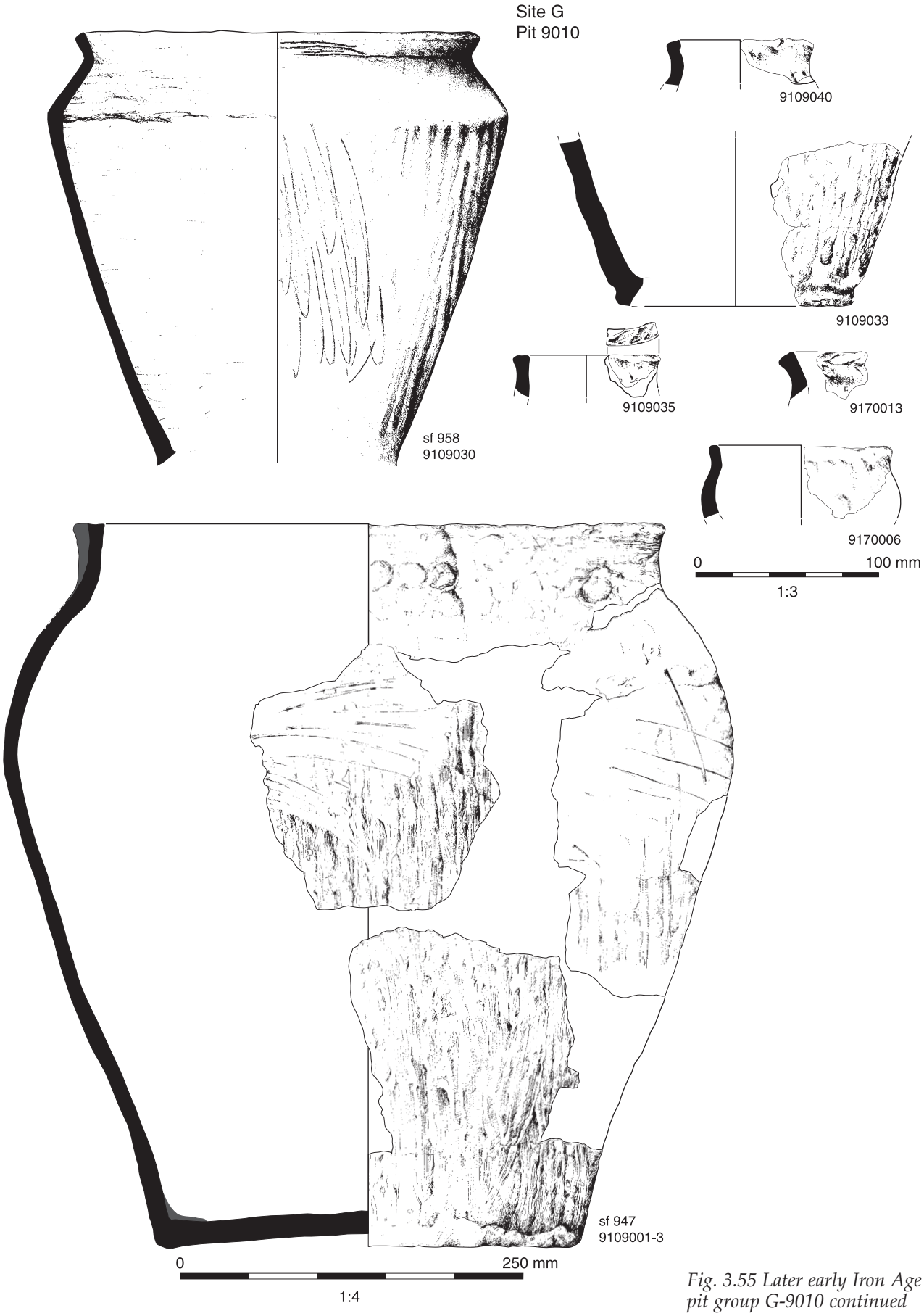


Fig. 3.55 Later early Iron Age pit group G-9010 continued

Fig. 3.56 Later early Iron Age pit groups G-9052 and G-9088/9567

5100334 (5431=5499) Upstanding cabled rim. Fabric SF27.
5000923 (5431=5499) Flat base of large jar. Fabric FS39.
5000924 (5431=5499) Flat base. Fabric Sa10.
5100353 (5500=5433) Large bowl with finger-tipped shoulder. Fabric SF23.
5100373 (5500=5433) Upright finger-tipped bowl or jar rim. Fabric SF22.
5100378 (5500=5433) Flat base, slightly protruding heel. Fabric FS9.
5100382 (5500=5433) Small round shouldered bowl with simple upright rim. Fabric F37.

Feature 7209 Site C (Fig. 3.53)
5100826 (7211) Body sherd with crude cross-hatched decoration. Fabric F21.
5100832 (7212) Flaring bowl rim. Fabric Sa46, burnished.
5100839 (7212) Flat-topped, expanded rim. Fabric FS62.
5100863 (7212) Small, crudely made carinated bowl with upright rim. Fabric F13, wiped.
5100864 (7212) Open bowl with flat-topped rim. Fabric F13.
5100884 (7212) Flat base with slightly projecting heel. Fabric FS39.
5100886 (7212) Upright, finger-tipped jar rim. Fabric SF26.
5100833 (7212) Carinated bowl with flaring rim. Fabric F20, burnished.

Pit 9010 Site G East (Tollgate pit 414) (Fig. 3.54 and 3.55)
9078007 (9078) Sherd with linear burnished decoration. Fabric FS194
9081002 (9081) Large jar with upright fingertipped rim FS187.
9122002 (9122) Small shouldered jar with slight impressions on rim. Fabric FS148
9122007 (9122) Plain upright rim, slight shoulder. Fabric FS149
9122010 (9122) Simple lid. Fabric Sa121
9122013 (9122) Body of carinated bowl. Fabric FS131, burnished.
9122011 (9122) Out-turned rim with expanded flat top. Fabric SF39
9151002 (9082) Near complete jar with fingertipped rim and shoulder. Fabric S16.
9082006 (9082) Flat base, coil-manufactured. Fabric SF20.
9082015 (9082) Upright rim of small bowl. FS134
9082016 (9082) Complete small jar with carinated shoulder and inturned rim. Fabric FS180
9082017 (9082) Base of jar. Fabric SF17
9082010 (9082) Small shouldered jar. Fabric FS187
9082027 (9082) Small hemispherical bowl. Fabric FS134
9082029 (9082) Upright rim with cable decoration. SF48
9082030 (9082) Shouldered jar with flat-topped rim. Fabric SF43
9082031 (9082) Jar with internally expanded flat-topped rim. Fabric FS19
9082036 (9082) Base with slight heel. Fabric FSS23
9109036 (9082) Upright rim with cable decoration. Fabric SF20
9082002 (9082) Bottom half of jar. Wiped surface. Fabric SF60
9082005 (9082) Bottom part of jar with flat base. Slurried surface. Fabric SF60
9109030 (9109, 9170) SF958. Near complete carinated jar profile. Fabric SF134, burnished.
9109001-3 (9109/9170/9082) SF947 Complete storage jar. Fabric SF60, wiped.
9109040 (9109) Small jar rim with fingertip decoration. Fabric Sa70
9109033 (9109) Base of jar with slurried surface. Fabric SF32
9109035 (9109) Upright rim with cable decoration. Fabric SF20
9109040 (9109) Small jar rim with fingertip decoration. Fabric Sa70
9109035 (9109) Upright rim with cable decoration. Fabric SF20
9109033 (9109) Base of jar with slurried surface. Fabric SF32
9170013 (9170) Rim with cable decoration. Fabric SF40
9170006 (9170) Rim of small jar. Fabric FS35

Pit 9052 Site G East (Fig. 3.56)
9063009 (9063) Shouldered jar with upright rim. Fabric FS130, burnished.
9063003 (9063) Pedestal base. Fabric FOR8, burnished.
9065022 (9065) Small bowl with fingertipped shoulder. Fabric SF58.

Pit 9088/9567 Site G East (Fig. 3.56)
9050035 (9050) Flat base, slight heel. Fabric S14
9050003 (9050) Upright slightly expanded rim. Fabric Sa9, burnished.
9050006 (9050) Rim with flat, externally projecting top. Fabric S12.
9050040 (9050) Small vessel with plain upright rim (possibly briquetage). Fabric S5
9050011 (9050) Flat base with slight pedestal. Fabric SF10
9051023 (9051) Upright, slightly projecting rim. Fabric F23
9061001 (9061) Upright, externally expanded rim. Fabric F3
9061002 (9061) Rim with fingertip impressions. Fabric SF33
9061018 (9061) Carinated jar/bowl with upright rim. Fabric F126
9061004 (9061) Jar with finger-tipped rounded shoulder and rim. Fabric SF30
9061079 (9061) Jar with upright, finger-tipped rim. Fabric FS20
9061007 (9061) Shouldered jar/bowl. Fabric FS19
9061072 (9061) Finger-tipped jar shoulder. Fabric SF55
9061042 (9061) Flat base with flaring body. Fabric FS148
9061013 (9061) Possible rim of festooned bowl. Fabric FS216.

Middle Iron Age (c 350–50 BC)

By the end of the early Iron Age in southern Britain, including Kent, large coarseware jars with pronounced shoulder angles and fingertip and -nail decoration were giving way to a range of generally smaller, undecorated vessels. In contrast to the Wessex area, saucepan pots were uncommon elements of this new stylistic repertoire, which was dominated by S-profile bowls and jars and proto-bead rim vessels. These forms were newly introduced in some areas and in others (eg parts of east Kent including White Horse Stone and Beechbrook Wood) were pre-existing forms that became more popular at this time.

The development and proliferation of these forms corresponded to an increase in the use of sandy fabrics, including distinctive glauconite rich

clays. Dating of features at the A2 has relied to some extent on the presence of body sherds in these sandy fabrics when, as was all too often the case, otherwise diagnostic sherds were lacking. A possible middle Iron Age presence at Site L, for example, was detectable in ceramic terms only by through the identification of a few glauconitic sandy body sherds found in pit 13052. A distribution exercise plotting concentrations of glauconitic sandy wares at the Site B settlement was not particularly fruitful, but a particular concentration was noted at the eastern edge of Site C in the area of briquetage-rich early-middle Iron Age pits.

However, the addition of shell temper and, less commonly flint, in potting clay recipes continued in varying degrees throughout the middle and late Iron Age in the region. Undecorated variants of the early Iron Age coarse shell- and/or flint-tempered storage and cooking jars were used alongside the finer, (mainly) sandy sinuous-profile jars and bowls. Two middle Iron Age pit assemblages from the A2/A282/M25 Improvement scheme mirror the trend towards increasing popularity of sandy and shelly fabrics at the expense of flint, together with an abandonment of fingertip decoration (Booth 2011, 113–6).

The most common forms representing the early to middle Iron Age transition and the developed middle Iron Age at the A2 are bowls and jars with everted rims and rounded bodies, producing S-shaped, sinuous or globular profiles. Many have low pedestal or footring bases, some with burnished crosses on the underside. The crosses were sometimes applied with a shallow tool, as in the case of base fragments that were probably residual in late Iron Age ditch 7989 (Fig. 3.62, 400821), but were applied as burnished strips on an example from Pit 4176 (400199 not illustrated) and another from Pit 3968 Site B (400370 not illustrated). Such footring bases with burnished crosses on the underside are known from other sites in West Kent, at Oldbury (Ward Perkins 1944), Greenhithe (Detsicas 1966) and at Farningham Hill (Couldrey 1984, fig. 15, no. 15). In Essex such crosses are believed to include some dating back to the 3rd century BC (Couldrey 1984, 48).

Vessels with an emphasis on rounded bodies, were particularly common at Site B (eg Fig. 3.57, 400070; Fig. 3.58, 400198) and were also present at Sites C and D (eg Fig. 3.58, 5000034 and 64830001). They are often well-smoothed or burnished, but rarely decorated. Curvilinear tooling of the Mucking-Oldbury style (Brown 1991) was identified on a glauconitic sandy ware sherd (Fig. 3.58, 63760001) from ditch 6375 on Site D, the only example of this decorative technique from the site.

A complete undecorated saucepan pot recovered from close to the base of pit 3662/3676 in Site B was a somewhat squat example in sandy flint-tempered ware (Fig. 3.57, 400186). Rim fragments less confidently attributed to saucepan pots were recovered from pit 4606 (400912, fabric S7) and pit 4969 (400912, fabric G52) in Site B and from Ditch 7428 (Group 5335) in Site C (5000551, fabric S2). None of these vessels, including the complete example, corresponds to the tradition of well-finished 'early/middle' Iron Age saucepan pots identified at Cuxton, White Horse Stone and Beechbrook Wood in flint or quartz sand tempered fabrics (Morris 2006). The complete A2 example may be a coarse imitation of the finer saucepan pots being produced in Hampshire, Sussex and Surrey during the later middle and late Iron Age and the others could represent a 'proto-saucepan' tradition or other open vessel form, although the potin coins from pits 4606 and 4969, and the grog-tempered rim from the latter, also support a later middle–late Iron Age date. West of the Darent Valley a crudely made saucepan pot in shelly ware was found in pit 6 at Farningham Hill (Couldrey 1984, fig. 15, 28); a flint-tempered example was found at Bigberry in east Kent (Thompson 1983, fig. 10, 37). The evidence overall suggests that the A2 saucepan pot candidates were generally of the crude imitation tradition dating well into the middle Iron Age, if not somewhat later. This corresponds to the general impression that saucepan pots *per se* remain rare in west Kent tradition during the early and middle Iron Age.

The middle Iron Age pottery distribution at the A2 site was largely confined to an extensive settlement that developed either side of cobbled trackway 7980 at Site B and the western edge of Site C. On the western side of the trackway a banjo enclosure (4518), large circular enclosure (4617) and a smaller curvilinear enclosure (3966) were situated amongst a rather sparse scatter of contemporary pits. These features produced relatively small assemblages of pottery but could be confidently dated to the middle Iron Age on the basis of a few distinctive sherds. The banjo ditch produced a globular shell-tempered jar associated with glauconitic sandy sherds, and two glauconitic sandy sherds were recovered from ditch 3966. Enclosure 4617 was reconfigured over some duration but the sequence of recuts includes a few middle Iron Age sherds that allow the whole to be placed within a period that coincided at least at one point with the existence of the banjo enclosure. Some minor outliers of middle Iron Age activity were represented by pottery of that date in Site A (Feature 3211), Site D (ditch 6944/6945) and Site L (Pit 13052).

Curvilinear tooling of the Muckng-Oldbury style (Brown 1991) is one of few middle Iron Age decorative motifs known in Kent. An example in glauconitic sandy ware (PRN 63760001) was found in ditch 6375 on Site D.

Middle Iron Age Key Groups

Enclosure 3965/3966 Site B (Fig. 3.57)

400089 (4034) Jar with everted rim and narrow flat base. Fabric S12, smoothed.

400100 (4742) S-profile jar. Fabric Sa42, burnished.

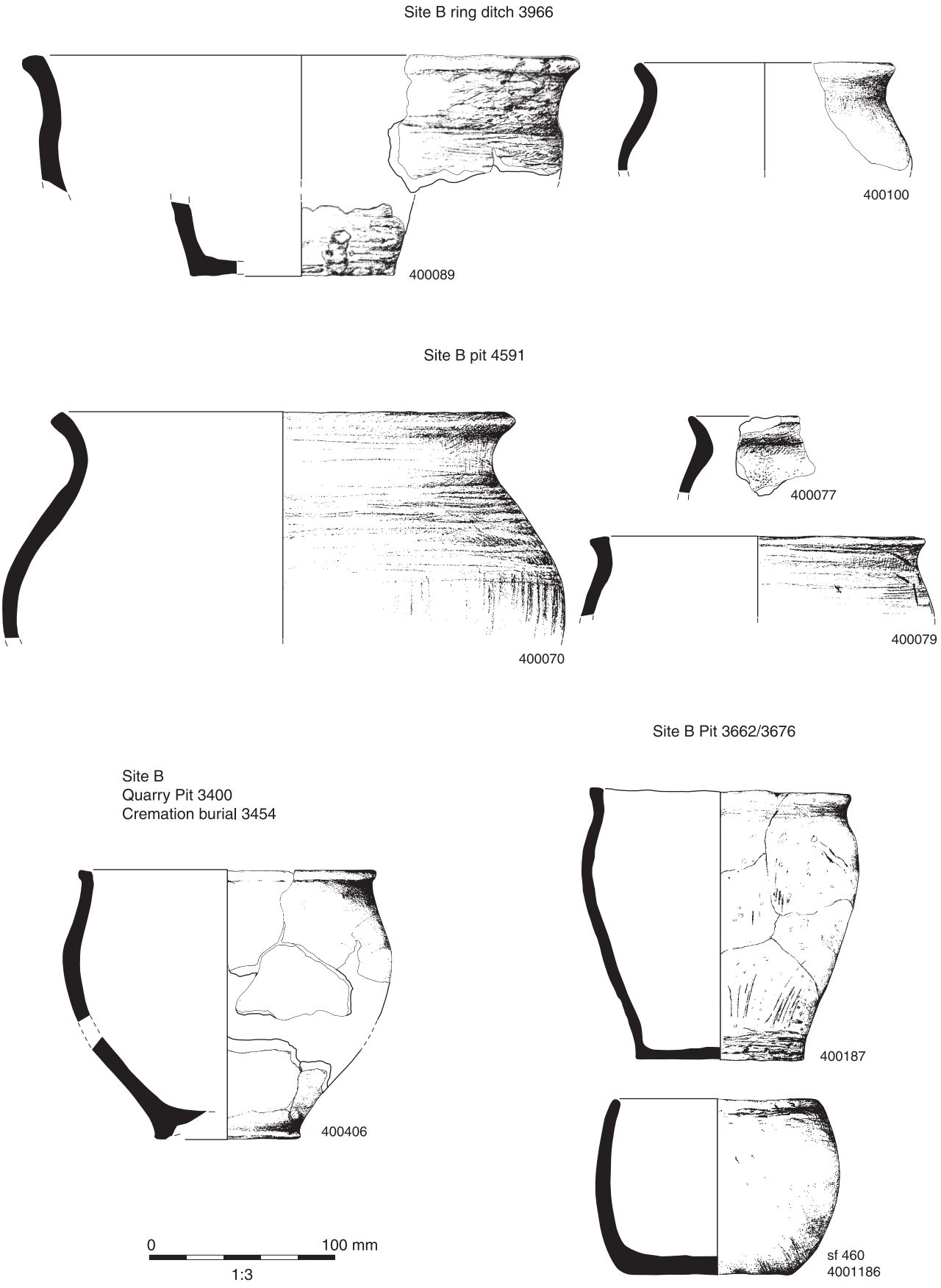


Fig. 3.57 Middle Iron Age ditch group B-3966, pits B-4591, B-3662/3676 and cremation B-3454

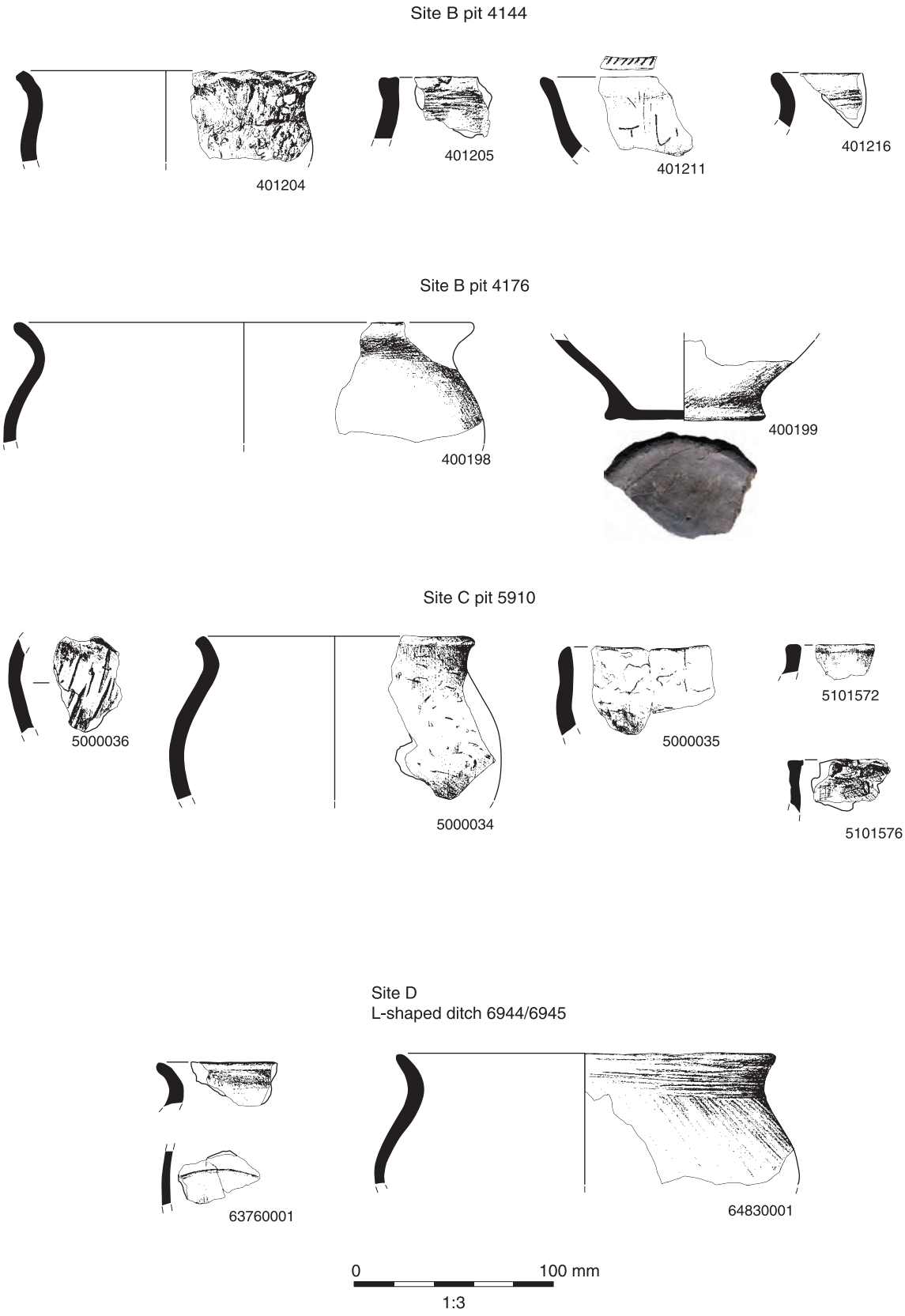


Fig. 3.58 Middle Iron Age pits groups B-4144, B-4176, C-5910 and ditch group D-6944/6945

Pit 4591 Site B (Fig. 3.57)
400070 (4593) S-profile jar. Fabric Sa42, burnished.
400077 (4594) Everted rim bowl or jar. Fabric Sa42, burnished.
400079 (4594) Slack-shouldered jar with flat-topped rim. Fabric Sa42, roughly burnished.

Quarry Pit 3400 and Cremation burial 3454 Site B (Fig. 3.57)
400406 (3454) Rounded profile jar with proto bead rim and footring base. Fabric FS134, smoothed.

Pit 3662/3676 Site B (Fig. 3.57)
400187 (3681) Near complete jar with upright, flat-topped rim. Fabric S7.
400186 (3678) SF460 Complete mini saucepan pot. Fabric FS126, burnished. Ctx 3678.

Pit 4144 Site B (Fig. 3.58)
401204 (4796) Bowl with everted, roughly finished rim. Fabric S12, wiped.
401205 (4796) Upright, flat-topped rim. Fabric S12, slurried surface.
401211 (4796) Flat-topped bowl with hatched-decorated rim. Fabric Sa95, smoothed.
401216 (4796) Everted bowl or jar rim. Fabric Sa82, burnished.

Pit 4176 Site B (Fig. 3.58)
400198 (4177) S-profile bowl. Sa5, burnished.
400199 (4177) Footring base with burnished cross on underside. Fabric Sa5, burnished. (see Farningham Hill Philp1984, fig 15, 15 3rd-1st C BC?).

Ditch 5910 Site C (Fig. 3.58)
5000036 cut 5044 (5042) Body sherd with scored surface. Fabric FOR1. Early Iron Age.
5000034 cut 5044 (5042) Everted rim jar. Fabric FO4, burnished.
5000035 cut 7530 (7529) Simple upright rim of carinated bowl. Fabric FOR. Early Iron Age.
5101572 cut 7530 (7529) Upright flat-topped rim. Fabric SS12, burnished.
5101576 cut 7530 (7529) Upright, inwardly expanded rim. Fabric S5. Early Iron Age?

Site D (Fig. 3.58)
63760001 cut 6375 (6376) Everted rim jar or bowl with curvilinear decoration. Fabric Sa87, smoothed.
64830001 cut 6481 (6483) Everted rim jar. Fabric Sa52, burnished.

*Late Iron Age (*c *50 BC–AD 50)*

In the analysis of the latest prehistoric pottery from the HS1 sites, pottery belonging to a middle/late Iron Age transitional stage (*c* 200–50 BC), characterised by common use of grog tempering accompanying new forms (slack-profile jars, cordoned jars and bowls and bead-rim vessels) was distinguished from a late Iron Age period proper, which was included in the analysis of the Roman pottery (Booth 2006). Conversely, the A2 assemblage was divided for recording and discussion into late Iron Age and early Roman groups on the basis of the presence or absence of clearly identifiable post-conquest ceramic types. The 'late Iron Age' is, therefore, regarded as continuing up to the mid 1st century AD. In this scheme, it is recognised, nonetheless, that distinctive post-conquest pottery would in practice have been used in tandem with native wares which had a long currency spanning the final years of the 1st millennium BC and early part of the 1st millennium AD, and that an absence of post-conquest wares does not guarantee a pre-conquest date in any given deposit.

One of the best comparative assemblages for this period is that from the small late Iron Age farmstead at Farningham Hill on the River Darent. There the transition from the middle to late Iron Age pottery forms was placed at *c* 50 BC (Philp 1984), although in the light of more recent discoveries several authors have suggested a revision of the date back to the second century BC (eg Morris 2006). The assemblage at Farningham Hill includes footring bases with burnished crosses on the underside (eg Couldrey 1984, fig. 15, no. 15). These occur in both middle Iron Age and late Iron Age contexts at the A2, as at Farningham.

The transition from the middle to late Iron Age was characterised at the A2 site by changes in vessel forms and fabric preference (see *Fabrics* above). There is some evidence that the use of grog as an opening agent, sometimes in combination with shell, flint and varieties of sandy and/or glauconitic clays, was re-introduced into east Kent after the Bronze Age as early as the mid 2nd century BC, or possibly even earlier (Clark and Thompson 1989, 303; Blancquaert *et al.* 1998, 133) (see Hockers Lane and Little Stock Farm; Booth 2005). However, the main currency of later prehistoric grog-tempered pottery in west Kent, as elsewhere in southern Britain, was the late Iron Age. Therefore, in the absence of otherwise diagnostic pottery, Couldrey assigned a late Iron Age date to deposits containing grog-tempered sherds where otherwise only undiagnostic material was present. Thompson's seminal work on Kentish grog-tempered pottery (1982) includes the then known west Kentish assemblages, and provides some comparison for the A2 material.

New forms of the earlier part of the transition period (*c* 200–50 BC) included, in a variety of fabrics, barrel-shaped jars with bead-rims. These were probably derivatives of the rounded, convex jar profiles that developed during the middle Iron Age, but during the late Iron Age they were generally produced in sandy or flint-tempered fabrics (Morris 2006). Necked bowls and jars, often with cordons at the base of the neck and/or shoulder, also emerged during this period and there was more extensive use of combing, which is a different technique to the early Iron Age rusticated effect. Combing, thought to be an early trait of the late Iron Age in the region, was a device applied to both grog-tempered and other wares, as exemplified by a flint-tempered bowl from ditch 5827 in Site C (Fig. 3.63, 5100427).

As late Iron Age ceramic stylistic development progressed towards the immediate pre-conquest period, the use of grog-tempered potting clays

increased and the range of forms expanded to include 'Belgic' influenced forms. A notable trend was the proliferation of new tablewares, including cordoned bowls, carinated cups, narrow-neck jars, platters and, mostly in funerary contexts at the A2, elongated, graceful urns with pedestal or 'quoit-shaped' bases, copying north-east Gallic forms. These are probably best regarded as vessels associated with particular forms of social drinking (Hill, in Woodward and Hill 2002, 148). A number of these urns showed clear evidence of manufacturing technique in the form of internal striations from wheel-throwing or finishing. Decorative and manufacturing techniques proliferated to include cordons, cordon and grooves, corrugation (in effect, multiple cordons), burnished finishes and/or decoration (linear and lattice motifs). The adoption of a prolific range of vessels for presenting food on the table signifies a development in food preparation and serving, away from the 'stew pot' tradition of the middle Iron Age towards a more complex, and probably more differentiated approach to cooking and eating. A revised attitude to food preparation and consumption has implications for the wider issues of the social organisation and functioning of the A2 settlement/s and their inhabitants, and also suggests a growing trend for specialisation of the potters' craft.

The distribution of late Iron Age pottery at the A2 was largely concentrated on the settlement area in Site B and C, particularly in the western part of the settlement in Site B, where late Iron Age pottery was found in funerary (burials 4298 and 4312) as well as domestic contexts—mostly enclosure ditches and pits. However, there were small numbers of features containing such material elsewhere on the site. Pit 3014 (3013) on Site A produced a shattered grog-tempered vessel with grooved and cordoned decoration in the 'Belgic' tradition. On Site D pit 6879 produced a straight wall platter in grog-tempered ware of Thompson Type G1-11, which straddles the conquest period. Similar vessels have been recorded in Kent at Oldbury, Canterbury, Swarling and Kennington (Thompson 1982, 471).

A group of enclosure ditches on Site Pond D North produced nearly 500 (3796g) sherds of pottery that would have originated from a late Iron Age or early Roman farmstead in the vicinity. A high proportion of this material is grog-tempered, although flint-tempered and sandy wares are also present (see Table 3.7). The latest material in this group probably dates to the early part of the 1st century AD, although one or two vessels resemble types that Thompson has placed later, straddling the conquest (Type 3–9, 1982, 179). These include a cordoned neck jar (19327001) from ditch 19346. A carinated bowl of Thompson type E1-2 in grog and quartz tempered ware (19213001) came from ditch 19258, whilst ditch 19346 produced a grog-tempered bead-rim storage jar with a band of herringbone decoration (19017002). The decoration on this particular sherd closely resembles that on a storage jar from shallow pit 17 at Farningham Hill, where it was dated to the late Iron Age (Couldrey 1984, fig. 1, 88). The same ditch produced grog-tempered everted rim jars with cordons at base of neck, a type also parallelled in the late Iron Age at Farningham (Couldrey 1984). Associated with these vessels were a sherd with vertical combed decoration and a small fragment of Terra Rubra (ctx 19024), which dates after *c* 15 BC.

There was very little evidence for late Iron Age activity within the Site G settlement area, which had flourished during the early Iron Age. A few scraps of grog-tempered pottery, including a typical late Iron Age cordoned sherd, were present in fill 9018 of early Iron Age pit 9010. The evidence from the adjacent Tollgate site suggests that occupation of this area was re-established only after the mid-1st century AD (Booth 2006, 138).

Late Iron Age Key Groups

Pit 4023 Site B (Fig. 3.59)
400436 (4021) Bowl with simple rim. Fabric G54, wiped.
400442 (4021) Bowl/jar with short out-turned rim. Fabric Sa58, burnished.
400472 (4021) Everted rim. Fabric G45, smoothed.
400424 (4021) Storage jar with herringbone decoration on shoulder. Fabric G55, smoothed.
400485 (4021) Carinated bowl. Fabric G3, smoothed.
400423 (4021) Quoit-shaped pedestal base. Fabric G55, burnished.
400429 (4021) Combed basal sherd. Fabric S7.
400439 (4021) Footring base. Fabric G46, smoothed.
400673 (4022) Base of combed jar. Fabric G45.
400552 (4022) Sherds with burnished lattice decoration. Fabric Sa62.
400655 (4022) Fragment of a possible girth beaker with incised diagonal linear decoration. Fabric S7, wiped.
400540 (4022) Large storage jar with squared bead rim. Fabric S7, slurried surface.
400560 (4022) Straight-walled cordoned sherd with fine combing. Possibly a girth beaker. Fabric G46.
400551 (4022) Round-shouldered jar with lightly combed surface. Fabric 54.
400558 (4022) Narrow-neck jar with cordoned shoulder (Thompson B2-4). Fabric G45, burnished.
400661 (4022) Jar with flattened, inturned rim. Fabric SS16, smoothed.
400539 (4022) Large jar with flattened bead rim. Fabric S7, wiped.

Pit 4969 Site B (Fig. 3.60)
400912 (4977) Saucepan-type pot with inturned, crudely shaped rim. Fabric G52.
400911 (4976) S-profle bowl. Fabric FS134, burnished.
400889 (4975) Everted rim jar. Fabric SS15, burnished.
400890 (4975) Everted rim jar with cordoned neck. Fabric G58, burnished.
400891 (4975) Flat base with vertical coming. Fabric G96.
400893 (4975) Plain rim with combing below. Fabric G43.
400903 (4975) Plain internally thickened rim, horizontal combing below. Fabric S7.
400906 (4975) Combed body sherd. Fabric G29.
408888 (4973) SF455 Cordoned, pedestal bowl/cup (Thompson type E1). Fabric G33.
400885 (4970) S-profile bowl with footring base. Fabric Sa56, burnished.

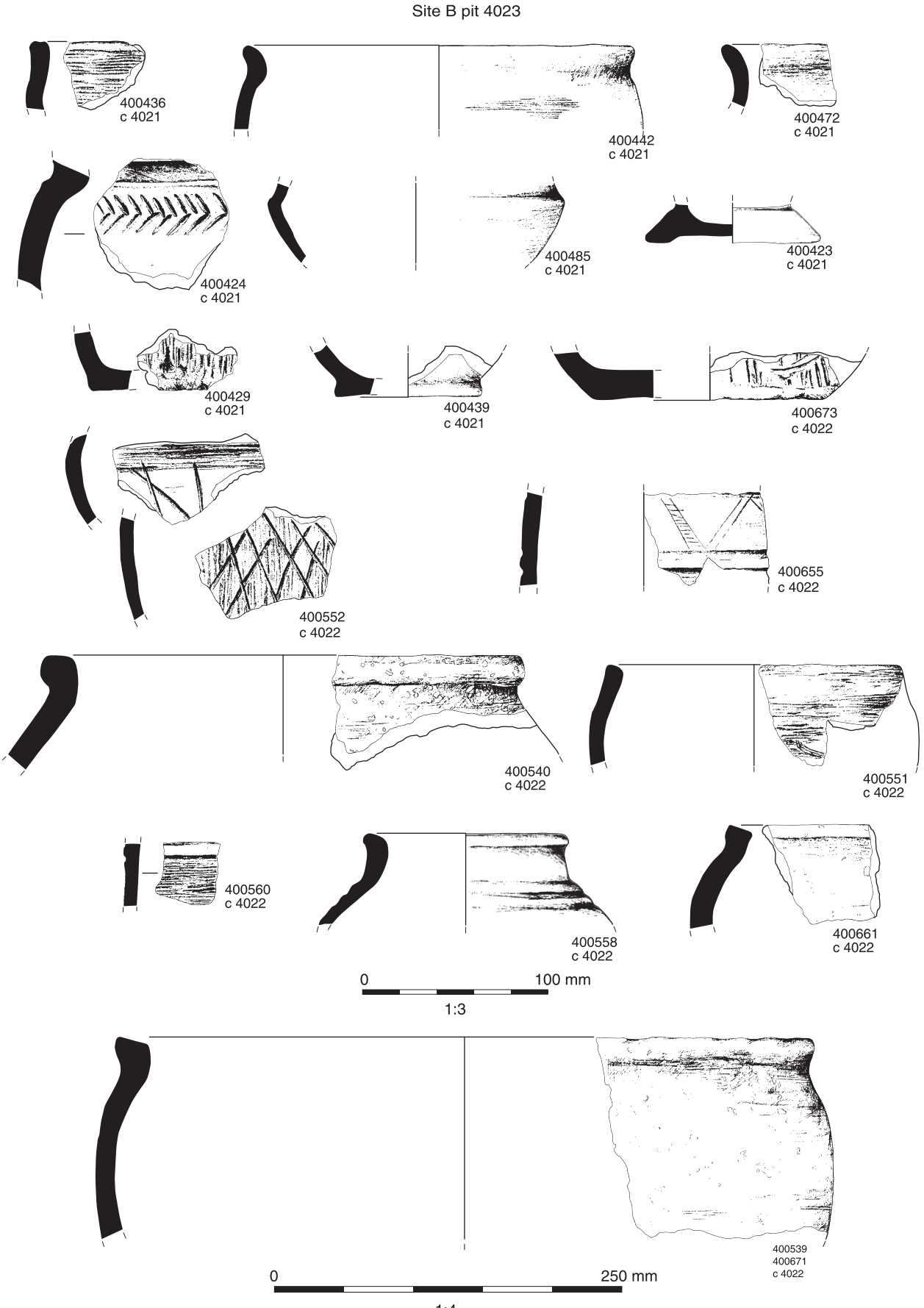


Fig. 3.59 Late Iron Age pit group B-4023

400880 (3401) Storage jar rim. Fabric S7.
400884 (3401) Jar with incurving, bevelled rim. Fabric S7, wiped.

Enclosure 4779/3963 Site B (Fig. 3.61)
400120 Ditch 4779 (4758) Bead rim jar. Fabric S12, smoothed.
400696 Ditch 3963 (4027) Narrow-neck jar with groove at neck base. Fabric G41, burnished.
400699 Ditch 3963 (4027) Storage jar with squared rim. Fabric G68, burnished.
400700 Ditch 3963 (4027) Cordoned bowl. Thompson type D1-1 (1982, 299). Fabric G43, burnished.
400701 Ditch 3963 (4027) Necked jar/bowl with linear burnished decoration on neck. Fabric G43, burnished.
400716 Ditch 3963 (4027) Rounded jar with bead rim. Thompson type C1-2 (1982, 217). Fabric G45, smoothed.
400733 Ditch 3963 (4027) Quoit-shaped base belonging to pedestal urn. Thompson type A1. Fabric G72, burnished.

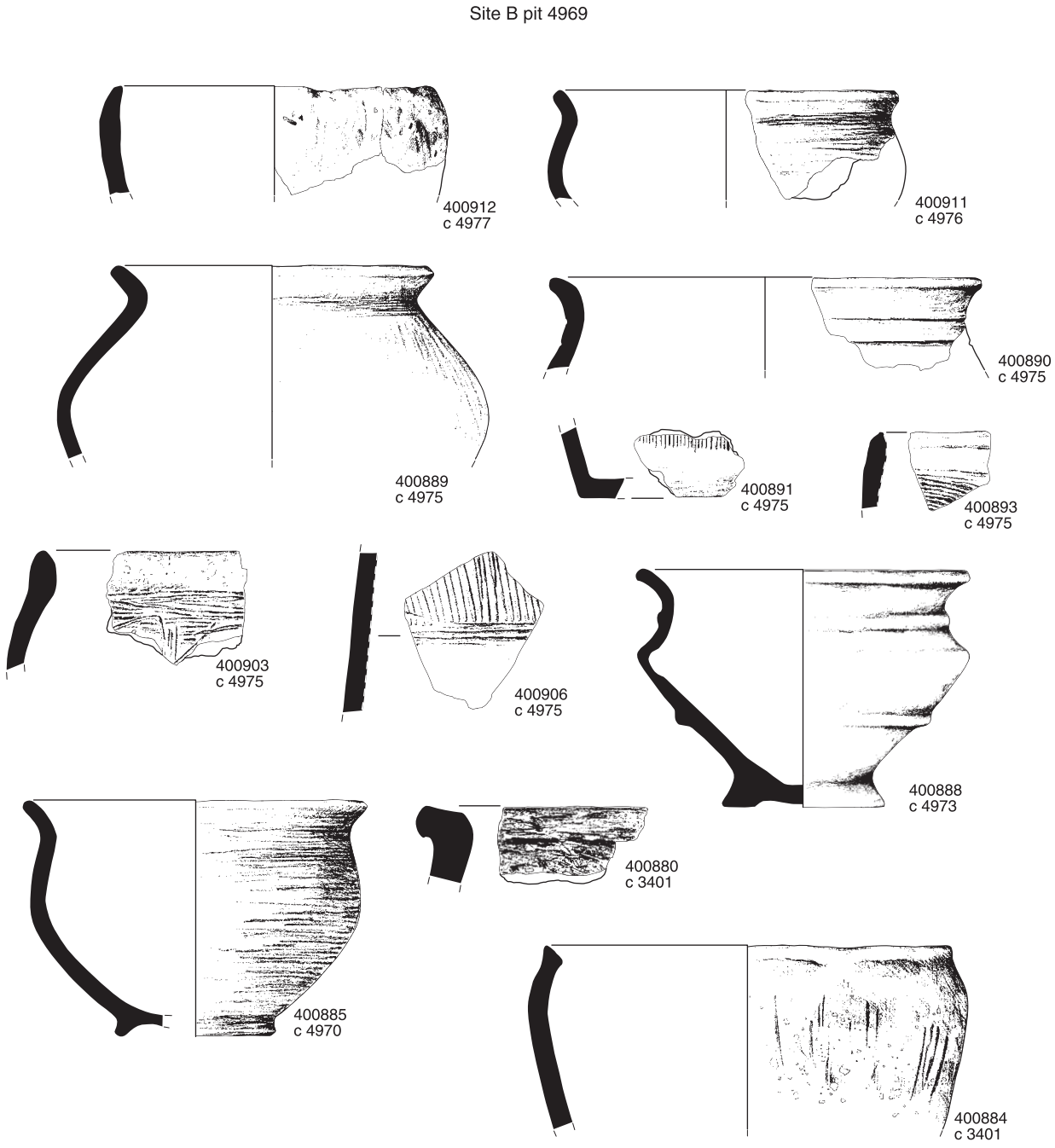


Fig. 3.60 Late Iron Age pit group B-4969

Ditch 4744 Site B (Fig. 3.61)
401495 (4556) Cordoned cup/bowl. Fabric G103, smoothed.
401296 (4556) Cordoned cup/bowl. Fabric G92, burnished.
401290 (4052) Concave base. Fabric G80, wiped.

Ditch 7993 Site B (Fig. 3.62)
400006 (4097) Ovoid bowl with simple out-turned rim. Fabric G20, smoothed.
400009 (4097) Roughly combed body sherd. Fabric G10.

Ditch 7989 (Fig. 3.62)
400821 (3959) Low pedestal base with incised cross on underside. Fabric Sa52, high burnish.
400826 (7739) SF 479 Shouldered bowl with sharply out-turned elongated bead rim and pedestal base. Fabric FS135
400830 (7782) SF80 Bowl with burnished lattice decoration. Fabric G86, smoothed.

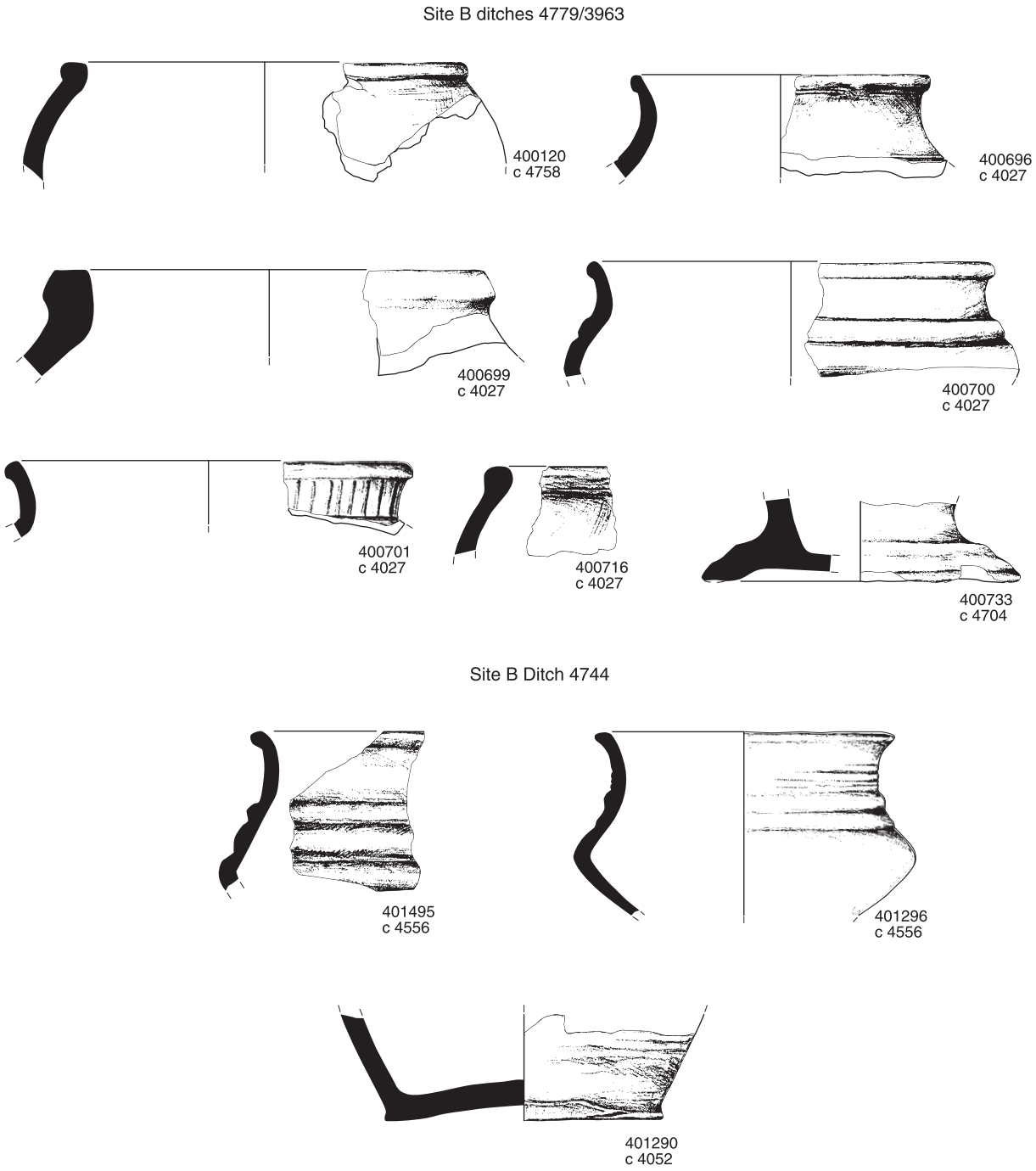


Fig. 3.61 Late Iron Age ditch groups B-4779/3963 and B-4744

Pit 5076 Site C (Fig. 3.63)
5000137 (5078) Base of large jar with vertical combed decoration. Fabric G10.
5000140 (5078) Upright, recessed rim. Fabric FG5.
5000138 (5078) Jar sherd with combed spiral decoration. Fabric G11.
5000139 (5078) Combed sherd. Fabric S3.
5000147 (5078) Combed jar sherd. Fabric G10.
5000152 (5107) Small jar/bowl with out-turned rim. Fabric G5.

Ditch 5827 Site C (Fig. 3.63)
5100422 (5672) Shouldered bowl. Fabric S13.
5100424 (5672) Base of a strainer with pre-firing perforations. Fabric S13.
5100427 (5676) Bowl with vertical and horizontal combing. Fabric F5.

Pond D North (Fig. 3.64)
19327001 Ditch 19246 [19329] (19327) Narrow neck cordoned jar. Fabric G120, smoothed.
19024002 Ditch 19346 [19018] (19024) Large bead-rim storage jar rim. Fabric S12.
19337001 Ditch 19346 [19329] (19337) SF1950 S-profile jar with developed everted rim. Fabric G56.
19017002 Ditch 19246 [19018] (19017) Storage jar with

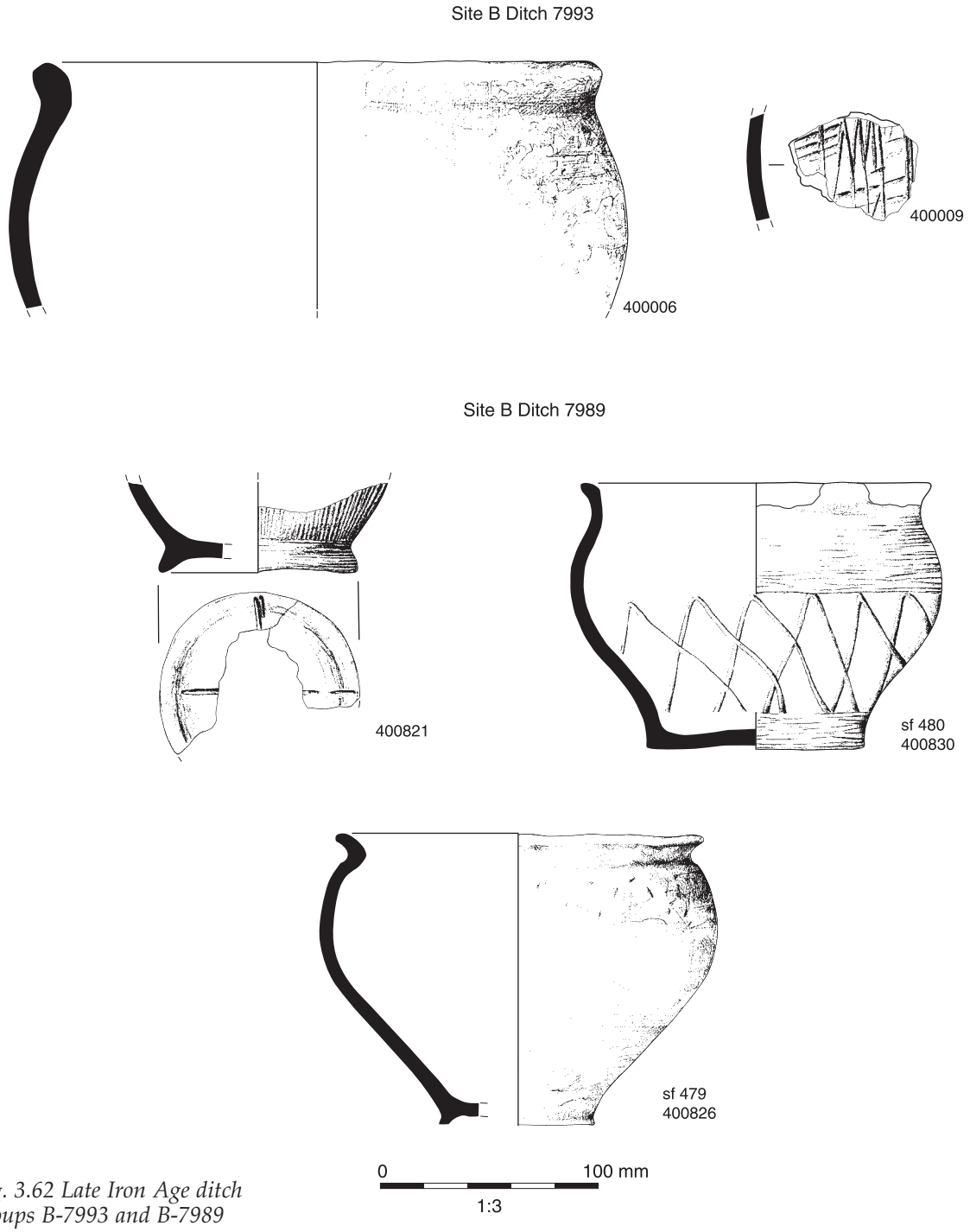


Fig. 3.62 Late Iron Age ditch groups B-7993 and B-7989

herringbone pattern. Fabric G118.
19335001 Ditch 19345 [19336] (19335) Plain upright rim (saucepan pot ?). Fabric G129.
19087003 Ditch 19258 [19088] (19087) Footring base. Fabric G128, burnished.
19087004 Ditch 19258 [19088] (19087) Necked jar rim. Fabric G128, smoothed.
19087005 Ditch [19088] (19087) Flat base (?perforated). Fabric G128.
19213001 Ditch 19258 [19088] (19213) SF1956 Bowl with cordoned neck and burnished linear decoration (Thompson E1-2). Fabric G125.
19064001 Ditch 19063 (19064) Large bead-rim storage jar. Fabric SS34.
19120005 (19120) Everted rim with perforation. Fabric G.
19025002 Pit 19022 (19023) Everted rim bowl. Fabric FSS20, smoothed.
19325003 Feature 19326 (19325) Flattened bead rim. Fabric G56.

Discussion

The use, deposition and disposal of pottery at the A2 represented a continuation of social and cultural processes that unfolded within this area of north-west Kent from the late Neolithic period. The later prehistoric pottery assemblage testifies to activity that extended along this *c* 2.5km stretch of landscape between the late Bronze Age and the emergence of Roman administrative power in Britain.

Ceramic evidence for the late Bronze Age is sparse, but taken together with pottery from the proximate Tollgate site and the nearby sites of West of Northumberland Bottom and Cobham Golf Course (Morris 2006), the general vicinity certainly saw some level of occupation during that period. All the broadly defined Iron Age periods are represented by pottery assemblages of various sizes, but

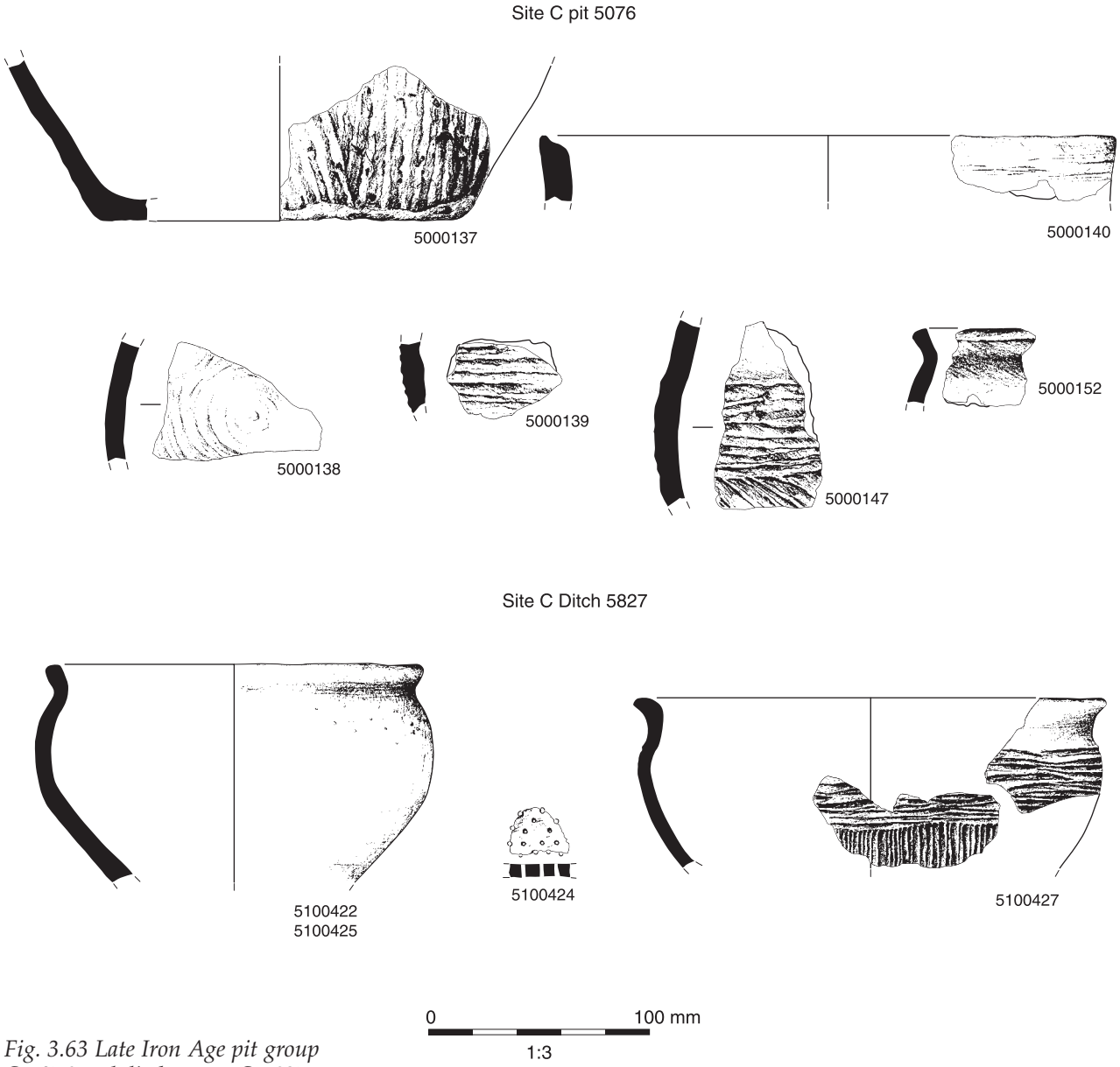


Fig. 3.63 Late Iron Age pit group C-5076 and ditch group C-5827

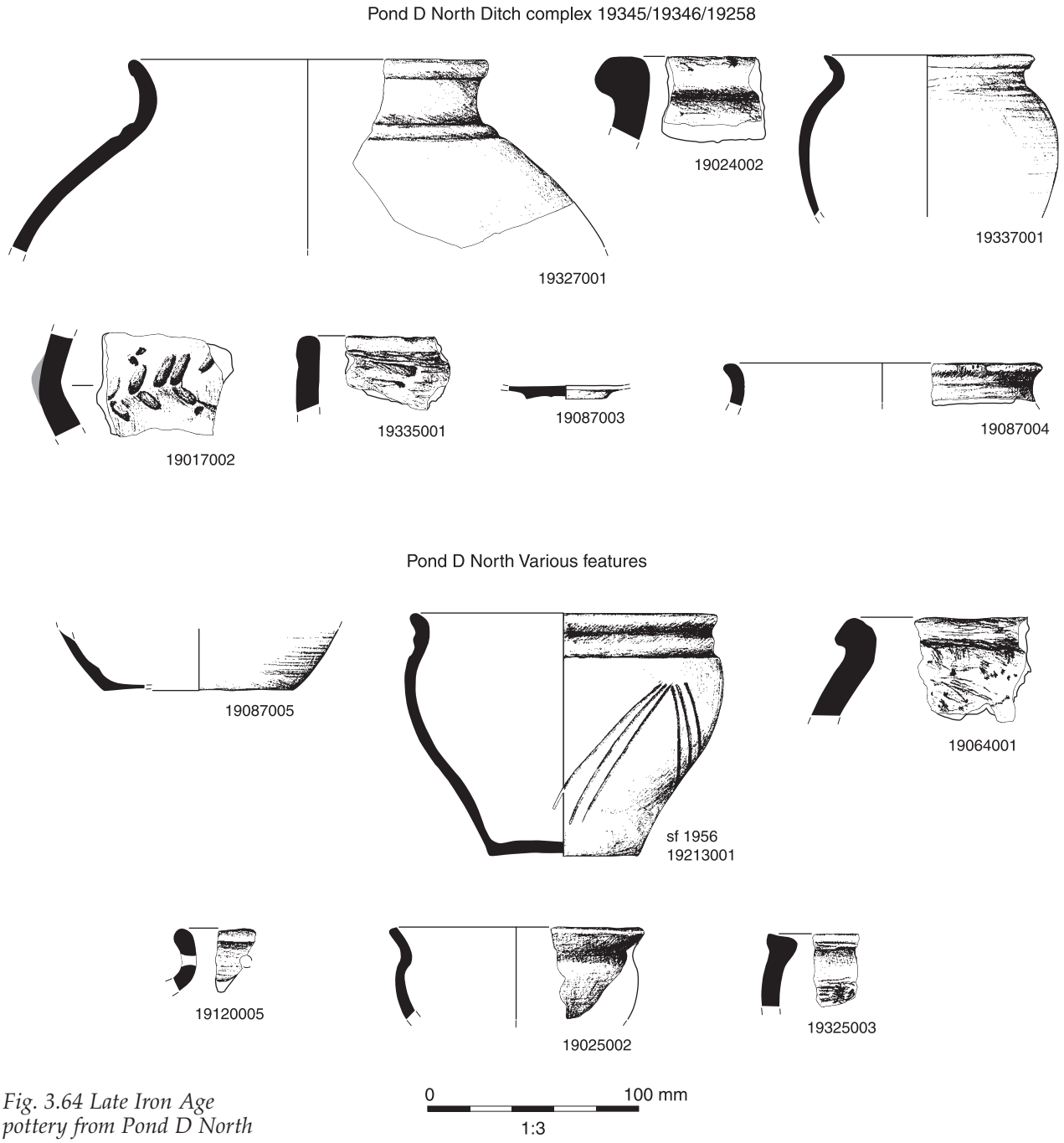


Fig. 3.64 Late Iron Age pottery from Pond D North

the case for continuous occupation *per se* for the duration of the Iron Age remains somewhat uncertain. The period best represented by the pottery is the early Iron Age, dated on the evidence from this excavation to *c* 600–350 BC. In some parts of the site, early Iron Age occupation emerged from pre-existing settlements and, in others, it progressed apparently seamlessly to agricultural developments of the Roman period.

Earliest Iron Age

In the absence of significant numbers of absolute dates associated with earliest Iron Age pottery, the construction of a chronological framework for this period relied to some extent on the limited stratigraphic evidence, but mostly on a few period-specific ceramic indicators that mark this transitional period between the late Bronze Age and early Iron Age. The pottery provided evidence of activity dating to *c* 900 BC to 600 cal BC at three sites along the line of the excavated area—Sites L, B/C and G. There was no indication of very intensive occupation at any of these locations. Only four radiocarbon results potentially fall within this date range. One of 760–390 cal BC (NZA 32280) was from an aceramic posthole in Site B. Another, of 1130–990

cal BC (NZA 32400), was from the uppermost fill of ditch 5912 in Site C, providing only a *terminus post quem* for the final filling and for the otherwise undistinguished group of flint-tempered body sherds it incorporated. Two dates were obtained from sooting on pottery from the HS1 excavation of pits in Site G, one of 850–760 cal BC (NZA-22880) from pit 9054 (HS1 pit 374), which clearly belongs in this period, the other of 760–380 cal BC (NZA 22866) from pit 9012 (HS1 pit 387). The associated diagnostic pottery included bowls decorated with shallow horizontal grooves, which have parallels at Saltwood Tunnel (Morris 2006), the A2/A282/M25 Improvement Scheme at Dartford (Booth 2011) and Highstead (Couldrey 2007).

Most of the earliest Iron Age pottery was recovered from shallow pits on Sites L, B and G and from a small number of postholes on Site B/C, some of which relate to structures 5444 and 7281. Relevant diagnostic features of this early assemblage include a proliferation of small-capacity vessels, such as the fine, thin-walled bowls found on all three sites. The fabrics of associated coarsewares invariably included flint or flint and shell in varying combinations, but these fabrics and the forms and decorative traits associated with them had a long currency—well into the later part of the early Iron Age—and so could not signify a precise date in the absence of other classifiable traits.

Early Iron Age

The most intensive later prehistoric activity dated to the early Iron Age but the absolute dates fall within the range *c* 500–350 BC, at the transition with the middle Iron Age, and most of them within the latter part of this range, *c* 400 BC and later. It is unclear whether the period between 600 BC and 400 BC is represented within the A2 assemblage, because even the radiocarbon dated groups could stylistically fall anywhere within the broader chronological range. However, one of the dates obtained from pit 156 at the adjacent HS1 excavations at West of Northumberland Bottom was 800–420 cal BC, with a 93% chance that the date lay between 800 and 510 cal BC.

Two major early Iron Age settlement foci were identified at the A2, on Sites C and Site G East. At the western end of the site a pit on Site K and two on Site L also produced important assemblages, which were quite diverse in character. A radiocarbon date of 410–230 cal BC (NZA 32308) was obtained from material on the base of pit 12527 (Site L), narrowing the date that the primary use of this feature ended. Thereafter it was initially backfilled with material that incorporated an unusual collection of jars (unique to the site) and, subsequently a set of fineware carinated bowls. Although a 4th century BC date seems stylistically somewhat late for these vessels, use and deposition may have occurred during the earliest part of this century.

The main early Iron Age settlement exposed on Site B/C produced a suite of radiocarbon dates that also placed the deposition of two important pit assemblages at or about the 4th century BC. The middle fill of pit 5110, dated to 510–360 cal BC (NZA 32315), contained fragments of a large fingertip decorated jar that had been distorted by intense heat from industrial activity. Pit 5130 produced a later radiocarbon date of 410–230 cal BC (NZA 32314) from a fill post-dating a deliberate deposit that included a pot base with protruding flint grits, typical of early Iron Age assemblages in Kent.

The two very close radiocarbon determinations (400–350 cal BC (71.6%; NZA 32401) and 405–365 cal BC (NZA 32405)) obtained on fragments of human bone from pit 9010 on Site G provide a date range for a deposition event that involved the burial of an impressive collection of vessels that might have been used in a feasting ceremony, discussed below. The basal fill of a smaller feature in this Site G group, pit 9052, gave a date of 405–365 cal BC (NZA 32406), providing a chronological context for fingertip-impressed jars and a rusticated sherd and indicating that the backfilling of this pit was broadly contemporary with that of 9010.

Middle Iron Age

The ceramic evidence for middle Iron Age activity continuing unbroken at the site is fairly compelling, but nucleation of the settlement within Site B/C during this time indicates some level of rationalisation of the occupied landscape, with only a minor middle Iron Age ceramic signature at Sites L and G. Two burials on Site L, radiocarbon dated to 400–200 cal BC (NZA 30150, NZA 30161), produced no pottery.

An inhumation burial (5129, grave 5064) inserted into the top fill of pit complex 5189 on Site C produced a radiocarbon date of 400–200 cal BC (NZA 30160). Whilst the grave and the underlying hollows produced only undiagnostic body sherds, the burial offers an indication of settlement date, as does a closely similar date of 380–190 cal BC (NZA 32316) from an aceramic posthole (5987) belonging to four-post structure 7316. To the west of trackway 7980 material from two other aceramic postholes, 7874 and 3806, gave radiocarbon dates of 380–200 (NZA 32311) and 360–110 cal BC (NZA 32306) respectively. These correspond well with the 380–200 cal BC (NZA 31265) date of a cremation burial in quarry pit 3400, which was accompanied by a rounded- profile jar with footring base of classic middle Iron Age form.

The combined radiocarbon and ceramic evidence from pit 4969, along with the basal deposit of a class J potin, suggests that this pit was filled entirely sometime after *c* 100 BC, perhaps mid 1st century BC, just at the ceramic transition from the middle to late Iron Age. A date of 170–40 cal BC (NZA 32399) was obtained on material from the basal deposit and a date of 400–160 cal BC (NZA 32281) from higher up the fill. The associated pottery assemblage included large fragments and near complete vessels of both middle and late Iron Age type.

A radiocarbon date of 210–40 cal BC (NZA 30118) was obtained from material in pit 3662/3676. The presence of another potin in the second fill points to a 1st century BC date for the filling of the pit, which involved the placement of a complete squat saucepan pot (400186; SF460) and other objects selected to accompany the coin. A complete slack-shouldered jar, which came from higher up in the pit, must have been in use relatively shortly before it was deposited. It serves as a useful indicator of the currency of this form, which could otherwise have been regarded as a 3rd or 2nd century BC (or even earlier) type on purely stylistic grounds.

Taken together, the association of potin coins with a number of middle Iron Age pottery assemblages, and with assemblages containing virtually complete vessels of both middle and late Iron Age type, strongly suggests that the currency of middle Iron Age forms continued at the A2 into the 1st century BC, and that the transition to late Iron Age types was later than 100 BC.

Late Iron Age

The settlement morphology and the ceramic sequence indicate that the late Iron Age activity immediately succeeded the middle Iron Age settlement at the A2. During the transition between the 1st millennium BC and 1st millennium AD there was a return to the Bronze Age practice of reuse (perhaps 'resurrection') of earlier vessel parts in directed activities of the late Iron Age occupants. These included special deposition of pots and other artefacts, behaviour which may have been a reflection of non-technical concepts involved in using grog as temper. No radiocarbon determinations were attempted for deposits that had distinctive late Iron Age pottery, as the ceramic typology is more precise than the broad range provided by radiocarbon dating.

Pottery sources and procurement

The range of pottery fabrics represented in the A2 assemblage is relatively restricted, despite numerous variations within broad fabric groups. Most of the raw materials could have been procured locally, within 1–5km from the site, but there was no direct evidence for on-site manufacture and firing. The few heat-affected, distorted sherds, such as the large fragments of an early Iron Age jar from pit 5110 (Fig. 3.49, 5000824), were probably products of re-firing during industrial activity within the settlement.

No definite exotic fabrics or components that may have originated outside of southeast Britain (or even Kent) were identified. However, because the geology of northern France is very similar to that of parts of Kent (Stead and Rigby 1999, 30), only extensive scientific analysis (not undertaken as part of this project) could rule out altogether the possibility that some vessels may have been imported to the site from the continent, or from more distant parts of southern Britain, during the Iron Age. The use of grog as a tempering agent, for example, was common in northern France during the middle to late Iron Age (Hurtrelle *et al.* 1990).

Just under 60% of the early and middle Iron Age assemblage contained some proportion of crushed flint, a material easily obtained from the Upper Chalk of the North Downs, on which the A2 site lies. High quality potting clays, including fossiliferous shelly varieties, could be procured within the Woolwich Beds and Reading Beds which outcrop within 5km from the site and along the Thames Estuary.

Only the glauconitic sands used to produce the major component of the middle Iron Age assemblage need be regarded as imports to the A2 settlement, in the sense of requiring organised transport to the site of either the raw materials or the finished products. The Upper Greensand and Gault deposits, located some *c* 10–15km to the south of the site, are the most likely source. These strata are accessible in west Kent along an east-west orientated outcrop that converges with the River Medway just south of its confluence with the Thames Estuary. The river forms the topographic and perhaps symbolic divide between east and west Kent, and there is growing evidence of pottery production centred on the Medway Valley (Jones 2009). The likelihood is that the well-finished, sinuous-profile bowls and jars with footring bases that best represent the exploitation of glauconitic clays during the middle Iron Age were brought to the site as finished vessels rather than being produced closer to the site from imported clay.

Bearing in mind the generally restricted appropriation of raw materials during most of the later prehistoric period at the A2, it could be argued that the settlements located along the route of the scheme were relatively insular during the earliest and early Iron Age, with only a moderate expansion of procurement during the middle Iron Age—a time when centralised production was emerging in many parts of Britain. By the later part of the late Iron Age the influence of 'Belgic' ceramic tradition was clearly making an impression, and the popularity of grog as an opening agent placed the settlements on a par with much of southern Britain during this period. Nonetheless, the ceramic intake included no certain examples of exotic vessels until about the time of the Roman conquest, when continental pottery became widely available.

Pottery and settlement at the A2 Sites

The A2 project area spanned *c* 2.5km, an area that could easily have accommodated several separate co-existing early Iron Age settlement nuclei. A comparison of the early Iron Age pottery, the most substantial ceramic group, from three settlement areas, focussing on Sites K/L, Site C and Site G/Tollgate, highlights some differences in the character of the pottery assemblages, which could, by extension, reveal something about the nature of settlement activity in the three areas.

Site K produced a small assemblage (127 sherds) of early Iron Age pottery incorporating only two

fabric groups—flint and flint/shell—the latter accounting for 95% of sherds. Of only seven sherds diagnostic of form three vessels bore fingertip or cabled decoration. If the adjacent Site L is regarded as part of the same settlement, the range of fabrics expands to include shell-tempered and sandy wares, but flint/shell remains the dominant fabric at 66% by count/76% by weight, with flint-tempered and shell-tempered fabrics taking a 15%/11% and 13%/11% share respectively and sandy fabrics representing only 6%/1% of the total. However, it is unclear precisely what proportion belong to early Iron Age vessels as most are body sherds. The most clearly identifiable forms on Site L were carinated bowls, jars with expanded upright flat tops and fingertip/nail decorated vessels, but most of the carinated bowls were recovered from the top fill of a single atypical pit (12527). The same pit produced a unique set of decorated jars. A few sherds of comb-decorated pottery were found in pit 10515 in Site K and pit 12572 in Site L, suggesting a common, contemporary potting tradition. One of these from Site K (Fig. 3.46, no. 1200225) was a bowl with a cabled rim, a feature of several vessels from the Site C settlement (see below). Overall, however, so few features were excavated on Sites K and L that it was difficult to gain an overview of the mainstream settlement activity in this area from the pottery, especially considering that one of the most prolific assemblages derived from a pit fill that testified to somewhat unusual behaviour.

The range of early Iron Age fabrics identified at the Site C settlement were similar to those of Site K/L, but the proportions slightly different, with flint/shell tempered wares dominating ata higher margin of 74%/80% of the total, shelly wares at only 8%/16% and flint-tempered at only 5%/3%. Whether this slight disparity is significant in terms of site function is hard to tell. Otherwise similar forms were present, with a total of 20 fingertip decorated vessels and four cabled rim bowls. An obvious disparity between the Site K/L and Site C assemblages is the evidence for industrial activity at Site C that included a crucible (pit 5066) and produced heat-affected sherds (eg pit 5110). A more notable difference is the absence at Site C of evidence for the deposition of complete or near complete pots and for 'sets' of pots of different sizes and functions occurring in the same feature.

Pit deposition of the type seen in pit 12527 on Site K/L was, however, identified in several pits on Site G/Tollgate, the best example being pit 9010/TLG414, where a set of large complete jars was associated with several small jar/beakers. Pits TLG 372 and 374 also contained large numbers of near complete vessel profiles. The fabric range and proportions again broadly resemble those of both Sites K/L and C in that flint/shell wares are dominant by far, but even more so here, at 92%/86%, with flint-tempered and shelly wares taking an even smaller share and most of this group belonging to one complete vessel (no. 9151002), and sandy fabrics present in negligible quantities. Numerous finger decorated vessels and cabled rim forms were present in the Site G assemblage, as was the case for the other two settlements, the much larger numbers of these forms here reflecting the large pit groups excavated.

Salt-affected sherds and/or briquetage were present in some quantity on both Sites C and G/TLG, evidence that salt production was one of the domestic activities that characterised these settlements. That only two possible salt-affected sherds were found on Site K/L may signify either a chronological lag, a difference in settlement activity or merely the small number of features explored on that site.

Common elements shared by the three settlement assemblages during the early Iron Age were a dominance of flint/shell fabrics progressing from the Bronze Age preference for mainly flint inclusions and an almost exclusive preference for fingertip/nail decoration (or cabling) at the expense of almost any other. These features could suggest that the settlements were broadly contemporary in that they shared a ceramic tradition. The presence of three rusticated sherds on each Sites C and G, and none at Site K/L, may merely be a product of the small size of the latter assemblage, but does provide a chronological and stylistic link between Sites C and G, especially considering this treatment is regarded as rare in west Kent generally.

Local and regional affinities

Excavated Iron Age sites of any date are still relatively uncommon in west Kent, but pottery assemblages from Farningham Hill, Darenth and Oldbury provide a basis for comparison with the A2 pottery. The ceramic evidence from the sites more recently excavated as part of the HS1 scheme, especially Tollgate, on which the A2 works impinged, and the nearby Northumberland Bottom, Cuxton and Cobham are especially relevant.

The A2 Site G settlement was a significant adjunct to the HS1 Tollgate site. At Tollgate, apart from a single pit containing late Bronze Age pottery, most of the later prehistoric pottery was of early/middle Iron Age date (in Morris' phasing scheme), recovered from three concentrations of pits. About a quarter of sherds belonged to briquetage containers and some of the pottery itself showed evidence of salt-related use (purple staining and residue). Two of the Tollgate pit groups (41023 and 41027) were re-exposed and further examined during the A2 excavations. In the A2 dating framework, the pits belonging to these groups (9010, 9012, 9053 and 9054) are classed as early Iron Age on stylistic grounds. Two radiocarbon dates of 405–365 cal BC (NZA 32405) and 400–230 cal BC (NZA 32401) from pit 9010 indicate that backfilling occurred towards the very end of the early Iron Age, but burnt residue on a sherd from pit 9012 (HS1 387) gave a date of 760–380 cal BC (NZA 22866). Whilst the radiocarbon date range permits these two pits to

be contemporary, the pottery assemblages are quite different in size and character. Pit 9012 incorporated decorated bowl fragments consistent with an earliest Iron Age date.

In considering the range of early Iron Age vessel sizes at Tollgate, Jones (2006) determined that a total of 35 vessels had measurable diameters ranging from 8 to 40cm. Of these, one was very small (<10cm diameter), nine small (10–18cm), 15 medium (20–28cm), nine large (30–38cm) and one very large (40cm +)—hence a clear dominance of medium sized vessels. A similar number of vessels (33) from pits 9010 and 9088 showed a somewhat different pattern of three very small vessels, 20 small vessels, eight medium, one large and one very large—a dominance of 20 small vessels, which is more common for the Iron Age. However, if the figures from both assemblages are combined, as they must be considering they derive from a single settlement, the overall bias is in favour of small vessels (29), with 23 medium sized-vessels, a result that conforms to early Iron Age sites generally.

Morris reported that the early/middle Iron Age pottery assemblage from Tollgate was dominated by salt-affected jars in a variety of shell-, flint- and shell and flint-tempered fabrics (Morris 2006, 40), and was associated with fragments of briquetage containers. Whilst several of the settlement G pits contained significant quantities of briquetage and other fired clay associated with salt production, salt-affected vessels that could otherwise be classed as domestic were not very common. Of the total Site G East assemblage, only 5% by count/11% by weight had evidence of contact with salt, in the form of purple/pink staining or cream coating. The affected fabrics were similar to the range identified at Tollgate but, apart from two jar bases, these sherds were undiagnostic of form. A few salt-affected sherds were also identified from the fills of pits 5066, 5130 and 5992 in Site C and the fills of ditches 4085, 4615, 7990, 7974, 7982 and 7988 in Site B. Unfortunately, none of this small group of sherds was distinctive of form. All were either in shell/flint fabrics of fine sandy wares and some of the latter fabric group may actually be briquetage rather than pottery.

Located some *c* 8km east of the A2 Site G settlement, the Cobham Golf Course site produced a relatively small middle and late Bronze Age pottery assemblage. The latest vessels were mostly flint-tempered plainware forms dated to the 9th century cal BC, and were associated with salt-production material, including briquetage containers, ceramic spacers and hearth or oven lining. The A2 excavations produced no pottery or settlement evidence that was definitely contemporary with the Cobham settlement, but the evidence for salt production during the early Iron Age at A2 Site G/HS1 Tollgate so close to Cobham strengthens the case for an early origin and continuing practice of salt production, with related domestic activity, along this strip of landscape at the base of the North Downs during the later prehistoric period.

At Cuxton, located some *c* 10km from the A2, a collection of pottery dated to the early/middle Iron Age was incorporated in the fill of one of three pits, with smaller quantities from postholes and two irregular features interpreted as treethrows (Morris 2006). The pit produced a radiocarbon date placing the contents in the 4th–3rd century BC and the pottery assemblage (and small quantity of briquetage) included an unusually wide range of fabrics making up the 50 individual vessels represented. Warped and burnt sherds indicated that some of the material had been heat-affected post-manufacture, possibly during a ritual event. The fabrics include glauconitic sandy wares and a number of rounded profile and burnished or smoothed vessels, alongside vessels that would traditionally be dated to the early Iron Age, such as a red-finished bowl and fingertipped jars. A footring base with burnished cross on the underside (Morris 2006, fig. 3.8b CUX/10) resembles those found in both middle and late Iron Age assemblages at the A2. Such correspondence of early forms (and fabrics) and more 'classic' middle Iron Age styles is a common feature of the assemblages dated to the middle Iron Age at the A2.

At West of Northumberland Bottom, located west of Site C and south-east of Site L, an assemblage of 'early/middle' Iron Age date included both vessels that would have served the range of domestic functions required at a settlement site and industrial vessels in the form of briquetage evaporation containers. The domestic pottery includes fingertipped and cabled jars, plain open bowls and a saucepan pot, associated with rounded shoulder burnished vessels in glauconitic sandy fabrics, which at the A2 mark the emergence of middle Iron Age settlement.

The rim diameters from 37 measurable vessels from WNB ranged from 12cm to 38cm, with an overall size bias typical for the Iron Age, peaking in the smaller range of sizes (Morris 2006). However, Morris notes some unusual features within this vessel group. There were no very small vessels (<10cm dia), and the most common rim diameter was four centimetres larger than the norm (cf Brown 1995 fig. 25; Woodward and Blinkhorn 1997, fig. 1). Also, this relatively large assemblage included six vessels with diameters greater than 28cm, notably larger than other assemblages in England of similar date. The large size of some vessels may indicate that they were used in salt-related activities.

At Pepperhill, close to Northumberland Bottom, there was some evidence of settlement activity, possibly emerging during the earliest Iron Age. Ceramic evidence for this was slight -a single 'swan-necked' jar rim and undiagnostic thin-walled sherds, and a flat-topped jar rim could date to the early/middle Iron Age. The combined evidence from these two sites indicates settlement activity at this location contemporary with that found at the A2 Sites L, B/C and G sites.

Site B/West of Northumberland Bottom

Activity at the middle and late Iron Age settlement at Sites B/C appears, based on the character of the succeeding Roman pottery assemblage, to have ceased soon after the conquest (see Biddulph, this vol). The picture is somewhat different for the area of this settlement excavated as West of Northumerland Bottom (WNB) in the HS1 scheme, where reasonably significant quantities of samian ware (1.2% of site total) and black-burnished ware 2 (2.6%) testify to activity continuing into the 2nd century AD (Booth 2006). Perhaps because of this, the phasing scheme there gave even those context groups lacking distinctive Roman-period finewares a post AD 43 date (Every 2006). It may well be the case that the southern (WNB) part of the settlement did see more activity continuing later than the northern part (Sites B/C on the A2), but nonetheless over 61% of the WNB assemblage consisted of 'Belgic' type E wares, most in grog or shell-tempered fabrics. The collection of 2474 sherds (22108g) from Site B classified as late Iron Age is similar in composition, with 56% grog-tempered and 30% shell-tempered fabrics. Much of the Site B pottery classified as Roman (see Biddulph this vol) was also in these ware groups, so dating either side of the conquest for many features, in the absence of finewares, is uncertain. The range of late Iron Age/early Roman forms present at WNB and Site B show a high degree of overlap, with numerous bead rim jars alongside slash-decorated storage jars and narrow-neck cordoned jars (Booth 2006, figs. 4.5 and 4.6).

Pottery and protocol

Throughout the prehistoric period at the A2 pottery featured in a range of activities that transcends the prosaic utilitarian functions of storage and the preparation and serving of food. The latter can be deduced to some extent from the shape and size of vessels, abrasion patterns and limescale, sooting and charred residues. Information about raw materials sources and procurement of pottery can also be obtained relatively easily through data collection and scientific analysis. The significance of other activities preserved within pottery assemblages are more difficult to interpret, but an examination of the deposition histories of the A2 pottery has highlighted various trends that hint at the nature of prehistoric and protohistoric ritual in this small stretch of west Kentish landscape.

A shallow square hollow, pit 12576, lying within an apparently unenclosed setting on Site L, was filled in a single event with material incorporating 433g of pottery, a significant quantity for such a small feature. The only classifiable vessels, four bowls, were produced in fabrics that suggest production before the fashion for burning and crushing flint for temper became mainstream in the early Iron Age. Although the deposit incorporated no complete vessels, or even large sherds, either the amassing of the pottery beforehand or the deposition event itself reflect deliberation and selection rather than the mere disposal of domestic waste.

Site L also offered an insight into an event that took place close to the end of the early Iron Age, between 402–299 cal BC. An unusual decorated jar, lacking its base (Fig 3.47, 1200547), was carefully placed at the edge of pit 12527 in an ash and charcoal rich deposit that sealed a cache of charred grain on the base. Fragments of at least four other jars of a type unique to the site lay mostly within this burnt fill, with a few smaller fragments in overlying layers. These vessels may have all been procured from the same production site, possibly even made to order. Several incomplete carinated bowls were found exclusively in the upper fill of the pit, suggesting an intended separation of drinking/serving vessels and coarse but distinctive jars (see key group 12527; Fig. 3.47). The bowls were not newly issued for this event, as they show varying degrees of wear. The jars may have been used for cooking, but no charred or sooted residue survived. The pottery deposited in this pit may be the remains of a ceremonial feasting set.

A group of complete and near complete vessels from pit 9010 on Site G may represent a similar display of conspicuous consumption at roughly the same period (403–355 cal BC) but at the other end of the site. The range of vessels could be seen as a 'stair-step' set of a large jar (deliberately shattered), medium jar and small jar, each very different to the other in form and treatment. A group of tiny jars of similar form, with an average rim diameter of *c* 100mm, may be beakers (Figs 3.54 and 3.55). Fragments of human bone could provide a clue as to the purpose of the event that ended with the burial of the pots, part of a burnt sow and other animal bone, a set of loomweights/oven bricks, amongst other artefacts that no doubt served a role in this event.

Whilst assumptions of a link between the human bone fragments and pottery in pit 9010 must remain tenuous, the purposeful arrangement of pottery with conventional cremation and inhumation burials was commonplace during the Bronze Age and late Iron Age. More unusual, however, is to see this association in a middle Iron Age context, a time when the proffering of grave goods was uncommon. The cremated human bone, accompanied by a heat-affected middle Iron Age jar and other offerings, in quarry pit 3400 is notable. The bone was perhaps a cenotaph deposit as it represented only the partial remains of an individual. The quarry may have represented a favoured location for activity of this type, enhanced by its proximity to the trackway (7980) that crossed the settlement.

Two other cremation burials were inserted in purpose-dug features close together in the entrance of the earlier 'banjo enclosure' (4518), a location that perhaps retained symbolic importance after its original function had been superseded. Both were

high status late Iron Age burials, as was clear from associated artefacts, including complete (when buried) pottery vessels. Burial 4298 was dated to 50 BC–AD 50 on the evidence of two Knotfibulen type brooches, and the four accompanying vessels, two pedestal urns, a carinated cup and a cordoned cup/bowl, were in all grog-tempered fabrics. Two pedestal urns accompanying burial 4312 had been sheared off near the base (Plate 3.33), but the basal forms indicate a date at least broadly contemporary with burial 4298.

Although the vessels selected to accompany the burials were of high quality, they were not apparently exclusively manufactured as grave goods. Quoit-shaped bases from pedestal urns were found in domestic contexts on Site B, including one from pit 4023 (Fig. 3.59, no. 400423) and another from ditch 4029 (Fig. 3.61, no. 400733), for example. The enclosure ditches associated with this settlement produced a number of vessels copying Gallo-Belgic forms. L-shaped ditch 4744 produced fragments of two high quality carinated, cordoned cups (Thompson type E2.1) and a wheelmade cordoned jar (Fig. 3.62, no. 400804) was found in the fill (3816) of ditch 7197.

Briquetage *by Elaine L Morris*

A total of 7017 fragments of briquetage (46,695g), the ceramic material made specifically for use in salt production and distribution, was recovered from five sites along the route of the A2 Widening Scheme, with the great majority found in two pits at Site C (Table 3.8). Fragments from evaporation vessels or containers, supportive pedestals, and heating structures were identified along with a small amount of miscellaneous or undiagnostic pieces. This assemblage includes both hand-retrieved material and pieces recovered during the processing of environmental samples, ranging in size from tiny split flakes of container sherds weighing a little as 1g each up to 706g for the largest structural fragment. This is the second largest collection of later prehistoric (middle Bronze Age through middle Iron Age) briquetage by weight in the country.

The purpose of this contribution is to characterise and quantify the range of forms and fabrics present in the assemblage, determine if all of the material could have been made from locally available clay resources, establish the shape, size and capacity of the evaporation vessels, chronicle the periods of salt production and use, explore the locations of production evidence in the landscape topography, and establish the nature of salt distribution transported in briquetage containers in north-west Kent. A study in the variation of artefact deposition into the two rich pits in Site C is also presented. In addition, an attempt will be made to identify who the saltmakers may have been. A more detailed version of this report is presented in the digital archive publication.

Table 3.8: Quantification of briquetage by count and weight for each site (weight in grammes)

Site	*Count*	*Weight*
K	7	122
L	49	158
B	173	753
C	6745	45341
G	43	321
Total	7017	46695

Methodology

All hand-retrieved briquetage was analysed and recorded following a combination of the current guidelines for examination of later prehistoric pottery established by the Prehistoric Ceramics Research Group (PCRG 1997; 2010) and a more recent methodology first developed for the examination of briquetage from eastern England (Morris 2001a). The assemblage was examined to determine the frequency by class of material (container, class C; support, class S; structural material, class ST; or undiagnostic, miscellaneous fired clay associated with salt production, class M) in order to compare the ratio of classes in this assemblage to significant assemblages from other production sites in the wider region (Lane and Morris 2001). The briquetage fragments were analysed and recorded within context, counted and weighed to create records of their fabric type, form type, surface treatment, wall thickness, vessel size by form type, and evidence of use.

Fabrics were defined with the use of a binocular microscope employing x10 power microscopy. The fabric codes allocated to the briquetage assemblage were 500-onwards to differentiate them from pottery fabric codes. Nine samples were selected to assist in the characterisation of the fabrics using petrological analysis as indicated with an asterix (*) in the detailed fabric descriptions below and the sherd or fragment sampled is listed at the end of the description by briquetage database record entry code (BRN).

The thickness of container sherds was recorded by using established briquetage thickness codes (Morris 2001a) as follows: less than 7mm, code 2; 7–9.9mm, code 3; 10–12.9mm, code 4; 13–15.9mm, code 5; and split sherds or flakes, code X. The extant height and the minimum and maximum wall-sides of support pedestals were measured in millimetres. The extant thickness of structural material was recorded in millimetres if a single surface was present. Evidence of use in the salt production process was recorded by the presence and location of white-colouring: WH2, exterior; WH3, interior; WH1 throughout; WH10, top of rim; WH12, underside of base; WH, uncertain location; and (WH), traces present.

Fabrics

The briquetage was made from three fabric groups which are easily distinguishable in hand specimen: fine quartzose (Q-series), shell-gritted (S-series), and organic-tempered (V-series). The most common fabric group based on weight is the Q-series which represents 52.3% of the assemblage (24.4kg), with the S-series representing 46.5% (21.7kg) (Tables 3.9–10). Organic-tempered fabrics are distinctive but relatively rare in this assemblage (1.2%; 0.6kg). There is a total of nine fabric types within these three main groups. Based on petrological analysis of thin sections in many cases, these could have been made from locally available clays. However, this does not prove that they were all made from these specific resource locations. Detailed descriptions of these fabric types can be found in the digital archive publication.

Fine Quartzose Fabric Types

Q501 fine-grained sand and silt fabric (*)
Very common (30%), well-sorted, angular to subangular with rare subrounded quartz, ≤ 0.2mm across, and rare grains up to 0.3mm, sparse (3%) linear vesicles, ≤10mm long, rare (1-2%), rounded glauconite, ≤ 0.15mm, of high sphericity, and rare (1%), rounded to subrounded iron oxide, ≤ 0.6mm, of low sphericity (thin-sectioned sample BRN 1093).

Q502 fine-grained sand and silt fabric with glauconite (*)
Moderate (10-15%), well-sorted, angular to subangular quartz and quartzite, ≤ 0.2mm, and rare (1%), subangular to subrounded quartz and quartzite, 0.3-0.5mm, sparse to moderate (7-10%), rounded, well-sorted glauconite, ≤ 0.2mm, sparse (3%) linear vesicles, ≤ 2mm long, and rare to sparse (2-3%), rounded, opaque iron oxides, ≤ 0.8mm, with low sphericity (sample BRN 1362).

Q503 medium to fine-grained sand and silt fabric with infrequent glauconite (*)
Common (20%), angular to subangular, well-sorted quartz and quartzite, ≤ 0.2mm, and rare (2%) rounded to subangular quartz and quartzite, 0.3-0.5mm, sparse (5%), rounded glauconite, less than 0.2mm, and sparse (5%), rounded iron oxides, ≤ 0.4mm, as well as very rare (< 1%), rounded, ferruginous fine sandstone rock, less than 1.8mm (sample BRN 1425).

Q504 fine-grained sand and silt fabric with infrequent calcareous matter (*)
Very common to abundant (30-40%), well-sorted, angular to subangular quartz ≤ 0.2mm with rare subangular to subrounded grains from 0.3-0.6mm, sparse to moderate (7-10%), well-sorted, rounded glauconite, ≤ 0.2mm with rare examples up to 0.5mm, rare (1%), poorly-sorted, rounded, unidentified calcareous matter, ≤ 1.3mm, and very rare linear vesicles, less than 2mm long, in a slightly micaceous clay matrix (BRN 1135).

Q505 fine-grained glauconite-rich, silty fabric with cylindrical vacuoles (*)
Abundant (40%), rounded, well-sorted glauconite, ≤ 0.2mm, moderate (10%), angular to subangular quartz, ≤ 0.15mm, sparse to moderate (5-15%), haematised or pyritised, plant-like matter, ≤ 15mm long and ≤ 2mm in diameter, and a single, rounded clay pellet-like inclusion of low sphericity which is micaceous, ferruginous and appears to display bedding planes as well as some iron-rich, linear, variable and almost wavy smears of clay-like matter (sample BRN 1102).

Shell-gritted Fabric Types

S501 fossil shell-rich, laminated fabric (*)
Abundant (40-50%), poorly-sorted, angular fossiliferous shell, ≤ 6mm, sparse (5%), creating a laminated fabric with rounded iron oxide, majority ≤ 0.3mm but up to 0.9mm, and rare (1%), subangular to subrounded quartz, majority ≤ 0.1mm but up to 0.3mm (sample BRN 1080).

S502 fine-grained, glauconitic, quartzose sand and silt fabric with shell-shaped vesicles (*)
Moderate to common (15-20%), rounded, well-sorted glauconite, ≤ 0.2mm, moderate (10%), angular to subangular, well-sorted flint, ≤ 0.1mm, moderate (10%), angular to subangular, well-sorted quartz, ≤ 0.1mm as well as rare (<1%), rounded quartz, 0.2-0.5mm, rare (1%), rounded iron oxides ≤ 0.8mm and sparse (3-5%), shell-shaped vesicles, ≤ 0.3mm (sample BRN 1359).

S503 sparse shell as lenticular vesicles and linear vesicles in fine sand and silt fabric (*)
Common to very common (25-30%), angular to subangular, well-sorted quartz, less than 0.2mm, and rare (1%), angular to subangular quartz, 0.2-0.5mm, sparse (5%), shell-shaped, lenticular vesicles, ≤ 3mm, sparse (5%), linear vesicles, < 2mm long, rare (2%), rounded, opaque iron oxides, ≤ 0.3mm and rare (1%), rounded glauconite ≤ 0.1mm (sample BRN 1806).

Organic-tempered Fabric Type

V501 organic-tempered, vesicular fabric (*)
Sparse to common (7-20%), linear vesicles, ≤ 5mm with majority ≤ 1mm, common (20%), angular, well-sorted flint, ≤ 0.2mm and one at 0.6mm, moderate (10%), angular to subangular, well-sorted quartz, ≤ 0.2mm with 1% measuring 0.2-0.5mm, sparse (7%), rounded glauconite, ≤ 0.2mm, rare (<1%), rounded, opaque iron oxides, 0.7mm, and rare (1% or less) calcareous matter of various sizes (BRN 1820).

Fabrics Discussion (resources and production locations)

It appears that there were three different general sources of clays chosen to make the briquetage recovered from sites along the A2 Widening Scheme corridor. The most obvious source is the Woolwich Formation, which was exploited for its shell-rich clays to make fabric S501. The second general source appears to be the London Clay Formation, or Head derived from London Clay, used to make fabrics which have glauconite and quartz sand (Q501, S503), as well as the unusual combination of algal tubes (vacuoles) and abundant glauconite found in fabric Q505. The third source could be the Upnor Formation, which may have been selected to make fabrics which have various quantities of fine angular to subangular flint fragments and rounded glauconite, with (Q504) or without (Q502, Q503) shell depending upon proximity of the deposit selected to Woolwich Formation deposits. All of these clay resources are found within 7km of the A2 corridor,

Table 3.9: Quantification of briquetage from each site by fabric, class and form types (weight in grammes)

SITE	CLASS/FORMS	FABRICS																		Site Total Count	Site Total Weight
		Q501		Q502		Q503		Q504		Q505		S501		S502		S503		V501			
		CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT		
K	Containers (C)																				
	B3																	4	81	4	81
	P1																	3	41	3	41
	Site Total																	7	122	7	122
L	Containers (C)																				
	R1																	1	3	1	3
	B99																	2	13	2	13
	P1											1	2					43	134	44	136
	Class sub-total											1	2					46	150	47	152
	Miscellaneous (M)																				
	FC1																	2	6	2	6
	Site Total											1	2					48	156	49	158
B	Containers (C)																				
	R1											1	6							1	6
	R4											1	3							1	3
	B1											3	15							3	15
	B2											6	18							6	18
	B3											2	15							2	15
	B4											2	9							2	9
	B6											1	4							1	4
	P1											141	352					13	51	154	403
	Class sub-total											157	422					13	51	170	473
	Supports (S)																				
	PD4	1	207																	1	207
	PD5	1	70																	1	70
	Class sub-total	2	277																	2	277
	Structural Material (ST)																				
	HFL1	1	3																	1	3
	Site Total	3	280									157	422					13	51	173	753

C	Containers (C)																				
	R1	27	602			2	147					65	707	45	834					139	2290
	R2	1	18									1	25							2	43
	R3													1	36					1	36
	R4																	2	6	2	6
	B1	9	169									43	496	2	52					54	717
	B2	33	526									36	439	7	184					76	1149
	B3	1	9									8	295	1	32					10	336
	B4	15	566			1	31					15	270	20	819					51	1686
	B5					1	51													1	51
	B6																	1	8	1	8
	B99	28	311									36	386	32	592			32	24	128	1313
	P1	911	6761	10	19	1	16					3051	9951	1098	6084	21	16			5092	22847
	Class sub-total	1025	8962	10	19	5	245					3255	12569	1206	8633	21	16	35	38	5557	30482
	Supports (S)																				
	PD1	26	1395																	26	1395
	PD2	3	866							2	250									5	1116
	PD3	3	300																	3	300
	PD99	21	146																	21	146
	Class sub-total	53	2707							2	250									55	2957
	Structural Material (ST)																				
	HFL1	28	1155			1	77	41	2291	92	1378									162	4901
	HFL2									54	634									54	634
	HFL3	7	269					12	1174	34	1357									53	2800
	HFL5	1	20							2	64									3	84
	HFL98									1	42									1	42
	HFL99	295	1092					48	392	343	1332									686	2816
	Class sub-total	331	2536			1	77	101	3857	526	4807									959	11277
	Miscellaneous (M)																				
	FC1	152	537			3	60	2	4	10	18	7	6							174	625
	Site Total	1561	14742	10	19	9	382	103	3861	538	5075	3262	12575	1206	8633	21	16	35	38	6745	45341
G	Containers (C)																				
	B4																	2	56	2	56
	P1	4	15									13	49					16	133	33	197
	Class sub-total	4	15									13	49					18	189	35	253
	Structural Material (ST)																				
	HFL1	7	66																	7	66
	Miscellaneous (M)																				
	FC1									1	2									1	2
	Site Total	11	81							1	2	13	49					18	189	43	321
	GRAND TOTAL	1575	15103	10	19	9	382	103	3861	539	5077	3433	13048	1206	8633	21	16	122	558	7017	46695

Table 3.10: Quantification of briquetage from each site by feature and fabric (weight in grammes)

SITE	CLASS/FORMS	FABRICS																		Total Count	Total Weight
		Q501		Q502		Q503		Q504		Q505		S501		S502		S503		V501			
		CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT		
K	pit 10515																	7	122	7	122
	Site Total																	7	122	7	122
L	pit 12571											1	2							1	2
	pit 12647																	48	156	48	156
	Site Total											1	2					48	156	49	158
B	pit 3686	1	207																	1	207
	pit 4005	1	3															5	27	6	30
	ditch 4053																	4	16	4	16
	ditch 4063											1	1					1	1	2	2
	ditch 4069											11	22					2	5	13	27
	ditch 4083											95	222							95	222
	ditch 4085											38	115							38	115
	ditch 4357											1	20							1	20
	ditch 4408	1	70																	1	70
	ditch 4455											3	13							3	13
	ditch 4797																	1	2	1	2
	ditch 4991											8	29							8	29
	Site Total	3	280									157	422					13	51	173	753
C	pit 5052	5	9									53	74	5	1	21	16	32	29	116	129
	pit 5066	971	10237	6	9	6	265	102	3855	371	3901	888	5154					1	3	2345	23424
	pit 5110	579	4197	4	10	3	117	1	6	167	1174	2298	7188	1199	8623			2	6	4253	21321
	pit 5130/5242	2	291									4	19							6	310
	pit 5225	1	7									1	32	2	9					4	48
	pit 5992	3	1									11	43							14	44
	pit 7209											1	9							1	9
	pit 7235											6	56							6	56
	Site Total	1561	14742	10	19	9	382	103	3861	538	5075	3262	12575	1206	8633	21	16	35	38	6745	45341
G	pit 9010	7	66															6	96	13	162
	pit 9052									1	2	4	4					2	17	7	23
	pit 9088	4	15									9	45					10	76	23	136
	Site Total	11	81							1	2	13	49					18	189	43	321
GRAND TOTAL	1575	15103	10	19	9	382	103	3861	539	5077	3438	13049	1201	8632	21	16	121	556	7017	46695	

some within 2km, and therefore the briquetage fabrics were probably made from locally available resources (Geological Survey Sheet 271; Ellison 2004).

Fabrics only used for containers, however, for example Q502, S501–S503 and V501 (Table 3.9), could have been made from sources located further afield with these vessels transported to the site for use. Only fabrics Q501 and Q503 were used to make containers, supports and saltern structural material, thus indicating both the on-site making of containers as well as the production of salt. Fabrics Q504 and Q505 were also most likely to have been made from local resources because they, too, were used to construct salt production equipment, primarily for making saltern hearths.

The possibility that some containers were transported as fired vessels to Site C East, rather than transporting the raw clay itself, is suggested by layers of quartzose clay found on the exterior surfaces of shell-rich fabric S501 sherds, presumably to re-seal them. A total of 94 sherds, all from pit 5066, display this exterior surface treatment (Fig. 3.65, no. 1). Containers made from S-series fabrics appear to have been easily shattered, as indicated by the frequency of split sherd flakes compared to Q-series sherds (Table 3.11). Between 44% and 56% of S-series sherds are flakes compared to only 17% of Q501 sherds, making S501 and S502 fabric containers approximately three times more susceptible to fracturing. The application of a layer of fine silty quartzose clay to the exterior of S501 vessels may thus have been a strategy to offset this technological weakness. This application indicates that raw quartzose clay was available at the production location to use in emergencies to repair stressed containers, and strongly suggests that it was created from clay which could be found at or very near to the site of salt production.

Forms

All four classes of briquetage established during the study of assemblages from prehistoric and Roman period salt production sites (salterns) in the Fenland region of eastern England (Morris 2001a & d) were identified in this assemblage. These comprise: evaporation vessels or containers (C), supports (S), structural material (ST), and miscellaneous fragments of fired clay associated with production (M) (see Table 3.9).

Containers (C)

Evaporation vessels or containers are represented by rim, base and body sherds. The most common rim form is type R1 with a flaring, conical profile indicating that the original vessel had no restrictive neck or shoulder zone (Fig. 3.65, nos 1–4). This rim type had been flattened consistently on the top edge. A total of 141 examples of R1 rim form were identified. Three other minor types were identified. Type R2 has a conical profile as well but the rim is made by taking the top flap of clay and folding it over to the interior rather than simply flattening it with the fingers (Fig. 3.65 no. 5 and Fig. 3.66 no. 6), type R3 is a pointed rather than flattened rim (Fig. 3.66, no. 7), and type R4 is curled over or hooked with an inwardly curved profile (Fig. 3.66, nos 8–10). There are four types of base which are differentiated by the method of their finish: type B1 is a simple flat base with crisp or smooth base angle that is straight in plan, while type B2 is also straight in plan but was roughly finished with curls and lumps of un-removed clay on the exterior that disguise the base angle and result from pinching the base plate onto the vessel wall (Fig. 3.66, nos 11–12). Base type B3 is the curved in plan version of B1 (Fig. 3.66, nos 13–15) and B4 is the curved in plan version of B2 (Fig. 3.66, nos 11–12 and 16–18). The presence of the B3 and B4 examples indicates that the vessels were rounded in plan. The majority of container sherds, however, are simply body sherds (form type P1).

The correlation of vessel form types to fabric types reveals that type R1 was made from all three fabric groups, R2 only from fabrics Q501 and S501, R3 from fabric S502 and the curled over type R4 in both S501 and V501. This general trend, that any commonly found rim form type was made from at least one fabric group if not all three fabric groups, holds for base types as well. The commonest forms, pinched types B2 and B4, were made from all three fabric groups. The less common, plain types B1 and B3 were made from Q-series and S-series fabrics only. Amongst the large collection of base plates (B99), the majority derive from the S-series rather than Q-series which may be a result of the fracturing nature of the laminated S501 fabric and possibly poorer adhesion of some shell-bearing fabrics.

A distinctive deep finger-wiping or -smearing technique was used on the rim sherds of all fabric

Table 3.11: Frequency of container sherds by full wall thickness or flaked condition in major fabrics only

	Fabric							
	Q501		*S501*		*S502*		*V501*	
Container Thickness	*CT*	*%*	*CT*	*%*	*CT*	*%*	*CT*	*%*
Full wall	859	83.5	1521	44.4	673	55.8	56	47.1
Flake	170	16.5	1905	55.6	533	44.2	63	52.9
Total	1029	100.0	3426	100.0	1206	100.0	119	100.0

groups and also to bind the walls of the vessels together. The wiping was used diagonally across the tops of the rims in the flattening or finishing process and therefore looks like a pie-crust effect along the rim tops (Fig. 3.65, no. 1). On the walls of the vessels it was used horizontally, vertically or diagonally (Fig. 3.65, nos 2 and 4 and Fig. 2.66 no. 19). The rim wiping could even be interpreted as a type of decoration. The wall smearing is very pronounced with clear finger-width ridges displayed. This technique may have provided additional strength to the walls during the drying process prior to firing, and also produced a rough exterior that may have been useful during lifting.

The longest piece of rim sherd in profile measures 88mm, and does not appear to be thickening as it would if approaching the base. In addition, the bases are 9–16mm thick and with the attached base angle zone would also have been at least 30–40mm tall at a minimum. Therefore, there is every reason to suspect that the evaporation vessels at this site were considerably taller than 120mm.

It has however proved difficult to reconstruct the profile and size of these evaporation vessels. Some of the bases have quite flared, lower walls and many are curved or rounded in plan while the rims display a diameter that is considerable and much larger than the base footprint. The upper parts of these vessels may have been quite significantly flared beyond the footprint of the bases. If so, they would have been ideally manufactured to provide the maximum possible surface exposure in order to speed the evaporation of the heated water. All of the briquetage from pit 5066 was laid out in order to attempt the reconstruction of a single vessel and provide the necessary evidence for general profile, shape in plan and size of containers. Of the 1848 container sherds from this pit, 960 sherds are Q-series and 888 sherds are S-series fabrics indicating that fragments from a minimum of two vessels based on fabric group and five based on fabric types and vessel sizes were deposited.

Despite examining all the rims, very few could be refitted. The same was the case for base sherds. Nevertheless, the refitting rims and others from pit 5066 did provide enough of the container circumference to enable sections of four different rims to be determined at three sizes in several fabrics: 360mm (Q503; Fig. 3.65, no. 3), 380mm (Q501; Fig. 3.65, no. 2), and 400mm (Q501, Fig. 3.65, no. 1; S501, Fig. 3.66, no. 6). Similarly, sections of refitting bases and others were established which measured around 100mm (S501, Fig. 3.66, no.13), 120mm (Q501; Fig. 3.66, no. 16), 150mm (S501, Fig. 3.66, no. 14), 180mm (Q501, Fig. 3.66, no. 11) and 220mm (S501, Fig. 3.66, no. 12). This suggests that sherds from at least five vessels were deposited in this pit, and one other has been illustrated (Fig. 3.65, no. 5). In addition, it was possible to obtain rim diameter measurements from fragments of two different vessels recovered from the assemblage of 3572 container sherds and flakes from nearby pit 5110 (during the assessment). A fabric Q501 rim measured 380mm in diameter (Fig. 3.65, no. 2) and a fabric S502 rim was found to be the largest example at 420mm in diameter (Fig. 3.65, no. 4). The diameter of only one base from this pit could be determined, at 220mm (Q501, Fig. 3.65, no. 17). At least three vessels are represented in this pit based on fabric types alone, in addition to two small sherds from at least one fabric V501 container (Table 3.10).

It is possible that only 10–20% of any vessel had been recovered from the complete excavations of these two pits, but there is no possible way of determining this due to the degree of fragmentation and loss of the uppermost pit deposits through ploughing. Because the rim diameters range from two to four times larger than the base diameter range and there are no shoulder sherds or angled sherds of any kind in the entire assemblage, it is most likely that these vessels were flared, conical basins or deep bowls measuring well over 120mm tall (see Fig. 3.68). The manufacturing technique used to make these containers appears to have been coil building due to the presence of 45˚ angle breaks on several sherds, but the use of slab-building technique cannot be ruled out.

For the V-series containers, only two bases from different sites provided evidence of vessel form and size. One is a type B3 and the other a type B4 (Fig. 3.66, nos 15 and 18). Both measure 110–120mm in diameter and have only slightly flared profiles. None of the bases displays finger-smearing evidence. So little remains of the rim sherds in fabric V501 that diameters cannot be reconstructed nor vessel heights determined but none of the few rims made from this fabric displayed finger-smearing on top (eg Fig. 3.66, nos 9–10). However, some body sherds of V501 are finger-wiped on the exterior.

The large, flared, conical basin or deep bowl-shaped briquetage containers found on the A2 sites are very similar to those recovered from the nearby Tollgate site located along the HS1 route. The best example was illustrated as a circular, flared vessel reconstructed at 300mm in diameter and displays finger-smearing along the top rim edge and down the walls of the vessel (Edgeley-Long 2006, 50). At Highgate (Thanet), however, large pieces of shallow evaporation pans made in a flint-tempered fabric appear to be a combination of shallow and long-sided in plan with horizontal finger-wiping or at least medium in height (more than 70–80mm) and sub-rectangular in plan (Macpherson-Grant 2007a, 269–70, figs 90, 375 and 96, 447). Therefore, it seems that there are two different styles of salt evaporation vessel in Kent—shallow sub-rectangular, flint-tempered pans from east Kent and deeper, flared, conical basins made from a range of fine sand or shell-gritted fabrics from west Kent. The east Kent material is similar to salt production evaporation vessels found in Holland at Hooindonksche Akkers (van den Broeke 1980, fig. 25, 2–4 cited in Couldrey 2007, 156, fig. 55-site 35). The west Kent material is presently unique to that area, and this is discussed further below in relation to the saltmakers

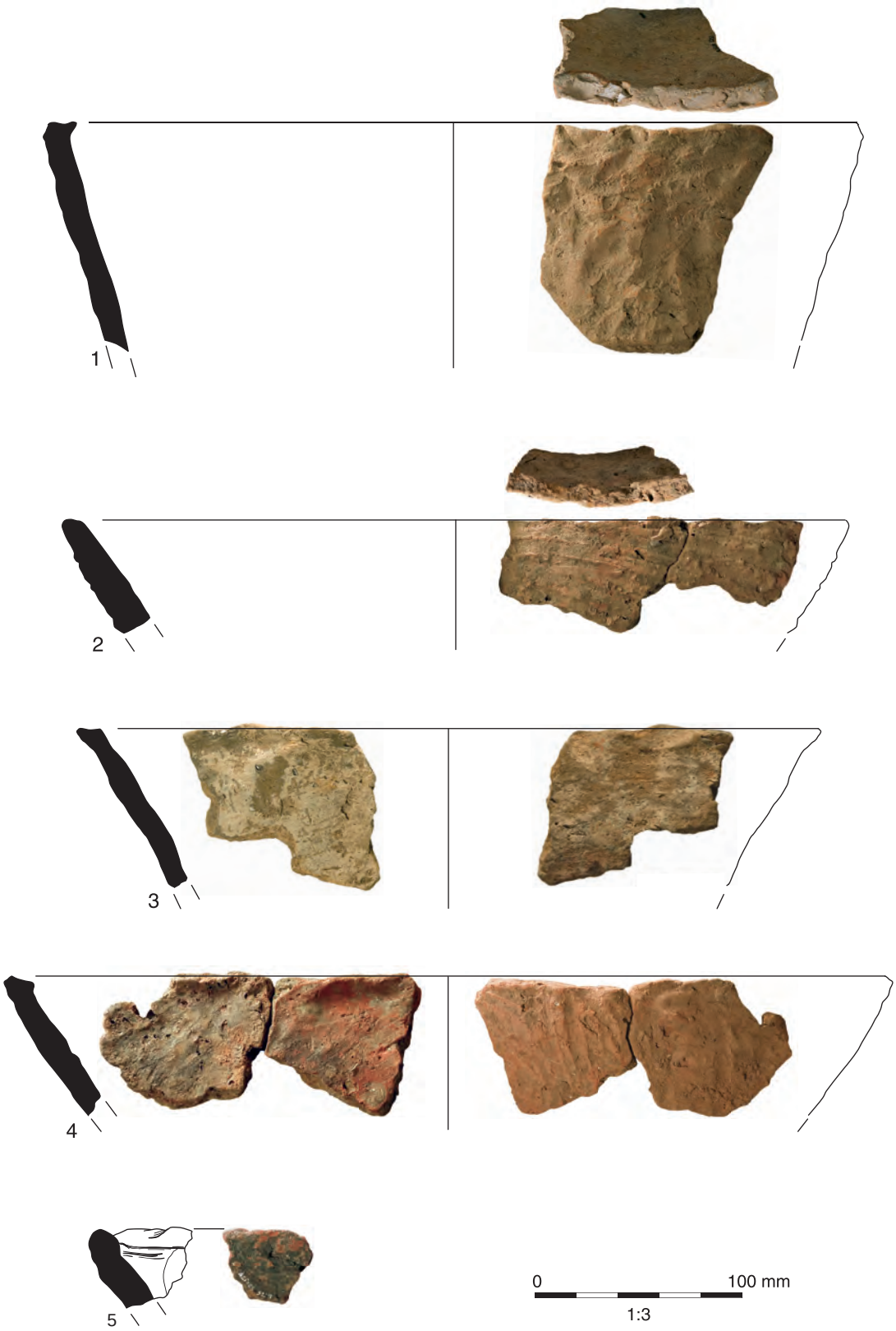


Fig. 3.65 Briquetage containers, 1–5

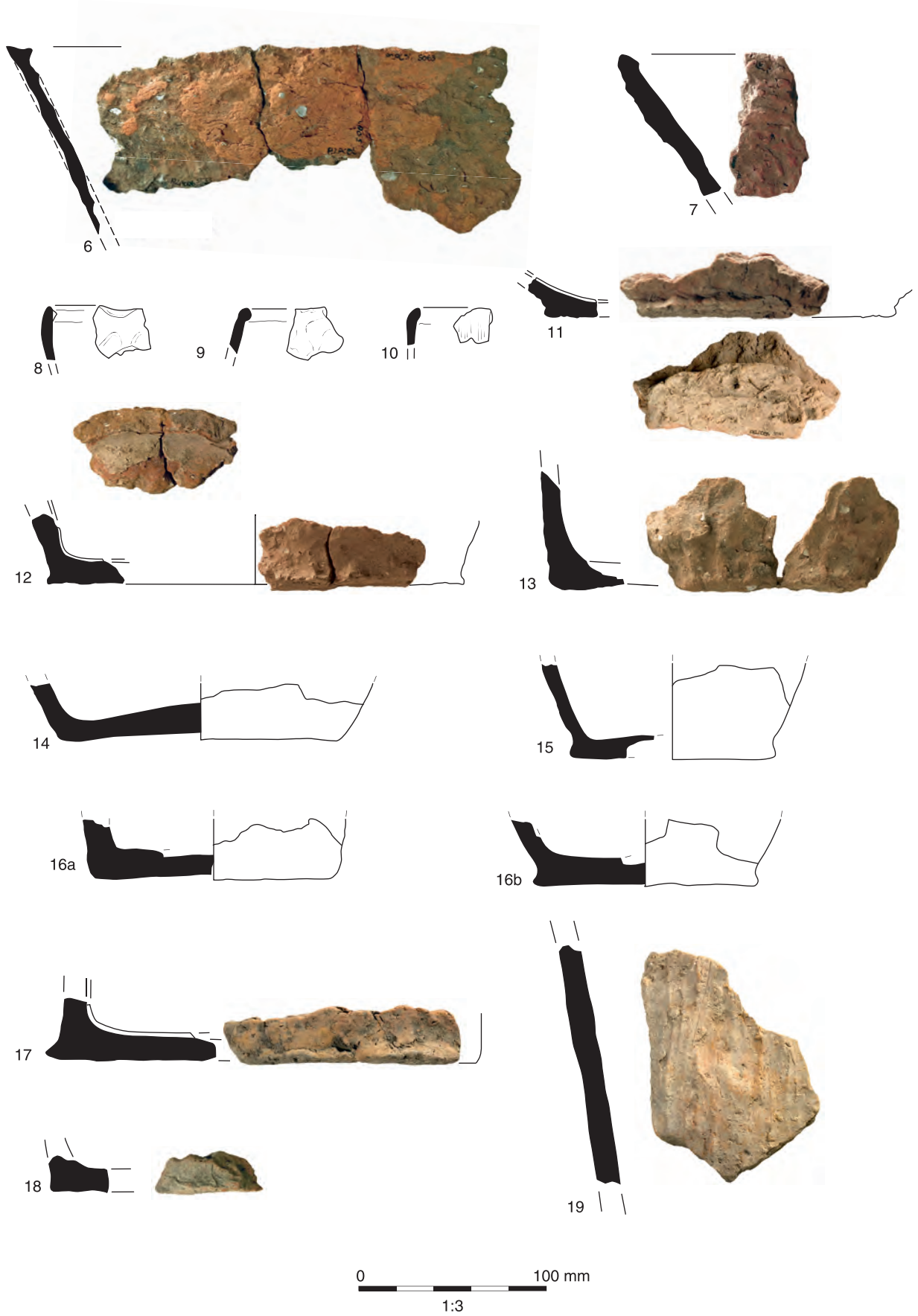


Fig. 3.66 Briquetage containers, 6–19

themselves. The more convex-profile, type R4 examples made from shell-gritted or organic-tempered fabrics could be more like the east Kent pans but this is far from certain.

Repairing of containers has already been discussed above but in addition to this distinctive surface treatment on the exterior, a small number of body and base sherds, in all three fabric groups, displayed what appears to be an additional, same-fabric layer or lining on their interior surfaces (eg Fig. 3.66, no. 17). This lining seems to have provided a smooth, Teflon-like effect to ease the removal of dried salt crystals or to repair the interior surface of vessels where scraping of salt had been severe.

Rims (Figs 3.65–6)

R1 upright to flared, flattened rim from conical-profile, open vessel (Nos 1–4)
R2 upright to flared rim with lip folded over to interior on conical-profile, open vessel; possibly manufacturing variation of R1 (Nos 5–6)
R3 upright to flared, pointed rim (No. 7)
R4 curled or rolled-over, hook-like rim on vessel with upright or convex-profile (Nos 8–10)

Bases (Fig. 3.66)

B1 plain, flat base, straight in plan (not illustrated)
B2 pinched, flat base, straight in plan (Nos 11–12)
B3 plain, flat base, curved in plan (Nos 13, 16a)
B4 pinched, flat base, curved in plan (Nos 11–12 and 16b–18)
B99 central, flat zone of a flat base unattached to vessel wall angle (not illustrated)

Body sherd (Fig. 3.66)

P1 undiagnostic body sherd with no specific profile features (No. 19)

Supports (S)

Five different types of pedestals (ie supports used to raise evaporation containers above the heating source to dry the brine and create salt crystals) were identified. Four pits contained complete or fragmented type PD1 supports, which are rectangular, hand-moulded objects which may be referred to as brick-like. The complete example measures 58mm wide, 64 mm thick and 115mm tall and most likely was positioned vertically on the hearth floor due to the presence of salt-bleaching from overspill of brine down one side (Fig. 3.67, no. 21). Two pits contained fragmented type PD2 supports, which are shorter, hand-shaped, sub-square objects with visible fingering not greatly dissimilar to PD1 pedestals (Fig. 3.67, no. 22). The best example measures 85mm wide, 100mm thick, and 98mm tall and was also positioned vertically on the hearth floor due to the firing condition of the object which shows that the lower part was immersed in ash.

Two pits contained fragments of type PD3 supports which are very similar to PD1 pedestals but had been pierced with a plain rod during the wet clay/leather-hard manufacturing stage, probably when the pedestals were being secured into position within the hearth (Fig. 3.67, no. 23). The rods would have held the pedestals in place during their first firing. It is very easy to misinterpret fragments of these perforated pedestals as deriving from contemporary triangular, perforated clay weights but they are actually brick-like in shape and the perforations are at a different angle to those in clay weights because they provided a completely different function. Brick-shaped pedestals have been identified in early Roman briquetage assemblages at Morton Saltern (Crosby 2001) and Holbeach St Johns (Gurney 1999) in Lincolnshire and March (Lane *et al.* 2008) in Cambridgeshire. Single examples of middle Iron Age and middle-late Iron Age perforated pyramidal-shaped pedestals have been found at Langtoft (Morris 2001b, fig. 90, 13) and Market Deeping (Morris 2001c, fig. 95, 21), but the early Iron Age PD1–3 examples from Site C East are currently unique.

Two other very different types of pedestals were found in the assemblage. They are slight rather than substantial and are represented by single examples, each in a separate pit on Site B with no other briquetage material. Type PD4 is a narrow, thin, flat pyramid (Fig. 3.67, no. 24) measuring 35mm wide and 100mm long at the base, 20mm thick along the body, and 75mm tall to the top of the apex. Similar examples of thin, pyramidal pedestals have been recovered from early Iron Age saltworking activity at Billingborough (Cleal and Bacon 2001, figs. 32, 48 & 34, 84; Morris 2007, fig. 3, 11–12), a middle Iron Age saltern at Langtoft (Morris 2001b, figs. 89–90), and middle–late Iron Age deposits at Market Deeping (Morris 2001c, figs. 94, 18–20 & 95, 21–22) in Lincolnshire. The pottery found in association with this example from pit 4686 is middle Iron Age (see Brown and Couldrey, this vol.).

Type PD5 is a round-stemmed pedestal with thick, disc-shaped footplate (Fig. 3.67, no. 25). The stem varies between 32–36mm in diameter; while the plate is 49mm in diameter and 12–13mm thick. The entire exterior surface of the stem and upper surface of the footplate had been salt-bleached. This broken pedestal fragment measures 41mm tall extant, which may be about half the original height. Identical types of slight pedestals with stems, or shafts, and footplates were recovered from late Bronze Age sites in Essex at Corringham (Barford 1984-5, fig. 1, 1) and the North Ring at Mucking (Barford 1988b, 15, 17-18; 1988c, figs. 36–37), both in association with fragments of briquetage containers. Very similar examples come from north-east Kent at Swalecliffe (Masefield, *et al.* 2003, fig. 28, pot 4), without other briquetage material. Briquetage recovered from nearby Cobham Golf Course as part of the HS1 fieldwork included two fragments of possible horizontal rods made from organic-tempered fabrics found in association with container fragments and pieces of structural material from late Bronze Age contexts (Morris 2005a, 1–2). The rods just might be from similar types of slight, stem-and-footplate pedestals. This suggests that the A2 fragment of type

Fig. 3.67 Briquetage pedestals 21–5 and oven structure 26–9

PD5 originally may have been late Bronze Age in date, and was residual in ditch 4618, of which cut 4408 was a part. However, late Bronze/early Iron Age (Hallstatt final/La Tène A) examples have been found with small evaporation containers at the saltern site of Vignacourt (Somme), northern France (Prilaux 2000, figs 7–9). Neither of the A2 pedestals was found with any other briquetage; it is possible that they may have been late Bronze Age objects rediscovered and reused during the Iron Age period. A second example of this type, in a different fabric, and without evidence of salt-bleaching, was recovered from a late Iron Age ditch in Site B (Fig. 3.69). It is therefore also possible that the type was still in use later in the Iron Age, though not necessarily in connection with salt production.

Pedestals (Fig. 3.67)

PD1 substantial, hand-moulded, rectangular pedestal which is imperfectly square in cross-section and brick-like in appearance; roughly constructed with visible fingering; positioned in vertical plane when in use due to evidence of salt-bleaching along one side only from overspill of brine (No. 21)

PD2 substantial, hand-shaped, rectangular pedestal with indistinct edges creating a sub-square cross-section; may have visible fingering (No. 22)

PD3 similar to PD1 with the addition of a diagonal, pre-firing perforation that may have been used to secure the brick-like pedestal into hearth position at the first firing; not a reused, triangular clay weight because of the angle of the perforation and the brick-like rectangular shape of the object (No. 23)

PD4 small, thin, truncated, pyramidal pedestal with flat, rectangular cross-section (No. 24)

PD5 small, round-stemmed pedestal with flat, footplate; type of top to pedestal uncertain because only example broken (No. 25)

PD99 fragment of pedestal but uncertain as to type (not illustrated)

Structural Material (ST)

Hearth flooring material consists of irregularly fractured, thick fragments of fired clay material which can have one flat, usually well-smoothed, surface with curved edges, and even the possibility of walls based on the presence of two wattle marks amongst the large quantity of briquetage hearth material (Fig. 3.67, nos 26–29). Of the 967 fragments of structural material, 17% displayed strong evidence of salt-bleaching while an additional 45% had slight or faint evidence for use in association with brine. The infrequency of curved edges may indicate that the hearth structures were quite large. The pieces of hearth flooring fracture quite easily, making reconstruction impossible. The well-broken hearth flooring material found in features on the A2 sites is the result of the demolition of hearth structures and deliberate deposition of the fragments into the features; no saltern hearths were recovered *in situ* during fieldwork. The irregular fracture of the pieces also indicates that the construction of the hearths was relatively simple with handfuls of well-wedged, damp clay pushed, meshed and smoothed to create the upper floor surface. Occasionally layers of clay can be identified.

Nearly all of the hearth flooring material found in pit 5066 is made from fabrics Q504 and Q505, while that found in nearby pit 5110 had been made from fabrics Q501 and Q505, and suggests that at least three hearth structures had been constructed in the immediate area. The quantity of saltern structural material found along the route of the A2 widening scheme is currently unique for early Iron Age Kent; none was found at Tollgate during the HS1 fieldwork located further to the southeast in this same landscape.

Hearth Flooring (Fig. 3.67)

HFL1 generally thick fragment of hearth flooring material with one flattened, usually smoothed, surface and a distinctively irregular appearance otherwise (No. 26)

HFL2 fragment of HFL1 with wattle impression (No. 27)

HFL3 fragment of hearth flooring material that are curved in plan, No. 28b with two flattened surfaces representing a change of angle direction that may be a corner (No. 28a-b)

HFL98 fragment of HFL99 with part of a wattle impression visible and, therefore, similar to HFL2 (No. 29a)

HFL4 fragment of hearth flooring material with wattle impression and an external curve suggesting that it might represent the edge or corner of a hearth (No. 29b)

HFL99 fragment of hearth flooring material with no flattened, smooth surface; irregular all over (not illustrated)

Miscellaneous (M)

A small amount of undiagnostic fired clay material was recovered which showed evidence of having been associated with salt production (due to the firing colours of the fragments or salt bleaching evidence discussed below). These fragments were too small to confirm that they derive from hearth structures. They were therefore recorded as fired clay.

Container performance

It was surprising that three different fabrics (Q501, S501, S502) were used to make containers while the forms of the containers were relatively uniform (Table 3.9). There is no other salt production site in Britain that displays such fabric variability with an associated consistency of evaporation vessel shape. In addition, there is further evidence about the nature of container variation that is likely to have been strongly correlated to this fabric variation for technological reasons.

Table 3.12 presents the evidence for vessel wall thickness frequency by fabric. A total of 70.8% of the Q501 sherds which still retained both surfaces of each sherd measure between 7–9.9mm thick (thickness code 3). Only 2% are thinner than this (code 2, less than 7mm). Thicker sherds include 26.7% at

Table 3.12: Frequency of briquetage container sherds by wall thickness code and fabric (code 2, < 7mm; code 3, 7-9.9mm; code 4, 10-12.9mm; code 5, 13-15.9mm)

Thickness Code	Fabric												Total Count	Total %
	Q501		Q502		Q503		S501		S502		V501			
	CT	%	CT	%	CT	%	CT	%	CT	%	CT	%		
2	17	2.0	1	20.0	-	-	200	13.1	16	2.4	11	19.6	266	8.5
3	608	70.8	1	20.0	1	20.0	1164	76.6	399	59.3	29	51.8	2202	70.1
4	230	26.7	2	40.0	1	20.0	152	10.0	257	38.2	16	28.6	658	21.0
5	4	0.5	1	20.0	3	60.0	5	0.3	1	0.1	-	-	14	0.4
TOTAL	859	100.0	5	100.0	5	100.0	1521	100.0	673	100.0	56	100.0	3140	100.0

code 4 (10–12.9mm) but only 0.5% measured within code 5 (13–15.9mm). In contrast, the S501 data reveals that while there is a similar frequency of code 3 sherds (76.5%), only 10.0% are code 4 but 13.1% are the very thin code 2. Therefore, the trend is for sherds made from fabric Q501 to be significantly thicker than those made from fabric S501. What is equally noteworthy is that the S502 sherds are even thicker, overall, than the Q501 sherds. Just fewer than 60% of these sherds register at code 3 and only 2.4% at code 2, while a massive 38.2% measure between 10–12.9mm (code 4).

One of the reasons for the use of three different fabrics to manufacture most of the evaporation vessels may be that the saltmakers realised that the life expectancy of an S501 evaporation pan was much shorter than that of a Q501 or S502 pan. This can be demonstrated by the relative rate of sherd splitting (code X) amongst these three fabrics. Table 3.11 above shows the frequency of container sherd splitting by fabric type compared to the frequency of full wall thickness sherds using both actual numbers of sherds and by percentage. Only 16.5% of the Q501 sherds were recovered as split sherd flakes, which is in tremendous contrast to the significantly high flake frequency amongst the fabric S501 sherds (55.6%) and slightly lower frequency for fabric S502 sherds (44.2%). If saltmakers were expecting to use their vessels over a period of time, ie repeatedly for some time, then it would have been more efficient to make them from fabric Q501. If this is the case, then it is worth examining the data in Table 3.13 which presents the amount of each fabric used to make containers by both count and weight of sherds for the two pits on Site C East with the greatest amount of briquetage. It is tempting to suggest that the deposition of briquetage into pit 5110 took place prior to that in pit 5066 nearby where just over half of the container sherds were made from fabric Q501 and much less from fabric S501 compared to pit 5110. The majority by weight in pit 5110 had been made from fabric S502, the fabric with the thickest container sherds. However if the number of sherds is considered relevant, two-thirds is fabric S501, one-third fabric S502 and a very small number had been made from Q501 in pit 5110. It may be that we are looking at a process of experimentation between successive saltmaking seasons using different fabrics for container manufacture. However, this may not be the only reason for the interesting variety of container fabrics; another reason may simply be different access to clay resources discussed below.

Dating of salt production evidence

Nearly all of the briquetage was recovered from features in association with Iron Age pottery. On Site C East, each pit with briquetage (see Table 3.10) also contained diagnostic pottery dating to the early Iron Age, and in some cases this was refined as later early Iron Age or early middle Iron Age if specific

Table 3.13: Quantification of briquetage container sherds by fabric in pits 5066 and 5110 (weight in grammes)

Pit 5066 Fabric	CT	% CT	WT	% WT	Pit 5110 Fabric	CT	% CT	WT	% WT
Q501	951	51.7	8485	62.2	Q501	73	2.0	474	2.9
Q502	-	-	-	-	Q502	4	0.1	10	0.1
Q503	-	-	-	-	Q503	3	0.1	117	0.7
S501	888	48.3	5154	37.8	S501	2291	64.1	7182	43.8
S502	-	-	-	-	S502	1199	33.6	8623	52.5
V501	1	<0.1	3	<0.1	V501	2	0.1	6	<0.1
TOTAL	1840	100.0	13642	100.0	TOTAL	3572	100.0	16412	100.0

vessels were present; pit 5052 (2 sherds, 0.02kg), pit 5066 (1018 sherds, 5.7kg), pit 5110 (510 sherds, 3.4kg), pit 5130/5242 (690 sherds, 8.1kg), pit 5225 (146 sherds, 1.6kg), pit 5992 (913 sherds, 6.3kg), pit 7209 (118 sherds; 0.7kg), and pit 7235 (31 sherds; 0.2kg) (see Brown and Couldrey this vol.). Pits 5110 and 5130/5242 produced radiocarbon dates of 510–360 cal BC (NZA 32315) from charred grain in context 5423 and 410–350 cal BC (NZA 32314; 84.5% probability) from charred grain in context 5406 respectively, absolute dates which are in complete agreement with the pottery dating. This occurs again on Site G where all three features with briquetage contained considerable quantities of early Iron Age pottery; pit 9010 (1191 sherds, 21.4kg), pit 9052 (192 sherds, 2.1kg) and pit 9088 (695 sherds, 7.4kg), the latter containing the distinctive horned, crenellated, *coupes à bord festonnés* bowl discussed elsewhere (see Brown and Couldrey this vol.; Fig. 3.56, 9061013). Pit 9052 returned a date of 405–365 cal BC (NZA 32406) from faunal remains found in context 9083, a date virtually in distinguishable from the previous two. Therefore, the fabric Q-series and fabric S-series briquetage containers, pedestals and hearth material are representative of early Iron Age salt production activity at these sites, and may specifically belong to the end of the early Iron Age and beginning of the middle Iron Age in particular the earlier 4th century cal BC. The three pits with briquetage on Site G also contained a total of 18 larger fabric V501 container sherds (189g), indicating that organic-tempered briquetage containers were also being used at this time. In addition, 35 pieces of V-series briquetage were recovered from five of the Site C features but these small fragments weighed only 38g.

On Site B, the majority of briquetage was recovered from ditches with no associated pottery, and often no other finds. However, four of the 12 features with briquetage did have small quantities of Iron Age pottery; pit 3686 with the only PD4 support, ditch 3961/cut 4083 and ditch 4069 with its re-cut ditch 4085. Pit 3686 contained distinctively middle Iron Age pottery and ditch 4085 re-cutting 4069 is late Iron Age. Cut 4083 of ditch 3961 contained early, middle and late Iron Age pottery, and was probably contemporary with ditch 4069/recut 4085. Ditch 4408 with the only PD5 support had no associated pottery. Therefore, the redeposited early and middle Iron Age pottery on this site appears to have been accompanied by the redeposition of contemporary briquetage with small mean fragment weights, material which is primarily fabric S501 examples (157 pieces, mean weight 2.7g) with a small amount of fabric V501 briquetage (13 pieces, mean weight 3.9g).

Sites K and L have significant amounts of V-series briquetage, and pit 10515 had the largest mean fragment weights of this fabric in the entire A2 assemblage (7 pieces, 122g; 17.4g mean weight). Pit 12647 contained 48 pieces weighing 156g (3.3g mean weight). The pottery from pit 10515 was early Iron Age but no pottery was recovered from pit 12647. Neither pit had any other briquetage, but one very small sherd (2g) from a fabric S501 container was identified amongst the late early Iron Age pottery from pit 12571.

Therefore, briquetage containers, pedestals and hearth material made from the Q-series and S-series fabrics were both in use during the early Iron Age, and the bulk of this salt production was taking place at the end of the 5th century and earlier 4th century cal BC on Site C East. The fragments of V-series containers recovered from five different sites along the A2 route, often found in association with Q-series and S-series material, indicate that organic-tempered briquetage was probably contemporary with these more common wares. However, in the absence of pedestals and hearth material made from fabric V501 it is not possible to prove that salt production using this fabric group took place here. It is most likely that a few containers made from this fabric brought salt to these sites in small quantities by trading with neighbours or by neighbourly visits during feasting and production events, such as people living and making their own salt in the Medway Valley to the east. Sherds from organic-tempered briquetage containers were recovered from the early–middle Iron Age sites at Cuxton on the west side of that valley and White Horse Stone on the east side (Morris 2006). The location of salt production which used organic-tempered briquetage has yet to be found, but may have been somewhere in the estuary of the River Medway.

Evidence of use and intensification of salt production

It is possible to determine if ceramic materials, including fired clay fragments and vessels, had been used in association with salt production due to the distinctive array of oxidisation colours which result from direct contact with brine and the subsequent loss of oxidised clay colouration as this association intensifies into bleaching of the iron from the clay. This effect was first noticed by Matson (1971) on pottery from Mesopotamia, observations confirmed by Peacock (1984) through experimentation as a method for understanding the so-called 'white slip' on the exterior of amphorae produced on the North African coast in Tunisia. The white slip appearance was simply bleaching of iron oxides from the clays due to saltwater being used in the manufacture of the amphorae.

Bleaching can occur both on briquetage and on pottery associated with salt production. If this effect is observed on pottery, the pots are usually considered to have been used secondarily as either brine carrying or storing containers (and occasionally even as salt evaporation containers). The role of pottery vessels in salt production activity on the A2 sites is discussed elsewhere (see Brown and Couldrey this vol. and archive report on the petrological analysis of two flint-tempered pottery fabric types).

If salt production occurred over a number of centuries in an area, it is possible to suggest whether intensification of production occurred through time (Morris 2007). The types of evidence used to assess this include an increase in the number of saltern sites, the change from direct to indirect heating structures, and increased bleaching of container sherds due to longer or repeated use to produce more salt. In north-west Kent, small quantities of late Bronze Age briquetage suggestive of salt production evidence were found at Cobham Golf Course (Morris 2005a) and Hoo St Werburgh (Moore 2002, fig. 4, 1–2). For the early/middle Iron Age the only direct saltern production evidence currently known in this area was found at Site C East. Early Iron Age salt production in north-east Kent has been suggested on the Isle of Thanet but the evidence is very slight (Macpherson-Grant 2007). It is only in the late Iron Age and Roman periods that there appears to have been an increase in the number of recognised and documented salterns, both along the south-side of the Thames and Romney Marsh on the south coast (Miles 1975; Barford 1982; Detsicas 1984; Philp and Willson 1984; Barker 1998; Philp 2002).

The frequency of examples displaying salt bleaching and the degree and depth of this effect into the walls of the container sherds are modest characteristics in the A2 assemblages. A total of 479 container sherds (8% of the total) display clear evidence of bleaching. A similar total of 476 sherds displayed a range of faint traces of bleaching. This infrequent evidence of sustained use of vessels was also observed in the Tollgate and West of Northumberland Bottom briquetage assemblages (Morris 2006). This suggests that the repeated or long-term use of briquetage containers was not occurring in north-west Kent during the early Iron Age.

This contrasts considerably with the frequency of affected examples and degree of bleaching found amongst the container sherds in several late Iron Age and early Roman assemblages from the Fenland (Morris 2007). The nature of production at Site C East was thus most likely small-scale and conducted to make salt for local use and limited, intra-regional exchange. The difference in the intensity of repeated or long-term use of containers between the mid 1st millennium BC and the early Roman periods is striking and indicates that the mode of production in the Fens had changed significantly during these 500 years. A second characteristic of use observed in the A2 briquetage collection is abrasion on the interior surface of some container sherds and on others an additional, interior layer of clay on top of an original bleached surface. Abrasion would have resulted from the scraping of salt out of the containers and this relining would have given containers a longer span of use. Donnelly and Anderson-Whymark (this vol.) noted a modest flake-oriented assemblage of 95 flints in good condition from the large pits in Site C East. It may well be that these were employed as scrapers to remove the salt.

A third characteristic which suggests a lack of intensive use amongst the fabric S501 vessels in particular is their overall firing condition which is different from the Q501 and S501 fabric vessels. The majority of Q501 and S502 sherds are completely oxidised (oxidised through the wall thickness), while the majority of S501 sherds are unoxidised on the interior, which suggests that these vessels were not repeatedly heated in an oxidising atmosphere which could have changed their fired appearance. It would not be surprising to learn that the S501 vessels had been used only once or twice.

Quantity of salt produced

Proposed reconstruction of briquetage containers in the A2 collection based on the refitting exercise of the sherds in pit 5066 allows for consideration of the quantity of salt produced during the episodes represented by the deposit of container material recovered. If the vessels were flared in profile, measured between 380–400mm in diameter at the rim, 140–200 mm at the base and over 120mm in height, then an approximate calculation which uses the formula of π x radius squared x height for the cubic centimetres within a cylinder can be adapted for this conical shape (Fig. 3.68). Taking the radius squared as 20cm x 20cm x height of approximately 15–20cm x 3.14 results in a range from 18840cc to 25120cc, or 18–25 litres of salt for a *cylindrical* shape with these measurements. The *conical* shape of an actual briquetage container would reduce this amount by approximately one-third to 12–17 litres of salt per container if used only once to its full capacity. There is no evidence to indicate whether the containers had been used to achieve this amount or not; this is simply an approximation of what might have been achieved. In pit 5066 there were fragments from at least three to five different briquetage containers based on different vessel sizes and fabrics. If these calculations are broadly correct, then the amount of salt produced using these containers could have been in the region of 36–85 litres. Such amounts at the lower range would have been useful to a group of two or three families salting meat, making cheese and butter and flavouring meals for a year, while at the higher range the amount could have satisfied twice that number of people or more.

Deposition and spatial variation

The vast majority of briquetage was recovered from two early Iron Age pits, 5066 and 5110, located at the eastern end of Site C (Tables 3.10 and 3.13). They are part of a group of artefact-rich pits, others being 5130/5242 and 5992. These and smaller early Iron Age pits 7209 and 7235 all contain some briquetage, but in limited quantity. Therefore this discussion will focus on pits 5066 and 5110 only.

There are seven briquetage-bearing layers in pit 5066 and ten layers in pit 5110. The term 'layer' is used here to differentiate from the traditional use of

the word context because many of the contexts only represent that part of a layer in one-half of the sectioned pit. For example, contexts 5063 and 5233 are the same layer in pit 5066 and contexts 5132 and 5224 are the same layer in pit 5110. Table 3.14 presents this summarized data for 'layer-contexts' and shows how much variation exists between the two pits. A massive amount of briquetage was deposited in one layer in pit 5066, layer-contexts 5063/5233, and it is the only layer of significance in this pit; all other layers contained less than 1kg of briquetage. In contrast, pit 5110 contained four significant layers of material. Pit 5110 also had five other layers with more than 500g of material while pit 5066 had only one other layer. Therefore, it appears that there were several significant dumps of broken fragments of briquetage weighing between 2 and 7kg into pit 5110 but only one extremely large dump of 22kg into pit 5066.

Group 5750 briquetage altogether includes equivalent amounts of both Q501 and S501 container fragments but only pit 5110 also has numerous fabric S502 sherds. Pits 5066 and 5110 revealed nearly the same quantity of briquetage by weight (23kg and 21kg respectively) but the amount of each specific container fabric varies considerably by weight, with two and a half times more Q501 in pit 5066 than pit 5110, 28% more S501 in pit 5110, and the appearance of 8.6kg of fabric S502 in pit 5110 but none in 5066 (Table 3.14). Both pits contained rare container sherds made from fabric V501 (Table 3.10). At least six times more hearth structure material by weight was recovered from pit 5066 than pit 5110 (Table 3.10). In addition, nearly all of the pedestal fragments from the A2 excavations were found in these pits. Therefore, there are similarities and differences in the deposition of briquetage into these two pits.

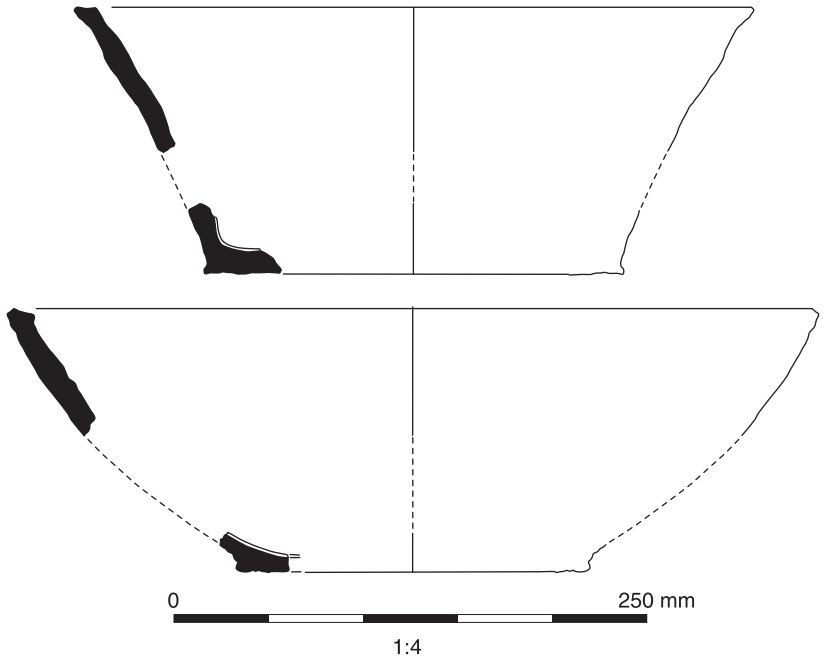


Fig. 3.68 Potential reconstructed vessel shapes

Table 3.14: Quantification of briquetage by layer-contexts in pits 5066 and 5110 (weight in grammes)

Pit 5066			*Pit 5110*		
Layer	*CT*	*WT*	*Layer*	*CT*	*WT*
5062/5227	66	286	5111/5220	115	451
5140/5232	121	846	5112/5221	100	648
5063/5233	2129	22074	5113/5222	312	305
5414	6	34	5125/5223	215	870
5416/5496	18	92	5132/5224	1006	5199
5431/5499	2	32	5149	713	2609
			5155/5230/5156	972	6758
TOTAL	2342	23364	TOTAL	3433	16840

The nature of briquetage fragmentation is also different between pits 5066 and 5110, and it would not be inappropriate to suggest that the behaviour associated with the fragmentation and deposition of briquetage into pit 5066 was different from that associated with pit 5110. As discussed above, this may be a chronological difference of as little as one to ten years or a generation (20–25 years). Or it may be a personal difference with different saltmakers or saltmaking groups depositing into the two pits at the same time or at different episodes. The variability encountered may also include a sequence of experimentation with different clay resources; first the shell-rich fabric (S501; 7.2kg) to make containers, followed by the sparse shell, silty fabric (S502; 8.6kg) and then the simply silty fabric (Q501; 4.2kg) deposited in pit 5110 followed some time later by the use of primarily silty fabric (10.2kg) but also shell-rich fabric (5.1kg), but interpretation of the likely sequence is not obvious. Another possibility is may be that these three dominant fabrics, Q501, S501 and S502, represent the local clay resources available to three different saltmakers in the local area, who chose to work together during the saltmaking season but preferred using their own clays (see also below).

For the hearth structure material, variation is again apparent between these two features (see archive report for details), and altogether the evidence seems to point towards possible experimentation and selection of different clay resources by saltmakers at slightly different times. If clay resource selection is the dominant explanation for the deposition patterns recovered, then that selection could indicate different saltmakers bringing their local clay, containers or both to this location at the same time to make salt and deposit briquetage.

Not only is there variation in the frequency of specific fabrics chosen for briquetage construction, fragmentation and deposition but the lack of completeness of any class of briquetage material is striking. The amount of either Q501 or Q505 fabric hearths is small, no container of any fabric is complete or even offers a total profile, and only two of the pedestals have complete dimensions, all of which begs the question—where is the rest of the briquetage? It may be that the focus of salt production takes place further north, and the A2 corridor is at the edge of this activity.

Salt production methods and the salt production landscape

The evidence of salt production presented above does not include an *in situ* saltern hearth or water management features. The large pits where quantities of briquetage have been found were not clay lined and, therefore, unlikely to have been constructed for the storage of saltwater during production procedures. This suggests that the saltern hearth(s) may have been located somewhere just north of Site C East, and that what was recovered in these pits was simply the disposal or special deposition of large quantities of production debris from a nearby saltern along with other materials.

Both Site C East and Tollgate are not unique in their raised location about 50m above sea level and 3–4km distance from seawater. They are located just opposite the Thames from the late Bronze Age saltworking site at Mucking North Ring (Barford 1988a, fig. 27; 1988b, fig. 36–8), which was located on a terrace at 30m above OD and 1km north of the present day Mucking Creek which leads into the Thames estuary (Bond 1988, fig. 1). The early Iron Age saltworking site at Bishopstone was located in a raised position at 44–50m above OD on the east side of the River Ouse in East Sussex (Bell 1977, 122). In northern France, a Hallstatt D/La Tène I salt production site was excavated on a terrace at Vignacourt, 7–8km north of the River Somme and 55km inland (Prilaux 2000). An even more extreme example is that of the Belgic (Atrebatic) period saltern found at Actiparc, near Arras more than 100km inland (Jacques and Prilaux 2003). It is possible that this apparently inland position was not the case during the second half of the 1st millennium BC due to the effects of the Dunkirk I transgression (Evans 1953; Devoy 1979), an environmental condition which has been used to explain the location of Iron Age salt production some 12km inland from the modern coastline of Belgium (Thoen 1975). This transgression appears to have prevented typical settlements being established in the foreshore area we know today (cf. Sealey 1996, 61). In north-west Kent, there are a number of north-south valleys coming off the Thames estuary and recent investigations have revealed that in the Ebbsfleet Valley brackish water conditions existed at least as far as mid-way between Northfleet villa and Springhead and levels for the waterfront at Northfleet villa in particular suggest tidal levels 1–1.7m OD during the Roman period (E. Stafford, pers. comm.). Bell (1977) has suggested that the raised position of the Bishopstone site may indicate that brine had been concentrated in the tidal zone using natural evaporation and then transported to that site where many bars and containers typical of salt production were found. It is not inconceivable, therefore, that during the early Iron Age saltwater creeks may have been closer to this section of the A2 and salt production may have been removed to the higher ground on the dip-slope of the North Downs at Site C East.

It was suggested that the contents of the three early Iron Age pit clusters at Tollgate, which held nearly 25kg of briquetage container fragments but no pedestals or hearth material, may have represented a crystallisation stage in the salt production process due to its distance from the Thames shore (Morris 2006). With the appearance of the Site C East pit group and the presence of pedestals and hearth material at the same distance from the

present shoreline of the estuary, that interpretation has less credence.

Who were the saltmakers?

The discovery of significant quantities of salt production ceramic equipment from primarily two pits on Site C East provides an opportunity to investigate who were the actual workers at this site. Were they craftspeople from Essex or Lincolnshire where salt production had been conducted since the late Bronze Age? Or were they continental European saltmakers who came to north-west Kent and showed local people how to make salt?

Clues to the answers may lie amongst the fabrics and fingering visible on the containers. Shell-gritted fabric S501 is an early–middle Iron Age type of pottery fabric commonly employed in north-west Kent which was also used to make briquetage containers found on the A2 sites. The presence of finger-smearing diagonally across the tops of briquetage container rims is not necessary for the functional performance of these large conical bowls; rather it is a type of decorative cultural marker. When other fabric types such as the fine, ungritted fabric Q501 and the slightly shell-gritted, fine fabric S502 were used to make containers, these vessels were also finger-smeared across the rims. Finger-smearing diagonally along the tops of pottery vessels (both jars and bowls) seems to be a style zone marker of early Iron Age pottery from the Medway Valley to the Darenth Valley, as at White Horse Stone, Cuxton, Tollgate, West of Northumberland Bottom and Farmingham Hill. Only occasionally is it found in east Kent (Couldrey 2007, figs. 82, 290, 85, 316 & 86, 320). It is not dissimilar to finger-tip impressions but is more piecrust-like in appearance. The similarities between contemporary pottery vessels and briquetage containers are strong enough to suggest that the makers of briquetage containers were most likely to have been potters. Otherwise, why waste time on an industrial processing medium (briquetage containers) when the decoration was not necessary in the saltmaking process? Early Iron Age potters were likely to have been women who made pottery on a part-time basis because the pottery is handmade, bonfired and used locally which is modelled as *household production* (Peacock 1982, 13–17) with some pottery production of glauconitic sandy wares destined for intra-regional distribution (Morris 2006) and referred to as *household industry* (Peacock, op cit., 17–25). The same potters could have made briquetage containers on a seasonal basis when saltmaking was optimal (cf. Bradley 1975; Gurney 1986, 141–4).

However, the effort to make all of the ceramics required to win salt from brine is time-consuming and physically challenging. Making the large conical bowl containers, the brick-shaped pedestals and the hearth structures as well as carrying the brine, even if it has been partially evaporated in the tidal zone, to the upslope location for the next stage of heating, would have been physically demanding. It is therefore likely that saltmaking was a family, if not community, activity with groups of women making containers, young girls and boys helping with hearth and pedestal making as less skill is required for these tasks, and men transporting the saturated brine. An additional task would have been collecting the fuel required to heat the brine, which may be represented by the various deposits of ash and charred plant remains found in the three pits at Site C East. Tending the fire, topping up the brine in the containers and removing the salt, when crystallised, were the final tasks in the process. The timing of optimal salt production is during the summer and this special activity could have been an annual opportunity for several communities or families in the immediate area to come together for this special event to celebrate and socialise while working and feasting—after winning the salt.

Fired clay *by Dan Stansbie with Tim Allen*

A total of 8665 fragments of fired clay, weighing 106,039g was recovered from Iron Age contexts in 13 sites (A–E, G, H, K, L and Pond D North) along the course of the road scheme. The largest concentrations of material occurred on Sites C and L with smaller amounts from Sites B and G, while the remainder produced relatively negligible quantities. The assemblage largely derived from deposits dated to the early Iron Age, although a relatively large quantity of material came from undated deposits and small but significant assemblages from the middle Iron Age, the middle to late Iron Age and the late Iron Age.

The composition of the Iron Age fired clay is summarised site by site below, in geographical order from west to east.

Site assemblages

Site K

The fired clay assemblage from Site K comprises 74 fragments, weighing 1888g and derives entirely from contexts assigned to the early Iron Age phase. It comprises some structural material in fabrics A, A2 and E, along with two fragments of triangular oven brick/loomweight in fabric A, one of which showed some evidence of burning. Both fragments were recovered from pit 10515.

Site L

The fired clay from Site L comprises 1017 fragments, weighing 25836g and is dominated by material from the early Iron Age phase, supplemented by smaller amounts from the earliest Iron Age, the middle Iron Age and the late Iron Age to early Roman period.

The early Iron Age material, including the fired clay from the single context phased to the earliest

Iron Age, is dominated by triangular oven bricks/loomweights in fabrics A, A2, E and F. Complete oven bricks/loomweights and oven brick/loomweight fragments were recovered from pit 12527/12700. Pit 12527 produced thirteen complete oven bricks/loomweights and 13 fragments. The oven bricks/loomweights were supplemented by some structural material in fabrics A and F and some unidentified material. Some of the structural material had internal wattle impressions and may have derived from oven walls and covers. All of the three early Iron Age contexts that produced oven bricks/loomweights also contained such structural material. Middle Iron Age fired clay comprises four fragments of structural material in fabric A. The late Iron Age to early–middle Roman material largely consists of structural material in fabric A, although there is also a small amount of unidentified material. The fired clay from unphased contexts is again dominated by structural material in fabrics A, A2 and E, with some unidentified material also present.

Site A

Very little fired clay from this site came from Iron Age contexts, but unphased layer 3067 produced a possible pedestal or oven plate, weighing 94g in fabric E.

Fired Clay from Site B

The fired clay from Site B comprises 1937 fragments, weighing 21,399g. It derives largely from middle or late Iron Age features, although there are also small amounts of early Iron Age material. The early Iron Age material is exclusively structural and comprises fabrics A, A2 and E. The middle and late Iron Age fired clay is dominated by structural material in fabrics A and E, although fabrics A2 and D are also present. Much of this middle and late Iron Age structural material has internal wattle impressions and probably derives from oven walls or covers.

This is supplemented by a number of objects, which are largely oven-related including two triangular oven bricks/loomweights and a pedestal base of triangular profile in fabric E from pit 3686 (see Fig. 3.67 no. 24). Part of a pedestal base of cylindrical cross-section in fabric E came from ditch 4408 (Fig. 3.67 no. 25), and another in fabric A2 from pit 4268 layer 4266 (Fig. 3.70), while a pedestal of square shape in fabric A was recovered from ditch 4744 context 4688 (Fig. 3.70). The triangular and cylindrical forms are believed by Morris to be associated with briquetage production, and are support types PD4 and PD5, but the square type may have been used in ovens. Wall daub in fabric E came from pits 4969 and 4606. There are also two fragments of perforated oven plate in fabric B, from late Iron Age ditch 4583 and pit 4606. These are very similar to late Bronze Age examples, and may be residual (see Chapter 2 Fired clay). The material from late Iron Age to early Roman and early Roman contexts is largely structural and comprises fabrics, A, A2 and E. It probably derives from similar sources and activities as the material from the middle and late Iron Age phases. A small amount of structural material also derives from unphased contexts.

Site C

Site C produced 3254 fragments of fired clay, weighing 41,963g. The assemblage is dominated by material from the early Iron Age phase, although this is supplemented by small amounts from the middle to late Iron Age phase. In addition there is a small amount of material from unphased contexts. The fired clay from features containing pottery in fabrics current in the late Bronze Age to early Iron Age phases, all of which are considered to be early Iron Age, is largely structural material in fabrics A, A2, B, D and E. The internal wattle impressions suggest that this is probably derived from ovens and cooking related activities. There is also a cylindrical oven brick/loomweight in fabric A from context 5553, probably residual from the adjacent middle Bronze Age enclosure.

Material from features with diagnostic early Iron Age pottery is again dominated in terms of numbers of contexts by fired clay derived from probable oven structures in fabrics A, A2 and E, although fabrics B, D and F are present in smaller amounts. In addition there were 12 triangular loomweights/oven bricks: pit 5110 contained eight in fabrics A, D and E, pit 5130 produced three in fabrics A and E and pit 5066 produced one in fabric E. Pit 5130 also contained a residual cylindrical oven brick/loomweight in fabric A2, and pit 5992 a fragment of oven plate in fabric A2. Material from unphased contexts, in addition to structural material included a triangular oven brick/loomweight from posthole 5465.

Site D

Only a very little fired clay from Site D is of Iron Age date (145 fragments weighing, 781g) and belongs to the middle Iron Age. This material is structural, and in fabrics A and E.

Site E

The fired clay assemblage from Site E is small, comprising only 41 fragments, weighing 48g and the majority of it comes from contexts dated to the Iron Age phase, with a small amount coming from unphased features. The vast majority of this material is unidentified, being less than 5mm in diameter. Of the identifiable material the single fragment from an Iron Age context is structural and made in fabric E. Five fragments of structural material in fabric A come from an unphased context.

Site G

Site G produced 2284 fragments of fired clay, weighing 15,773g. This largely comprises material from contexts within the early Iron Age, supplemented by material from undated features. The fired clay from the early Iron Age phase is also

Fig. 3.69 Fired clay loomweights/oven bricks sf 473 and 1285

largely structural and mostly made in fabrics A and E, supplemented by small quantities of fabrics A2, B, D and F. This material has frequent wattle impressions and some burning on the exterior surfaces, suggesting that it derives from oven walls and covers. There are also fragments of two triangular oven brick/loomweights made in fabric E, along with fragments of five more possible oven bricks/loomweights in fabrics A and E from pit 9010 and an additional fragment of triangular oven brick/loomweight from pit 9567. The remaining material comes from unphased contexts and comprises structural material in fabrics A and D and fragments of a triangular loomweight in fabric A.

Site Pond D North

Pond D North produced 65 fragments of fired clay, weighing 434g. Most of this material belongs to the late Iron Age phase, is entirely structural in character and made in fabric A. No wattle impressions were noted, but it likely to derive from oven walls and covers.

Discussion

The large quantities of generic structural material deriving from all of the sites probably mostly represents broken up oven walls and covers, and less commonly, wall daub from buildings.

Two types of object were found in the Iron Age features: triangular oven bricks/loomweights and pedestals. The pedestals were very varied in type, but many have been identified as associated with salt production, and so are described and illustrated in the briquetage report (see Morris this vol. and Fig. 3.67). A second example of her cylindrical support type PD5 was only identified late in the preparation of the report, so is illustrated on Figure 3.70. On the basis of very similar pedestals from Essex, Morris suggested that this type of pedestal was of late Bronze Age date reused in the Iron Age, but the example from context 4266 was part of a larger group of fired clay, all in the same fabric, within a clearly late Iron Age pit. Although no pottery was found in ditch cut 4408, the ditch overall (4618) contained middle Iron Age finds. It is therefore more likely that these pedestals were still in use in the mid–late Iron Age, rather than being residual.

Triangular oven bricks/loomweights dimensions, fabrics and phasing

The majority of the triangular oven brick/loomweights from the A2 scheme date to the early or early–middle Iron Age, although examples were also found in both middle and middle–late Iron Age contexts (eg pit 3696). There was no systematic variation in size between phases, with the majority being between 50 and 70mm thick, having a side length of between 120 and 160mm and weighing 1kg on average. Two were between 70 and 80mm thick, with a side length of between 180 and 190mm and weighed around 2kg each. Of the two larger examples one came from a middle Iron Age context and one from an early Iron Age context. Perforations in the oven bricks/loomweights were generally worn around the edges, and several of them had grooves worn in the fabric between the holes.

Typologies of loomweights from Essex suggest that triangular varieties in the east of England date to the early Iron Age (Barford and Major 1992, 118–19). This fits the accepted chronology for such objects in Wessex and the Thames Valley. Elsewhere in Kent triangular loomweighs/oven bricks are common, as at Keston (Philp *et al.* 1991, 151–2 and

Fig. 3.70 Late Iron Age fired clay pedestal (context 4266) and square oven brick (context 4688)

fig. 42) and at White Horse Stone on the route of High Speed One (Hayden 2006a). Local examples were recovered from middle Iron Age pits at Farningham (Philp 1984, fig. 14) and at Hillside, Gravesend (Philp and Chenery 1998, 19).

Traditionally triangular objects have been interpreted as loomweights, although recent studies (Poole 1995a) have argued that they in fact functioned as oven bricks, serving as hearth or oven bases and/or as supports for oven plates (ibid, 285). Triangular ovenbricks/loomweights along the course of the road-scheme were largely confined to large cylindrical pits or shallow sub-circular pits of early Iron Age date. No material was recovered from any features identified as ovens or hearths; however, the vast majority of the features containing these objects also contained large quantities of material identified as oven structure debris. This may be seen as lending weight to the argument that the objects functioned as oven/kiln furniture rather than loomweights.

Illustration catalogue (Figs 3.69–70)

1 SF 473 triangular oven brick/loomweight; fabric E; pit 3686 layer 3760
2 SF 1285 triangular oven brick/loomweight; fabric A; pit 12527 layer12616
3 Fragment of small cylindrical pedestal of Late Iron Age date, fabric A2, pit 4268 layer 4266.
4 Square oven brick of Late Iron Age date, fabric A; ditch 4744 layer 4688

Potin coins *by David Holman*

A total of six Iron Age coins were recovered during the course of the excavations, all from the Iron Age settlement area in Site B. These are all potin coins belonging to the latter stages of the Flat Linear I series, dating from the middle to latter part of the second quarter of the 1st century BC. Using Derek Allen's classification (Allen 1971), they all belong to his classes J and L. Flat Linear I potins have long been accepted as being of Kentish origin and are found across much of the county (eg Holman 2000).

Of these coins, five came from separate, securely stratified contexts in different Iron Age pits. In several cases, these pits contained other material of a nature which gives reason to consider the possibility of deliberate deposition, perhaps votive in character (eg Hill 1995). No later Iron Age coins were recovered, perhaps surprising given the proximity of the major Iron Age and Roman site at Springhead, only 2km to the north-west, from where a significant assemblage of Iron Age coins has been recorded, principally consisting of struck bronzes dating from the later 1st century BC onwards. Conversely, only three Flat Linear I potins, all late types, have been recorded from Springhead and constitute only a very minor part of the assemblage there. This might suggest that the potins from the present site were deposited prior to the main phase of deposition at Springhead, ie before *c* 30 BC, otherwise one might reasonably expect later coins to also be present.

A further 68 potin coins have to date been recorded from that part of North Kent between the rivers Medway and Darent which includes the site discussed here. Of these, 29 are of Flat Linear I, marginally more numerous than those of the earlier Kentish Primary Series. The Flat Linear I coins from this area are split roughly evenly between early and late types. Other than those from Springhead, the closest multiple finds from archaeological excavation are three unspecified later Flat Linear I potins from Stone Castle Quarry, Greenhithe, some 5½km to the WNW of the current site (Detsicas 1966, 188). Also from this area, excavations on an Iron Age site at Cliffe, 10km to the ENE of the current site, recovered five Flat Linear I potins, three of which were stratified in Iron Age features and associated with contemporary pottery; these included two of Allen class L (Haselgrove 1998, 63–4). A small number of other, single Iron Age coins are recorded as having come from close to the current site, including three noted as coming from the same grid square (TQ 6371) but none of these are late Flat Linear I potins.

Beyond the aforementioned rivers, numerous other multiple finds of stratified Flat Linear I potins have been recorded. Of the thirteen potins known from the major site at Rochester, 10km to the ESE of the present site, six are of Flat Linear I but the coins from here are poorly recorded and a breakdown of types is currently not available. Further east, at Canterbury, 21 of the 78 recorded potin coins, all from excavation, are of Flat Linear I types, and virtually all of these are Allen L types; many, however, come from disturbed, residual contexts because of large-scale later activity (Holman 2005). Somewhat further west, from Keston, four unspecified Flat Linear I potins were recovered from a single pit together with one from the early part of the series from another pit (Philp 1999, 85).

By far the majority of Iron Age coins in Kent have been found by metal-detector users in ploughed fields. Those from archaeological excavations account for less than 20% of the total and stratified coins are rarer still, especially from primary contexts and associated with other material; excavated coins not infrequently come from later features as a result of their having been disturbed by subsequent activity, as is frequently seen at Canterbury. As such, the coins from the present excavations are of some importance and represent a useful addition to the small corpus of securely stratified Flat Linear I potin coins from a primary context.

Metalwork *by Ian R Scott*

For the overall introduction to the metal finds, please refer to Chapter 5. Among the Iron Age features, which spanned the earliest to the late Iron Age, were two high status cremation graves, 4298 and 4312. The finds from these included a bronze-bound bucket and metal cup, and a collection of six

brooches, and these are presented in a separate report following the description of the graves at the end of this chapter. This report deals with metalwork from other Iron Age contexts (Fig. 3.71).

Only scraps of metal were found in early Iron Age features across the site, although metalworking in the early–middle Iron Age is demonstrated by smelting slag from pit 5066 on Site C. Among these were fragmentary strips of copper-alloy in pit 10520 on Site K, presumably binding of some sort. Metalwork was, however, recovered from the middle and late Iron Age settlement on Sites B and C west, and from a pit at the east end of Site C. Six potin coins were found, and are reported upon separately (see Holman above).

Site assemblages

Site B

Site B crossed an Iron Age and early Roman settlement, comprising a series of ditched enclosures either side of a metalled trackway. On the west side of the area two high status late Iron Age burials (4298 and 4312) were found, and as stated above, the finds from these are reported upon separately.

Other than this Iron Age finds were few, but include two of great intrinsic interest. Firstly, there is an Iron Age linch pin of distinctive type, with a curved stem and plain loop terminal (SF 459; Fig. 3.71. no. 3). Secondly, there is also a Langton Down brooch (SF 482; Fig. 3.71, no. 1), a type which is dated to the early 1st century AD, and therefore potentially represents a pre-Roman brooch. Structural items, which cannot be dated closely, comprise a collar (context 4591) and three clamps or dogs (contexts 3467, 4022 x 2).

1 **Linch pin (Fig. 3.71, no. 3)**, with looped head and curved stem. The head is well-formed with a slightly thicker section at the top of the loop. Immediately beneath the loop the stem is pierce by a narrow rectangular section slot running front to back. This portion of the stem is square in section. Lower down the stem tapers and becomes circular in section. The curved end terminates in a plain button or knob. Fe. L: 148mm; W: 49mm. Site B, context 3678, pit 3676, sf 459.

A very distinctive object, it is best paralleled by a linch pin from the Llyn Cerrig Bach deposit (Fox 1946, 19–20, 78–9, pl ii, A, & pl xxxviii, no. 43; Savory 1976, 57 and fig. 29, 2). The Llyn Cerrig Bach material seems to have been deposited over a very long period of time and therefore it is not possible to use this item to provide independent dating. There are similar though much less well-preserved examples from a chariot burial at Garton Station (Stead 1991, 44, fig. 36), which Stead compared to examples from Jonchery-sur-Suippe, Marne (Stead 1965, fig.16: 3). The Garton Station and Jonchery examples have a much more

Fig. 3.71 Metal objects from middle and late Iron Age contexts: linch pin sf 540, gouge sf 564 and brooch sf 482

pronounced curve than the A2 example. Another example comes from the Waltham Abbey hoard and is dated by Manning to the very late Iron Age (Manning 1985, 72–4, 184, & pl. 31: H39). The loop of the Waltham Abbey example is incomplete but the identity and form of the linch pin is quite certain.

A radiocarbon determination of 210–40 cal BC (NZA 30118) was obtained on a charred seed from a deposit immediately overlying this object.

2 **Langton Down brooch (Fig. 3.71, no. 1)** with straight flat reeded bow and enclosed spring. The bow has almost no curve and is short. Most of the catch plate is extant. Cu alloy. L: 31mm; W: 17mm. Site B, context 7793, ditch 7792, sf 482. Dated to the early 1st C AD.

Site C

Site C was dominated by evidence for a medieval rural settlement, but also included the edge of the Iron Age and early Roman settlement to the west in Site B. Iron Age metalwork is rare on Site C but those finds that were recovered are of note. There was a single tool, a socketed gouge (SF 564; Fig. 3.71, no. 4). The gouge, which was found in a pit alongside a Neolithic ground stone axe, was probably Iron Age in date. There is also a simple one piece sprung brooch (a so-called 'Nauheim derivative') (sf 522; Fig. 3.71, no. 2), found in a medieval ditch within the middle–late Iron Age settlement, that could be of late Iron Age or early Roman date.

3 **Socketed gouge (Fig. 3.71, no. 4)**, with closed socket. No visible nail(s) to secure object. Blade incomplete, but there is clear evidence that the blade had a hollow curved cross-section. Fe. L: 201mm; Socket D: 28 x 27mm. Site C, context 5954, pit 5953, sf 564.

Socketed iron gouges are known from both the late Iron Age and the Roman period (Manning 1985, 24). There is an example from Old Down Farm, Hampshire from a middle Iron Age pit (Davies 1981, 124, fig.29:14) and two socketed gouges and a socketed chisel from Danebury (Sellwood 1984, 351, fig 7.11: 2.44–6). Other Iron Age examples can be cited from Glastonbury Lake village (Bulleid and Gray 1917, 372, 383, pl. lxi, i, 62) and from the Waltham Abbey hoard (Manning op. cit., 24, pl. 11: B45). Manning dates the Waltham Abbey hoard to the late Iron Age or early Roman period (Manning op. cit, 184).

4 **Simple one piece brooch (Fig. 3.71, no. 2)**, the so-called 'Nauheim derivative'. Bent and incomplete. Originally *c* 50mm long. Cu alloy. L extant: 32mm. Site C, context 5092, ditch 5091, sf 522.

Area D

Only a small number of Iron Age features were found in Site D, none of which produced any metal objects. The ditches of a large rectilinear enclosure produced several brooches of 1st century AD date, but the enclosure and its finds are believed to be early Roman (see Chapter 4).

Iron Slag *by Lynne Keys*

A very small assemblage of Iron Age slag, recovered both by hand and from environmental samples, was examined for this report. Examined by eye and categorised on the basis of morphology, each slag or other material type in each context was weighed.

Activities involving iron can take two forms:

1) Smelting: The manufacture of iron from ore and fuel in a smelting furnace. The slag produced takes various forms depending on the technology used: furnace slags, run slag, tap slag, dense slag or blast furnace slag.

2a) Primary smithing: This took place in periods before the late post-medieval development of casting iron. It involved the hot working (by a smith using a hammer) of the iron lump on a stringhearth (usually near the smelting furnace) to remove excess slag. The slags from this process include smithing hearth bottoms and micro-slags, in particular tiny smithing spheres.

2b) Secondary smithing: hot working, using a hammer, of one or more pieces of iron to create or repair an object. As well as bulk slags, including the smithing hearth bottom, this generates micro-slags: hammerscale flakes from ordinary hot working of a piece of iron (making or repairing an object) or tiny spheres from high temperature welding to join or fuse two pieces of iron.

Most of the slag in the assemblage was undiagnostic, ie could not be assigned to either smelting or smithing either because of its morphology or because it had been broken up during deposition, re-deposition or excavation. Other types of debris in the assemblage may be the result of a variety of high temperature activities—including domestic fires—and cannot be taken on their own to indicate iron-working was taking place. These include fired clay, vitrified hearth lining, cinder and fuel ash slag, all of which may be produced by domestic fires.

Discussion of the assemblage

On Site C, pit 5066 contained a small amount of iron slag, including a possible fragment of pre-Roman furnace slag. It has relatively large, burnt-out, charcoal inclusions, often the case with Iron Age smelting slag. This pit is early–middle Iron Age, so the possible furnace slag is of some interest. Previous work on iron slag from the HS1 sites such as Leda Cottages and White Horse Stone changed long-held ideas concerning iron-smelting techniques in the Iron Age (Keys in Hayden 2006a).

Site G, pit 9567=9052, produced a very tiny quantity of iron flakes, coal and a micro-run in soil sample 908. The pit was radiocarbon-dated to the early–middle Iron Age so the presence of a tiny quantity of coal is unusual. Fragments of coal were also recovered from another pit on Site G, from a prehistoric posthole on Site E, and from a late Iron Age ditch on Pond D north, raising the possibility

that coal was used as a fuel in the Iron Age. These features were, however, all shallow except for pit 9567, and this pit was part-excavated during the HS1 excavations, so the coal may be intrusive.

Worked stone *by Ruth Shaffrey*

Iron Age contexts (excluding late Iron Age) produced the greatest number of worked stone items, mainly from Site B (Table 3.15).

Querns and processors

Two cobbles of quartzite and flint were recovered from late Iron Age ditch fills (19232 and 19123) at Pond D North and another from an undated gully of probable late Iron Age date (19188). All three stones have some evidence for wear, either percussion wear or polish from rubbing and both can be classified as hammerstones or processors.

A total of seven probable querns were recovered, two of which are positively identifiable as saddle querns. One is roughly formed but heavily damaged and burnt and now in two fragments (SF 1288, SF 1354). It is of sandstone probably from the Hythe Beds of the Lower Greensand and its two fragments were recovered from early Iron Age pit fill 12528=12701 on Site L. The other definite saddle quern was found in a middle Iron Age pit on Site B (SF 467, fill 3760). It is roughly shaped all over and is also made from a Hythe Beds sandstone. This same pit produced two further fragments of another sandstone from the Hythe Beds (3689, SF 465 and 466). Although these are not adjoining they appear to be from the same quern and are counted as one item; they are not sufficiently complete to determine whether they are from a rotary quern or saddle quern.

A single probable saddle quern fragment was recovered from early Iron Age pit 5110/5219 on Site C (5422, SF 543); it is made from a very sparkly quartz sandstone with weathered feldspar inclusions of unknown origin. Two probable quern fragments are of the purple ferruginous sandstone used during the Bronze Age; one was recovered from an early Iron Age ditch fill on Site G (9237) and another from a probable late Iron Age ditch or gully on Site A (3083).

Table 3.15: Iron Age worked stone

Category	*Site L*	*Site A*	*Site B*	*Site C*	*Site G*	*Pond D North*	*Grand Total*
Quern	1	1	3	1	1		7
Weight			6				6
Processor						3	3
Spindle whorl			1		1		2
Other			1			3	4
Total	1	1	11	1	2	6	22

A large fragment of Millstone Grit was recovered from the final fill of pit 4962 (layer 4968) on Site B (SF 454). Pit 4962 contained pottery sherds indicating a date of deposit during the 1st century AD, and in the absence of any clearly Romanised forms or fabrics, probably before AD 70. As it could therefore be early Roman, this object is described in detail in the stone report in Chapter 4.

A single small rotary quern fragment also recovered from a pit fill on Site B (3646, SF 481) is of probable Lodsworth Greensand. Lodsworth Greensand has only recently begun to be recognised in Kent with several notable examples from nearby Springhead town (Shaffrey 2011a). This particular example, however, may push the known use of Lodsworth Greensand in Kent back from late 1st century/early 2nd century AD into the late Iron Age. Rotary querns Lodsworth Greensand occur in the Upper Thames Valley at this time (Shaffrey and Roe 2011), so it is possible that the querns were also being transported downriver.

Although the quern fragments appear to demonstrate greater variety of lithology than those from earlier phases, they are mainly variants of glauconitic calcareous sandstone or ferruginous sandstones from the Lower Greensand Hythe and Folkestone Beds (see Chapter 2). These are the most common Iron Age quern materials in north-west Kent, with nearby examples from the A2/A282 Improvement scheme, Dartford Football club and Darenth Gravel Pit as well as sites across the rest of Kent (Shaffrey 2011b; Philp *et al.* 1998, 43).

The two exceptions to this pattern of using Kentish lithologies are one fragment of possible Lodsworth Greensand and the fragment of Millstone Grit, both found on Site B. The Lodsworth Greensand belongs to a feature dating to the late Iron Age, but the Millstone Grit could be early Roman. These predate the main import period for both materials and are of some significance. It is not clear whether they are a reflection of matrimonial links/evidence for gift giving or an indication that Site B had access to items not available elsewhere for other reasons.

Worked chalk

Two plain chalk spindle whorls were recovered from Site B (3454, SF 451) and G (9078). One example (SF 451, Fig. 3.72, no. 2) is of typical B2 form but is heavy and large for a spindle whorl at 94g and also has a wide perforation at 12mm minimum. The second item is incomplete and is good evidence (along with the chalk weights) for the manufacture of chalk products on site. It was recovered from pit fill 9078 (Fig. 3.72, no. 1) and is roughly circular in shape with partially cut perforations evident on both faces. Although it is only partially shaped and thus larger than the intended product, it compares well to the first example, being larger (78mm diameter) and heavier (169g) than finished typical spindle whorls. It is possible these

Fig. 3.72 Two chalk weights (sf 401 and sf 408) from pit 4011

two discs may have served an alternate function, perhaps as net sinkers (Walton Rogers 2007, 25) although excavations in Townwall Street, Dover did produce a large assemblage of comparably large and heavy items, definitively interpreted as spindle whorls (Riddler and Walton Rogers 2006, 282).

A group of five complete chalk weights, one partially made weight and a number of apparently unworked, but presumably related chalk fragments were found on Site B (SF 468, 470, 400, 401, 408, 472). Three of the weights are of a distinctive form with the top corners removed and perforated edge to edge in a projection above the top of the weight (SF 400, 401, 408 Fig. 3.72, nos 3–4). These were all recovered from fills of pit 4011. Two further weights were recovered from pit 3676 (SF 468, 470 Fig. 3.73, nos 5–6). One of these is a large roughly triangular cobble of chalk with a natural perforation running from edge to edge and some shaping. The other is a long oblong of chalk, clearly shaped but also with the remains of a natural perforation. These have more obviously made use of naturally occurring pieces of chalk but the cobble in particular is very similar to the first three weights. The same pit also

Fig. 3.73 Two chalk weights (sf 468 and sf 470) from pit 3696

produced a number of further broken pieces of chalk and a large cobble of roughly the same weight as the finished items, but in this case not worked at all (SF 469). One further piece of chalk recovered from late Iron Age ditch fill 3771 appears to be a partially worked weight (SF 472 not illustrated). It does not have a perforation but has some tool marks on one side suggesting the process of shaping had begun. This piece could have originated in pit 3676 as the top of that pit was truncated by another feature whose upcast was used to backfill the nearby ditches.

All the weights bear some evidence that they were suspended, although it is not consistent between weights. Some have narrow grooves worn into the outside edges but one has very distinctive wear across the top of the stone, suggesting a tight loop was attached to the stone with the top of the loop cutting into the stone. Several of the stones bear evidence for wear on the main faces of the stone suggesting they rubbed against something during the course of their use.

Chalk weights such as those found on the A2 are not uncommon finds on Iron Age sites but are more likely to be found in areas with natural chalk reserves such as here. As long ago as 1917 a brief survey by Bulleid and St George Gray listed at least eleven sites in the Wessex area with chalk weights and there are more recent noteworthy assemblages at Danebury and Maiden Castle (Brown 1984; Wheeler 1943). Easton Lane Winchester produced seven similar chalk weights and although they were not as carefully worked, they were all recovered from the fill of the same middle Iron Age pit (Fasham 1989, 108–112, fig 102).

In most of the British archaeological literature, these large chalk and stone weights are referred to as loomweights. This interpretation seems largely based on their similarity in shape, size and weight to Iron Age fired clay objects generally interpreted thus for example at Rushey Mead (Pollard 2001, fig 7.1) and Glastonbury Lake Village (Bulleid and Gray 1917). An alternative interpretation for these triangular fired clay objects has been offered (Poole 1995a) but can be eliminated for the chalk here by the presence of wear marks consistent with suspension. The most notable assemblage of chalk weights of this type was found at Danebury and they were interpreted as loomweights on the balance of ethnographic evidence. Indeed, despite some in depth searching of the literature, few references could be found to large chalk weights in the British literature that did not refer to them as loomweights.

Despite the apparently overwhelming indication that these items are loomweights, interpretation of their function is rare (with the notable exception of Danebury) and appears to be a result of the perpetuation of an early assumption of function. However, at between 2 and 3kg the A2 weights are all heavier than is ideal for weaving (Walton Rogers 2007, 30-31) and it seems unlikely that they can have functioned as loomweights. In addition, although the Glastonbury examples were recorded under the heading of loomweights, doubt was cast within the report on this interpretation (Bulleid and Gray 1917, 574–5). In the Danebury report several alternative functions were considered and the author has commented that the interpretation of loomweight is by no means certain (Brown pers. comm.). Furthermore, the weights also bear a striking resemblance to a large assemblage of fishing weights rescued from the River Thames near Oxford (Thomas 1981, 129–33). Although these are thought to be of a much later date, their presence is a warning that other interpretations should be considered.

This raises the question of what function did they serve? The different shapes of the weights may indicate that they were made by different people or that they had a different function; the more crudely shaped examples may have functioned as fishing weights although not in the immediate vicinity. The careful attention paid to at least three of the examples implies they were intended to be visible; this would probably eliminate their use as fishing weights. The orientation of the perforation on these examples is certainly significant—by perforating edge to edge the weight could have been suspended flat against a surface more easily than if the perforation was through the faces. This is supported by the presence of wear on some of the faces. This may suggest that the weights were suspended against a flat surface, perhaps as thatch weights or more likely as gate/door posts which would have involved the weights moving up and down and banging/rubbing against the gate or door.

Whatever their function, it is clear that some serious thought was given to the design and manufacture of these weights. Their deposition as a group within a pit whilst still fully functional also lends credence to the idea that they were objects of some importance, either as personal belongings or to a particular property. Their deposition in this sort of context mirrors the evidence from other sites including a notable group of seven from the bottom of a single pit at Mount Caburn Camp (Bulleid and Gray 1917, 577). It is possible their deposition represents an act of ritual closure, especially if their function is related to access to an enclosure or building.

The partially made weight, in conjunction with the unfinished spindle whorl, provides good evidence that chalk was being worked on the site. This is not unexpected given that the local chalk was soft and easy to work and would have been available on the site. One other piece of worked chalk from a late Iron Age pit fill on Site B (3845) is a tooled structural block which may indicate that chalk was also worked for export from the site.

Worked bone *by Ian R Scott*

The quantity of Iron Age worked bone is limited, with just two bone objects from Site G. A possible

toggle made from a complete small bone, with the ends cut and polished (Context 9082; Fig. 3.74, no. 2) came from pit 9010. The second object was a fragment of weathered cut antler (Context 9061: Fig. 3.74, no. 1) from pit 9088. Both pit 9010 and pit 9088 contained pottery of early Iron Age date, and radiocarbon dates of the late 5th–early 4th century cal BC were obtained from both pit 9010 and pit 9052 beneath pit 9088.

A small cylindrical object with a very fine piercing through its centre was recovered from posthole 7142 in Site E, within a concentration of four-post structures. A late Bronze Age radiocarbon date was recovered from another posthole (not belonging to a structure); the rest were undated, but are likely to date either to the late Bronze Age or Iron Age. This object may have been a small cylindrical bead although the hole is so fine (<1mm) that it is difficult to image how the bead could have been threaded, and it may simply have been an offcut. An object this small may easily have been intrusive, and a prehistoric date is not considered likely.

1 **Handle fragment? (Fig. 3.74, no. 1)** Piece of cut and worked antler. L: 50, W: 25, Area G, Context 9061, Pit 9088
2 Possible **toggle (Fig. 3.74, no. 2)** made from a complete caudal vertebra (tail bone) from a large mammal (cattle or horse). The bone narrows in the centre and its ends have been smoothed and polished. L: 39, D: 11, Area G, Context 9082, Pit 9010
3 Possible **cylinder bead** (not illustrated). Small cylindrical bone object, with an extremely fine hole bored through its length, L: 4.5, D: 3.5, Area E, Context 7143, Posthole 7142, Sf 700

Fig. 3.74 Worked bone objects from contexts 9061 and 9082

IRON AGE OSTEOLOGICAL AND ENVIRONMENTAL EVIDENCE

Human remains *by Mark Gibson, Ceridwen Boston, Sharon Clough and Nicholas Marquez-Grant*

Inhumations and cremation burials were discovered in five areas along the A2 Road Scheme. Iron Age burials comprised a rare early Iron Age cremation deposit and two high status late Iron Age cremation burials on Site B, one middle Iron Age inhumation in a pit on Site C, and two middle Iron Age inhumations, one in a purpose dug grave, the other halfway up a large boundary ditch, on Site L. The high status cremation burials from Site B are described seperately at the end of this chapter.

Disarticulated human bone was retrieved from the fills of an Iron Age pit and ditch on Site B and one Iron Age pit on Site G. Radiocarbon dating was undertaken on four burials and one of the disarticulated bones, and the results are included in this report (for details see Radiocarbon dating report below).

Osteological analysis of the cremated human remains was undertaken in accordance with recommendations set out in McKinley (2004), while unburnt human remains were examined in accordance with national guidelines (Brickley and McKinley 2004; Mays *et al.* 2004). Skeletal age was assigned according to the categorised displayed in Table 3.16. A full methodology can be found in the digital archive report.

Iron Age cremation burial

Early–middle Iron Age in Site B

One of the upper fills (3454) of a large quarry pit or dene hole (3400) on Site B contained a quantity of early Iron Age pottery and a small deposit of cremated human bone (see Fig. 3.27).

Bone weight and skeletal part representation

The human bone from fill 3454 was well-preserved, displaying little, if any, post-mortem erosion or weathering. Trabecular bone was poorly preserved, however. The total bone deposit weighed 158.6g, indicating that it represented only a small proportion of the complete cremated skeleton. Deliberate selection of only a 'token' amount of bone by mourners is likely to be the most significant factor in the size of this deposit.

The most represented anatomical region by weight were the lower limbs (14.6g), followed by the skull (15.4g), the upper limbs (14.6g) and the axial skeleton (5.8g). The skull was represented by cranial vault fragments, including the occipital and parietal bones, and a styloid process fragment. In addition, there were four dental fragments (0.5g).

Table 3.16: Age categories for human remains

Age category	*Age*
Neonate	0-1 months
Infant	1.1 months-2 years
Young Child	2.1-5 years
Older Child	6-12 years
Adolescent	13-17 years
Subadult	<18 years
Young Adult	18-25 years
Prime Adult	26-35 years
Mature Adult	36-45 years
Older Adult	> 46 years
Adult	> 18 years
?	Unknown

The axial skeleton was represented by several vertebral fragments and rib shaft fragments. The upper limb was represented by the scapula, shaft fragments of radius, ulna, humerus, and intermediate phalanx, and a complete distal hand phalanx. Lower limb bone fragments present included the femur, tibia, fibula, talus and other tarsals, two proximal phalanges and one distal phalanx.

Palaeodemography

A minimum of one individual was present in the deposit. The general size of the cranial vault and long bone fragments tentatively suggested an adult individual. Sex could not be attributed due to the absence of diagnostic traits.

Palaeopathology

Healed periostitis, in the form of striated new bone formation overlying the original bone surface, was present on one fragment of right ulna and another possible ulnar fragment. Periostitis is a non-specific inflammation of the periostium or bone surface, which may develop in response to local or systemic infection, bleeding around the bone (for example from direct trauma, or due to nutritional abnormalities, such as scurvy or excessive Vitamin A intake) or secondary to other local or systemic disorders, such as venous ulcers or chronic pulmonary disease.

Colour

The majority of the cremated bone was yellow-white, but a mixture of white with blue and grey was noted on some fragments of the skull, axial skeleton, upper and lower limb fragments, indicating near but not complete combustion of the skeleton. Complete combustion occurs in sustained temperatures above 700°C (Holden et al. 1995).

Fragmentation

The largest fragment (a tibia shaft fragment) measured 33mm. The bulk of the assemblage showed a high level of fragmentation, however, deriving from the <5mm fraction. Observations of fissuring, cracking and splitting of the bone was limited by the small fragment size. However, in some of the bigger fragments of long bone transverse, longitudinal checking and warping were identified, indicating that the bone was 'green' or fleshed when burnt (Ubelaker 1989).

Discussion

This cremated human bone deposit within upper fill 3454 of quarry pit 3400 was dated by early–middle Iron Age pottery within the same deposit, and by a radiocarbon date of 380–200 cal BC (NZA-31265). The low bone weight indicated that only a small proportion of the complete adult skeleton was represented, although all body parts were present. The absence of other evidence of burning (such as burnt flint or soil or charcoal) suggested deliberate burial, as opposed to the dumping of pyre material within a pre-existing feature. Its association with much of a single pottery vessel might suggest that this was accompanied by grave goods or formed part of a 'special deposit' that included pottery but may not have been a burial *per se*.

Cremation burial appears to have been an uncommon rite in south-eastern England in the early and middle Iron Age. Prehistoric cremation burial is more usually associated with the early and middle Bronze Age and late Iron Age (Taylor 2001), although in recent years, an increasing number of unaccompanied and otherwise undated isolated burials have been radiocarbon dated to the late Bronze Age. It is possible that early–middle Iron Age cremation deposit 3454 represents the persistence of this late Bronze Age rite. At White Horse Stone, near Aylesford, Kent, both late Bronze Age and an early–middle Iron Age cremation burials were found, the latter accompanied by metalwork, a whetstone and a pot containing grain (Hayden 2006a).

Iron Age inhumation burials

Middle Iron Age in Site C

Unaccompanied skeleton 5129 was discovered within an isolated grave or pit (5054) on Site C (see Fig. 3.33). The body occupied one side of this sub-rectangular pit, and lay upon chalk at the bottom of the pit. It was orientated north-south and had been laid out in a flexed position on its left side, with the elbows flexed and the hands in front of the chest. Both the orientation and the body position is commonly found in the Iron Age in Britain. Residual pottery within the backfill was of late Bronze Age date. Radiocarbon dating of bone from the skeleton gave a date range of 400–200 cal BC (NZ30160).

Palaeodemography

Bone preservation was moderate to poor, with 50–60% of the skeleton preserved. Trabecular bone, in particular long bone epiphyses and pelves, was

largely destroyed, adversely affecting ageing, sexing and stature estimation. The skeleton was a probable female, aged 25–30 years.

Pathology

Surface erosion of the cortical bone may have obscured more subtle lesions, but enthesophytes on the lesser tuberosity and intertubercular groove of the proximal humeri were identified. The posterior femoral shafts displayed enthesophyte formation at the insertion point of the *Gluteus maximus*. Enthesophytes are small ridges of rugose bone formed by the ossification of damaged tendons and muscle fibres where they insert into bone. They are thus often associated with repetitive strenuous physical activity involving particular muscles or muscle sets.

Dental disease was present in the form of a medium- sized caries on the mesial surface of the right first maxillary molar (1/19 teeth), the loss of the crown of the first right maxillary premolar, and ante-mortem tooth loss of four mandibular teeth (4/20 sockets).

Metrics

Epiphyseal damage precluded stature estimation, although other measurements were possible. The platynemic index was 61, indicating marked flattening of the femoral shaft, whilst the tibia was in the mescnemic range (63). Such low indices are prevalent in modern non-western populations, and have been found in other prehistoric Britons, such as the Arras culture of the Yorkshire Wolds (Leese 1991, 172). The femora of two early Bronze Age males from Northumberland Bottom, Gravesend, Kent, displayed less flattening (87 and 75.1) (White 2006) than skeleton 5129. In contrast, the platycnemic index of one early-middle Iron Age skeleton from Little Stock Farm, Kent, was consistent with skeleton 5129, at 62.6. These indices have been associated with behavioural practices involving the lower limbs, including squatting.

Middle Iron Age in Site L

A large Iron Age to Roman ditch (13161) contained three skeletons (12750, 12778 and 12986) (see Fig. 3.23), a small deposit of pyre debris (12785) and fragments of disarticulated unburnt human bone (12681) and (12831). A small oval pit (12742) just south of the ditch terminus contained the crouched remains of an adolescent skeleton (12744). Skeleton 12778 proved to be of Roman date, while infant skeleton 12750 could be of Iron Age or Roman date; both are described in Chapter 4.

The human remains were recovered at different levels within the ditch, the earliest being an older child/early adolescent skeleton (12986) located towards the base. The skeleton lay largely prone with both arms flexed at the elbows and the left hand lying beneath the pelvis. The legs appeared tightly flexed, but the lower left leg was completely missing (possibly due to later truncation). The absence of a grave cut, the crouched body position and broadly north-south orientation of the burial is typical of the Iron Age pit/ditch burial tradition found widely across southern England (Taylor 2001), but the prone body position is less common, although not unknown. The disorganised arrangement of the arms and largely prone position of the torso suggested to the excavators that this had been a casual interment—that the corpse had been thrown into the ditch. This is not consistent with the careful arrangement of the legs, however, nor with the deliberate covering of the corpse with a dump of chalky rubble that was found to overlie the skeleton.

Skeleton 12986 was radiocarbon dated to the middle Iron Age (400–230 cal BC; NZA 30150) making this skeleton broadly contemporary with adolescent burial 12744 (380–200 cal BC; NZA 30161) located in a small oval pit or grave just beyond the ditch terminus. The tightly crouched body position and north-south orientation of skeleton 12744 on Site L is consistent with normative Iron Age inhumation burial practices. Unlike the more widespread practice of interment within pre-existing storage pits, however, oval pits or graves such as that for 12744 appeared to have been purpose cut. Early and middle Iron Age inhumation burials are rare in Kent, comprising only a few examples of isolated crouched inhumations (Parfitt 2004, 16; Mays and Anderson 1995), such as two burials from Mill Hill Deal, one dated 765–385 BC and the other *c* 200 BC (Parfitt 1995; 2004). More locally, a single adult male skeleton at Pepperhill Roman cemetery was radiocarbon dated to 350–40 cal BC (Witkin and Boston 2006). Burial practices differed from those of the Site L inhumations, however, in that this individual had been laid out prone and extended within a purpose-cut sub-rectangular grave.

Isotope analysis of skeletons 12986 and 12744 was carried out as part of the wider study of human skeletal material on Site L, and the results are presented alongside the Roman skeletons in Chapter 4.

Preservation and completeness

Bone preservation of skeleton 12744 was fair, whilst skeleton 12986 was fair to good. Cortical bone was eroded in places, fragmentation was moderate and the bone was fairly robust. Preservation of trabecular bone was fair. Both skeletons were approximately 70% complete, and all parts of the skeleton were represented.

Age and Sex

Both skeletons were broadly similar in age, being 12–13 years old.

Dentition

Skeleton 12986 had a very small carious lesion on the occlusal surface of the left lower first molar (1/16). In addition, there was a small groove on the

enamel of the right lower canine, possibly dental enamel hypoplasia (TPR 2%). No pathology was noted on the dentition of skeleton 12744. Both already displayed extra-masticatory wear of the incisors.

Disarticulated human remains

Iron Age pit and ditch deposit in Site B

The upper fill (4107) of shallow pit 4109 (se Fig. 3.32), dated to the Iron Age, contained adult foot bones. These were left 1st and 4th metatarsal, right 3rd and 1st metatarsal and 1st proximal phalanx. Although these bones were damaged post-mortem at the articular ends, the surface of the bone was complete. These bones represent a pair of feet.

The uppermost fill (3787) of ditch 3669 (see Fig. 3.39), dated to the late Iron Age, contained a fragment of the proximal tibia. This was an adult sized unsided fragment of the articular surface.

Iron Age pit deposits in Site G

The disarticulated skeletal remains of two individuals were recovered within the fill of a large early–middle Iron Age pit (9010) on Site G (see Fig. 3.17).

Preservation and completeness

The preservation of the two bones from Site G was very good—Grade 1–2 (McKinley 2004)—and displayed very little surface damage or weathering. The remains comprised of a near complete left parietal bone (fill 9077) and a complete manubrium (fill 9109).

Age and Sex

The small quantity of human bone recovered severely limited the osteological potential. Whist there was insufficient skull available to implement ectocranial suture closure ageing (Meindl and Lovejoy 1985) accurately, it was observed that fusion at the lambda had begun, but no other fusion had occurred. Combined with other evidence of advanced age (such as arachnoid granulations or the deepening of the meningeal arteries), this suggested that this individual was a young to prime adult. The small size of the manubrium in fill 9109 indicated that it was part of an older child. It was not possible to sex either individual.

Non-metric traits

Five wormian bones were observed on the occipital bone, with one located at lambda. The angle of the ossicles suggested that the individual had had an occipital bun.

Discussion

Taphonomy

The osteological potential of the A2 skeletal assemblage was greatly reduced by poor preservation of the bone. In general, cremated bone survived better than unburnt bone, as is usually the case, but even in the former, loss of trabecular bone was observed, and would have contributed to the low weights of most deposits. The acidic areas of Thanet Sands and brickearth on Sites D affected preservation the worst, and elsewhere preservation was better; the skeletons recovered from the ditch and adjacent grave on Site L showed markedly better bone preservation. Similarly, disarticulated bones recovered from Iron Age pit fills on Sites C and G were well preserved. In general, these findings are consistent with other Kentish burials, where the osteological potential has been severely limited by poor preservation, particularly in unburnt bone (eg Mays and Anderson's (1995) review of burials in Kent, and McKinley's (2006) Schemewide report on HS1 human remains).

Wider context of the Iron Age burials

The inclusion of both articulated and disarticulated unburnt human remains within storage pits in settlements is a widespread and frequently encountered Iron Age phenomenon in southern Britain, as at Danebury, Hants (Cunliffe and Poole 1991), Gravelly Guy, Oxfordshire (Lambrick and Allen 2004) and White Horse Stone, Kent (Hayden 2006a). The burial of skeletons in boundary ditches, of which skeleton 12986 is an example, is also well-known (eg Allen *et al.* 1993).

Less common are Iron Age inhumations within purposely-dug graves, although examples do occur, as at Frilford and Little Wittenham in Oxfordshire (Harding 1972; Allen *et al.* 2010), and groups of these are appearing, as at Yarnton, Oxon. (Hey *et al.* 2011), Suddern Farm, Hants (Cunliffe and Poole 2000) and Spring Road, Abingdon, Oxon (Allen and Kamash 2008). These are often associated with significant features, such as houses (Abingdon) or fenced enclosures (Frilford), but burial 12744 is clearly associated with the terminus of boundary ditch 13161, suggesting a link with burial 12986 in the ditch some 20m away. The different treatment of these two individuals, the one formally deposited in a grave, the other in the open ditch, and only covered by a little chalk rubble, is striking, although the significance of this remains unclear.

The middle Iron Age cremation burial in quarry pit 3400 is a rare instance of cremation during this period. While common in the middle and late Bronze Age, cremation burial is largely absent from the early and middle Iron Age, only becoming popular again in the late Iron Age. Another example of similar date was found at White Horse Stone (Hayden 2006a), however, so perhaps in Kent cremation continued alongside inhumation.

Animal bone *by Andrew Bates, Jacqui Mulville and Adrienne Powell*

A total of 2278 animal bones from Iron Age contexts were identified to species, along with a further 278

Table 3.17: Iron Age animal bone by species and site collected by hand; bone of the same individual counted as 1 NISP; figures in brackets are, or include, data from the CTRL excavations (Kitch forthcoming)

Species/Site (with associated sub-phases)	*Site*							*Total*
	K	*L & A*	*B & C*	*D*	*E*	*G*	*Pond D North*	
	EIA	*EIA/LIA*	*EIA/LIA*	*EIA/LIA*	*EIA/ MIA*	*EIA/ MIA*	*LIA/ ERB*	
Cattle	2	35	722	22	1	42		824 (387)
Sheep/goat	6	36	373	8		32		455 (84)
Sheep		6	77			7		90 (2)
Goat	1		3			2		6
Pig		16	428	3		58		505(69)
Horse		10	10			1		21
Ass		1						1
Equid sp		35	74	1		6(5)	1	117(10)
Roe deer		1	1	1		8(1)		11 (2)
Red deer	2		14			14(7)		30(93)
Dog		5	56	3		2		66
Hare			4					4
Toad		16	53			1		70
Frog			29			1		30
Snake			46					46
Wood/yellow necked mouse						1		1
Hedgehog			1					1
Total	11	161	1891	38	1	175	1	2278
Principal stock animals								
Cattle			45.1			36.7		44.0 (50.1)
Sheep/goat			28.1			25.9		29.1(26.1)
Pig			26.8			37.3		26.9 (23.8)

Table 3.18: Iron Age animal bone collected from soil samples by species and site; bone of the same individual counted as 1 NISP; figures in brackets are, or include, data from the CTRL excavations (Kitch forthcoming)

Species/Site (with associated sub-phases)	*Site*					*Total*
	K	*L & A*	*B & C*	*D*	*G*	
	EIA	*EIA/LIA*	*EIA/LIA*	*EIA/LIA*	*EIA/MIA*	
Cattle		1	14		1	16 (1)
Sheep/goat	1	6	76		10	93 (4)
Sheep			4		1	5
Pig	1	1	25		10	37 (12)
Equid sp			2		1	3
Dog			11	1		12
Toad			30		6	36
Frog		1	14			15
Snake			2		1	3
Lizard		1	4			5
Common shrew			5		26	31
Water shrew			2			2
Pygmy shrew			1		1	2
House mouse			14		1	15
Wood/yellow necked mouse			1		2	3
Total	2	10	205	1	60	278

collected from soil samples (Tables 3.17 and 3.18). Sites K, L and A were all in close association with each other, at the north-western end of the easement. Sites B and C were adjacent to each other and contained related features. In addition, at the south-eastern end of Site C, six early Iron Age pits were located in the vicinity of the L-shaped Bronze age enclosure ditch, 5892. The animal bones associated with the high staus late Iron Age cremation burials are described along with other aspects at the end of this chapter. A full methodology and analysis can be found in the digital report.

Comparing hand-collected bone (Table 3.17) to those recovered from the 67 soil samples (Table 3.18), bone of sheep/goat and pig would appear under-represented in comparison to those of cattle. Sheep/goat remains were predominantly excavated from pit features, and cattle from enclosure ditches, although significant numbers of both species appear in both feature types. Pig bone appears to be found in roughly equal numbers from each feature type (Table 3.19). The number of interventions by feature type will therefore have an effect on the overall proportion of bone of the principal domestic stock animals in the archaeozoological archive (see discussion).

The occurrence of cattle and sheep/goat bones within ditches is generally low per deposit with some exceptions such as ditch 7992. Within pits there is a similar low rate of deposition, and the tendency towards sheep/goat is indicated in Table 3.19, although five deposits in pits 4591, 3671, 3838, 3608, 4867 from Site B are skewed towards greater numbers of cattle bones than average. The same is true of shallow pit 9484 in Site G. Pits 3608 and 4591 truncated the middle Iron Age ring ditch, 3968, and pit 3671 truncated the late Iron Age ditches, 7197 and 7196. All three ditches contained greater quantities of cattle bone compared to other species and, as such, arguments could be made for residual material entering these pits. Pit 3838 was located in close proximity to abundant bone deposits in ditch 7992, and deposition of bone within the upper deposits of this pit maybe related to the same depositional activity seen in ditch 7992. Pit 9484 was an isolated deposit in Site G west, and was broad and shallow, similar to a ditch. Pig bones were typically of low occurrence per deposit, but a number of pits and a ditch that produced greater quantities of pig bone are discussed below under ABGs.

Table 3.19: Distribution of species by feature type; sheep/goat and sheep have been totalled; articulated or associated bone groups of the same individual counted as 1 NISP and ditch group 7992 excluded

Species	*Ditch*	*Pit*	*Other*	*N*
Cattle	57.4	39.2	3.4	716
Sheep/goat	27.1	67.4	5.5	543
Pig	45.9	45.9	8.2	427
N	104	68	21	193

Associated or articulating bone groups

Early Iron Age Pit 12527, Site L

Pit 12527 of Site L (see Fig. 3.6) produced a large number of sheep/goat bones, thought to be derived from a single sheep. The feature has been interpreted as an early Iron Age grain storage pit, measuring 2.12m by 1.44m and 0.62m deep. The seven deposits within it containing significant quantities of cultural material were deposited after the final use of the pit. The sheep bones within the fifth deposit of this feature, deposit 12579, were not excavated as an articulated animal. A number of cut marks on the femoral head of the left femur are evidence for the dismemberment of this hip joint. The bones are generally in a good condition, with less than 50% of the surface of the limb bones eroded, but it is quite feasible that a good butcher would not have left many further cut marks to be recorded. There was no evidence of the skull. A single first phalanx had been scorched at its distal end. Although the limb bones clearly pair up with their opposing counterparts, or articulate with adjacent bones, assigning this phalanx to the same animal is not as clear cut. Its browner colour in comparison to the other bones may suggest that this was an incidental inclusion from another animal. Similarly, an additional metatarsal is also present. The age of this animal was estimated using both mandibular tooth wear and epiphysial fusion states, which suggest that the animal was most probably slaughtered at the end of its second year or the beginning of its third year of life.

Early Iron Age Pit 9010, Site G

Pit 9010 (see Fig. 3.17) had been partially excavated to a depth of 0.7m by the HS1 excavations, truncating deposits down to the depth of 9078, with the remaining 1.15m left undisturbed. The feature is an early Iron Age storage pit, measuring 2m by 1.4m in size and 1.85m deep. Sixteen deposits were recorded by the OA excavations, most of which contained only a small number of bone per species.

Significant quantities of pig bones were recovered from context 9082, a deposit of burnt material. These remains were recognised on site as belonging to two articulated pig skeletons, but collapse of the section prevented their photography and recovery as individuals. Examination of the bones suggests that a minimum of four individuals were present, with the two older animals being female. The first of these comprised elements of the skull, including the mandible, and parts of both forelimbs. Elements of pig hind-limb fragments are also likely to be of this individual, but these elements were only represented by small fragments. Mandibular tooth wear and epiphysial fusion suggest an animal between

one and two and a half years of age. Most of the bones of this individual were charred. The second female appeared to be almost complete, but with the skull and the radius and ulna of the right forelimb missing. The unworn deciduous fourth premolar suggests an animal only a few months old. Two further pigs are indicated by a calcined foetal scapulae, feasibly the young of the first burnt animal described, and a second scapulae of a young animal clearly not of the other two individuals. No butchery marks were present on the bones from this deposit (see below), but at least one of them had clearly been cooked on the bone.

Also placed within deposit 9082 was Pottery vessel 9151. From its fill a charred occipital condyle of a neonatal pig, and an unfused proximal epiphysis of a pig femur, were recovered. Other animal remains from 9082 comprised a fragment of roe deer antler, a sheep/goat distal tibia, and a cow humerus fragment. The 31 toad bones from deposit 9082 are of the same individual and, as with the three toad bones from deposit 9170, potentially entered the feature in the same manner as into a pit fall trap.

A number of pig bones were also recovered from deposit 9109 below 9082, including a charred but near complete pig femur with dismemberment marks upon it, a partially calcined foetal femur, and an unburned humerus of a young animal with both dismemberment and filleting marks upon it. It is thought likely these bones are of the same charred and uncharred sows found in the deposit above.

Other articulating bones from this feature included a cow calcaneum and astragalus from deposit 9011, the pit's uppermost fill. No further deposits of bone were made that were similar to the material excavated from 9082. A complete red deer antler was recovered from deposit 9078 about halfway down the feature. The antler had been shed from a live animal, and therefore its deposition would have represented the loss or deliberate placement of a valued raw material.

Early Iron Age Pit 9052, Site G

Some 45m to the south-east of pit 9010, and very similar in style and form to the aforementioned feature, was a second early Iron Age storage pit, 9052 (see Fig. 3.18). It measured 1.8m in diameter and 1.6m deep and also contained significant quantities of animal bone from its lower fills.

Associated bone groups were excavated from two deposits. The remains of a young deer were excavated from deposits 9083 and 9065. Of the 211 NISP of pig in deposit 9065, 204 of them were from a single piglet. Most parts of a red deer skeleton were present, although some elements were absent, such as the left mandible and some of the smaller bones. Although most of the forelimbs, the mandible, vertebra and ribs were recovered from deposit 9083, the fragmented skull and hind limbs were largely recovered from deposit 9065. It is thought likely that these remains were pressed into the underlying clay deposit, 9083, after being deposited at the interface of these two layers (Mike Donnelly pers. comm.). The jaw of the deer had all of the deciduous premolars erupted, but unworn, with the first molar visible in the aveolus but as yet not erupted above the bone. The M1 on deer comes into wear after erupting in the first five months of life (Brown and Chapman 1991, 525). All long bone epiphyses were unfused, with the body of the vertebra centrum in the process of fusing to the vertebra arch. The animal must therefore have been no more than two months old at most. No butchery marks were present on these bones, but the bones were not found as an articulated skeleton.

The piglet remains found in deposit 9065 include most of the animal, with only a number of the very small bones missing, most likely due to the problems of preservation and recovery. Tooth wear and tooth eruption states suggest an animal only a few months old at death. Again, no butchery marks were visible on these remains, but the bones were not found as an articulated skeleton.

Part of an incomplete raven skeleton was also associated with the remains in deposits 9065 and 9083, all the bones except for one of the humeri coming from deposit 9083. Elements of both wings, part of the main body of the bird (including the sternum and ribs), and part of the left leg were present. Other bone fragments from these basal fills are thought to have been fragmented prior to deposition, although these included a mandible and maxillary fragment of roe deer.

Early Iron age Pit 7228, Site C

Pit 7228 was an early Iron Age pit, measuring 1.8m in diameter and 1m deep (see Fig. 3.11). Deposit 5974 was formed early in its depositional history, after the initial primary deposition from the sides of the feature. Neonatal piglet bones belonging to at least two individuals were recovered from environmental sample 1591 taken from deposit 5974. The bones included elements of the skull, mandible, and the fore- and-hind limbs.

Early Iron Age Pit 5992, Site C

Pit 5992 was a former storage pit, measuring 2.2m by 1.8m in size and 1.15m deep (see Fig. 3.10). The six deposits within it contained relatively small quantities of bone per deposit. Of the 14 sheep/goat bones from deposit 5994/7287, eight are thought to be from a partial skeleton which comprised the back legs of the sheep. Epiphysial fusion of the long bones suggests an animal over three years of age.

Early Iron Age Pit 5130/5242, Site C

Fifteen deposits were identified within pit 5130 (see Fig. 3.9), none of which produced animal bone in any quantities, although there was part of a red deer skull (sf 546) positioned with other objects in deposit 5420. It is quite likely that both antlers were removed prior to the placement of the skull.

Early Iron Age Pit 7381, Site C

A partial sheep/goat skeleton was identified during the recording of animal bone recovered from the only fill of pit, 7381, deposit 7380 (see Fig. 3.7). Elements of the forelimb, hind-limb and a mandible were recovered. Although a firm identification was not made, the animal was most likely a sheep. Tooth wear and epiphysial fusion of the long bones suggest a yearling lamb, between one and a half and two years of age. No butchery marks were visible on the bones, but the bone surface had been highly eroded by acid root etching. The remains were not removed as an articulated skeleton, but most parts of the body are represented. It is feasible that more of the animal remained in the unexcavated half of this feature.

Middle Iron Age ditch group 4617/4623 and ditch HS1271, Site B

A large curvilinear enclosure (see Fig. 3.28) collectively contained a quantity of animal bone with a slight bias towards pig bones. There is, however, no direct evidence for a high concentration of pig bone in any specific deposit in this group. It is worth noting that curvilinear ditch group 3966, *c* 29m to the east of 4617/4623, also contained quantities of pig bone, although again in no specific concentrations.

Middle to late Iron Age Pit 4969, Site B

Pit 4969 (see Fig. 3.38) was a former storage pit containing 14 deposits, with one deposit (3401) containing significant numbers of pig bones. The pig bones predominantly derived from a single immature male, including most parts of the skeleton, with only some very small bones from the vertebra and feet missing, potentially a result of preservation and recovery problems. Mandibular tooth wear suggests an animal aged between six months and one year of age. A single butchery mark on the right scapula demonstrated at least some dismemberment of this animal. Also included in this deposit were three cattle bones, including fragments of the skull, mandible and astragalus, as well as two sheep/goat tibias and the metatarsal of a sheep.

Late Iron Age enclosure ditch group 7992 and pit 3838, Site B

Ditch group 7992 comprised the sickle-shaped enclosure group near the division of Sites B and C (see Fig. 3.39). Significant numbers of animal bone were recovered from a *c* 20m section of the ditch, including interventions 3984, 3830, 3927, and to a lesser extent 3906. More specifically, this material is overwhelmingly from the second and third deposits of these interventions.

From an examination of the sheep/goat bones where the same element occurred with some frequency, ie sheep/goat mandibles, it was evident that there were many different animals. In contrast, dog bones from this feature are considered to be of just two young animals, with an age of four to five months for one individual, and around one and a half years for the second. A number of hare/rabbit bones were also excavated from this ditch, but are thought most likely to be an intrusive deposit of rabbit bones.

Three sheep/goat and eight pig maxillas demonstrate the presence of fragmented skulls. In the unidentifiable categories, three large mammal and two medium mammal vertebra, as well as four large mammal and six medium mammal rib fragments, were recorded. Generally most parts of the animals are present, but sheep/goat has a greater abundance of mandibles and hind-limb, followed by the forelimb. Vertebra and ribs are generally of a low occurrence considering the number that exist in one individual. An MNI of two cattle, six sheep/goat or sheep and four pigs was calculated.

Pit 3838 was located *c* 3.2m from the edge of the enclosure ditch group 7992 and is of the same period as this enclosure ditch (see Fig. 3.39). The majority of bone from this pit was excavated from its uppermost fill, deposit 3839. A smaller quantity of bone was excavated from pit 3838 than the adjacent ditch interventions, including 13 cattle, 12 sheep/goat or sheep and three pig bones, but its proximity to ditch group 7992 may suggest that secondary deposition within its upper deposit was related to that in group 7992.

The quantity of animal bone in comparison to that from other features suggests a peak in bone deposition in the vicinity of the ditch and pit. Alternatively this represents secondary deposition of material directly into these features, with material originally accumulated elsewhere such as in adjacent middens. Cattle, sheep/goat and pig appear to be represented by only a small number of individual bones per animal, as opposed to being predominantly from one or two individuals. In contrast, the dog bones appear to represent just two individuals.

In addition, a horse skull (SF 3916) was located as the base of ditch 7992, from intervention 3906, *c* 7m to the south-west of intervention 3830/3927. No horse mandible was present. A fragment of pig mandible was noted just below the skull within deposit 3604, although this may be an incidental inclusions.

Late Iron Age pit 3671, Site B

In addition to potentially residual bone in late Iron Age pit 3671 (see above), its third deposit (3523) contained significant numbers of pig bones (see Fig. 3.41). The pig remains were predominantly loose teeth and skull fragments, with a small number of post-cranial bones. Calculating an MNI by the method of the most frequently occurring diagnostic zone by side suggests an MNI of three for the pig bones. However, the wear patterns of the third molar demonstrate that none of the maxillary third molars are of the same individual, and therefore at least four individuals are present. At least two were

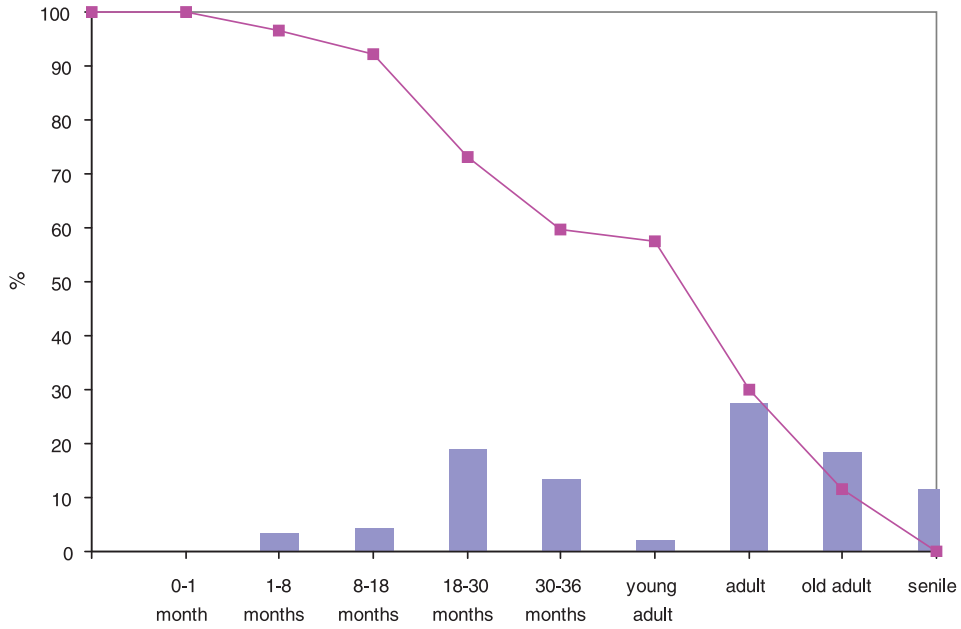


Fig. 3.75 Percentage of Iron Age cattle mandibles per age class; N=45

female and one male, with all these animals either 1–2 years of age or older.

Late Iron Age cremation pit 4298, Site B

In total, cremation pit 4298 contained four pottery vessels. Fragments of a pig atlas and axis (the two vertebra located below the skull) were recovered from the fill of a shallow bowl, 4355, with a sheep/goat pelvis fragment and poorly preserved cow astragalus (of the ankle) recovered from the fill of pottery vessel 4349. These could not be said to be associated with choice food offerings, and maybe considered as a symbolic token offering.

Species represented

Cattle

The majority of mandibles from which an age of death could be estimated were recovered from Iron Age deposits (Fig. 3.75). Of the Iron Age cattle, the mandible wear data suggest that by two years of age just over 40% of the herd was culled, with animals predominantly culled between one and a half years and two years of age. The remaining cattle have been slaughtered as adult animals. Of the cattle pelves, 14 were attributed to a sex, all identified as from female animals.

Of the biometric data from cattle, the distal tibia produced the most frequently occurring measurements, also suggesting a predominantly older female herd. Very few cattle bones had evidence of butchery upon them, although where they did occur they predominantly comprised knife marks.

Body part analysis was completed for Iron Age cattle remains excavated at Sites B and C, and it is suggested that whole animal carcasses are represented at the site (Fig 3.76). Those elements of lower frequency are either associated with low bone density or lower recovery rates via hand collection due to their smaller size. A comparison of cattle body parts in ditches with those in pits produced similar results.

The husbandry of cattle in the Iron Age would suggest that a mixed strategy was being practised, with predominantly males most likely to be culled after gaining some meat weight, with a population of older adult dairy cows or working cattle. A small number of cattle were killed as very old animals (Fig. 3.75).

Three pathological cattle bones were excavated from phased deposits. The mandibular hinge of a middle Iron Age cow jaw had evidence of necrosis of the bone, resulting in a hollow in the condyle. This is the result of an infection in this part of the jaw, which has cut off part of the blood supply to the bone. The resultant dead bone has either been dissolved by the puss, been ejected via an abscess, or remained in the body as a sequestrum. Additional bone growth has developed around the area of the infection, extending the condyle slightly. This non-specific infection may have derived from adjacent surrounding tissues, or haematogenously from elsewhere in the body (Baker and Brothwell 1980, 63–8). A second middle Iron Age mandible had its pre-molar tooth row angle at around 45° to the molar row. No further pathology was evident, such as infection, although the surface of the bone was fairly eroded. This angle must have occurred from a break to the mandible, which evidently has healed well, potentially early in the life of the animal. There was also an instance of osteochrondrosis dissecans, on the distal articular facet of a late Iron Age navicular-cuboid of the ankle. Osteochrondrosis dissecans is defined as the focal

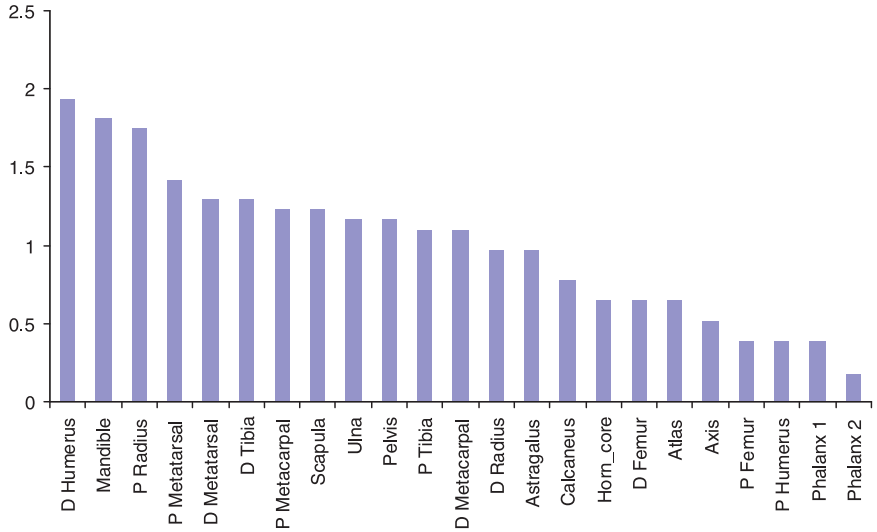


Fig. 3.76 MNE of Iron Age cattle bones from Sites B and C

ischemic necrosis of the growth cartilage initiated by necrosis of the cartilage canal blood vessel during growth of the bone (Ytrehus *et al.* 2007, 445).

Sheep and goat

Of the sheep/goat categories, where the division could be made, the majority of specimens proved to be sheep. Although goat was present at the site, it is considered to be a relatively minor species. Most of the sheep/goat mandibles from which an age of death could be estimated were excavated from Iron Age deposits, which indicated that 72% of the flock appear to have been culled by three years of age, with a steady decline after a significant cull in lambs in the latter half of their first year (Fig. 3.77). The division of mandibles by sub-phase reduces the sample size considerably, although in general each sub-phase has the same trend. The greater quantities of animals culled in their second and third years from early Iron Age deposits cannot be considered statistically significant, this percentile drop representing only two mandibles.

Sexing data from pelves were scarce, but pelves excavated from Iron Age deposits were predominantly identified as of female animals. A similar pattern is suggested by the biometric data. Sheep appear to have been husbanded primarily for their meat, with only a relatively small older population, predominantly of females or wethers maintained as breeding stock. Wool and milk would also have been available from the flock, with at least a two of clips of wool harvested from each sheep prior to being culled. Butchery data were scarce, but where present predominantly comprised knife marks.

Body part analysis was completed for Iron Age sheep/goat and sheep bones from Sites B and C (Fig. 3.78). Tibias and mandibles appear somewhat over-represented in the assemblage in comparison to other robust elements of long bone such as proximal radii and distal humeri and metapodials.

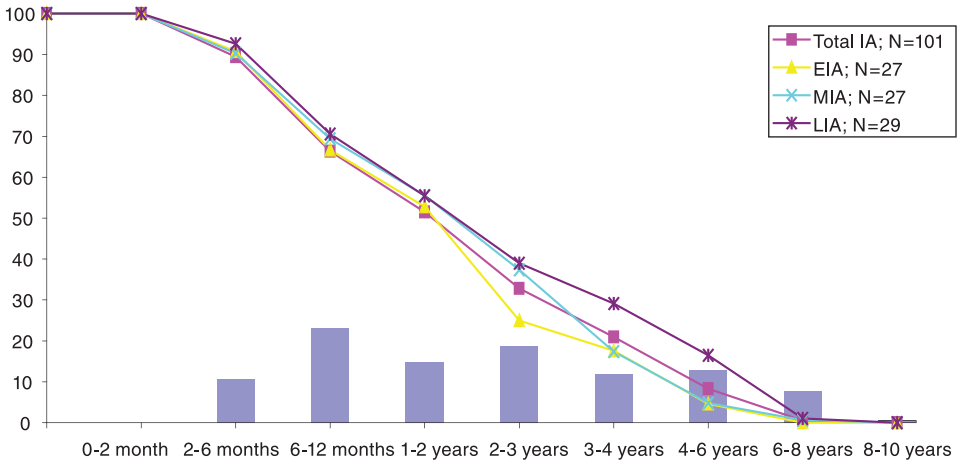


Fig. 3.77 Percentage of Iron Age sheep/goat and sheep mandibles per age class

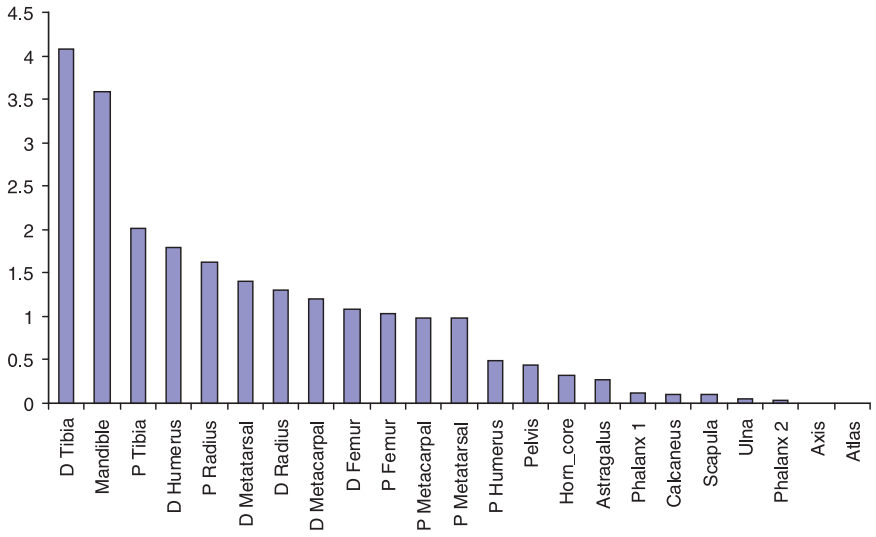


Fig. 3.78 MNE of Iron Age sheep/goat and sheep bones from Sites B and C

Although the sample is small, the recorded epiphysial fusion states of metapodials suggest most had not fused prior to slaughter, making them more prone to attritional processes. This is perhaps emphasised by the frequency of metapodials in pits and ditches, metapodials proving to be slightly more abundant in pits where there is the potential for more rapid burial. The same reasoning cannot, however, be applied to distal humerii and proximal radii, although tibia mid-shaft fragments do have high bone density values. Of the tibia and mandible, elements of the distal shaft and the mandible tooth row and diaphysis are most abundant. It is clear that the mandible and tibia have similar depositional characteristics, being the most frequently occurring bones at the site and recovered from the most features. The difference between fore- and hind-limb cannot entirely be put down to rates survivability.

Hill (1995, 49) observed that at Balksbury and Winnall Down in deposits from the upper thirds of features the tibias of sheep were better represented. This was also true of cattle, which is not the case in this instance. In addition, pig also does not have the same abundance of tibias on the A2 sites. A similar pattern was also noted at the Eton Rowing Course (Bates forthcoming) and Stansted Airport (Bates 2008). An alternative explanation for the apparent abundance of the rear limb and mandible is the lack of the forelimb in the archaeozoological record, which may point towards differential treatment of the forelimb in the processing of the carcass. One explanation would be that the tibia was discarded with the initial butchery waste, with further processing or the forelimb at a later date. This would mean discarding the shank of the bone, of relative high food utility unless the meat and probably the tendons were stripped from it first. There is no evidence for chopping through the distal end of the tibia to remove the foot. Comparison of the tibia to the femur and pelvis is problematic, however, due to the low bone density values of these elements.

One pathological sheep/goat bone was recovered from Iron Age deposits. A single late Iron Age mandible had evidence of periodontal disease in the form of localised periostitis around the buccal margins of the second and third molar, the result of an infection in the gum, potentially caused by a foreign body impacting upon it (Baker and Brothwell 1980, 153).

The occurrence of an additional foramen on the buccal side of the sheep mandible, in the area of the second pre-molar, is a congenital trait present in about a third of the late Iron Age sheep population. This may not necessarily be hereditary, but a high occurrence of a congenital trait may be the result of a limited gene pool in the stock.

Pig

As with cattle and sheep/goat, the number of mandibles from deposits other than those of the Iron Age was too small to be useful. Mandible wear stages of Iron Age pig mandibles are presented in Figure 3.79. Division by sub-phase produced small

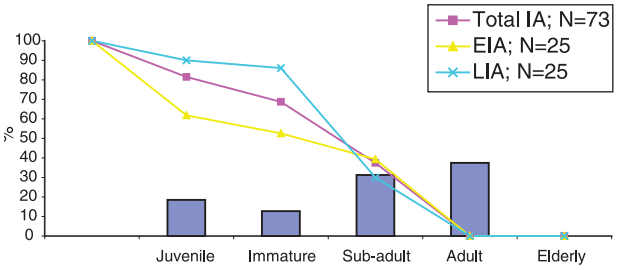


Fig. 3.79 Percentage of Iron Age pig mandibles per age class

sample sizes, but also a noticeable difference in the percentage of juvenile culls. However, all of these early Iron Age juvenile mandibles were recovered from ABG's within the pits described above. It is highly likely therefore that there is little change in the age of slaughter of pigs. The species, which may support a high rate of immature mortality, is husbanded primarily for its meat.

There is a large discrepancy between the number of Iron Age mandibles and loose lower canines attributed to a sex. It is quite likely that this is a factor of preservation. Where most male animals are culled at a younger age, there is potential for more male mandibles to be broken up due to the lower bone density in a younger mandible. The pig herd is likely to have produced roughly equal numbers of male and female animals, but it is suggested that, of the older animals, mostly sows were maintained as breeding stock. Butchery data was scarce, but when present were predominantly knife marks.

The distribution of pig bones at the site by element is presented in Figure 3.80. Whole carcasses are represented, with no obvious bias in the bone assemblage except those caused by taphonomy and recovery. The mandible has a high frequency in NISP counts, as described for cattle.

A single pathological pig bone was recovered from a phased deposit. A late Iron Age tibia had significant bone growth (exostosis) on the distal (lower) shaft in the position where the ulna lies beside the tibia. The result of osteoperiostitis, an infection within the periosteum, of non-specific origin but potentially originating from adjacent infected tissues or from infecting agents carried via the blood (haematogenous) (Baker and Brothwell 1980, 63–8). One congential defect was identified on the remains of a very young piglet. A maxillary canine and incisor from an early Iron Age piglet were sharing a root (syndactyle).

Equids

Separating horse from ass (donkey) and the two hybrids of ass and horse, mule and hinneys, has proved problematic in the archaeozoological record. However, the prehistoric equids are unlikely to be ass or a hybrid, as the ass is considered to be a Roman introduction into Britain (Clutton-Brock 1992, 117). Within Iron Age features, horse bones and teeth were recovered predominantly from ditches, often in association with other animals. There is no evidence to suggest the carcass was not treated in a similar manner to cattle, and is likely to have been eaten. Three skulls had butchery marks upon them. Knife marks on the occipital condyles of two skulls excavated from Iron Age ditches demonstrate where the skull has been removed from the neck of the animal. Knife marks below the orbit of the skull, angled towards the mandible, show where the masseter muscle has been cut to remove the mandible from the skull.

Age estimates were calculated from measurements taken from 41 horse teeth excavated from Iron Age deposits. No teeth were from animals below five years of age; 43% were of animals between five and 10 years; 26% 10–15 years, and 31% were over 15 years. No unfused long bone shafts or epiphyses were excavated from the Iron Age period. There was, therefore, no direct evidence for horse breeding. Wither heights of horse were calculated from three Iron Age specimens, all within the size range of ponies (1219 to 1391mm).

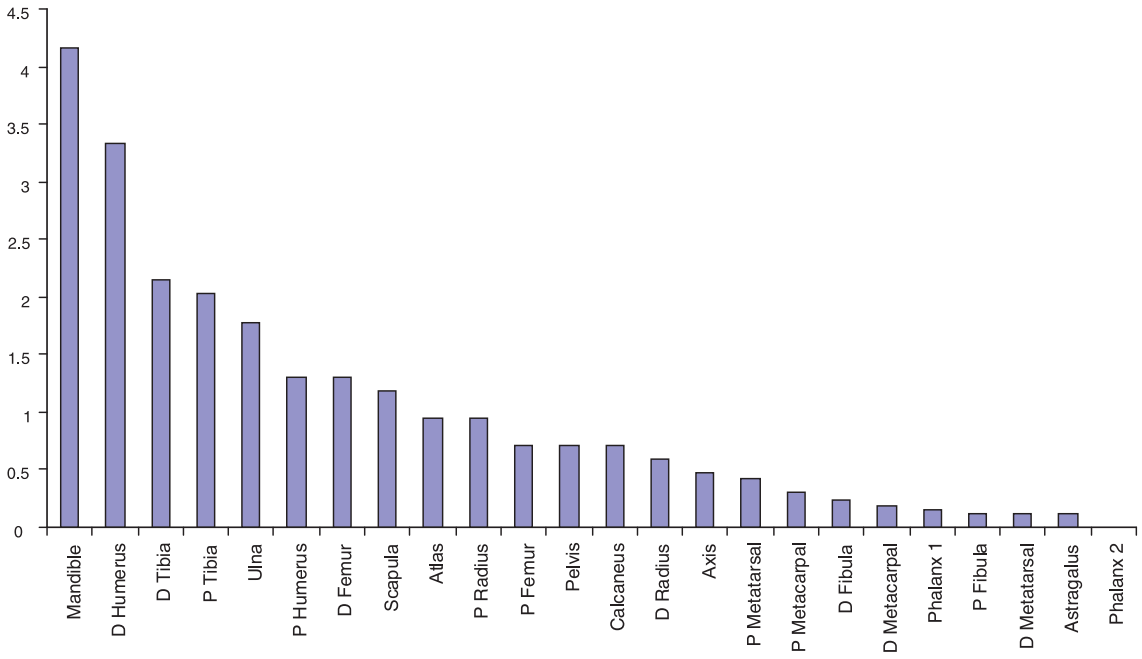


Fig. 3.80 MNE of Iron Age pig bones from Sites B and C

One Iron Age horse bone with pathology was recorded. The late Iron Age articulated lower rear leg from ditch group 7197 had pathologies caused by spavin in the animal's hock or ankle. Included in the articulated bones were the tibia, all the tarsal bones, as well as the metatarsal. The lesions affected the navicula, the cuboid and the metatarsal proximal articulation, with anklylosis (union) of the navicula and cuboid bones. The aetiology is undetermined, but hereditary factors affecting the confirmation of the joint, and concussion due to heavy work or faulty shoeing may be factors (Baker and Brothwell 1980, 117–18).

Dog

Unarticulated dog bones were recovered from Iron Age deposits, although the species was relatively scarce. No butchery marks were recorded on dog bones. A single late Iron Age dog metatarsal of the rear foot had evidently been broken. The fracture had healed well, with additional bone growth along the length of the shaft.

Wild species

A small number of deer bones were excavated from Iron Age deposits, with only single occurrences in later phases. A single deer burial was excavated from storage pit 9052 (see early Iron Age Pit 9052, Site G). Unlike cattle, most of the deer bones from Iron Age deposits were from excavated pit features suggesting some difference in the treatment of these animals.

Five red deer antler or antler fragments were recovered from Iron Age deposits, and one roe deer antler fragment from an Iron Age deposit. At least one of the red deer specimens had been naturally shed from the live animal, and as such must have been collected from the wild. Tool marks on antlers included two sawn red deer antler fragments, with knife marks recorded on the beam of two red deer antlers.

Hare bones were also present in small numbers from Iron Age deposits. No butchery marks were present on these bones, but hare would undoubtedly have been hunted and consumed, with potential uses also found for its pelt.

Bones of pine marten and cat were also recovered from middle Iron Age pit 147 during the excavation of the HS1 adjacent (Kitch in Askew 2006), indicating that a local wildcat population was present until late in prehistory.

Birds

A small number of bird bone fragments were recovered from Iron Age deposits (Table 3.20). No butchery marks were recorded on any bird bones. The early Iron Age raven was an articulated or partially articulated skeleton within storage pit 9052. It is unlikely that the species list given here represents the full list of wild bird species hunted and consumed by the inhabitants of the area, but they do not appear to have made a large contribution to the diet.

Small mammals

A number of voles and shrews were recovered from most periods, as well as one bone of a hedgehog, most likely incidental inclusions within the features. Bank vole, common shrew and pygmy shrew may live in areas of scrub, banks and hedges, rarely in open land but where cover is provided (MacDonald and Barrett 1995). Hedgehogs are found in deciduous woodland, hedgerows and grasslands (ibid.).

House mouse (*Mus musculus*) bones were recovered from four Iron Age features. The early Iron Age is an early date for the species in Britain, although not unparalleled. Mice of the genus *Mus* originated in Asia, and are found on mainland Europe by the Bronze Age, but were more common in Britain in the Roman period (Yalden 1999, 124). Early Iron Age house mouse bones were also excavated at Gussage All Saints (Harcourt 1979, 155), and from late Iron Age deposits at Danebury (Coy 1984, 526).

Amphibians and reptiles

A small collection of frog and toad bones was present, including a number of articulated skeletons. Frogs may have been consumed, but 80% of these came from pits that could have acted as pit fall traps. Eleven lizard bones were recovered from Bronze Age to Roman contexts, all but one being identified as slow worm or probable slow worms. It would be tempting to associate slow worms with midden deposits, modern-day compost heaps being an attractive habitat for the species. Two Iron Age specimens were recovered from deposits in ditch group 7992, interpreted as midden deposits.

The remains of a grass snake were recovered from early Iron Age pit 5992, and a viper vertebra from late Iron Age pit 3838. Unidentified snake vertebrae were recovered from early Iron Age pit 9010 and mid- to late Iron Age pit 4969. None of these remains had evidence of burning or butchery associated within them.

Discussion

It has been shown that the proportions of the principal domestic animals are often greatly affected by the feature type in which they are found; in particular, taphonomic and depositional factors may over-represent cattle in ditches. Interventions

Table 3.20: Bird bones from Iron Age contexts; bones of the same individual counted as 1 NISP

Species	*No.*
Raven	1
Carduelidae sp (finch)	1
Passerine (perching brids)	3
Goose sized bird	1
Total	6

into the middle Iron Age to early Roman enclosure ditches contribute significant numbers of cattle bone to the totals. Wilson (1996) demonstrated that the greater proportions of cattle in ditches at Iron Age sites may reflect differences in the processing of animals due to their size. To a degree this may hold true in the prehistoric and Roman phases, but a number of ditches with larger sample sizes do not reflect this pattern (Table 3.21; Ditch groups 5892 and 7992 are also discussed further below). Either the deposition within these features differs from other ditches, or the proportion of animal bones in other ditches is greatly affected by taphonomic factors. An interpretation of adjacent middening activity, as suggested for ditch groups 5892 and 7992 in the descriptions of their associated ABGs, could also have been taking place adjacent to ditch groups 13161 and 6941.

Despite the quantity of bone from pits in the early Iron Age, cattle and sheep/goat NISP totals are much of a par. On balance, it seems quite likely that, in the later Iron Age and into the Roman period, sheep flocks were increased in size in comparison to the cattle herds; this trend may have begun in the middle Iron Age. It has been suggested that this is a trend visible across central England in the late Iron Age (Albarella 2007, 394).

Generally, most of the carcasses of Iron Age cattle, sheep and pigs are represented at the site. The abundance of hind limbs of sheep in comparison to forelimbs, measured by the abundance of tibias in comparison to elbow joints represented by the distal humerus and proximal radii, was looked at in some detail, with some speculation to different treatments of the fore and hind limbs (see Sheep/Goat above). It is noticeable that ditch group 7992 produced a similar pattern of sheep/goat elements to that of the site as a whole, despite the femur, which is a fairly fragile bone, being well represented. This pattern of apparently abundant tibias was not observed in Iron Age cattle or pig bones from ditch group 7992, or from the site as a whole. It was suggested that the tibia was more frequently stripped of meat and discarded as butchery waste, with the forelimb removed elsewhere and treated differently, such that fewer elements of the forelimb entered the archaeozoological record. The butchery of sheep in this manner is perhaps best demonstrated by the ABG described in pit 5992, in which the pelves and tibias are present, but most if not all of the upper part of the body, as well as the femurs, are separated as meat on the bone. An assumption that sheep and pig carcasses were treated in a similar manner, due to their comparative sizes, does not therefore appear to hold true, either in the treatment of the carcass or their deposition in features. Iron Age sheep/goat bones are predominantly found in pits, whereas pig bones were excavated equally from both.

The mortality profiles of cattle, sheep and pig are generally consistent throughout the Iron Age. Cattle during the Iron Age appear to have been husbanded for mixed purposes, most animals being grown to gain meat weight before slaughter, with around 60% of the stock slaughtered as adults. These probably represent older females kept for milk production. The absence of very young animals may be due to taphonomic bias, as the skeletons of six calves were found in a middle Iron Age pit 147 along the line of the HS1 adjacent to Site B (Kitch in Askew 2006). Comparable sites in the region suggest a variety of husbandry strategies in cattle, albeit often with only small sample sizes available (Hambledon 1999, 82). Similar mortality profiles of cattle were also seen at the settlement of Owslebury and Winnall Down in Hampshire, where a mixed strategy in the husbandry of cattle is also suggested (Maltby 1987; 1985, 129). In comparison to settlement sites of the upper Thames Valley, there is potentially less emphasis on meat (Hambledon 1999, 82; Mulville and Levitan 2004, 469–70).

The husbandry of sheep at the site during the Iron Age would appear to be have been fairly consistent throughout the period, geared toward a mixed strategy of obtaining meat, wool and probably milk. This is perhaps typical of the period, as demonstrated in Hambledon (1999, 74). There was, however, no evidence of the much higher rate

Table 3.21: Relative percentages of the principal stock animals in enclosure ditches with N greater than 20

Sub-period	*Group*	*Cattle %*	*Sheep/Goat %*	*Pig %*	*N*
Early Iron Age	5912	75.0	19.4	5.6	36
Middle Iron Age	3966	35.7	21.4	42.9	28
Middle Iron Age	6944	75.0	20.0	5.0	20
Middle to Late Iron Age	3961	19.0	45.2	35.7	42
Middle to Late Iron Age	4617/4623	22.4	38.2	39.5	57
Early to Late Iron Age	4617+CTRL271	15.6	26.6	57.8	109
Middle to Late Iron Age	7192	43.3	20.0	36.7	30
Late Iron Age	4744	69.0	17.2	13.8	29
Late Iron Age	7197	66.0	12.0	22.0	50
Late Iron Age	7989	65.8	18.4	15.8	38
Late Iron Age	7992	38.9	29.4	31.7	262
Iron Age to Roman	13161	38.3	42.0	19.8	81

of slaughter at six months to one year seen at a number of other sites of southern England. Most of the flock appears to have been over-wintered into at least their second year, with a significant percentage of the population culled by three years of age (Hambledon 1999, 71–4; Albarella 2007, 394).

Pig is typically husbanded for its meat, but the importance of this animal is discussed below (see Storage Pits). Wild species were only present in small numbers, and do not appear to have played an important role in the calorific intake of Iron Age peoples of Britain (Grant 1981, 205).

Associated or Articulated Bone Groups (ABGs)

A number of pits produced significant quantities of animal bone from ABGs. Those from the site can be categorised into four types: complete or partial skeletons (sometimes associated with specific features types or other objects); the placement of skulls; partially articulated limbs (as described in Hill 1995, 57); and large deposits of bone from secondary deposition from a number of individuals. No bone deposits of vertebral columns and ribs were identified. The location and discussion of these are considered by feature type below.

Storage pits (Table 3.22)

Deposition of whole animal carcasses was found at the base of storage pits 9010 and 9052 on Site G. Deposited in the basal fills of 9010 were the limb bones and mandible of a piglet, and the head and parts of the fore- and probably hind limbs of the same pregnant sow. The latter individual had evidently been cooked, with its meat on the bone. It would be tempting to see the animal cooked in the nature of a hog roast. However, the absence of any evidence for the vertebral column and ribs of either of these animals may suggest some disarticulation of both the charred and uncharred pig. It can not be shown whether this occurred prior to or after the cooking of the charred animal.

The basal fills of pit 9052 contained the near-complete remains of a piglet and a relatively new-born red deer calf. It remains inconclusive as to whether these animals had been defleshed, but neither was excavated as an articulated animal. In addition, part of a raven was deposited with these remains. At Danebury, the occurrence of bird bones in association with special deposits was shown to be statistically significant, raven and crow being the most frequently occurring species (Grant 1984, 540). In Celtic mythology, the raven, symbolic of darkness and death, is also a prognostic bird associated with oracles and closely bound up with prophecy (Green 1997, 166 and 174).

Two further mid to late Iron Age pits have similar depositional characteristics. Storage pit 4969 on Site B had a potin coin located in its primary fill. A male piglet had been placed at the base of the feature, between six months to one-year-old. Similarly, at the base of pit 7228, two neonatal pigs had been deposited. Young piglets were also found at the base of Bronze Age storage pit 3030 of Site A (see Chapter 2). Most of these animals were very young, often only a few months old and, in one feature, neonatal.

ABGs of sheep were recovered from two storage pits. Pit 12527 contained the remains of a one to two-year-old sheep, with its skull and most of its spinal column missing, and a single cut mark demonstrating the dismemberment of the animal. These remains were excavated from the fifth of seven deposits. Pit 5992 contained the back legs, excluding the femurs, of a sheep over three years of age. In neither instance were the deposits from the initial disuse of the storage pit, and it is difficult to assess whether the deposition of these sheep are referencing the pits in a similar manner to animal bone groups at the base of storage pits.

The association of red deer skull SF456 at the base of pit 5130 with other objects demonstrates the use of animal skulls as deliberately placed objects. Its inclusion in an apparently ritualised act reflects the totemic significance of the deer. The skull was not complete, and is likely to have been fragmented prior to deposition, although the maxillas were recovered from the same deposit. Other partial or near complete skulls were recovered from the excavations, but no others had the same direct association of artefacts. Data concerning skull fragments at the base of features, as potentially representing brushed partial or completed skulls, was too limited to assess any statistical significance.

The deposition of a complete red deer antler, part way through the depositional history of pit 9010, may be a similar act of deposition, referencing these pits. It was also noted that, of the few deer bones excavated from the site, most (discounting identi-

Table 3.22: Animal bone ABGs in selected pits

Feature	*Site*	*Animal*	*Sex*	*Age*	*Butchery marks*	*Other Objects*
Storage pit 9010 (deposits 9082 and 9109)	G	Charred pig	Female	1-2.5 yrs	Yes	Yes
		Uncharred pig	Female	Few months	Yes	
Storage 9052 (deposits 9065 and 9083)	G	Red deer		Few months		
		Pig		Few months		
		Raven		Adult		
Storage pit 4969	B	Pig	Male	6 months-1 year	Yes	Yes
Pit 7228	C	Pig		Neonatal		

fied ABGs) were recovered from the alignment of Iron Age storage pits in Site G.

Pigs are considered to have had a significant role as a high status food consumed at feasting during the British Iron Age (Parker-Pearson 1999, 46). The manifestation of this in the treatment of the animal's carcass may vary regionally, and their appearance as a regional phenomenon in Iron Age burial practices is one form of this. In southern England, large numbers of pigs are likely to have been a luxury at the expense of cereal cultivation, hence their perceived association with wealth or prestige and their decline in numbers in the later Iron Age (Mulville 2008, 230). The placement of pigs, either consumed or not, in the base of pits may reflect the perceived value of the animal and the feature. The placement of very young, even neonatal, remains in these features is possibly linked with a belief in the power of chthonic deities and fertility associated with grain storage pits (Cunliffe 1992, 79). Similarly, the placement of a charred neonatal pig skull fragment and unfused proximal epiphysis of a pig femur within pottery vessel 9151, placed within deposit 9082 of pit 9010, may also be a manifestation of this.

Shallow pits

Four shallower pits, ie c 0.5m deep or less, typically interpreted as rubbish pits, were found to contain significant quantities of bone per deposit. At least part of a disarticulated yearling lamb was deposited in the early Iron Age pit 7381. The late Iron Age pit, 3671, produced fragmented pig skulls and a small number of limb bones. This represented the deposition of at least three pigs, a fourth being represented by a loose tooth, but this may be incidental. Most of the post-cranial bones are missing, but the slaughter and consumption of three to four animals in one event would have produced a significant quantity of meat for consumption. This pit could be said to have similar depositional characteristics to storage pits 9010, 9052 and 4969, although in this instance fewer bones from the carcasses had been deposited.

Cremation pits

Animal bones within cremation pit 4298 would appear to represent symbolic offerings, with little or limited food value (see below). Some of the meat from the spare rib may have been attached to the pig vertebra within pit 4298, but the astragalus from a cow ankle recovered from the fill of a pottery vessel is unlikely to have much meat attached to it.

Enclosure ditches

Enclosure ditches generally produced few animal bones per intervention, with material distributed vertically through the deposits and along the length of the ditch. Where bone did occur in any numbers, such as ditch groups 7992 and 5892, there seemed no reason to suppose that the bones were derived from the same animals, although exceptions to this were identified in the deposition of dog bones. Deposition of the principal stock animals within the ditches is thought to be primarily secondary deposition of the bone. As such, they differ to the ABGs found at the bases of pits. The erosion of animal bone from adjacent middens, or even the deliberate deposition of midden material into the ditch, would account for these collections of animal bone.

Within these two ditch groups, it was noted that skulls of cattle and sheep were poorly represented, although a number of pig maxillas were recovered from ditch group 7992. Similarly, the vertebra and ribs of these animals were frequently absent. Either they have not survived into the archaeozoological record, or were not deposited in the same location.

Other, more complete skulls, were excavated from two ditches. The rear part of a late Iron Age cow skull was excavated from close to the base of ditch intervention 4555 in enclosure ditch group 4744. A complete late Iron Age horse skull was excavated from near the base of ditch intervention 3906 in the sickle-shaped enclosure ditch group 7992. Similarly, an articulated lower part of a horse's leg was excavated from the base of the ditch of an internal division within the same enclosure, intervention 3669 of ditch group 7197.

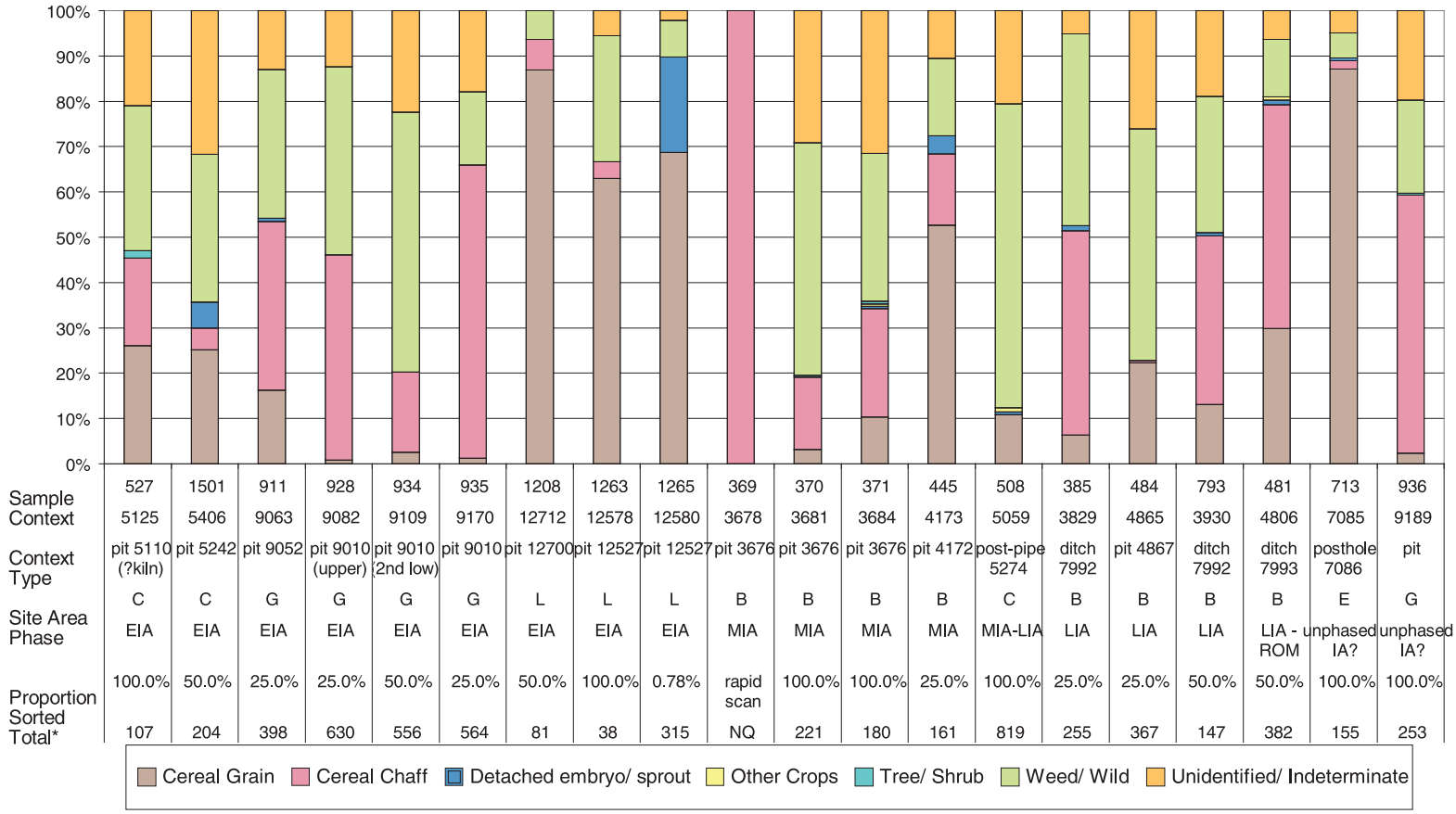
The data from the middle to late Iron Age curvilinear enclosures on Site B were inconclusive, albeit with some bias seen towards pig bones in ditches 4617/4623 and 3966. However, bones excavated from intervention 271 of the HS1 excavations, potentially of the same enclosure as 4617/4623, produced significant numbers of pig reinforcing this bias. The bias towards pig bones in these enclosure ditches maybe a spatial variation in comparison to deposition in other enclosure ditches, hinting at settlement activity within the enclosures. Alternatively, or in concert with, the symbolic importance of pig in the Iron Age may highlight feasting activities within the enclosures.

Other ABGs of the HS1 excavations

A much smaller bone assemblage was recovered from excavations in advance of High Speed 1 (Kitch 2006a/b). Early to mid Iron Age features were mainly located on Site B. The most significant animal bone finds of this period were recovered from pit 147, which contained the partially articulated remains of a minimum of six calves and three juvenile red deer.

Conclusion

The focus of the analysis of the animal bone of the depositional characteristics of the material has highlighted specific Associated or Articulated Bone Groups (ABGs), beyond those identified during the excavation. As a result, it is considered that the symbolic or totemic importance of pigs suggested elsewhere in Iron Age archaeology (Parker-Pearson 1999; Mulville 2008) is evident in the treatment and deposition of these animals. The deposition of deer



* Total identifications are only for that fraction of the flot & heavy residue sub-sampled. NQ = Not quantified.

Fig. 3.81 Relative proportions of charred plant remains in early Iron Age to late Iron Age/early Roman features

Table 3.23: Summary statistics for early Iron Age to late Iron Age/ Roman period CPR samples

SAMPLE	527	1501	911	928	934	935	1208
CONTEXT	5125	5406	9063	9082	9109	9170	12712
CONTEXT DESCRIPTION	pit 5110 (?kiln)	pit 5242	pit 9052	pit 9010 (upper-most fill)	pit 9010 (2nd lowest deposit)	pit 9010	pit 12700
SITE	C	C	G	G	G	G	L
PHASE	EIA	EIA	EIA	EIA	EIA	EIA	EIA
SAMPLE VOL (L)	10	40	50	80	40	40	3
FLOT VOL (ML)	30	75	1000	315	126	100	45
PROPORTION OF SAMPLE SORTED	100.0%	50.0%	25.0%	25.0%	50.0%	25.0%	50.0%
SEEDS PER LITRE OF SEDIMENT	11.9	11.4	33.4	31.5	25.2	56.4	158.0
TOTAL IDENTIFICATIONS (FLOT)	118	227	415	630	504	564	237
TOTAL IDENTIFICATIONS (HEAVY RESIDUE)	1	0	2	0	0	0	0
TOTAL FLOT + HEAVY RESIDUE	119	227	417	630	504	564	237
TOTAL SCORE (FLOT + HR)							
CEREAL GRAIN	31	57	68	5	13	7	206
CEREAL CHAFF	23	11	155	285	89	365	16
DETACHED EMBRYO/ SPROUT	0	13	3	0	0	0	0
OTHER CROPS	0	0	0	0	0	0	0
TREE/ SHRUB	2	0	0	0	0	0	0
WEED/ WILD	38	74	137	261	289	91	15
UNIDENTIFIED/ INDETERMINATE	25	72	54	78	113	101	0
RELATIVE PROPORTION (FLOT + HR)							
CEREAL GRAIN	26.1%	25.1%	16.3%	0.8%	2.6%	1.2%	**86.9%**
CEREAL CHAFF	19.3%	4.8%	37.2%	45.2%	17.7%	**64.7%**	6.8%
DETACHED EMBRYO/ SPROUT	0.0%	5.7%	0.7%	0.0%	0.0%	0.0%	0.0%
OTHER CROPS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TREE/ SHRUB	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
WEED/ WILD	31.9%	32.6%	32.9%	41.4%	**57.3%**	16.1%	6.3%
UNIDENTIFIED/ INDETERMINATE	21.0%	31.7%	12.9%	12.4%	22.4%	17.9%	0.0%

Bold indicates those samples where a plant category is clearly dominant (i.e. >50% of all identifications made). All calculations are based on the combined results for flot and heavy residue.

bones, and in one instance a complete antler, also appears to be associated with activities focusing on the former grain storage pits that have ABGs in their basal fills. The husbandry of animals through the Iron Age is generally consistent, although it is thought that the sheep flocks were increased in the mid- to later Iron Age.

Charred plant remains *by Wendy Smith*

The reports on charred plant remains in this and other chapters present the results from a major programme of archaeobotanical sampling carried out during excavations along the A2 Pepperhill to Cobham widening scheme. The sampling approach and details of each individual flot are given in the Post-excavation Assessment and Updated Research Design (Allen *et al.* 2009).

Table 3.23 and Figure 3.81 present the results and relative proportions of plant remains for the Iron Age archaeobotanical assemblages taken to full analysis. Charred remains of cereal crops (grain and chaff) and any accompanying weeds of crop dominate all of the samples, although traces of other crops and wild foodstuffs were present in samples from the middle Iron Age onwards.

Results

Twenty samples of early Iron Age to late Iron Age/ Roman date were selected for further analysis (Fig. 3.81; Table 3.23). In general the cereal remains (either grain or chaff) were not well preserved and were often highly fragmented. As a result, most identification could only be made to the general level of genus or group of species. The majority of samples studied (N = 15) are from pit deposits, and these come from all periods within the Iron Age. In addition, one middle–late Iron Age post-pipe (sample <508>, context 5059); two late Iron Age samples from ditch 7992 (sample 385, context 3829 and sample 793, context 3930) and one unphased, but putatively Iron Age posthole (sample 713, context 7085) were analysed. Different areas of the A2 excavations date to various phases of the Iron Age (see Table 3.23 for details).

Table 3.23: Summary statistics for early Iron Age to late Iron Age/Roman period samples (continued)

SAMPLE	1263	1265	445	370	371	369*	508
CONTEXT	12578	12580	4173	3681	3684	3678	5059
CONTEXT DESCRIPTION	pit 12527	pit 12527	pit 4172	pit 3676	pit 3676	pit 3676	post-pipe 5274
SITE	L	L	B	B	B	B	C
PHASE	EIA	EIA	MIA	MIA-LIA	MIA-LIA	MIA-LIA	MIA-LIA
SAMPLE VOL (L)	40	32	30	10	30	15	20
FLOT VOL (ML)	35	3060	100	45	60	85	100 ml
PROPORTION OF SAMPLE SORTED	100.0%	0.78%	25.0%	100.0%	100.0%	rapid scan	100.0%
SEEDS PER LITRE OF SEDIMENT	1.4	2468.0	30.7	22.0	6.1	-	42.6
TOTAL IDENTIFICATIONS (FLOT)	54	596	222	220	184	0	850
TOTAL IDENTIFICATIONS (HEAVY RESIDUE)	0	21	8	0	0	0	1
TOTAL FLOT + HEAVY RESIDUE	54	617	230	220	184	0	851
TOTAL SCORE (FLOT + HR)							
CEREAL GRAIN	34	424	120	7	19	0	92
CEREAL CHAFF	2	0	36	35	44	++++	0
DETACHED EMBRYO/ SPROUT	0	130	9	0	1	0	5
OTHER CROPS	0	0	0	0	1	0	8
TREE/ SHRUB	0	0	0	1	1	0	0
WEED/ WILD	15	50	39	113	60	0	570
UNIDENTIFIED/ INDETERMINATE	3	13	24	64	58	0	175
RELATIVE PROPORTION (FLOT + HR)							
CEREAL GRAIN	63.0%	68.7%	**52.2%**	3.2%	10.3%	0.0%	10.8%
CEREAL CHAFF	3.7%	0.0%	15.7%	15.9%	23.9%	**100.0%**	0.0%
DETACHED EMBRYO/ SPROUT	0.0%	21.1%	3.9%	0.0%	0.5%	0.0%	0.6%
OTHER CROPS	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.9%
TREE/ SHRUB	0.0%	0.0%	0.0%	0.5%	0.5%	0.0%	0.0%
WEED/ WILD	27.8%	8.1%	17.0%	51.4%	32.6%	0.0%	**67.0%**
UNIDENTIFIED/ INDETERMINATE	5.6%	2.1%	10.4%	29.1%	31.5%	0.0%	20.6%

*sample 369 was primarily fine charcoal and hundreds of extremely fragile fragments of charred to silicified indeterminate wheat awn. It was not possible to quantify such highly fragmented material, so this sample was only rapidly scanned and semi-quantified to provide some indication of the nature of its content.

Bold indicates those samples where a plant category is clearly dominant (i.e. >50% of all identifications made). All calculations are based on the combined results for flot and heavy residue.

Iron Age samples often are dominated by emmer (*Triticum dicoccum* Schübl.) wheat, but spelt (*Triticum spelta* L.) and barley (*Hordeum* sp.) also are present. In general the samples only contain cereal crops; however, a few middle Iron Age–late Iron Age/Roman samples contain small quantities of flax/linseed (*Linum usitatissimum* L.), common vetch (*Vicia sativa* L.) and/or garden pea (*Pisum sativum* L.). Potentially useful wild fruits/nuts such as elderberry (*Sambucus nigra* L.), hazelnut (*Corylus avellana* L.) and a tentative identification of blackberry (cf. *Rubus* section Rubus) may also have been collected; however, tree fruits or nuts such as elderberry or hazelnut can also be inadvertently burned along with wood fuel/kindling The charcoal report (see Challinor this vol.) does make it clear that hazelwood was a significant source of fuel. The A2 Iron Age assemblages are not uniform, some are dominated by cereal grain, some by cereal chaff, some by weed seeds and others are fairly even mixtures of all three of these plant categories.

The limited recovery of other crops, or wild fruits and nuts, should not be taken to mean that these are of little or no importance to Iron Age diet, but instead most likely reflects the limited opportunities for such foodstuffs to become charred, even accidentally. In early prehistory charred wild foodstuffs, especially hazel nutshells, are commonly recovered in archaeobotanical assemblages (eg Moffett *et al.* 1989); however, this is likely to reflect the regular use of heat in their preparation as a foodstuffs (eg G Jones 2000). This pattern clearly changes from the Bronze Age, when charred plant remains are most often dominated by cereal grain/chaff and any accompanying weeds of crop (M Jones 1985). However, when organic remains are preserved in other ways, such as by mineralisation, other plants can be recovered (eg Iron Age mineralised weed/wild plant remains from Potterne, in Carruthers 2000).

The weed assemblage associated with these cereal-rich Iron Age samples is of particular interest,

Table 3.23: Summary statistics for early Iron Age to late Iron Age/ Roman period samples (continued)

SAMPLE	385	484	793	481	713	936
CONTEXT	3829	4865	3930	4806	7085	9189
CONTEXT DESCRIPTION	ditch 7992	pit 4867	ditch 7992	ditch 7993	posthole 7086	pit
SITE	B	B	B	B	E	G
PHASE	LIA	LIA	LIA	LIA - ROM	unphased IA?	unphased IA?
SAMPLE VOL (L)	30	40	40	40	10	40
FLOT VOL (ML)	150	110	200	150	20	80 ml
PROPORTION OF SAMPLE SORTED	25.0%	25.0%	50.0%	50.0%	100.0%	100.0%
SEEDS PER LITRE OF SEDIMENT	33.9	39.1	7.7	19.8	16.3	6.4
TOTAL IDENTIFICATIONS (FLOT)	254	391	153	395	163	254
TOTAL IDENTIFICATIONS (HEAVY RESIDUE)	0	0	0	0	0	0
TOTAL FLOT + HEAVY RESIDUE	254	391	153	395	163	254
TOTAL SCORE (FLOT + HR)						
CEREAL GRAIN	16	87	20	118	142	6
CEREAL CHAFF	114	2	57	195	3	144
DETACHED EMBRYO/ SPROUT	3	0	1	4	1	0
OTHER CROPS	0	0	0	3	0	0
TREE/ SHRUB	0	0	0	0	0	1
WEED/ WILD	107	200	46	50	9	52
UNIDENTIFIED/ INDETERMINATE	13	102	29	25	8	50
RELATIVE PROPORTION (FLOT + HR)						
CEREAL GRAIN	6.3%	22.3%	13.1%	29.9%	**87.1%**	2.4%
CEREAL CHAFF	44.9%	0.5%	37.3%	49.4%	1.8%	**56.7%**
DETACHED EMBRYO/ SPROUT	1.2%	0.0%	0.7%	1.0%	0.6%	0.0%
OTHER CROPS	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%
TREE/ SHRUB	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%
WEED/ WILD	42.1%	**51.2%**	30.1%	12.7%	5.5%	20.5%
UNIDENTIFIED/ INDETERMINATE	5.1%	26.1%	19.0%	6.3%	4.9%	19.7%

Bold indicates those samples where a plant category is clearly dominant (i.e. >50% of all identifications made). All calculations are based on the combined results for flot and heavy residue.

primarily because of the remarkably small size of the weed seeds (all <4mm, and most usually 2mm or less). These included: small-sized wild grass caryopses (certainly including several probable annual meadow-grass – cf. *Poa annua* L. caryopses); indeterminate birds-foot-trefoil/medick/melilot/clover (*Lotus* spp./*Medicago* spp./*Melilotus* spp./*Trifolium* spp.); goosefoot/orache (frequently the abraded, indeterminate internal structure of *Chenopodium* spp./*Atriplex* spp.); smaller-sized dock (*Rumex* spp.) and eyebright/bartsia (*Euphrasia* spp./*Odontites* spp.). What is notable is that such weed seeds are more likely to be recovered in deposits with substantial quantities of cereal chaff, if not dominating an assemblage themselves (eg samples 370 and 508). For example, very few weed seeds at all were recovered in grain-rich sample 1208 (context 12712, pit 12700); 1265 (context 12580, pit 12527) or 713 (context 7085, posthole 7086). Smaller-sized weed seeds are easily removed from cereal grain by sieving (usually with a mesh size of *c* 2mm) and such fine-sieving waste is a recognised by-product of cereal crop processing (eg G Jones 1984; 1987; 1996 and Hillman 1981; 1984a–b; 1985) and is the most likely explanation for deposits of small chaff fragments and small-sized weeds encountered here.

In general, the Iron Age assemblages analysed from the A2 include all variations of cereal crop products and by-products (*sensu* G Jones 1984; 1987; 1996 and Hillman 1981; 1984a–b; 1985). Several samples have produced what could be viewed as a pure assemblage of cereal grain (eg samples 713, 1208 and 1265 and possibly samples 445 and 1263). Three of these samples come from a single pit (12527/12700) on Site L, the others are from a middle Iron Age pit on Site B (pit 4172) and the last from a posthole on Site E. Samples such as 1263 (context 12528, pit 12527) and 445 (context 4173, pit 4172) have a more substantial weed/wild component, but sample 1263 was very small (54 identifications from 100% of a 35ml flot from a 40L sample) and the weed/wild plant category from sample 445 is in fact dominated by indeterminate oat/brome grass (*Avena* spp./*Bromus* spp.) caryopses, both of which could have in fact been crops in their own right or, at the very least, a tolerated impurity. The latter can be defined as seeds which are of similar size to cereal

grain, do not adversely affect the taste of the cereal-based product and, possibly more relevantly, are difficult to fully remove from cereal grain (eg Campbell 2000, 48; de Moulins 2006, 69–71). Indeterminate wild/cultivated oat/brome grass is frequently recovered in the A2 Iron Age assemblage. Brome (*Bromus* spp.) grass is often recovered in these samples, regardless of whether the samples are grain-rich or chaff-rich. At present both brome and the indeterminate wild/cultivated oat are classified as a weed/wild plant primarily because we cannot assume they were cultivated intentionally. Given their relative abundance in some samples, however, they are perhaps better regarded as a crop in their own right, even if not necessarily for human consumption. Certainly, Campbell (2000, 50) has speculated that brome was cultivated for fodder at early Iron Age Danebury (and environs) and was then replaced by oat in the late Iron Age. The development of hay meadows for the intentional cultivation of grass feed for livestock also dates to the late Iron Age (eg Hodgson *et al.* 1999).

Discussion

The Iron Age pit deposits—rubbish or special deposits?

Cynthia Poole's (1995b) detailed study of some 1670 pits at Danebury and J D Hill's (1995) wider analysis of a major group of pit assemblages from Wessex should perhaps be credited with the first systematic study of deposits from pits in terms of their formation through ritual activity or, indeed, rubbish disposal. To identify an archaeobotanical assemblage as a 'special deposit' rather than one that is the accretion (rapid or gradual; see Poole 1995b for modes/classification of pit infilling) of ordinary domestic or agricultural rubbish is not straightforward. CPR does not arrive with a convenient label informing the archaeobotanist of its origins. Instead, it is more typical to find archaeobotanical reports regularly listing a plethora of potential routes of entry for CPR into a particular deposit.

In the case of the Iron Age samples from A2, the majority (15 samples out of a total of 20 analysed) are from pit deposits, some of which were identified during excavation as being potential 'special' deposits because of the recovery of complete animal skeletons or complete/largely intact pottery vessels. The pits that have been selected for CPR analysis from Iron Age features, however, should first be reviewed in terms of their archaeobotanical assemblages before considering the context of their deposition.

Table 3.23 presents the critical data for these samples in summary. Obviously an offering can be quite small, it may not necessarily be pure but it would have to be charred in order to survive for this analysis. The relative number of charred plant remains per litre of sediment sampled can provide an indication of whether a deposit has a high or low density of plant remains. Approximately 10 seeds per litre of sediment sampled would represent a low density of plant remains, whereas over 100 seeds per litre would be considered a relatively high density. A sample with thousands of plant remains per litre of sediment would be approaching a pure charred deposit of that particular plant(s). The vast majority of Iron Age samples from the A2 are in fact of low to moderate density (typically <50 seeds per litre). Two samples from pit 12527/12700, however, sample 1208 (context 12702) above sample 1265 (context 12580), were exceptionally rich, with 158 and 2468 seeds per litre of sediment sampled respectively (see Table 3.23).

In addition to exploring which samples have a high density of plant remains, we can then consider whether a sample contains any unusual or exotic plant remains, or whether samples are highly dominated by a single class of material, such as cereal grain. In terms of the Iron Age A2 samples, the early Iron Age assemblage from pit 15015 did contain a single unusual or remarkable plant remain, a possible example of broomcorn millet, but this seed could not be securely identified as a cultivar, so is discussed separately (see below).

The pit samples consistently produced the usual mixtures of cereal grain, cereal chaff and crop weeds consistent with other results from the region. The relative proportions of these three plant categories, however, were highly variable (see Table 3.23). In general assemblages with >75% of identifications from a single plant category can be considered relatively pure. Only four samples from the Iron Age phases from the A2 could be viewed as 'pure' on this basis. Three early Iron Age samples were dominated by cereal grain and derived from pit 12527/12700, including sample 1208 (context 12702); sample 1263 (context 12578) and sample 1265 (context 12580). In addition, a middle/late Iron Age sample from pit 3676 (sample 369, context 3678: NZA 30118; 210–40 cal. BC) was not quantified, but produced abundant highly silicified (nearly ashed) wheat (*Triticum* spp.) awn and glume fragments.

Two samples (1208 and 1265) from early Iron Age pit 12527/12700 have already been identified as having a high density of CPR (see discussion above). The density of CPR decreases up the pit profile, from 2468 seeds identified per litre of sediment to 158 seeds per litre of sediment and then 1.4 seeds per litre of sediment sampled.

Sample 369 (context 3678) from the middle/late Iron Age pit 3676, is dominated by unquantified minute, silicified (burnt nearly to ash) indeterminate wheat (*Triticum* spp.) awn and glume fragments. This deposit was the lowest of three samples analysed from this pit, the other two of which contained moderate to low densities of highly mixed assemblages of charred cereal grain, cereal chaff and accompanying weed seeds (samples 370 and 371). Some experts have speculated that ashy deposits such as this may be used to intentionally line a pit, which possibly necessitated the burning of the previous contents of a pit before

storing a new crop (eg Monk 1991, 106; van der Veen and Jones 2006, 222). Certainly ash is a highly effective insecticide and is traditionally used to coat storage rooms/vessels (eg Hakbijl 2002). Nevertheless, ash also has a well-recognised use in ritual (eg Hill 1995, 110 citing Hodder 1987b). In pit 12527, a smaller deposit of ash (12581) was associated with a largely intact decorated pottery jar close to the base of the pit, strengthening the possible association of ash with deliberate placement of other materials. The detection of 'special deposition' of ash (by which I mean unidentifiable, highly silicified remains of plants) at archaeological sites remains problematic, especially if this is also taking place alongside the regular day-to-day deposition of spent fuel/burnt domestic debris into similar features. As Hill (1995) and Poole (1995b) suggest, it is most likely the confluence of a number of factors (eg location, horizontal/vetical position and associated finds) that best enables us to recognise a 'special deposit'.

This ashy material from pit 3676, as well as the low-levels of charred material recovered in the other two samples studied from this pit, is associated with a whole pot buried upside down, an iron linch pin, a triangular loomweight and a potin coin. These remains are considered by Allen and others on the project to suggest that this deposit is 'special' (*sensu* Hill 1995). However, an opening or closing offering (related to a protecting a stored crop or thanking for the safe storage of a crop) does not necessarily mean that the plant material (in this case charred debris) is related to these offerings. The ash could simply be the pit lining and, therefore, solely related to the functional use of the pit. Although it is understandable to engage in speculation of significance beyond functional interpretation, untangling other deeper meanings for charred plant remains is still highly problematic (eg Campbell 2000; Cunliffe 2000).

Out of all 20 Iron Age samples fully analysed, only four pit samples produced assemblages which could be considered notable either for their high density of charred plant remains or the purity of the deposit. The ash from sample 369 in pit 3676 has already been discussed. Pit 12527/12700 contained all of the other three, which in itself makes the contents of this pit out of the ordinary. Given the decreasing density of charred plant remains per litre from the analysed samples up the profile, it is conceivable that the upper two samples both derive from the reworking of the richest deposit (sample 1265 from context 12580) at the base. In this case pit 12527 would have contained only one sample with a high density of relatively pure cereal grain (in this case 2/3 emmer to 1/3 barley, on the basis of the identifiable grain recovered), rather than a sequence of such deposits. Whether containing only one or more separate deposits, rich assemblages of charred grain from Iron Age pits are relatively common, and are generally considered to be 'rubbish' rather than a ritual or 'special' deposit (eg van der Veen and Jones 2006; 2007). Campbell (2000, 53) notes, in her review of CPR associated with 'special deposits' at Danebury, that there is no discernable pattern—both grain-rich and chaff-rich assemblages have been recovered from such deposits suggesting it is the pattern of disposal that is critical. Van der Veen and Jones (2006, 222) argue that a predominance of grain-rich samples should be interpreted as an indicator for large-scale cereal processing, either as part of production of the crop (eg cereal crop processing stages) or as part of the consumption of the crop (eg food preparation). With only one exceptionally grain-rich pit (pit 12527/12700) from the A2 it is not possible to ascertain any pattern in the specific deposition of charred grain. Some (eg Campbell 2000, 53; van der Veen and Jones 2006, 424; 2007, 222) argue that charred grain is most likely produced by accident, probably occurring during crop processing. Such accidents should, however, be rare and arguably are likely to be rarer than ritual behaviour, which tends to have a cyclical dimension, whether seasonal, annual or over a longer period of time.

The function of pit 12527/12700 is also worth considering further. It was 0.66m deep and flat bottomed; the grain-rich lower deposits also contained structural fired clay with wattle impressions, and the upper fills contained numerous triangular oven bricks/loomweights (see Stansbie, this vol.). If correctly interpreted as oven bricks, this evidence would all be consistent with an oven structure, perhaps similar to the circular cereal drying floors known at Danebury (Poole pers. comm.). Whether the contents of this feature represents the dismantling of such a structure, or even its remains *in situ*, and whether this could have some sort of ritual dimension is, however, not proven on the basis of the charred plant remains alone.

The question as to why charred grain would be recovered from pits ostensibly used for the storage of harvested grain remains hotly debated (eg reviews by van der Veen and Jones 2006; 2007). Certainly pits as a form of storage in the Iron Age are more likely to be for the storage of surplus grain rather than seed corn (eg Fenton 1983; see also detailed discussion in van der Veen and Jones 2006, 223–5; 2007, 425–426). Van der Veen and Jones (2006, 222) suggest two prosaic explanations for the recovery of grain-rich deposits in pits: they are related to debris from day-to-day cereal processing events or the deliberate burning of pit linings (to clean pits prior to storing a new crop). Regardless of which explanation applies here, the recovery of charred grain and cereal chaff, sometimes in extremely high densities, in Iron Age deposits (especially pits) from the A2 widening scheme indicates 'the large-scale handling of cereal produce' (eg van der Veen and Jones 2006, 222) at the site.

In her review of pit function for the Danebury environs project, Campbell (2000, 53) argues that only one of the Danebury pits can be considered to

be stored grain burnt *in situ* (pit P1078). She (ibid.) believes most charred grain and/or chaff-rich assemblages represent disposal of accidentally burnt grain or intentionally burnt chaff (either as part of disposal, for fuel or for pit lining/cleaning). Although she considers the possibility of ritual disposal and explores any patterning in the deposition of grain/chaff into pits (specifically for Nettlebank Copse; ibid.), she ultimately concludes that the pattern of deposition most likely reflects proximity to areas where activities involving heat (ovens/parching floors) and cereal processing regularly take place. What is notable is that the distribution of different forms of crop processing by-products and products in well-sampled pit assemblages can occasionally provide an insight into areas of activities. At the Danebury Environs site of New Buildings, pit assemblages produced a pattern whereby pits along the boundary produced winnowing waste and those within the enclosure were dominated by glume bases, with Cunliffe (2000, 172) interpreting the latter 'as being derived from parching'.

Whether such large quantities of emmer/spelt glume bases would be highly charred during parching of emmer/spelt grain still encased within its spikelets, however, initially seems unlikely as one would not want to risk greatly altering the taste of the grain or, at worst, burning the grain. However, in Peña-Chocarro's (1996, 139) observation of traditional glume wheat harvesting methods in Asturias, Spain, she notes that there is a strong tradition of singeing harvested glume wheat crops prior to threshing, to remove awns. Notably this activity is carried out near the granaries and not in the field. In addition to the possibility of charring during parching/singeing, it is also probable that chaff-rich wastes from crop processing could be used as fuel for ovens/kilns. If the charred cereal grain, cereal chaff and weed/wild plants recovered from the A2 pits are largely re-deposited rubbish from large-scale crop processing, then we are dealing with an agricultural economy which has fully moved from subsistence to surplus (eg M Jones 1985). Although possibly less exciting than the ritual placement of deposits in pits, the regular disposal of crop processing waste into Iron Age features at A2 does speak to the relative prosperity of the Iron Age inhabitants of the area and has implications for their health and, indeed, social status. Surplus grain means healthier people (especially children), healthier livestock and can result in expressions of prosperity, such as feasting (eg van der Veen 2007).

What these crops were processed for remains unclear. Obvious explanations such as parching prior to milling/storage are highly likely. There is no direct evidence for malting in the Iron Age charred plant remains at the A2. Small quantities of detached indeterminate cereal grain embryos were frequently encountered in the Iron Age deposits, but they all were clearly undeveloped. It therefore seems likely that these separated from accompanying cereal grain through mechanical damage, probably during excavation or flotation.

Mixed assemblages and the possibility of Iron Age Maslin Crops

The Iron Age assemblages include mixtures of different cereal crops, often containing emmer (*Triticum dicoccum* Schübl.) and barley (*Hordeum* spp.) or emmer, spelt (*Triticum spelta* L.) and barley. In most cases the low density (see Table 3.23) of charred plant remains recovered suggests that there may be some mixing of deposits. The rich and relatively pure early Iron Age deposit from sample 1265 at the base of pit 12527/12700, however, which comprised 2/3rds emmer and 1/3rd barley, raises the possibility of the cultivation and harvesting of maslin (mixed) crops. Although several lenses of cereal remains were observed within this layer, allowing for the possibility that the sample resulted from a mixture of several different dumping events, the purity of the deposits throughout the profile of the pit suggests that this layer was deposited rapidly and was unadulterated.

If this assemblage does represent a single dumping event of either accidentally or intentionally charred cereal grain, then the relative proportions of emmer to barley is of interest. If barley had represented <10% of the assemblage, it could easily be considered a contaminant. To represent as much a 1/3 of the assemblage suggests that it may have been intentionally mixed with the emmer before processing or that it even could have been grown with the emmer as a maslin. Certainly, there are clear advantages to growing crops in a mixture to buffer against vagaries of weather or disease (eg G Jones 1995). However, just because two crops are found together does not necessarily mean that they were grown together. Moreover, van der Veen (1995) has argued that emmer and barley were not grown together elsewhere in England. It is alternatively possible that the two crops were deliberately mixed before charring, or after charring and before deposition.

The recovery of a panacoid caryopsis from early Iron Age pit 10515

One extremely tentative identification of possible broomcorn millet (cf. *Panicum miliaceum* L., known as common millet in Stace 1997, but broomcorn millet in Zohary and Hopf 2000) grain was made from sample 1051 (Pit 10515 Area K). This is a remarkable find for Britain, certainly Tomlinson and Hall (1996) in their survey of all archaeobotanical finds in the British Isles only record two other finds of *Panicum miliaceum* L in England—one from Roman London (2nd century AD cesspit) and one from medieval pit or watercourse from Kingston-upon-Hull, Humberside (post 1575 AD). However, Allan Hall (pers. comm.) has argued that there are problems even with these identifications and Stace (1997, 910) considers broomcorn millet a birdseed

alien. Thus, the consensus view is that millet was not a cultivar in Iron Age Britain and its recovery is extremely unusual. Unfortunately the caryopsis is so small that it cannot be directly dated itself. *Cecilioides acicula* L. snail shells, some of which were clearly modern, were noted in this deposit. This snail can burrow to great depth, so we cannot rule out the possibility that this small, charred grass caryopsis is intrusive and was later re-worked into this deposit.

Comparison with other archaeobotanical results from Kent

Two sites from the Channel Tunnel Rail Link excavations—Northumberland Bottom (Davis 2006a) and Tollgate (Davis 2006b)—are immediately adjacent to the excavations at A2 and, therefore, are directly comparable.

Tollgate has produced four interpretable early–middle Iron Age archaeobotanical assemblages, which have provided very similar results to those presented here. Like A2, at Tollgate emmer (*Triticum dicoccum* Schübl.) is the dominant cereal cultivated, but spelt (*Triticum spelta* L.) and barley (*Hordeum* spp.) were also recovered. Mid–late Iron Age deposits from Northumberland Bottom were fairly poor (<100 identifications) but barley, emmer and spelt were identified. The weed/wild flora from both Northumberland Bottom and Tollgate, is quite limited but is generally consistent with the results from A2.

In general the early–middle Iron Age pit deposits from Tollgate were relatively poor, but one sample from oven 503 produced abundant emmer grains. The direct association of this rich assemblage of cereal grain with an oven strengthens the interpretation of the assemblage from pit 12527 on the A2 as deriving from the destruction of an oven. Whether there was a ritual dimension to this activity, however, is not provable on the basis of the charred plant remains alone. Certainly, this suggests that rich assemblages of cereal grain are more likely to be associated with day-to-day crop processing on a large scale or else as accidents, as van der Veen and Jones (2006; 2007) have proposed.

Wood charcoal *by Dana Challinor*

The early Iron Age pit samples came from three different sites: K, C and G west to east, which are separated from one another by about 1km (Table 3.24). Sites C and G were on the chalk plateau while Site K was in a dry valley. The radiocarbon dates suggest that the pit groups mostly date from the same period (5th–4th century BC). Any differences in the local environment of the sites cannot be discerned from the charcoal, since there was only one sample from Site K, which was dominated by oak, and did not appear to contain any unusual or different taxa.

Some of the early Iron Age pits, in particular pit 9010 from Site G, were exceptionally rich in charcoal

Table 3.24: Results of the charcoal analysis from Iron Age contexts

	Phase	early Iron Age							
	Site	C	C	C	G	G	K		
	Feature type	pit	pit	pit	pit	pit	pit		
	Feature	5066	5110	5225	9010	9052	10515		
	Context	5062	5143	5402	5234	9077	9082	9063	10522
	Sample	515	536	597	567	922	928	911	1051
	% identified		37.5	12.5			25	3.13	
cf *Ulmus* sp.	elm			1					
Quercus sp.	oak	++	38h	68h	++	++	89h	64rhs	++++ h
Corylus avellana L.	hazel		15r	6		+	14r	3	+
Alnus/Corylus/ Carpinus	alder/hazel/ hornbeam		6		+ r	+++	13r		
cf *Rosa* sp.	rose								
Prunus spinosa L.	blackthorn			6r					
Prunus avium L.	wild cherry								
Prunus cf *avium*								3r	
Prunus sp.	cherry type	+							+
Maloideae	hawthorn group	+++	27r	2	+	+	14r	9r	
Cytisus/Ulex	broom/gorse								
Acer campestre L.	field maple		6r	22r	++	+		29r	
Fraxinus excelsior L.	ash						3		
Indeterminate bark							1		
Indeterminate			16	4			10r	3	
Total		++++	108	109	++++	++++	144	111	++++

r= roundwood; h=heartwood; + = <5; ++ = 5-25; +++ = 25-100; ++++ = >100

and had been extensively sampled. All of the samples were scanned and the results recorded in full in the archive, but Table 3.24 presents only a selection of the results showing variations in the assemblage compositions within features. In general, there were no significant variations; the samples with the greatest degree of difference came from pit 9010 where sample 928 was dominated by oak, but hazel/alder/hornbeam group dominated sample 922. Since the rest of the assemblages were similar in taxa presence and the character of the wood (ie some large trunkwood but mostly small roundwood), these variations are not believed to be significant.

Oak was abundant and represented the greatest taxon in terms of fragment count, but the samples were generally quite mixed, with an average of four taxa. Hazel forms an important component of the assemblages, and there is a strong presence of hedgerow type species, including hawthorn group, blackthorn/cherry and field maple. Blackthorn and ash are light demanding trees and, whilst they could have grown in woodland margins, the general picture indicates a reasonably cleared landscape. Many of the fragments came from small diameter roundwood, consistent with small branches or fallen deadwood. The presence of broom/gorse in pit 4741 indicates the use of heathland, and is the first evidence for the use of this resource at this site. The middle Iron Age date finds a parallel in a pit from Dartford (Druce 2011), which might, tentatively, suggest that increased clearance in this period led to the occasional use of heathland resources. Additionally, there was no broom/gorse charcoal found at the adjacent HS1 sites from samples earlier than the Iron Age.

The evidence from the charred plant remains (see Smith, this vol.) suggests the regular disposal of crop processing waste into features along the route of the A2. She concludes that there was large scale processing of cereals remains, leading to high densities of charred material, though of differing proportions, throughout the pits. The charcoal is consistent with the types of fuelwood generally used for domestic contexts and crop processing in Iron Age Kent (eg Barnett 2009; Aldritt 2006b). The diversity of taxa and the consistent use of small diameter roundwood indicate common gathering practices from a fairly limited range of locally available resources. The occasional pit entirely dominated by oak (such as 10515) may relate to a specific (though unknown) activity but, if domestic debris, it is not without parallels. The nearby site of Northumberland Bottom produced a mid–late Iron Age pit containing charcoal entirely composed of oak, including heartwood (Challinor 2006a).

Land snails b*y E Stafford*

For details of the approach to the study of land snails on this scheme, please refer to Chapter 2, Bronze Age Land Snail Analysis.

Site B

Middle Iron Age

Overall 20 samples deriving from six interventions of middle Iron Age date (ditch groups 3966, 4615, 4617 and 7194) were initially assessed (see Fig. 3.28). Shell preservation was generally poor to moderate from many of the features. Shell was entirely absent in samples from ditches 4168 and 4072 (Group 7194) and very poor in samples from 4238 and 4406 (Group 4617). Of the four samples retrieved from 4903 (Group 3966), only the uppermost sample, from fill 4905, produced a flot. Shell was quite abundant here but the assemblage was mixed (zonitids, *D. rotundatus*, *P. elegans*, Clausiliidae, *Vallonia* sp. helicids and *P. muscorum*).

The 13 samples retrieved from middle Iron Age ditch 4455 (Group 4615) were rather more productive. Overall molluscan preservation was good. The majority of the samples were dominated by shade-demanding species although occasional samples had more mixed assemblages. This feature is the same ditch analysed from the HS1 site at Northumberland Bottom (ditch 332 ARC WNB98) which produced similar assemblages. For this reason ditch 4455 was not subject to detailed analysis. The results of the HS1 analysis of ditch 332 are summarised below (Stafford 2006).

The profile from ditch 332 can be divided into four zones. Zone A spans the primary fills. In the basal fill (362, 1.30–1.40m), *P. elegans* was numerous. The remainder of the assemblage comprised mainly shade-demanding taxa, *D. rotundatus* and *Aegopinella nitidula* along with *Aegopinella pura* and *Oxychilus cellarius* with lesser quantities of Clausiliidae. Significant quantities of *Carychium tridentatum* were also noted. Open-country species were generally few in number, although *V. costata* was noted. Some elements of the assemblage may derive form soil falling into the ditch when it was cut and may thus reflect conditions prevailing immediately prior to construction. Other elements may reflect very local conditions prevailing in the base of the feature during the initial stages of infilling. *P. elegans*, as previously stated, is often abundant is areas of ground disturbance where it burrows into the loose soil and is often associated with woodland or scrub clearance. It could also have been attracted to the unstable nature of the feature edges. The shade-demanding elements of the assemblages are consistent with open woodland or scrub conditions. *V. costata*, although common in open country assemblages, does occur in small numbers in shaded habitats (Evans 1972). It is subsequently considered one of the first species to colonise recently cleared areas of ground. Between 1.30m and 1.20m shells were very sparse either due to poor recovery, or possibly because surfaces in the primary fill were unstable, dry and unvegetated, producing a hostile environment for snails.

In Zone B, between 1.20m and 0.80m (fill 258), the assemblages were dominated by shade-demanding taxa. *P. elegans* was noted as only a few worn apices which may indicate fewer disturbances within the ditch perhaps as the edges became stable and vegetated. Catholic species also appeared at this level including *Trichia hispida*, and *Cepaea* sp. *V. costata* continued in small quantities, otherwise open-country species were absent. The rapid colonisation of the ditch by shade-demanding taxa suggests refugia were present in the vicinity from which shade-loving species could colonise. The general paucity of open-country species apart from *V. costata* suggests any clearance associated for construction of the feature may have been localised or temporary, at least in the immediate surroundings.

In Zone C, above 0.80m (fills 256 and 249), *P. elegans* again became more abundant possibly indicating renewed disturbance in the vicinity. In Zone D, above 0.40m, shade-loving species are still present, particularly *C. tridentatum*, but open country species are more important with *V. costata* joined by *V. excentrica* and *Helicella itala.* Open-country species comprised approximately one third of the assemblages. The obligatory xerophile *T. cylindrica* is also present along with *P. muscorum* and *V. pygmaea.* These changes in the upper fills of the ditch may be associated with late Iron Age to Roman activity on the site.

Middle to late Iron Age

Sixty-one samples were assessed from 14 interventions of middle to late Iron Age date (including groups 3961, 4619, 4622, 4779, 7192, 7196, 7197, 7979, 7990, 7992, 7993). Overall shell preservation was quite variable ranging from absent or very poor to very good.

In the samples from the curvilinear enclosure in the western part of Site B shell was only moderately preserved in the uppermost fills of interventions; 4423 (Group 4619) and 4499 (Group 4622). Here, assemblages were dominated by open-country taxa, mainly *Vallonia* sp and *H. itala* with *P. muscorum* and *T. cylindrica*, along with the catholic *T hispida*. Preservation was better, however, in the incremental samples from the secondary fills of ditch 4502 (Group 3961). Assemblages appeared to be dominated by as similar range of open-country taxa. However more shade-demanding species, predominantly the zonitids, were noted. These may reflect the microenvironment and growth of shadier vegetation, such as long grass, growing within the feature.

In the central area of Site B three interventions produced useful assemblages. All were quite similar and dominated by quite a diverse range of shade-demanding species. These included, the three uppermost spits in 4803 (Group 7993), one spot sample from ditch 4675 (Group 7979) and four samples from ditch 4116 (Group 7992). This is similar to the results of the HS1 analysis immediately to the south (ARC WN98). Here, two contexts dated from the late Iron Age to early Roman period were examined (ditch fill 526, and pit fill 565) produced mixed assemblages, although shade-demanding species predominated. Most numerous were *A. pura* and other zonitids, with lesser quantities of *D. rotundatus, Ena obscura, Acanthinula .aculeata* and Clausiliidae. Open-country species, including xerophiles *T. cylindrica* and *V. excentrica,* however, made up an important component comprising about one third of the assemblages (Stafford 2006).

In the eastern area of Site B shell only was poorly to moderately preserved. In the uppermost fills of 4078 (Group 7196) assemblages were dominated by open-country taxa. Assemblages from the six samples from ditch 4122 (Group 7192), however, were quite mixed.

Site C

A single bulk sample was assessed from early Iron Age pit 5505 (see Fig. 3.8). Shell was moderately well-preserved but the assemblage quite mixed (e.g.

Table 3.25: Molluscan data from middle Iron Age ditch 6944 (cut 6375), Site D

Sample		1980	1982
Context		6376	6488
Depth		0.20-0.30	0.40-0.50
Sediment processed (kg)		2	2
Taxa	Habitat		
Pomatias elegans (Müller)	S-D	5	2
Carychium tridentatum (Risso)	S-D	1	2
Cochlicopa sp.	C	1	
Truncatellina cylindrica (Ferussac)	O-C	22	1
Vertigo pygmaea (Draparnaud)	O-C	3	
Vallonia costata (Müller)	O-C	107	
Vallonia excentrica (Sterki)	O-C	163	
Vallonia sp.	O-C	46	
Acanthinula aculeata (Müller)	S-D	2	2
Punctum pygmaea (Draparnaud)	C	14	1
Discus rotundatus (Müller)	S-D	10	1
Vitrina pellucida (Müller)	C	5	1
Vitrea sp.	S-D	8	2
Aegopinella pura (Alder)	S-D	1	
Aegopinella nitidula (Draparnaud)	S-D	6	1
Oxychilus cellarius (Müller)	S-D	1	1
Clausilia bidentata (Ström)	S-D	2	1
Helicella itala (Linné)	O-C	19	14
Trichia hispida (Linné)	C	6	5
Cepaea/Arianta sp.	C	3	1
Monacha cantiana	C	1	
Limicidae			
% Shade-demanding		8.45	34.29
% Catholic		6.81	22.86
% Open-country		84.51	42.86
No. individuals/sample		426	35
No. individuals/kg		213	18
Shannon Wiener Index (H')		1.93	2.11
Brillouin Index (HB)		1.86	1.70
H'-HB Index		0.08	0.41

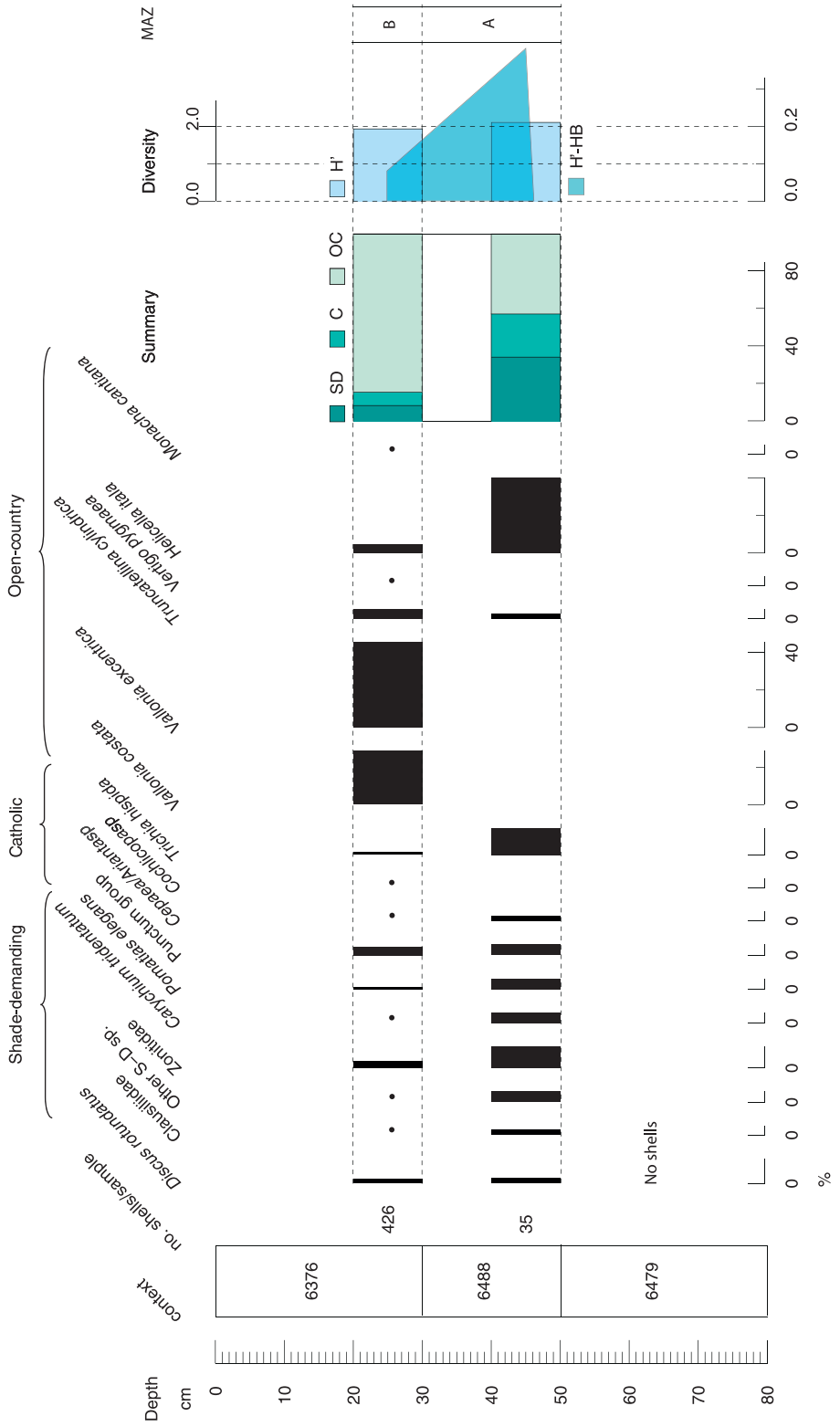


Fig. 3.82 Percentage molluscan diagram from middle Iron Age ditch 6944 (cut 6375), Site D

many *Vallonia* sp. *P. elegans*, *C. tridentatum*, *D. rotundatus*, zonitids, *A. aculeata*, *Lauria cylindrica*, Clausillidae, occasional *T. cylindrica*).

Site D

Group 6944 comprise part of a segmented ditch on Site D dated to the middle Iron Age (see Fig. 3.35). A single profile from cut 6375 was sampled for molluscs. Assessment of seven samples indicated shell was variably preserved. No shell was preserved in the primary fill 6479 which comprised redeposited chalk rubble. Shell was slightly better preserved in the middle fill 6488 and well preserved in the upper fill 6376. Two samples from 6488 and 6376 were therefore analysed in detail. The mollusc counts from the sampled fill sequence are presented in Table 3.25 and the histogram in Figure 3.82.

The sample from fill 6488 produced only 35 shells of mixed ecology. The shade-demanding component was quite diverse comprising a range of species and may represent a residual component from a previous landscape phase. The open country component on the other hand was confined to two species, *T. cylindrica* and *H. itala*, indicative of short-turfed grassland.

In the sample from the upper fill 6376 shell was much more abundant at 426 individuals. The environmental signal here is very clear. Open-country species dominate at 85%. *V. excentrica* is numerous, followed by *V.costata. T. cylindrica*, *V pygmaea* and *H. itala* are also present. It appears that the environment in the vicinity of the feature during the infilling of 6376 was very open, most likely established short-turfed grazed grassland. Shade-demanding and catholic taxa are present in insignificant numbers which may suggest the ditch itself, which by this time was much shallower, was also being grazed.

Site G

Ditch Group 9609, dated to the early Iron Age, marked the eastern extent of archaeological activity on Site G (see Fig. 3.16). Cut 9478 was the best preserved, surviving to a depth of at 0.45m and 0.60m wide. Pottery, flint, bone, shell and burnt stone were recovered mostly from upper fill 9479. Four mollusc samples were retrieved from this profile. The mollusc data is presented in Table 3.26 and the histogram in Figure 3.83. Shell was only moderately preserved in this ditch profile ranging from 13 to 94 individuals. The composition of the assemblages is

Table 3.26: Molluscan data from early Iron Age ditch 9609 (cut 9478), Site G

Sample		1815	1816	1817	1818
Context		9479	9480	9481	9481
Depth		0.00-0.13	0.13-0.26	0.26-0.36	0.36-0.45
Sediment processed (kg)		2	2	2	2
Taxa	Habitat				
Carychium tridentatum (Risso)	S-D	3	2		
Cochlicopa sp.	C	2	2		
Vertigo pygmaea (Draparnaud)	O-C				2
Vallonia costata (Müller)	O-C	2	1		
Vallonia excentrica (Sterki)	O-C	6	30	43	7
Punctum pygmaea (Draparnaud)	C	3	10	12	
Vitrina pellucida (Müller)	C			4	
Vitrea sp.	S-D	1		2	
Nesovitrea hammonis (Ström)	C		1	1	
Aegopinella pura (Alder)	S-D	2	1		
Aegopinella nitidula (Draparnaud)	S-D	6	5	3	
Oxychilus cellarius (Müller)	S-D	5	9	2	
Clausilia bidentata (Ström)	S-D			1	
Helicella itala (Linné)	O-C	13	8	14	3
Trichia hispida (Linné)	C	5	4	10	1
Cepaea/Arianta sp.	C			1	
Limicidae	C			1	
% Shade-demanding		35.42	23.29	8.51	
% Catholic		20.83	23.29	30.85	
% Open-country		43.75	53.42	60.64	
No. individuals/sample		48	73	94	13
No. individuals/kg		24	37	47	7
Shannon Wiener Index (H')		2.17	1.85	1.74	
Brillouin Index (HB)		1.87	1.65	1.58	
H'-HB Index		0.3	0.2	0.17	

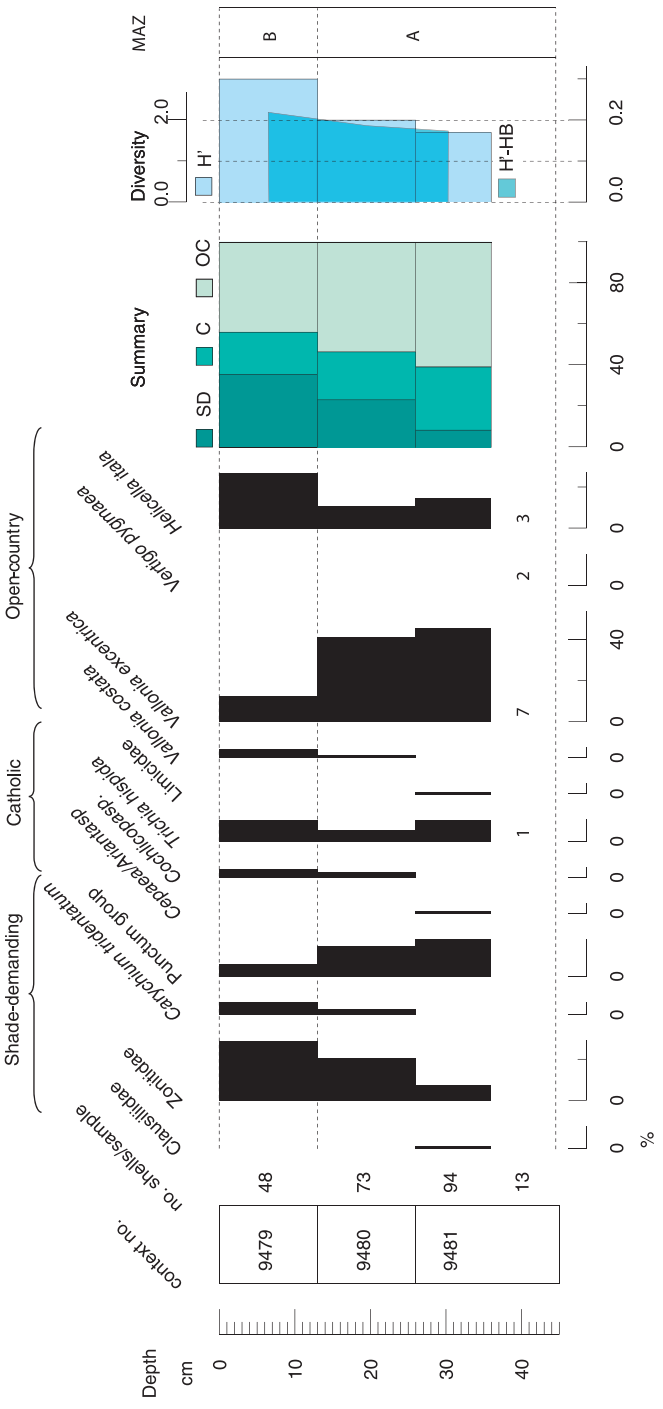


Fig. 3.83 Percentage molluscan diagram from early Iron Age ditch 9609 (cut 9478), Site G

quite similar with only minor differences towards the top of the profile. Two molluscan assemblage zones have been identified from ditch 9478.

In Zone A (0.13–0.45m) the basal sample from fill 9481 produced too few shells for interpretation. Above 36cm shell was a little more abundant, at 73 and 94 shells per sample. The assemblages are dominated by open country taxa at 50–60%. Most numerous was *V. excentrica*, although *H. itala* was also significant. *V. costata* and *V. pygmaea* were present in low numbers. Catholic species made up to *c* 20–30% of the assemblages, mainly the Punctum group and *T. hispida.* Shade-demanding taxa accounted for 9% increasing up-profile to 23%, mainly the zonitids and to a lesser extent *C. tridentatum.* The composition of these assemblages suggests this feature was constructed in an open environment of probably short-turfed but not intensively grazed grassland. The catholic and shade-demanding components were probably attracted to the microenvironment of the feature and are consistent with the development of long grass within the base of the ditch as it infilled.

In Zone B (0.00–0.13m) the uppermost fill 9479 does show some change. There is a notable reduction in shell abundance, a decrease in the proportion of *V. excentrica* and a corresponding increase in *Helicella itala* and the zonitids. These changes are difficult to interpret, particularly given the low numbers of shell. Field records suggest this artefact rich context may represent a deliberate dump of material, so that these slight difference may be of little consequence for the overall environmental interpretation.

Discussion

Data for the early and middle Iron Age comes from a number of sources. The single early Iron Age ditch sampled on Site G (9609) east of the Tollgate dry valley indicated a environment of probably short-turfed but not intensively grazed grassland. Lush vegetation such as long grass and herbs probably grew within the base of the ditch as it infilled.

West of the Tollgate dry valley, assemblages from the middle Iron Age ditch 4455/HS1332 on Site B argue for open woodland or scrub cover, and the rapid colonisation by shade-demanding taxa suggests that any clearance associated with the construction of the feature may have been short-lived. Similar refugia for these species must have been present close by from which the species could spread. There is no real evidence for large established tracts of short grassland or arable in the immediate vicinity of this feature during the initial infilling; had this been present a more significant open-country element would have been expected alongside the shade-demanding snail species. Such mixed assemblages do not occur until later in the sequence. In contrast on Site C the uppers fills of ditches 4583 and 5297 indicate disturbance and more open conditions than in the Bronze Age. On Site D, assemblages from the middle Iron Age ditch 6375 indicate an open environment, most likely established short-turfed grazed grassland, and it is possible the feature itself was being grazed by livestock.

Radiocarbon dating *by Rebecca Nicholson and Tim Allen*

A series of 19 samples was submitted for radiocarbon dating from features in an attempt to define the nature and duration of Iron Age settlement across the scheme more closely (Table 3.27, Fig. 3.84). Within the Iron Age there is, however, an unfortunate radiocarbon plateau from around 800–400 cal. BC. As a result, while it would have been useful to be able to use radiocarbon dating to provide very close dating for the ceramics, this was considered unfeasible. Samples were usually selected for dating because the features could not be dated reliably by other means, or because the features were thought likely to be later Iron Age.

Dating and sequencing four-post structures

Four-post structures occur widely along the scheme, but the postholes rarely contain sufficient artefactual evidence for secure dating. These structures are found both on later Bronze Age and Iron Age sites, and are traditionally interpreted as raised granaries or storehouses. H Gent, who reviewed the evidence for their use as granaries (Gent 1983), believed that the case was strengthened for some examples by the discovery of charred cereal grain in quantity in one or more postholes.

On the A2, four-post structures are generally clustered and the intention was to date one or more structures in each group, to assist in establishing the range of dates of these structures for each group, and across the project as a whole. Charred grain from one four-post structure was dated to the late Bronze Age (see Chapter 2).

Charred grain from four-post structure 3772, at the eastern end of Site B

A single four-poster from Site B produced several cereal grains. A charred wheat grain (*Triticum dicoccum/spelta*) from posthole 3734 gave an early Iron Age date (NZA 32280: 760–390 cal BC) demonstrating that there was some early Iron Age activity in the area of the later nucleated settlement.

Radiocarbon dates from four post structures from the eastern end of Site C also demonstrated early Iron Age activity, while others from Site B suggest early–middle or middle Iron Age occupation (see below).

Charred grain from pits and four-post structures at the east end of Site C

Two large circular pits (5130/5242 and 5110/5219) in Site C contained large assemblages of briquetage, in addition to large pottery assemblages. In pit 5110, solitary or small groups of cereal grains were recov-

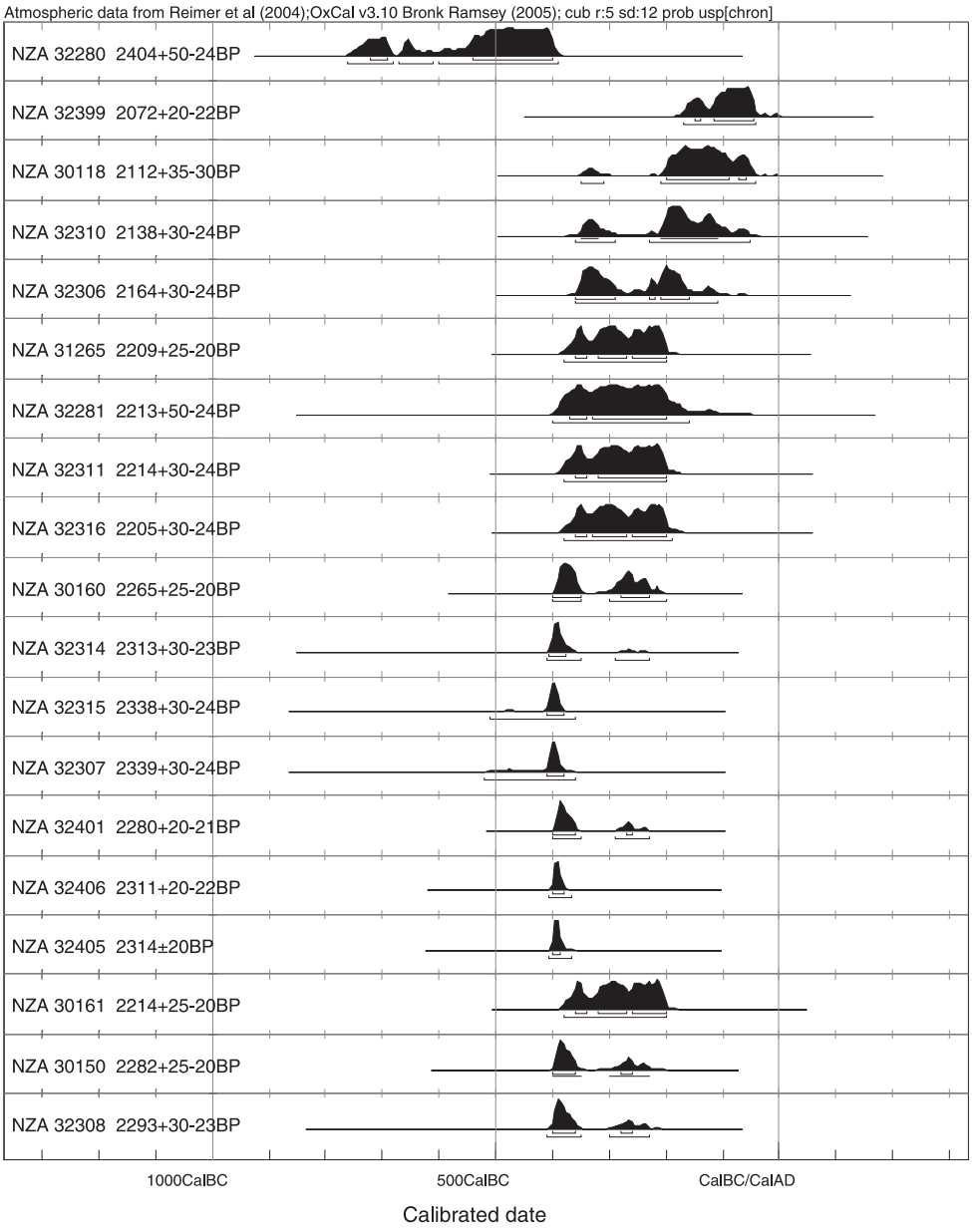


Fig. 3.84 Radiocarbon distributions for the Iron Age features

ered from eight fills near to the base and included emmer wheat, indeterminate wheat, barley and oats. A single wheat (*Triticum* sp.) grain was dated to 510–360 cal BC (NZA 32315), with a 67% chance of lying between 420 and 380 cal BC, while a similar date was obtained from a single wheat grain (*Triticum* sp.) in pit 5130 (NZA 32314). Both dates suggest occupation in the very late 5th or earlier 4th century BC.

A charred hazelnut shell from the fill of posthole 7207 in four-post structure 7327 produced a date of 520–360 cal BC (NZA 32307), very similar to that from the pits. It is thus likely that the pits and at least one four-poster belong to a single phase of occupation.

Four-post structure 7316 was, however, later. A single charred wheat grain from fill 5986 from posthole 5987 provided a date of 380–190 cal BC (NZA 32316), with a 67% chance that the date lies after 330 cal BC.

Dating of other Iron Age features

Animal and human bone from Pits 9010 and 9052 in Site G

These two large and deep pits contain clear evidence of structured deposition, and included several complete or partial animal skeletons. A fragment of human skull from 9077 within pit

Table 3.27: Iron Age radiocarbon dates

Laboratory number	*C14 Age BP*	*Error*	*Site*	*Sample/ small find no.*	*Context No.*	*Feature*	*Material*	*$\delta^{13}C$ (‰)*	*Calendrical date cal. BC/AD (95.4% unless stated) Calibrated using Oxcal 3.10*
NZA 32280	2404	50	B	Sample 367	3734	3772	Charred emmer/spelt grain *(Triticum dicoccum/spelta)* x1	-24	760 - 680 cal. BC (16.6%); 670- 610 cal. BC (7.4%); 600- 390 cal. BC (71.4%)
NZA 32399	2072	20	B		3401	4969	Mammal bone-pig frontal	-21.7	170 - 40 cal. BC
NZA 30118	2112	35	B	Sample 369	3678	3676	Charred seed *(Galium aparine)*	-30.3	350-310 cal. BC (4.2%); 210 - 40 cal. BC (91.2%)
NZA 32310	2138	30	B	Sample 1466	7889	7964	Charred wheat grain (*Triticum* sp.) x1	-23.5	360- 290 cal.BC (17.9%); 230- 50 cal. BC (77.5%)
NZA 32306	2164	30	B	Sample 785	3805	3892	charred grain (*Triticum* sp.) x1	-24.2	360 - 110 cal. BC
NZA 31265	2209	25	B	Sample 487	3454	3400	Cremated human bone	-19.9	380- 200 cal. BC
NZA 32281	2213	50	B	Sample 494	4975	4969	Charred wheat grain (*Triticum* sp.) x1	-23.7	400-160 cal. BC
NZA 32311	2214	30	B	Sample 1464	7872	3875	Charred grain (*Avena/Bromus* sp.) caryopsis	-23.7	380-200 cal. BC
NZA 32316	2205	30	C	Sample 1546	5986	7316	Charred wheat grain (*Triticum* sp.) x1	-23.5	380 - 190 cal. BC
NZA 30160	2265	25	C	Skeleton 5129	5129	5064	Human bone - tibia	-20.3	400- 350 cal. BC (47.1%); 300BC-200 cal. BC (48.3%)
NZA 32314	2313	30	C	Sample 1501	5406	5130	Charred wheat grain (*Triticum* sp.) x1	-22.8	410 - 350 cal. BC (84.5%); 290 - 230 cal. BC (10.9%)
NZA 32315	2338	30	C	Sample 1509	5423	5110	Charred wheat grain (*Triticum* sp.) x1	-24	510 - 360 cal. BC
NZA 32307	2339	30	C	Sample 812	7802	7237	Charred hazel (*Corylus avellana*) nutshell	-23.9	520 - 360 cal. BC
NZA 32401	2280	20	G		9109	9010	Mammal bone - 3x piglet phalanges	-21.4	400 - 350 cal. BC (71.6%); 290 - 230 cal. BC (23.8%)
NZA 32406	2311	20	G		9083	9052	Mammal bone -juvenile deer rib frags	-22.2	405 - 365 cal. BC
NZA 32405	2314	20	G		9077	9010	Human bone - skull frag	-19.7	405 - 365 cal. BC
NZA 30161	2214	25	L	Skeleton 12744		12742	Human bone - tibia shaft frag	-20	380 - 200 cal. BC
NZA 30150	2282	25	L	Skeleton 12986		12987	Human bone	-19.7	400 - 350 cal. BC (65.5%); 300 - 230 cal. BC (29.9%)
NZA 32308	2293	30	L	Sample 1210	12713	12527/ 12700	Charred emmer wheat grain *(Triticum dicoccum)* x1	-22.9	410 - 350 cal. BC (68.9%); 300BC - 230 cal. BC (26.5%)

9010 gave a date of 405–365 cal BC (NZA 32405) and articulated phalanges from piglet 9109 gave a date of 400–350 cal BC (71.6%) or 290–230 cal BC (23.8%) (NZA 32401). Articulating ribs from a juvenile red deer from pit 9052 were similarly dated to 405–365 cal BC (NZA 32406). All of these dates indicate activity probably in the first half of the 4th century BC.

Pit 12527/12700 in Site L

This pit has pottery of early Iron Age character and was the circular storage pit with the clearest evidence of structured deposition on Site L. Fills included successive layers of charred grain, whole pots and a layer of animal bone. The pottery suggests a date towards the end of the early Iron Age and a wheat grain (*Triticum dicoccum*) from basal grain-rich layer 12713 produced a date of the 4th or 3rd century BC (NZA 32308). This pit thus appears to be of similar age to those in Sites C and G.

Dates in the 4th century BC for assemblages of early Iron Age character have also been obtained for pits excavated along the High Speed One (Allen 2006). This seems to indicate widespread activity occurring within a relatively short period of time, spanning the end of the 5th century and the 4th century BC.

Cremation 3454 in Site B, accompanied by sherds of an early/middle Iron Age bowl

Cremation deposit 3454 was found in the middle fills of a large quarry pit. Much of a highly fired pottery vessel described as transitional early–middle Iron Age was found in association with the cremated remains, but since early and middle Iron Age cremations are extremely rare the date needed to be tested in case the cremation was earlier. At 380–200 cal BC (NZA 31265) the cremation proved to be of similar date to the pot, so pot and burial can be considered to belong together. This therefore provides important evidence for cremation rites at this period in south-east England.

Extended inhumation 5129 in Site C

The burial lay within an unusual large sub-rectangular pit. A fragment of human tibia shaft yielded a middle Iron Age date, of 400–200 cal BC (NZA 30160). The inhumation and cremations in this settlement therefore appear to be broadly contemporary, suggesting that parallel burial rites were practised during the early–middle Iron Age.

Seeds from four post-structures at the east end of Site B

Of the four-poster structures dated from Site B, two suggest occupation in the early–middle or middle Iron Age and overlap with the date for cremation 3454. Oat or brome grass caryopses (*Avena/Bromus* sp.) from posthole 7874 (group 7875) were dated to 380–200 cal. BC (NZA 32311) while a wheat grain (*Triticum* sp.) from posthole 3806 (group 3892) was dated to 360–110 cal BC (NZA 32306).

Seeds from four-post structures at the west end of Site B

A group of four-post structures lies west of the cobbled Iron Age trackway, but these are largely undated. The only example with a reasonable quantity of charred plant remains was posthole 7888 from group 7964; a wheat grain (*Triticum* sp.) provided a date of 360–290 cal BC (17.9%) or 230–50BC (77.5%) (NZA 32310) for this feature, ie in the middle or middle–late Iron Age.

Sample 369 from layer 3677 in pit 3676, Site B

This pit had an iron linch pin from a cart or chariot placed, together with a complete pot and a potin coin, near to the base of the pit. Such linch pins are rare, especially on settlement sites, and are not well-dated. The pot is a straight sided vessel, possibly a saucepan pot and so provisionally dated to the middle Iron Age (350–50 BC). A middle or middle–late Iron Age date was confirmed by the dating of a single seed of cleavers (*Galium aparine*) from this feature (NZA 30118: 210–40 cal BC, 91.2%).

Animal Bone from pit 4969 in Site B

This deep circular pit contained a potin coin and two largely complete pots, as well as abundant charred plant remains and a partial piglet skeleton. A piglet frontal bone from layer 3401, which also contained the coin, was dated 170–40 cal BC (NZA 32399). A wheat grain from layer 4975, higher up in the fill sequence, gave an earlier date of 400–160 cal BC (NZA 32281) and may be residual.

Crouched human skeleton 12744 in a purpose-dug grave just beyond ditch 13161 in Site L

This unaccompanied inhumation was situated at the very end of the major boundary ditch, and adjacent to the Roman inhumation cemetery. A fragment of human tibia shaft was submitted for dating, and the result indicated a middle Iron Age date of 380–200 cal BC (NZA 30161).

Human skeleton 12986 in the cemetery, Site L

Partial human skeleton 12986 in ditch 13161 in Site L was covered by dumped layers that included a little pottery dated to the later 1st century AD. However, a fragment of human bone was dated to the middle Iron Age (NZA 30150: 400–350 cal BC or 300–230 cal BC) which is much earlier than expected.

HIGH STATUS LATE IRON AGE BURIALS IN SITE B

Two highly significant cremation burials (4298 and 4313) associated with a rich assortment of metal-work and pottery were revealed during excavations in Site B. They were dated to the late Iron Age and lay within the middle Iron Age 'banjo' enclosure, to the west of a series of contemporary pits and enclosures (see Fig. 3.38)

The circular pits containing the high status Iron Age graves (4298 and 4313) both contained two pedestal jars, of which truncation had removed all but the base and lowest part of the body (Figs 3.85 and 3.88). The pottery and metal grave goods therefore became visible very shortly after excavation began, and it was immediately clear that the graves had been severely truncated by ploughing. Due to the known risk of theft by illegal metal-detecting, these burials were excavated as quickly as possible. The approach adopted was to carry out sufficient excavation to determine the approximate layout of objects within the grave, plan and photograph the contents *in situ*, remove large objects such as pottery vessels to clarify the extent of other remains, and to block-lift as much of the remaining grave fill as possible for excavation under laboratory conditions. The further excavation was carried out at the conservator's laboratory following X-ray of the soil blocks by archaeologists with osteological training in the recording of cremated human remains.

In both graves half-sections were laid out across the grave and one half was excavated first, and in both cases the majority of the pots were included in the first half. Burial 4298 contained four pottery vessels, the pedestal jars being accompanied by two necked bowls, which survived largely intact (Fig. 3.85). In the case of grave 4313 there were only two vessels, both pedestal jars (Fig. 3.88). All of the pots were fully exposed, and were planned and photographed. Due to the small size of the graves, and the fragility of the pots, these were then lifted to allow excavation of the remainder of the graves to proceed.

Grave 4298 (Fig. 3.85)

Grave 4298 was the more northerly of the two high status burials and was c 0.8m diameter and 0.22m deep. A group of four copper-alloy brooches in pairs was placed just south of the centre of the grave, surrounded by the cremated bone. Two of the brooches were Knotenfibeln or boss-on-bow brass brooches joined by a very fine chain, the others,

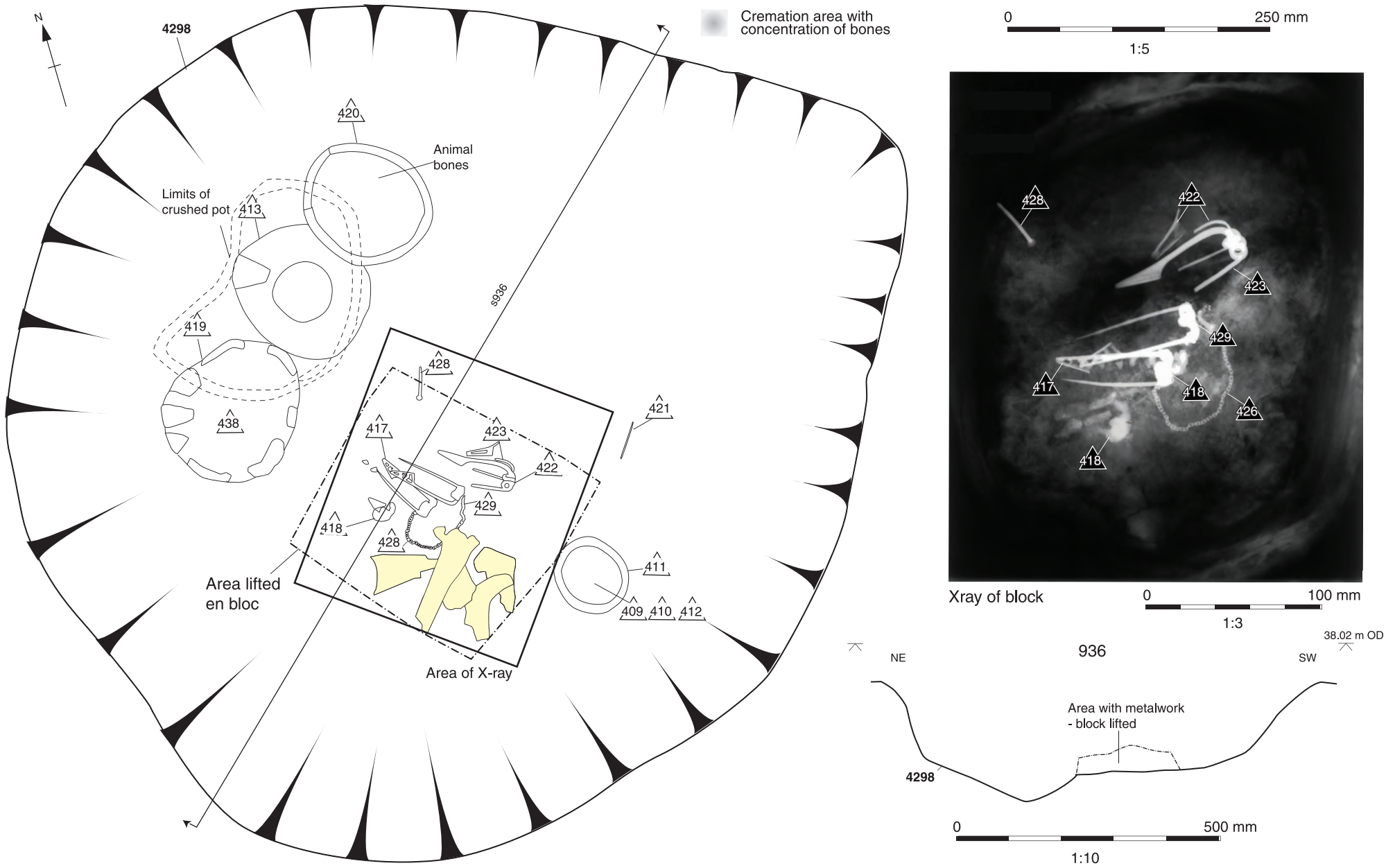


Fig. 3.85 Plan and profile of grave 4298 including X-ray of brooches

Plate 3.32 Late Iron Age cremation burial 4298 during excavation, looking north-west

which lay just to the north-east, comprised a simple bow brooch and a smaller La Tène III brooch. Both of the latter were made of leaded bronze. Fragments of two further iron brooches lay adjacent to the Knotenfibeln on the south-west, making six brooches in all. The cremation, which consisted of only 284g of bone, lay over and around the brooches. Traces of wood were also present, possibly indicating that these objects had been contained in a box or overlain by a wooden board.

The cremation was surrounded by four ceramic vessels, one on the south-east and three on the north-west, running in a line NNE-SSW. The two large pedestal-based jars (sfs 413 and 411) were placed on either side of the cremated bone, and the smaller vessels (sfs 420 and 419) were placed north and south of vessel sf 413 on the west (Plate 3.32). There was only one grave fill (4299), a friable mid-brown silty loam, but the fills of the pottery vessels were each given a separate number. Three short lengths of copper-alloy strip bent at the ends (sfs 409, 410 and 412) were found in one of the pedestal jars (sf 411), and were presumably attached to other organic objects, while a circular disc with a perforation off-centre and four equally-spaced nicks in the edge (sf 438) was found within one of the bowls (sf 419) on the west side.

Pottery from grave 4298 (Fig. 3.86) *by Peter Couldrey and Lisa Brown*

The vessels accompanying this burial are distinctive late Iron Age 'Belgic' forms in grog-tempered fabrics. A tall, unornamented jar (400815 sf 411) and another with a narrow, cordoned neck (400813 sf 413), both with quoit-shaped bases, were types frequently placed in burials during the 1st century BC. The quoit-shaped bases of the pedestal jars resemble fragmentary examples, also grog-tempered, from pit 4023 and ditch 4029, and are likely to be broadly contemporary. The plain jar form had a currency up to the immediate pre-conquest period, but the cordoned jar form is probably no later than AD 20. Both correspond to Thompson's Type A1 (1982, 35). The necked bowl with single cordon (400819 sf 420) was a widely circulated form with a long currency in south-east England, frequently grog-tempered and hand-made in Kent, with a date range of the last quarter of the 1st century BC to the post-conquest period (Thompson Type E3–1, 391–2). The carinated wide-mouthed cup/bowl with multiple cordons (400816 sf 419), however, is a type that does not often occur in post-conquest contexts. This form is related to the Gallo-Belgic form Cam. 51, for which an early dated provenence is the late 1st century BC at Braughing (Thompson Type E1–2, 357–8). It commonly occurs in settlement as well as burial contexts.

400813 (4349) sf 413 Cordoned pedestal jar with quoit-shaped base. Fabric G56, burnished.
400815 (4352) sf 411 Pedestal jar with quoit-shaped base. Fabric G56, burnished.
400816 (4351) sf 419 Carinated cup/bowl with footring, Thompson type E. Fabric G85, burnished.
400819 (4355) sf 420 Cordoned necked cup/bowl with everted rim. Fabric G41, burnished.

Metal objects from grave 4298 (Fig. 3.87) *by Ian R Scott*

The metalwork comprises a pair of Knotenfibeln (sfs 429 and 417; Fig. 3.87 nos 1–2) joined by a copper-alloy chain (sf 426; Fig. 3.87 no. 3), a La Tène III brooch (sf 422; Fig. 3.87 no. 4) and a simple sprung

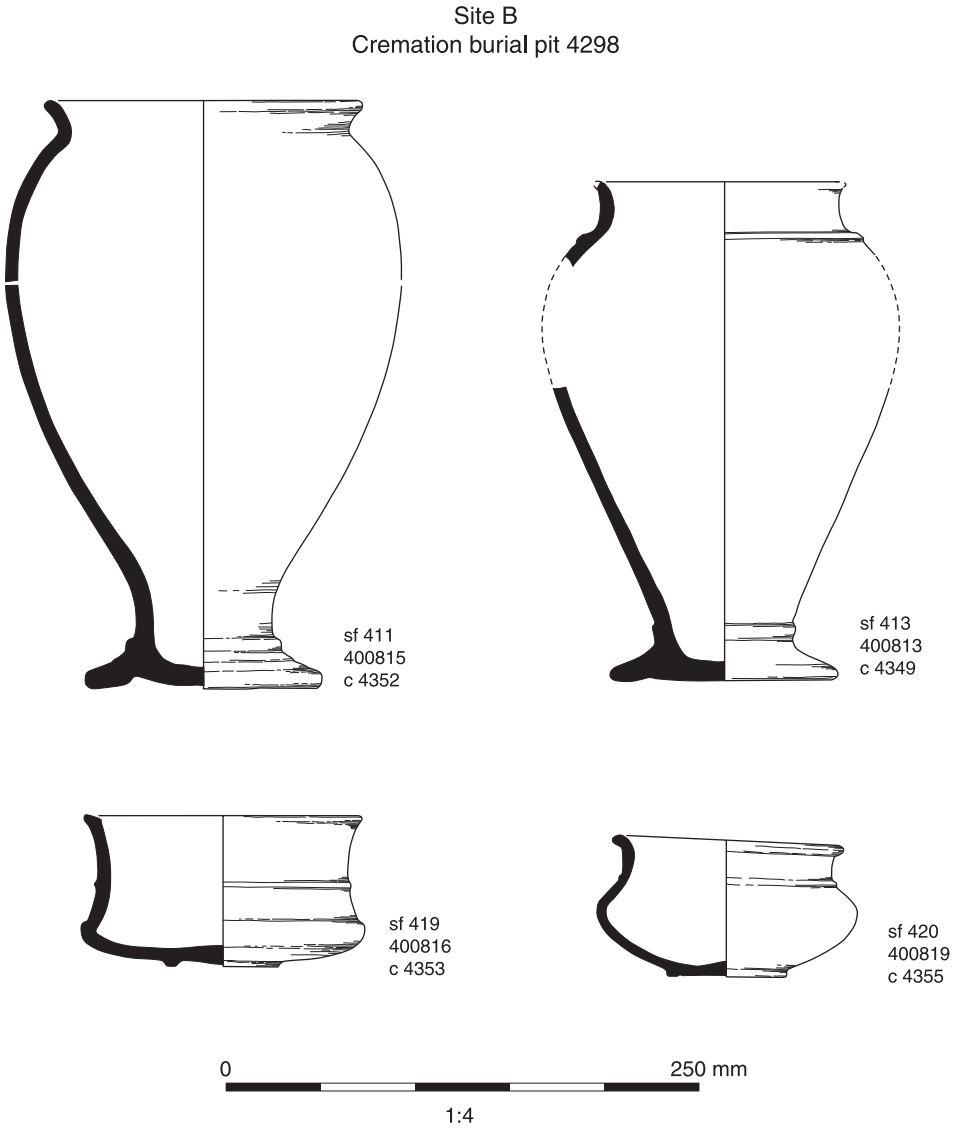


Fig. 3.86 Illustrations of the ceramic vessels in grave 4298

brooch with internal chord (sf 423; Fig. 3.87 no. 5). The latter objects are dissimilar but may have formed a second pair of brooches. Both of these were broken, but the end of the pin of the simple sprung brooch, sf 421, was found lying further north-east. The tip of the other brooch pin is missing.

There are hints from the x-ray plates that there was a third pair of simple iron sprung brooches now almost completely mineralised. Fragments of only one brooch were recovered by hand excavation (sf 418). Further fragments were recovered through sieving of soil samples, but are not readily identifiable (Sample 433). Three small fragments of small copper-alloy clips or clamps (sfs 409, 410, 412; Fig. 3.87, nos 7–9) were found in a pedestal jar (sf 411), and a notched thin circular plate (sf 438; Fig. 3.87 no. 10) in the bottom of one of the cup/bowls (sf 419). The function of the latter object is not clear. None of these objects appears to have been burnt, so it is unlikely that they come from objects burnt on the pyre.

1–2 Two **Knotenfibeln**, with sprung pins and internal chords. They are very well-preserved, and were found with a linking chain (sf 428) now detached. The bow of each brooch is quite plain but with knobs and mouldings below the head. The foot-plate of each brooch is similarly decorated with cut-outs and tooled borders. The two brooches are very similar. Both brooches have bands formed from thin sheet wrapped around their springs. On sf 417 the strip forms a plain band, but on sf 429 the ends of the strip have pierced loops to which the chain was presumably linked. L: sf 429: 73mm; sf 417: 74mm; Context 4299, sfs 417, 429, grave 4298.

3 Two lengths of what was originally a single chain, one of 34 links, and the second of *c* 40 links. The chain is formed from simple butt-jointed circular or perhaps slightly oval, links. The smaller links are *c* 3mm in diameter. L: 78mm & 75mm. Context 4299, sf 428, Grave 4298.

These brooches are particularly fine examples of Knotenfibeln or 'boss-on-bow' brooches. A good

parallel for a pair of copper alloy Knotenfibeln joined by a chain comes from Argentomagus, St Marcel, Indre (Albert and Fauduet 1976, 57 & pl iv, no 20). The number of brooches of this type from Britain is comparatively small, and Stead has argued (1976, 402) that they are a good type fossil for the Welwyn Phase of the Aylesford Culture. There are two incomplete silver brooches forming a pair together with a copper alloy brooch from the Aylesford Y burial (ibid., fig 1 no 1 & fig. 4, no 1). There are a pair of copper alloy brooches from Swarling (ibid. 403 & fig. 2, no. 2). Other similar brooches were found at Mill Hill, Deal, at Folkestone, at Faversham and at Borough Green, all in Kent, and at Great Chesterford, Essex (ibid. 404, 406–7, fig. 1, nos 3–4; fig. 2, nos 2–6; fig. 3, nos 1–3).

Fig. 3.87 Copper alloy brooches and other objects from grave 4298.

Further afield there are examples from Hitchin, Herts (ibid., 407–8, fig. 3, no. 4) and from Guildern Morden, Cambs. (ibid, 408, fig. 3, no. 5). The Knotenfibel from pit CF7 at Stanway are dated to the period 60–25/20 BC (Crummy *et al.* 2007, 14–15).

A number of the Knotenfibeln from Britain are made of silver. These include two examples from Aylesford Y, two brooches from Faversham, and four brooches forming two pairs from Great Chesterford. More recent discoveries include an incomplete silver Knotenfibel from Shillington, Beds (*Treasure Report 2000*, 15–6 & fig. 7) and a complete silver example from Malden Hall Farm, Essex (Lavender 1991, 205–6, & fig. 4.1). Another silver example was found as part of the le Catillon hoard on Jersey (Fitzpatrick and Megaw 1987; 1989, fig. 1, no. 2).

A pair of gold Knotenfibeln joined by a 'loop in loop' chain formed part of the recently published late Iron Age hoard from near Winchester (Hill *et al.* 2004, 12–3, figs 1 & 10, a) and were found with a second pair of gold fibulae of Gallic la Tène III type. A closely comparable pair of Knotenfibeln again with a 'loop in loop' chain has been found at Corent, Puy de Dome (Poux *et al.* 2007).

The quality of the Grave 4298 brooches is very marked and sets them apart the majority of copper alloy Knotenfibeln from Britain. They should perhaps been viewed in the context of the silver and gold brooches. Mathieu Poux has argued that the gold and silver brooches were produced in Gallia Cisalpina and spread North of the Alps in the middle decades of the 1st century BC, whether as gifts in diplomatic exchanges, through trade or other channels (Poux *et al.* 2007, 207–21).

Knotenfibeln/'boss on bow' brooches date to the later 1st century BC, and their distribution of is strongly concentrated in the south-east of England and in particular immediately to the north and south of the Thames.

4 **La Tène III brooch**. Complete except for tip of pin, in 4 pieces. The bow is broad and flat expanding to the head. It has a simple plain tooled border. The catchplate is open. The spring is broken but complete, and has an internal chord. L: *c* 58mm. Context , sf 422, grave 4298.

5 **Simple sprung brooch with internal chord**. The pin (sf 421) is detached but the brooch is complete. Brass. L: 75mm. Context 4299, sf 423, 421, grave 4298.

6 **Simple sprung brooch of iron**, now very mineralised and fragmentary. The spring can just be identified (see x-ray, Fig. 3.85). Context 4299, sf 418, Grave 4298.

7–9 Small **copper-alloy clamps** or **collars**. Sf 409 has a curved back, which may be an original feature. One end has been clenched, the other end appears incomplete. Sf 410 is a small angled fragment from a clamp or collar. Sf 412 is a small collar, or clamp, made from thin strip. L: sf 409: 42mm; sf 410: *c* 10mm extant; sf 412: 23mm. Context 4299, sfs 409, 410, 412, grave 4298.

10 **Notched disc**. Regular circular disc, with circular hole just off centre. There are four opposed V-shaped notches slightly asymmetrically position and aligned on the central hole. The edge of the disc between the notches reveals fine notches or cuts around the circumference of the disc. Both faces of the disc, which is quite flat, show irregular surface scoring although it is more marked on one face. D: 28mm. Context 4354, sf 438, grave 4298

The Knotenfibeln or Aylesbury brooches and the la Tène III brooch with open catch plate all date to the 1st century BC. The simple sprung brooch may date to the first half of the 1st century AD or to the period of the Roman conquest (Bayley and Butcher 2004, 147). Olivier (1988, 38) stresses that the dating of the brooches is difficult inspite of the large numbers known. He dates the type to the immediate pre-Conquest period, but notes that examples are found in later contexts. Dungworth (1996) states that the earliest date for the regular production of brass in the Roman Empire is 25 BC. A boss-on-bow brooch from Stanway, a type normally dated to the 1st century BC, was made of brass, and on stylistic grounds was dated to the later 1st century BC (Crummy 2007, 314–5). No simple sprung brooch was recovered from a funerary context at Stanway (ibid., table 47).

The small notched copper-alloy disc cannot precisely be paralleled. However, there are a number of perforated iron discs from late Iron Age cremation burials, some with notches on the circumference, which may be related. The iron discs are generally larger; most have a diameter in the range 75mm to 85mm as in the examples from King Harry Lane, St Albans, cremation 325 (Stead and Rigby 1989, 358 & fig. 157, no. 10), Maldon Hall Farm, Essex, burial 3 (Lavender 1991, 205–6 & fig. 4, no. 2) and Biddenham Loop, Beds, grave S357 (Luke 2008, 222 & fig. 9.13, RA118). The metal of these iron discs is thicker in the centre and thins toward the outer edge. Some examples have a collar fitted into the central hole (eg Biddenham Loop, Beds, grave S357; Luke 2008, loc.cit). There are however smaller examples from (among others) Danebury, Hants (Cunliffe 1984, 370 & fig. 7.23 no. 2.174; diam.: *c* 70mm), and from Hinxton Rings, Cambs, cremation 2 (Hill *et al.* 1999, 253–6 & fig. 10; diam.: 45mm).

The discs have sometimes been interpreted tentatively as circular knives (eg Luke 2008, 222; James and Rigby 1997, fig. 42) or as measuring devices (James and Rigby 1997, loc.cit.). The example from King Harry Lane is a plain disc without notches (Stead and Rigby 1989, fig. 157, no. 10) and might well have been a circular knife, perhaps for cutting leather. By contrast there are quite elaborate notches on some examples: the disc from Biddenham Loop (Luke 2008, fig. 9.13, RA118) has a double notch with a raised point in the centre, and that from Alkham, Kent, burial 3 (James and Rigby 1997, fig. 42), has a broad notch with a smaller v-shaped notch at its centre. Although these notches and cut-outs may have been decorative, they would have affected the efficiency of these 'knives', and may have served a functional purpose.

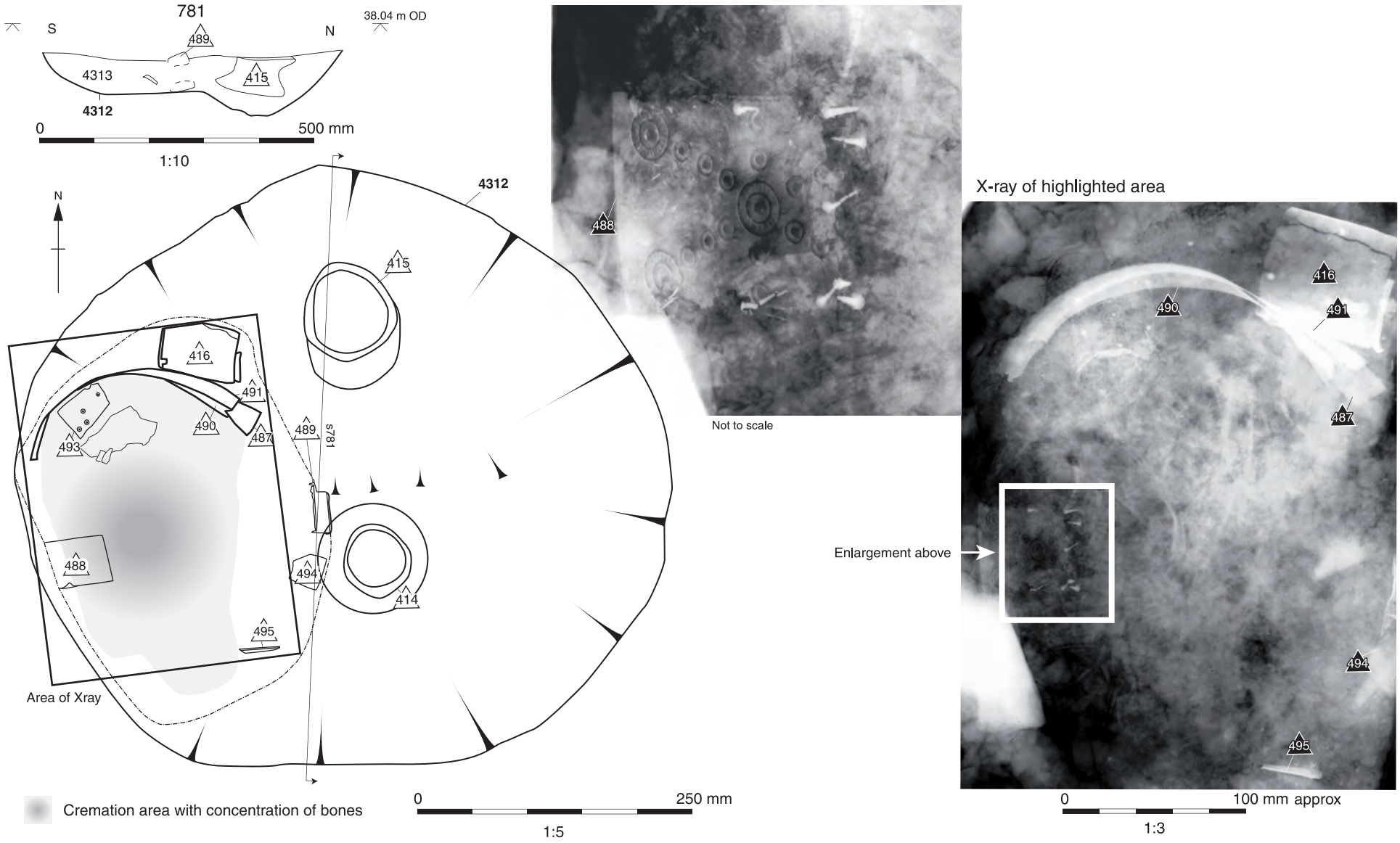


Fig. 3.88 Plan and section of grave 4312, including X-rays of bucket and feet

The closest parallel in terms of context to that from grave 4298 is the disc from Hinxton Rings cremation 2. This disc (D: 45mm) was found fused together with a smaller oval plate or disc (32mm x 35mm), four brooches, a chain, a pair of copper-alloy tweezers and a nail cleaner (Hill *et al.* 1999 253–6 & fig. 10). Both discs appear to have had central perforations. The similarity of the finds as a group to those from grave 4298 is striking, and some association with personal adornment or grooming, as also suggested by Hill, seems most likely.

Animal bone from grave 4298 *by Andy Bates, Jacqui Mulville and Adrienne Powell*

A small quantity of animal bone was recovered from cremation pit 4298. Fragments of a pig atlas and axis (the two vertebra located below the skull) were recovered from the fill of a shallow bowl sf 420. In addition a sheep/goat pelvis fragment and poorly preserved cow astragalus (of the ankle) was also recovered from the fill of pottery vessel sf 413. In addition, sixteen unidentified bone fragments were recovered from the backfill of the pit.

The animal bones would appear to represent a symbolic offering, with little or limited food value. Some of the meat from the spare rib may have been attached to the pig vertebra, but the astragalus from a cow ankle recovered from the fill of a pottery vessel is unlikely to have much meat attached to it. Offerings of pork in graves are found both in Iron Age Britain and Europe (Philpott 1991, 205; Green 1992 116–19). In some instances the offerings have been suggested to be more symbolic than literal, with the bones of the animals defleshed prior to burial (Legge 1991, 114; Philpott 1991, 199). The choice of the joint of meat placed in the grave may reflect the status of the individual, the animal having totemic significance to the funeral party. Evidence from Iron Age burials in East Yorkshire associates the place of pig remains with the elite, and sheep with the commoners (Parker-Pearson 1999, 60). In this case only fragmentary bones are present, but these represent all three main domestic species.

Grave 4312 (Fig. 3.88)

Cremation grave 4312 lay *c* 5m south-west of grave 4298 and was *c* 0.6m diameter and 0.12m deep. The grave pit had two pedestal-based jars in the middle, one north of the other (Plate 3.33). East of this the pit appeared to be empty. Part of a decorated metal plate was visible in the section, and further metal edges, together with a fragment of highly polished bronze, were found around the periphery of the western half of the grave. As soon as the outer limits of the metal were established, the entirety of the remainder of the grave fill was lifted in its entirety as a block for excavation in the conservator's laboratory.

X-ray of the block, and excavation in the conservation laboratory, showed that the metal bands belonged to a bronze-bound bucket. Two plain high tin-bronze bands (sfs 490 and 491) from one side of the bucket survive, together with three of the plates used to solder the bands together (sfs 487, 494 and 495). There were also three rectangular foot-plates at the bottom (Sfs 488, 489 and 493), which are decorated. Tacks attaching the decorated plates to the bucket also survive (Fig. 3.88 x-ray detail). The bucket must have stood against the west edge of the grave, and the cremated bone, some 848g in total, lay entirely within the bucket. Wood from the

Plate 3.33 Bases of two footring jars exposed in grave 4312, looking east.

bucket has been preserved behind all three of the decorated plates.

Immediately north of the bucket was part of a bronze cup with a rolled rim and a straight edge at the bottom (sf 416). A projecting rivet on the inside at the bottom shows that there was originally a base, either an organic material that has decayed, or more likely a metal base that has been removed by the plough. A band near to the rolled edge running around the outside is rough and has iron concretion attached, perhaps suggesting that the copper-alloy sheathing was originally further decorated with iron.

Pottery from grave 4312 *by Peter Couldrey and Lisa Brown*

The truncated bases of two pedestal based jars were recovered from this cremation burial (Plate 3.33). These vessels have since been mislaid, so few further details are available. Both were in grog-tempered fabrics and, on the evidence of the photograph, both were quoit-shaped. They likely belonged to jars of similar type and date to those accompanying burial 4298.

401378 SF434 (4313) Pedestal base of truncated vessel. Fabric G41

401379/40 SF1492 (4313) Pedestal base of truncated vessel. Fabric G41

Metal objects from grave 4312 (Figs 3.89–90) *by Ian R Scott*

The metalwork comprises two highly polished bucket hoop fragments with associated joining plates, and three rectangular plates originally attached to the feet of the bucket, together with an incomplete cylindrical object, probably part of an Eggers type 16 cup (sf 416).

The extant bucket hoops are undecorated except for their raised and rolled edges and highly polished surfaces. They were joined by small rectangular, or sub-rectangular, plates that had been soldered to the back of the hoops. There is no evidence for pins or nails to fix these hoops to the bucket. The decorated plates for the feet are also highly polished with stamped decorative motifs and have pin holes to fix them to the bucket. Some fragments of the wooden feet of the bucket were also recovered.

Small find 416 comprises part of a cylindrical object, with a rolled edge at one end. The other end has evidence for the attachment of a base. On the interior there is a distinct line where the base ended some 9mm from the end of the cylinder, and a single extant rivet about 2mm thick.

1–2 **Bucket hoop fragments**. Plain, but highly polished fragments of bucket hoop, with slightly raised simple border. One end of sf 490 is an original cut end and has a rectangular patch of solder on the back of the hoop, which matches the solder on junction plate sf 494 (no. 4). There is a second apparent patch of solder on one edge of the band near the broken end. The surviving band has a uniform curve suggesting an original diameter of *c* 250mm for the complete hoop. No pin or nail holes. L around curve: 259 and 247mm; L of chord: 217 mm; W: 39–7 mm. Context 4313, sfs 490–1, grave 4312.

3–5 **Rectangular junction plates for bucket hoop.** Each slightly curved through its length. There is clear evidence for hammering on the back, and solder on the front face. L: 42–4mm; W: 34–7mm. Context 4313, sfs 487, 494–5, grave 4312.

6–8 **Rectangular decorative plates from bucket foot**. Each comprises a highly polished rectangular plate decorated with punched 'ring and dot' motifs radiating in lines from a central ring dot motif, which is surrounded by rays with an outer concentric ring. The bands were attached by means of small tacks or nails. L: 72–9mm; W: 53–8mm. Context 4313, sfs 488–9, 493, grave 4312.

9 Small **nail** or **tack** with flat circular head. L: 10mm. Context 4313, sf 492, grave 4312.

The bucket from this grave survives only in part. Clearly there is no handle and handle mounts, and there must originally have been at least three or four hoops. However, enough of the bucket survives to allow some observations about the construction and appearance of the bucket. The position of the surviving pieces of hoop and of two of the decorative plates for the feet (sfs 488 and 493) show clearly the overall diameter of the base of the bucket, which would have been about 250mm. The third foot plate (sf 489) appears to have been slightly displaced.

Two of the decorative foot plates (sf 488 and sf 489) have marks on their top edges indicating where the lowest bucket hoop overlapped. The foot plates were further secured by small copper-alloy pins or tacks. The possibility that a rectangular patch of solder on the edge of hoop sf 490 represents a point where a foot plate was attached is disproved by the fact that the solder patch is significantly narrower than the width of the decorative foot plates, and it is also deeper than the width of the band on the top edges of the foot plates. Another possibility is that the solder patch on sf 490 presents the end of a vertical strip running up the side of the bucket and held in place by the bucket hoops. No such vertical strip however survived, and there was no evidence of a further patch of solder on the surviving length of the second bucket hoop.

The hoops that survive are plain and highly polished. In this they are similar to the tiny bucket from Great Chesterford, which has two plain polished hoops and a third wide decorated hoop. This bucket is tiny: its reconstructed height is 6.3 inches (160mm) and its diameter 6.3 inches (160mm) (Stead 1971, 278-79, pl xc1). What is noticeable is the variety of sizes and forms that the buckets take. The examples from Aylesford burial Y has copper-alloy bands, while the bucket from Aylesford burial X has iron bands. The bucket from Baldock has been reconstructed as completed encased in its copper-alloy bands (Stead 1971, fig. 11).

The bucket from grave 4312 differs from most of the published buckets in having bands which appear not to have been nailed or pinned to the wood of the bucket; more surprisingly the components of the bands were soldered together rather than being riveted together. The match between one of the linking plates and soldered patch on one of the surviving hoops is conclusive in this matter. Since both surviving fragments of band are

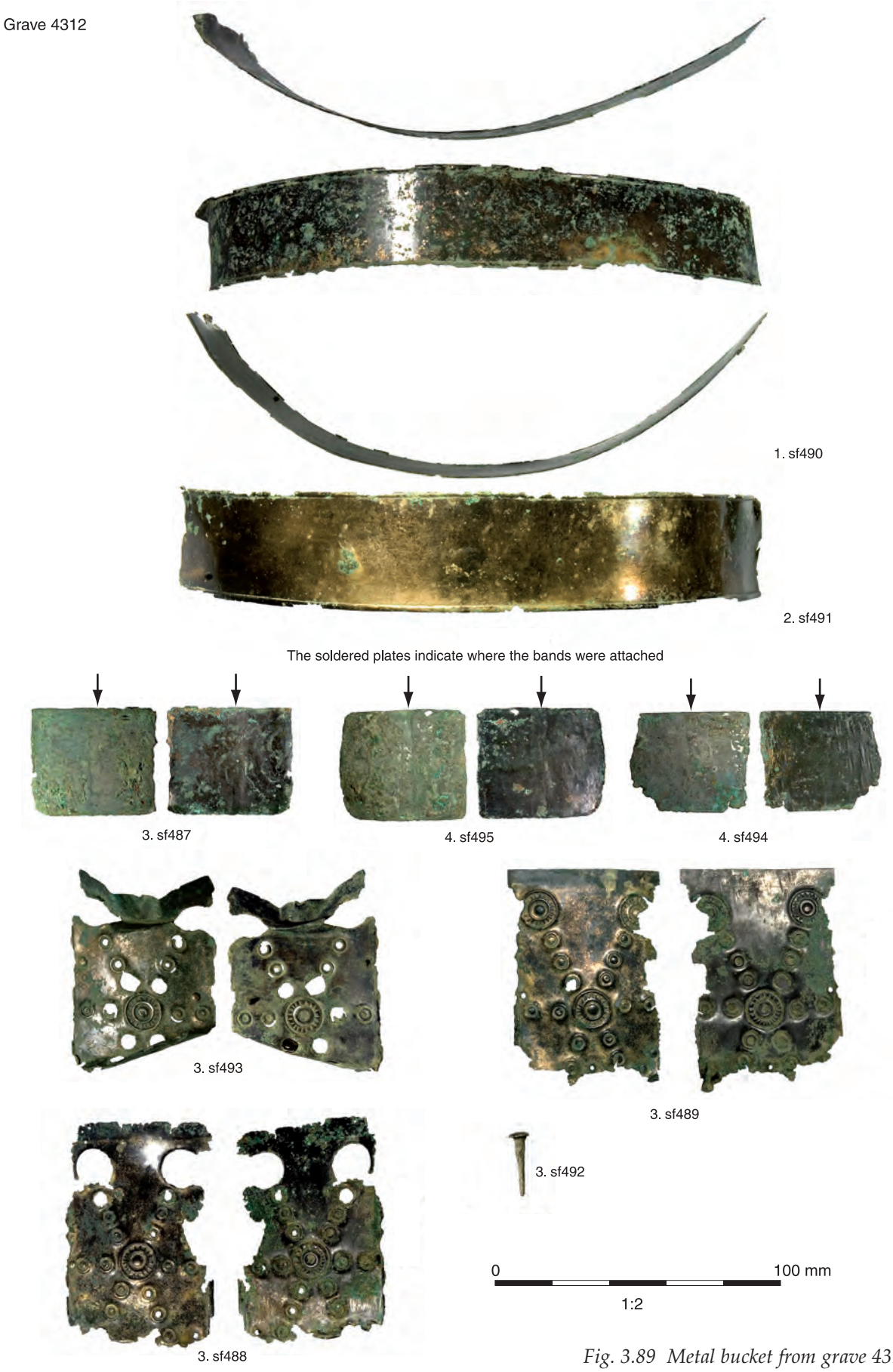


Fig. 3.89 Metal bucket from grave 4312

incomplete it is uncertain whether each hoop consisted of a single strip or whether each was composed of more than one segment. The two surviving sections of hoop were found together one inside the other. This, together with the fact that the two pieces are of very slightly different widths, indicates that they were parts of separate bands, one around the base, the other presumably a little above. The wider band (sf 491) may have been the higher of the two. Exactly how many hoops or bands the bucket had is uncertain. The evidence from the surviving Iron Age buckets from Britain suggest that generally their heights and diameters were broadly similar. If this was the case with the grave 4312 bucket then it could be suggested that there may have been three or four hoops or bands binding the bucket.

The plates for the feet of the bucket are decorated with repoussé rings and dot motifs. The motifs are similar to those found on the Baldock, Great Chesterford, and Aylesford Y buckets (Stead 1971, pls lxxxviii-lxxxix, xcl). It may be that the upper bucket hoop was wider then the

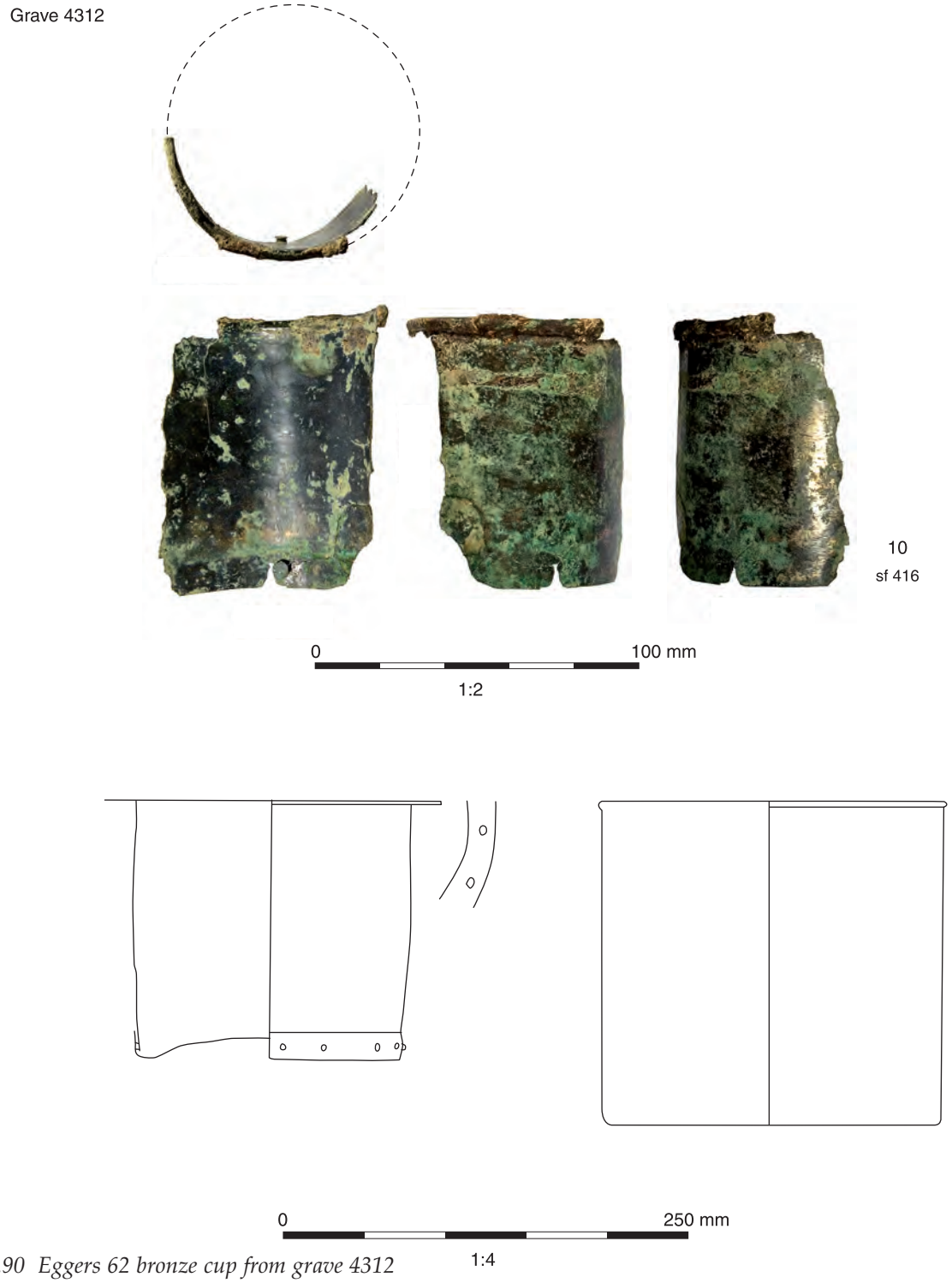


Fig. 3.90 Eggers 62 bronze cup from grave 4312

plain hoops and was decorated with ring and dot motifs echoing those on the feet.

The four unpublished late Iron Age cremation burials excavated at Alkham in Kent included two buckets in adjacent graves (Philp 1991, 51). One of these buckets has a top hoop or band decorated with small circular repoussé ring and dot motif (James and Rigby 1997, fig. 80) similar to those used on the feet of the present bucket. The Alkham bucket also has rectangular feet, but it is unclear whether they have any decoration. There are no details of the means of securing of the bucket hoops on the Alkham bucket. Unlike the present bucket, the Alkham bucket illustrated by James and Rigby is more or less complete and has a handle and handle mounts.

Although the buckets found in very late Iron Age graves vary markedly they are one of the recurring features of burials of the Aylesford culture. Buckets are also found quite widely in contemporary burials in Europe and in particular in France. When Vidal published the complete bucket from Vieille-Toulouse in 1976 he also reviewed the evidence for la Tène III buckets. The distribution of these burials is of considerable interest (Vidal 1976, fig. 6), stretching from Toulouse in south-west France across to the Rhineland. Buckets appeared to be absent from northern France and the Low Countries. If the distribution is real then it raises a number of questions about the occurrence of buckets in the south-east corner of Britain, and about the links in the late Iron Age between Britain and the Continent.

10 **Cylindrical object**, incomplete, approximately half survives. Its original appears to have been about D: *c* 75 mm. One end has a rolled over lip, the other is a simple straight edge. However on the inside of the straight edge is clear evidence for a junction with another object/material, in the form of a 9mm wide band of staining, and a single extant rivet. The rivet indicates that whatever joined the cylindrical object was less than 2mm thick. About 10–20mm below the rolled over lip is roughened band *c* 7–8mm wide which may be evidence for some applied decoration. There are two large joining fragments, and four much smaller fragments. L: 80mm; W: 73mm. Context 4313, sf 416, grave 4312.

It is possible that this item was a small cylindrical vessel with a metal base that was lost to the plough, but which was held in place by rivets. No exact parallel for a vessel such as this is known from Britain, but there are similarities to cylindrical vessels or situlae of Eggers Type 16 (Eggers 1951, Taf 3, no. 16; Guillaumet 1991 passim; see also Barrate *et al.* 1984, 26–8 & pl xiv–xv, nos 26–30) found on the Continent from France to the former Yugoslavia. Guillaumet defined five variants on the basis of rim form. The example from Grave 4312 with its rolled rim is Guillaumet's variant 4 (1991, 8 & fig. 2). Cylindrical vessels of Eggers type 16 vary considerably in height and diameter (ibid., 10) although most are larger than the present example; the smallest vessel cited by Guillaumet is an example from Ornavasso with a diameter of 124mm. There is an example of an Eggers 16 vessel with a base attached by rivets; the vessel was recovered from the Saône at Chalon or Lux (Barrate *et al.*, 27 & pl xv, no. 27). Guillaumet suggests that Eggers 16 vessels date to the first half of the 1st century BC, but that they continue in use until the first decade of the 1st century AD (Guillaumet 1991, 10).

Analysis and metallography of copper-alloy metalwork from late Iron Age graves *by Peter Northover*

A number of vessels and fibulae from high status late Iron Age and Roman graves excavated during the A2 widening project were submitted for metallurgical analysis by electron probe microanalysis and optical metallography. The purpose of the analysis was to determine the alloys used and the methods of manufacture, as well as to consider whether the objects were of local manufacture or imported from the Continent.

Samples were taken either by cutting with a jeweller's saw or scalpel, or drilling with a handheld modelmaker's electric drill with a 0.9mm diameter bit. Details of sample preparation and analysis are given in the digital archive. The individual analyses from each sample and their means in weight % and normalised to 100% are given in Table 1 (Digital archive), and microphotographs of the cut samples in Figures 1–18 (Digital archive); in both cases they are presented in the order in which the vessels are discussed, not in sample order.

Grave 4298

This grave contained four fibulae, the two Knotenfibeln (sfs 417,429) being linked by a chain and clearly a pair, while the other two, of simpler types, may also have been worn as a pair.

The two Knotenfibeln must have been made together since they have effectively identical compositions. They are made of unleaded brass with 19.8–20.0% zinc, 1.0–0.9% tin, and 0.21–0.22% lead; the principal impurities are 0.22–0.24% iron and 0.11–0.08% silver, together with traces of nickel, arsenic, antimony, bismuth, and sulphur. The 1% tin could well have been a deliberate addition to improve castability.

Zinc contents in the range 19–22% are common in Roman brass (Bayley and Butcher 2004; Dungworth 1996, Northover 2004) and may be regarded as something of a standard. The fact that the brooches are made of brass means that they cannot really date from before the last quarter of the 1st century BC. There is no evidence of brass-making in southern Britain at that time, but imported brass must have been re-worked because it appears in brass coins of the Trinovantes inscribed ANDOCO and DIAS (Northover 1992). However, it is not unreasonable to believe that these Knotenfibeln were imported as a set with their chain. It is also noted that a boss-on-bow brooch from Stanway, and dated most probably to the late 1st century BC, was also made of brass (Crummy 2007).

The two other fibula samples analysed, sf 422 from the pin and sf 423 from the body, were both made of unleaded bronze of very similar character to that used in the grave goods analysed from Grave 4312. The tin contents were 11.1% and 12.1% respectively and, again, impurities were at a low level.

Also analysed from this grave was the notched disc, sf 438. This, too is in an unleaded bronze with 13.1% tin and very low levels of impurities with the exception of 0.13% iron. Metallography (Digital archive Figures 17–18) revealed a fully recrystallised equiaxed grain structure with annealing twins and slip traces showing it had been left in a moderately cold worked state.

Grave 4312

Six samples were cut from sheet bronze bucket mounts from a wooden bucket (Context 4313, sfs 488–91/94–95). All were formed from medium tin bronzes with 11.6–13.5% tin, and with lead only present as a trace element or minor impurity; zinc was scarcely detected at all. Metallographic examination of the samples (Digital archive Figures 1–11) shows that all contained sufficient sound metal for the analyses to be unaffected by corrosion.

The total weight of metal involved in these sheet bronze parts is sufficiently small for all to have been formed from one blank forged out into sheet. However, examination of the tin contents and the impurity patterns show that this was not the case. Allowing for a certain amount of inhomogeneity it is probable that the two hoop bands (sfs 490, 491) are cut from the same sheet (12.9/13.5% tin, 0.06/04% nickel and 0.04/0.03% arsenic), while the two analysed plaques from the feet (sfs 488, 489) make another pair (12.84/12.16% tin, 0.06/0.08% iron, 0.13/0.11% nickel an 0.07/011% silver). Of the two junction plates sf 494 is quite close in composition to the two decorative plaques from the feet but has higher iron (0.13%) and nickel (0.16%), while the other (sf 495) is more like the two hoops and could very easily be from the same piece. The high tin contents would have allowed the metal to achieve a good golden colour and a high polish.

The metallography shows that the thin strips and the thicker plaques were handled rather differently. The two hoop bands (Digital archive Figures 1–4) have a fully recrystallised grain structure with annealing twins and a fine grain size of about 15□m with some secondary recrystallisation and a little residual cold work, possibly incurred when the hoops were fitted to the bucket. The analysed junction plate (Digital archive Figures 5–7) has a much larger grain size of 50–100μm, possibly the result of longer annealing, but perhaps also caused by the heat of soldering. Figures 5–6 (Digital archive) show a taper section through the solder joint; the two shade of grey depict the ϵ and η phases while the darker material may be corroded η phase but is more probably corroded tin. The bronze attached to the other side of the joint could be expected to have a similar structure. The two plaques from the feet (Digital archive Figures 8–11), have an intermediate grain size of about 30μm and with no residual cold work. As the compositions indicate, the two hoop bands were almost certainly made together, while the two decorative plaques are also clearly a pair.

Also from the same grave is the cylindrical vessel fragment sf 416. This is made from a bronze that is broadly similar to the above but with higher tin (14.0%), iron (0.59%), arsenic (0.25%, and lead (0.10%), although there may be some enhancement of the measured tin content through corrosion. The metallography (Digital archive Figures 12–14) show that the section sampled is made of an unleaded sheet bronze with a fine-grained, equiaxed, recrystallised grain structure with annealing twins but no coring or visible residual cold work. The grain size is of the order of 15μm, so the general style of working is very similar to that in the bucket hoops. The sample area is deeply penetrated by corrosion, initially intergranular.

The origin of the bronze

Extensive analysis of later Iron Age bronze (Northover 1984; 1987; 1991; 1992; 1994a; 1994b; 2000; 2004a; Barnes 1985) has shown that in the 1st century BC and the first part of the 1st century AD unleaded bronze was typical for sheet and for many cast products. Leaded bronze began to appear from the middle of the 1st century BC onwards, a result of contact with Romanised Gaul, and was followed a few decades later by brass. Less studied have been the impurity patterns: in the scheme developed for the Iron Age by the present writer (Northover 1991), the majority of the compositions from the two graves fall in to Group 0, ie low impurities. Those with rather more arsenic and nickel could relate to Group 6 but if they do their much lower impurity total suggests a mixing with bronze from Group 0. Such bronze occurs sporadically throughout the Iron Age in southern Britain but is rather more common in later phases, and it could come from either British or continental sources. Given the long tradition of metal trade across the English Channel going back to the early Bronze Age and the consequent use of imported metal in south-eastern England (Northover 1983), it is reasonable to suppose a common circulation of bronze on both sides of the Channel. It should perhaps also be noted that the Roman technology for smelting and oxidative refining copper produced ingots with low impurity totals.

Mineralised wood and other organic remains

by Dana Goodburn-Brown

Table 3.28 presents the results of SEM analysis of mineralised wood and horn from Grave 4298. The species identifications are 'probable' only, based on experience with similar materials from UK excavations (J Watson and Damian Goodburn, pers. comm.). Wood types suggested and some of their associated features are:

Sweet Chestnut (*Castanea sp.*): ring porous, uniseriate rays, simple perforation plates

Table 3.28: Results of SEM analysis of wood and other samples from Grave 4298

Object No.	*Type of object*	*SEM identification *refers to epliluminated examination by Lisa Gray*	*Technological information/notes *diagnostic features observed*	*Comments*
Grave No: 4298				
	Box/tray or board	Chain & brooches appear to have been in a box, or laid on a plank		
	chain	sweet chestnut		
	brooch	"		
	Unknown – vessel or instrument	*Striations on corrosion as if object had been finished on a lathe*		
Sf.416	Rim from vessel/instrument	horn	Thickness can be measured by gap between wall and stud	
	Bucket	yew		
	Stave frag	** Yew*	** softwood, reddish hue, gradual transition from early to late wood, dense spiral seen in tangential longitudinal section, no resin ducts thickening in rays (quite a clear identification but no pitting visible in the rays due to deterioration of the wood)*	

Yew (*Taxus sp*): conifer with no resin canals, but spiral thickening in the tracheids. Paired rays, ray pits, cupressed ray pits

Osteology of the high status burials *by Mark Gibson, Ceridwen Boston, Sharon Clough and Nicholas Marquez-Grant*

Two circular graves containing cremated human remains (4298 and 4312) were discovered within a banjo enclosure on Site B (see above). The burials were accompanied by high status late Iron Age grave goods. The cremated bone within pit 4312 was contained within the copper-alloy remains of a bucket, whilst five or six brooches and a chain were recovered within the bone deposit of pit 4298. Both graves included pottery vessels of late Iron Age date.

Due to the presence of metal grave goods within the deposits, the two cremation burials were block-lifted and excavated by an osteologist in the more controlled environment of the laboratory. In accordance with recommended practice (McKinley and Roberts 1993), samples were wet sieved and sorted into >10mm, >4mm and >2mm size categories. The sorted bone and the residues were then analysed.

The cremated bone in burial pit 4312 was excavated and recorded as a single context (4313), but the cremated bone from pit 4298 was assigned several context numbers (4299, 4320 and 4385) in the field. These are all part of a single deposit, and henceforth are referred to under the number of the largest context 4229.

Results

Weight and element representation

Deposit 4299 weighed 284.1g and deposit 4313, 848.2g (Table 3.29), which indicated that neither burial represented the remains of a complete skeleton. Both burials were heavily truncated by agriculture and machining that had destroyed approximately two-thirds of the bucket of burial 4313, and all but the base and lower body of the pedestal vessels in both burials.

Cranial vault bones were far the most common identified element in the two cremation deposits, which tentatively suggested favouring the head in the selection of body parts for burial. The cranial vault is the most easily recognisable element in a osteological analysis, however, thereby creating a bias towards recognition of this element.

Landmarks present were the supra-orbital margin of two frontal bone fragments and the nuchal line of occipital fragments from deposit 4299. Facial bones were absent, apart from the maxillary alveolar fragment in deposit 4313. Mandibular fragments were present in burials 4299 and 4313. Tooth roots were recovered from both deposits. A left incus bone was recovered from deposit 4299. The axial skeleton was under-represented in both burials. In deposit 4313, most vertebral fragments were pedicles and superior articular processes, one of the superior latter being from the axis. The shoulder and pelvic girdle was poorly represented, such that the age and sex of the individuals could not be identified from these bones. Upper limb bone fragments were recovered from both cremation deposits, largely comprising

Table 3.29: Summary of weights for the Site B late Iron Age cremated bone deposits (g)

	Deposits	
	4299	*4313*
Skull	46.1 16.2%	116.6 13.7%
Axial	2.1 0.7%	20.6 2.4%
Upper limbs	6.5 2.3%	18.7 2.2%
Lower limbs	28.1 9.9%	27.9 3.3%
TOTAL (g)	284.1	848.2

ulnar or radial fragments. The femoral shaft was fairly well represented in both 4299 and 4313, however, with fragments of condyle identified in the latter. Hand and foot bones are also poorly represented. A single proximal metatarsal fragment was found in 4299 and a distal metatarsal fragment and the trochlear surface of a talus in 4313.

Palaeodemography

Neither deposits included the remains of more than one individual. The individuals comprising deposits 4299 and 4313 were adults, as both contained fully formed third molar roots, suggesting an age greater than 18 years at the time of death (Ubelaker 1989). In addition to this, the syndesmophyte on the axis of deposit 4313 tentatively suggested an older adult.

Sexually diagnostic features were present in both cremation deposits. In burial 4299, the frontal bone fragments lacked a pronounced supra-orbital ridge, indicating a female, but sex estimation from the sharpness of the orbital margin was ambiguous. In deposit 4313, a fragment of occipital bone exhibited a fairly marked inferior nuchal line, suggestive of a male.

Palaeopathology

The only pathological lesion observed was a single syndesmophyte in deposit 4313 located near but not overlying the articular process of the axis. Syndesmophytes are associated with joint disease, which may be caused by joint degeneration from general wear and tear of advancing age, but may also be caused or accelerated by repetitive activities (such as carrying heavy weights on the head) (Roberts and Manchester 1995).

Fragmentation

The most frequent fragment size for both cremation deposits ranged between 10mm and 5mm. In deposit 4313, fragments greater than 10mm were better represented than those less than 5mm (Table 3.30). Many were cranial vault fragments. Both cremation deposits exhibited clear fissuring, transverse and longitudinal checking and splitting of larger bone fragments, indicating that they were 'green' or covered with flesh when cremated (Reverte 1986; Ubelaker 1989).

Table 3.30: Percentage of bone fragments larger than 10mm, between 10-5mm and smaller than 5mm

	Context number	
	4299	*4313*
>10 mm	102.7 g 24.3 %	335.9 g 43.7 %
10-5 mm	200.8 g 47.5 %	358.4 g 46.6 %
<5 mm	119.6 g 28.2 %	74 g 9.7 %
TOTAL (g)	423.1	768.3

Colour

The cremated bone of burial deposit 4229 was predominantly white or predominantly white with very occasional flecks of light grey or blue, indicating near complete cremation. Burial deposit 4313 was also largely white, but included hues of grey (approximately 25% of the sample), black (5%) and unburned trabecular bone (2%). Occipital bone fragments showed incomplete burning, containing grey or black diploë with white or grey cortical bone, whilst other cranial vault fragments were also incompletely burnt. One tooth root was charred black, whist the other two were white and grey. A number of femoral shaft fragments were largely black on the internal surface whilst the external surface of the cortical bone was grey. Thus, bone colour varied with white bone comprising only 68% of the deposit, the remainder being only partly burnt or unburnt. Whilst parts of the cremation pyre had reached the high temperatures needed to fully oxidise some of the skeleton, burning was not consistent across the skeleton, suggesting that the pyre was too small or that cremation had not been sustained. Being towards the edge of the pyre, the head would have been exposed to lower temperatures than the more centrally placed trunk and upper limbs. Unburned or slightly charred trabecular bone also indicated incomplete cremation.

Discussion

Due to considerable modern truncation of burials 4298 and 4312, interpretation of the osteological data and burial archaeology was problematic, although there was much similarity observed in the cremation processes and burial practices. Both were unurned, but the discrete concentration of bone within the burial pits suggested that originally they were contained within an organic container (a bucket with copper-alloy bands in the case of 4312). Both were accompanied by a rich array of grave goods, including pottery and fibulae. Given their close proximity and artefactual dating, they appeared to be contemporary.

Whilst in many ways similar, the two deposits did differ in the completeness of the combustion of the bone, however. Although availability of fuel is often seen as a significant factor in the completeness of cremation, other factors such as poor pyre construction that impedes oxygen circulation throughout the pyre, or indeed, adverse weather (such as a sudden downpour) may also be responsible for incomplete cremation.

DISCUSSION *by Tim Allen*

The nature of the surviving evidence

Before the Iron Age evidence can be discussed, we need to obtain some idea of the level of survival of

that evidence, in order to distinguish between what may have been removed by truncation and what was never present. Truncation in many parts of the scheme has clearly been considerable. Some indication of the degree of truncation may perhaps be obtained from the high status cremation burials in the western part of Site B. Both grave 4298 and 4312 had contained pedestal jars, of which only the bottom 120mm survived intact. Reconstruction of one of the vessels from 4298, of which a small fragment of the rim survived, suggests that it was originally 300mm high. In grave 4312 only the feet and parts of two of the bronze bands surrounding the bucket survived, and the middle band had dropped behind the lowest. Nothing of the band around the rim or of the handle survived. It is possible to estimate the diameter of the bucket from the surviving bands, and from this to estimate the likely height as around 250mm, with perhaps another 50mm for the handle attachments. The original graves are likely to have been at least 0.25m deeper than this, or not less than 0.55m deep, and probably more. Allowing 0.2m for the depth of the Iron Age topsoil, at least 0.2m of chalk has been lost through ploughing at this point, and more than 0.4m of the Iron Age features.

This was clearly not the case right across the site, as the survival of the metalled road in Site B shows. This feature, however, occupied a local hollow in the chalk plateau (see Chapter 2, Fig. 2.4), and became less well-preserved as it rose to the south-east. The metalling in Site G was similarly only preserved on the south side of the enclosure, where the ground was dipping into the glacial hollow, and where the metalling itself lay within a pre-existing slight holloway. The survival of a line of metalling in Site C is more extraordinary, as this ran across the highest part of the chalk plateau, but it was clear from the adjacent excavations in the A2 Activity Park that the metalling was added to a holloway (Dawkes 2010, 16), and it is likely that what survived along the line of the A2 was the very base of this feature, some distance below the contemporary ground surface.

The loss of 0.4m over much of the site means that only substantial postholes are likely to have survived, and that at the level of their uppermost surviving fills, ditches, gullies and pits were still substantial negative features, and could have remained in use beyond the latest date of the finds recovered from them.

The local context of the discoveries

In order to put the discoveries from the A2 widening scheme into context, the results of the adjacent excavations along the line of the HS1, at Coldharbour Road and in the A2 Activity Park, are all shown together and have been phased to match the phasing used for the A2 widening scheme. (see plans by inside front and back covers). The later prehistoric features along the line of the HS1 were phased according to a slightly different ceramic framework than that derived from absolute dates on the current scheme, so have been adjusted to correspond. The results from the A2 Activity Park are those described in the assessment report, and so are provisional; there is some discrepancy between the dating offered in the main text and in the pottery report, and in general the dating suggested by the pottery report has been followed in revising the phasing here.

Two four-post structures of early Iron Age date were found on the line of the HS1 some 50m south of the west end of the Site B settlement (Askew 2006, fig. 10). The pottery from this area was divided into an early/middle Iron Age phase, characterised by sub-angular shouldered jars often decorated with finger-tipping and upright pots, and a late middle Iron Age characterised by round-bodied burnished vessels. Twigs in pit 156, which contained the largest pottery assemblage of the early/middle phase, gave a radiocarbon date range of 800–420 cal BC (NZA 22728), putting this clearly into the early Iron Age phase in the A2 excavations. Indeed the date is considerably earlier than those from the A2, most of which fall in the later 5th or early 4th century cal BC. Another of the pits (331) produced a copper-alloy La Tène 1 brooch, showing that activity did continue into the 5th/4th century BC, but the pottery shows that this is still contemporary with the late early Iron Age pits along the A2. Both the pits and four-post structures will therefore be discussed together with the early Iron Age activity on the A2.

Earliest and early Iron Age chronology

Evidence for earliest Iron Age activity along the route, like that of the late Bronze Age, is very sparse. Only single pits on Sites L and G can be attributed with confidence to this period. There is a similar shortage of evidence from the adjacent lengths of the HS1, though a radiocarbon-dated residue on a potsherd in Site G clearly belongs to this period. Champion (2007b) noted the very limited evidence of activity of this period in West Kent, though occupation of this period has been found not far away at Darenth (Couldrey 1988). The A2 and HS1 excavations have demonstrated that activity of this period was occurring in this area, but that either this area was peripheral to settlement at this time, or that settlement was of a kind that left little trace below ground.

Early Iron Age activity on the route of the A2 is more widespread, but where radiocarbon dating has been carried out the dates have almost all fallen towards the very end of this period, in the late 5th or 4th centuries cal BC. The radiocarbon dates from the A2 were not, however, selected at random; they targeted pits with particularly rich assemblages, and may therefore not be a representative selection of early Iron Age activity (see below for further discussion of these pits). Dates on four-post struc-

tures represent a better sample of the date of use of these structures, biased only by the survival of charred material associated with them. Among the four-post structures there is one potentially of late Bronze Age date, and one in Site B with a more usual early Iron Age date spanning the radiocarbon plateau between 760 and 390 cal BC, and with a 71% chance of dating after 600 cal BC. One further four-post structure dates, like the pits in Site C, to the 5th or earlier 4th century cal BC, the remainder falling in the 4th century or later.

One of the radiocarbon dates from Northumberland Bottom on the HS1 also falls on the radiocarbon plateau, but has a 93% chance of falling before 520 cal BC (Askew 2006). Excluding the rich pits, the number of early Iron Age samples dated was not very large, and on the basis of this limited sample it is therefore likely that these sites included early Iron Age activity of the 6th, as well as the 5th and 4th centuries BC. The fact that earliest Iron Age features or potsherds were found on all of the sites where early Iron Age activity was present, and only on these sites, perhaps argues for some level of continuity of activity throughout the early Iron Age in these locations.

Settlement evidence – general characteristics

The earliest and early Iron Age pit groups from the A2 enlarge and refine the evidence already gathered from the adjacent HS1 excavations. Excavations at Tollgate revealed three clusters of pits within 200–400m of each other (Bull 2006), one of which was re-examined in Site G, and a somewhat larger group of 15 pits west of Downs Road on a slight knoll at Hazell's Farm (Askew 2006). The A2 excavations have added a further cluster on Site C, the highest point of the chalk plateau between the dry valleys at Downs Road and Tollgate Junction. The Activity Park excavations have shown that this loose grouping extends further north into the Activity Park (Dawkes 2010), with an outlier north of the old A2 at Coldharbour Road some 200m to the north. Other scattered pits have been found on Site L and north of Hazell's Farm at Site K. This again suggests extensive, though not necessarily intensive, use of this landscape.

Further excavation has also expanded the range of other features associated with these pit groups. At Site G, for instance, there is now good evidence of a number of four-post structures (see below), and a linear boundary on the east. A similar scatter of four-post structures has been found adjacent to the pits on Site C, and one structure of this type on Site B has also been radiocarbon dated to the early Iron Age. Other undated examples on Site B may also belong to this period. None have come to light on Sites L or A, but very few postholes have been found on these sites, and their absence may be due to truncation. Site K has shown that early Iron Age activity extends north from Hazell's Farm onto the valley bottom, and an arc of postholes may possibly indicate a roundhouse of this date, although this may alternatively be later Bronze Age. No other roundhouses of this period have come to light during the HS1, A2 or A2 Activity Park excavations.

The artefacts and ecofacts recovered from the early Iron Age pits, whether they derive from everyday refuse disposal or from more selective and purposive placement, provide evidence of a wide range of activities. Apart from pottery, there are fired clay loomweights or oven bricks and pedestals, spindle whorls, structural fired clay from ovens and charcoal, briquetage containers and trays for salt evaporation, smelting slag, charred cereals, quernstones and rubbers, a worked bone toggle and a handle. These include most of the usual types of find from settlements of this date across Southern England where roundhouses are also present. The pottery also represents a varied assemblage characteristic of the period, with a few vessels showing decoration or designs indicative of contact with East Kent or beyond, and its manner of deposition encompasses both complete, or complete but smashed vessels, and also fragmented and abraded material suggesting middening before burial. Both the pottery and the quernstones indicate contact with geologies further south in Kent, but still relatively local to the site.

Animal bones indicate mixed animal husbandry, but with cattle predominating over sheep/goats and pigs, and a fair number of horses. Contact with the Thames and the sea is indicated by remains of both freshwater and marine fish (a tooth, possibly from pike, a herring vertebra, a tiny cyprid vertebra, a scad vertebra and a plaice or flounder vertebra; identifications by R Nicholson). Some hunting is also suggested by the bones of red and roe deer, and of hare. The charred plant remains are dominated by emmer wheat, with lesser proportions of spelt and hulled barley, and include a small number of layers of almost pure cereal grains. The majority, however, are mixed assemblages of cereals and weeds. The charcoal is similarly mostly mixed species suggesting the use of local hedgerows, although one sample dominated by oak was present.

The briquetage and metalworking slag are particularly interesting, as salt processing would normally be expected to have occurred on the coast, and while there are extensive iron deposits on the Weald, they are not found this far north in Kent. Briquetage had previously been recovered from the late Bronze Age settlement at Cobham Golf Course some 10km further east, and in early Iron Age pits at Tollgate, during the HS1 excavations, but while at Cobham this material had included containers, pedestals and hearth or oven-lining (Morris 2006; Champion 2007b), that at Tollgate had included only container fragments (G P Jones 2006). The Cobham material comprised several kg of briquetage, however, and was interpreted as relating to a cottage industry using salt brought to the site, evaporation having taken place elsewhere. The quantities at Site C on the A2, including both

pedestals and hearth material, necessitate a rethink of this interpretation, raising the question whether salt production in North Kent in later prehistory was in fact a two-stage process, involving the portage of incompletely processed salt or brine to more elevated sites inland to finish production there.

As Site C lies several km from the present coastline, and at an elevation of 55m OD, the importation of briquetage material from the coast for deposition, rather than on site production, would at first sight seem more plausible. The clay from which the pedestals were made is, however, almost certainly that on the site itself, and is not of good quality, making it unlikely that this would have been sought out had production been taking place elsewhere. Quantities of fuel ash slag were also recovered from the pits with briquetage debris, demonstrating that industrial processes were certainly taking place in the vicinity of the pits. It has also been suggested from excavations in the Ebbsfleet valley that the shoreline, or at least the limit of marine transgression, was considerably further south in the Iron Age than today, and may have been no more than 1.5km from the site (Stafford pers. comm.). This would have reduced the distance to transport brine before completing the production of salt, though it would not have removed this awkward task.

Another factor that may have influenced salt production may have been the availability of suitable fuel. If wood was scarce close to the shoreline, or was very carefully managed, it is possible that it was easier to bring the salt inland than to cut wood or brush and carry or float it down to the shore. Other factors such as social constraints may have affected the process. However unlikely this may seem, recent discoveries in Normandy and Brittany, albeit somewhat later in the Iron Age, have shown unequivocally that salt production was taking place at sites some 3km from the coast (M Yvanne Daire pers. comm.; Poole pers. comm.). Recent excavations west of this scheme at the A2/A282 junction, again several km from the coast, have produced late Iron Age briquetage including shallow open vessel fragments and pedestals (Poole 2011). Similar and larger-scale evidence was also recovered at Springhead, and Poole (ibid.) suggested that these sites were also evidence of a local tradition of two-stage salt production in North Kent.

The lump of smelting slag, which reflects the processing of ore that is certainly not very local to the site, leaves open the possibility that the briquetage, and in theory other types of find, could all have been brought to the A2 sites from settlements elsewhere. Given that the majority of the finds were recovered from pits with rich and varied assemblages of material, and included items such as complete pots and loomweights, the A2 sites could possibly have been locations visited for specific rituals by communities from a variety of locations in the wider area. The evidence for the incorporation of middened material might support the idea of periodic visits, the sites marked by the upstanding middens, material from which was included in the backfilling of pits after the rituals had been completed. In this interpretation, four-post structures would also have been a routine part of such sites.

Structural evidence

The interpretation of the evidence presented above might explain the lack of permanent houses, but given the partial investigation of the sites in question, it would be unwise to base too much on current lack of evidence. More importantly, such an interpretation requires there to be a series of other, better-defined permanent early Iron Age settlements, for which at present there is very little evidence. Most other substantial early Iron Age settlements in Kent, such as White Horse Stone and North Foreland, contain a similar mix of pits and four-post structures, and also lack clear evidence for houses (Hayden 2006a, 145–6; Champion 2007b, 106). Only two sites with ring-gullies are known, both in East Kent (Champion 2007b, 107). The range of artefacts and ecofacts is also very much the same as is found in the middle Iron Age, where they are found in both pits and enclosure ditches on sites usually interpreted as permanent settlements. Taking into consideration the evidence for local procurement of many of the resources, it is therefore simplest to interpret these sites as the remains of truncated local settlements, though it remains possible that their houses were less permanent structures than in some other parts of the country.

Looking at the middle and late Iron Age settlement in Sites B and C, and in the adjacent HS1, there is a similar lack of evidence for buildings as in the early Iron Age. Excavations further up the Thames, for instance at Mingies Ditch in Oxfordshire or Claydon Pike in Gloucestershire, or indeed at Danebury in Hampshire, have shown that buildings in the middle Iron Age can be built with stakes that leave little trace in the ground (Allen *et al.* 1984; Cunliffe and Poole 1995). Other forms of construction, such as mass-wall (eg cob walling), also leave little or no trace; this tradition of building has a long history in Kent, and could have begun in later prehistory. The degree of truncation at the A2 and the adjacent HS1 sites would have removed all but the doorpost-holes of such buildings.

It is, however, noticeable that none of the roundhouse-sized enclosure gullies so common in the Upper Thames, in Wessex or in the Midlands, have been found in association with this site, although such features are known in the local area. One was apparently present at Hillside, Gravesend, only 3km to the north-east (Philp and Chenery 1998), and another was visible as a cropmark between Sites B/C and Hillside, although this was not confirmed by excavation. On some sites these gullies are slight, and gullies such as these could also have been removed by truncation, but on others (such as

Hillside) they can be more than 1m in depth. In other areas where roundhouse gullies were sometimes used, practice clearly varied considerably even within adjacent settlements, so it would be unwise to attempt to define the status of occupation, or its permanence, on their presence or absence.

At least 18 four-post structures were found along the scheme, but of these less than half were securely dated either by finds or by radiocarbon dating, so a phased analysis of their characteristics is not possible. It is, however, possible to be confident that four-post structures were present from the early to the late Iron Age, and possibly had their origins in the late Bronze Age on this scheme. Almost all were between 2 and 3m across, most around 2.5m square. There were therefore none of the larger type (3.5–4.3m across) found at White Horse Stone (Hayden 2006a, table 34). The most substantial was 3772, the only such structure firmly dated to the early Iron Age, nearly 3m square and with postholes 0.7–0.8m across. The postholes were larger than those of the other examples, possibly indicating a more massive construction than that of the rest. Amongst the smaller examples the postholes varied considerably in size and depth, but it is difficult to be certain that this was not partly an artefact of variable truncation, rather than an indication of the solidity of their construction and the loads they were intended to bear. There was certainly no correspondence between the size of structure and that of the postholes.

Two structures were particularly small: 7180 in Site E at only 1.6m square and 7191 in Site B at 2.1 by 1.1m, though both falling within the range of small structures identified at White Horse Stone (ibid.). The latter example is so different from the others at the A2, however, and with such a small enclosed area, that it is likely to have had a different function, perhaps being a pair of adjacent two-post structures, or perhaps the doorposts and porch of a roundhouse. A few structures had postholes of very different sizes: had the differences been between pairs of posts, this might have indicated a different construction, and possibly a different function, to the rest, but mostly these were at opposite corners, making it possible that these were no genuine structures.

There were no examples of recut postholes to suggest that four-posters had been rebuilt in the same location. These structures did tend to occur in groups, most notably the tight cluster of seven or eight in Site E, but this is the only location where a zone of four-posters appears to have been present. No other activity areas, eg groups of pits, houses or workshop areas, were found in the vicinity, so the reason for this clustering is unclear. In the description of this area it was postulated that the structures might have been successive rather than contemporary, although the lack of any intercutting structures perhaps argues against this. If the group was largely contemporary, then it was surrounded by areas largely devoid of contemporary archaeological features. The group of central four-post structures at Gussage All Saints, although within the ditched enclosure, was similarly isolated from pits and other types of feature (Wainwright 1979), though the absence of neighbouring structures may have been the result of truncation. Possibly the group on Site E represented an area of communal storage surrounded by fields, or alternatively the structures may have had some other purpose that required their separation from other everyday activities.

The other four-post structures were associated with pits, and later with ditched enclosures that contained settlement evidence, but on current dating evidence do not appear to have occupied clearly-demarcated or separated areas, nor were they organised in lines or patterns suggesting that they were respecting above-ground boundaries, unlike the much larger numbers at White Horse Stone.

Pits and special deposits

There were 125 probably later prehistoric pits found along the scheme, although 40 of these were undated. These include 36 pits belonging to the earliest or early Iron Age (including those with pottery dated only middle Bronze Age to middle Iron Age), 29 middle Iron Age pits (including those dated mid–late Iron Age) and 20 late Iron Age pits (including one late Iron Age/early Roman example). As there was very little earliest Iron Age activity, and only three pits have been dated to this phase, this perhaps represents 33 pits between 600 and *c* 350 BC, 29 from *c* 350–80 BC, and 20 from 80 BC to AD 50. If, however, only the closely dated examples are considered, then there are 20 early Iron Age pits, 22 middle Iron Age and 17 late Iron Age examples.

The proportions of pits of different shapes and pit profiles in the early, middle and late Iron Age are given in Table 3.31. As almost all of the beehive types were dated, it would appear that beehive-shaped pits, or at least pits with undercut sides, were most common in the early Iron Age, and cylindrical pits more common later on. When the depth of the pits is plotted by phase, the average is around 0.7m in all three periods, but beehive pits will have had a greater capacity than other types of the same depth. As Table 3.31 shows, there are also considerably more dated pits over 1m deep in the early Iron Age than in the middle Iron Age and late Iron Age. Pits between 0.5m and 1m deep are also more numerous in the early Iron Age and late Iron Age than in the middle Iron Age. Taken at face value, it would appear that in general fewer and larger pits were dug in the early Iron Age. This might perhaps indicate a change from agriculture carried out communally to one in which ownership of resources was becoming parcelled out, perhaps into individual families or close kinship groups. Alternatively, it may simply reflect the deliberate division of storage to provide insurance in case the contents of any one pit were spoiled. Bearing in

Table 3.31: Breakdown of early, middle and late Iron Age pits by shape in plan and profile

Shape	*Date*	*Beehive*	*Cylinder*	*U-shaped*	*Bowl*	*Saucer*	*Irregular*	*Conical*	*Total shape*
Circular	Early	5	2	-	-	1	1	-	9
	Middle	1	3	2	1	1	-	-	56.25%
	Late	-	3	1	-	-	-	-	
Oval	Early	2	-	2	-	1	-	-	5
	Middle	-	5	-	-	-	-	-	31.25%
	Late	1	4	-	2	-	-	-	
Sub-rect	Early	-	1	-	-	-	-	-	1
	Middle	-	1	1	-	-	-	-	6.25%
	Late	-	3	1	-	1	-	-	
Irregular	Early	-	-	-	-	-	1	-	1
	Middle	-	-	-	-	2	1	-	6.25%
	Late	-	1	1	-	-	1	1	
Total	Early %	7 77.78%	3 13.04%	2 25.00%	-	2 33.33%	2 50.00%	-	16 29.63%
	Middle %	1 11.11%	9 39.13%	3 37.50%	1 33.33%	3 50.00%	1 25.00%	-	18 33.33%
	Late %	1 11.11%	11 47.83%	3 37.50%	2 66.67%	1 16.67%	1 25.00%	1 100.00%	20 37.04%

mind how many pits are undated, or only loosely dated, however, it would be unwise to base too many conclusions upon these figures. This trend is the opposite of that observed at Danebury, where larger pits were more common as the Iron Age progressed (Whittle 1984, 132).

From his experiments in storing grain in pits below ground at Little Butser, Reynolds suggested that the loss of stored grain (in percentage terms) decreased with volume, and that the loss was greater at the pit surface (Reynolds 1974, 126–7), so that pits with a greater depth than diameter were best. For his experiments he always used pits with these proportions, and with a minimum depth of 1m (ibid., 120–1). At the A2, 19 pits survived deeper than this, and allowing for 0.3–0.4m of truncation, the majority of the 25 pits within the 0.5–1m range would also have met his criterion. None of these pits was more than 2m in diameter. Some groups of pits, such as the early Iron Age large pits on Sites C and G, would have been particularly suited to this function. Another eight of the 33 pits from the adjacent HS1 excavations also survived over 1m deep, and seven more (allowing for later truncation) might well have been. In this respect the dimensions of the pits on the A2 settlements differ considerably from those at White Horse Stone, the only other large group on the HS1 (Hayden 2006a), where the greatest surviving depth was 1.1m, and very few pits approached 1m in depth, but a substantial proportion of the pits were over 2m in diameter, and the range extended to over 3m across (ibid. figs 91–3). Even allowing for truncation, a smaller proportion of the pits at White Horse Stone would appear to have been appropriate for grain storage.

In some areas (K and L) the pits appeared to be widely scattered, but in others (Sites C and G in particular) the early Iron Age examples formed loose clusters. There were, however, no tight dense groupings such as are common in the pit-cluster settlements of the Upper Thames Valley (Lambrick with Robinson 2009, 105–9) or as recently discovered at Taplow in the Middle Thames (Hart and Mudd forthcoming), nor any intercutting areas of pits like that at White Horse Stone (Hayden 2006a, fig. 69). Although the group in Site G form a rough line, this is widely spaced, and there is no clear pattern to the arrangement of the pits in these loose clusters to suggest a defined area for storage, or a boundary against which they might have been dug. The middle and late Iron Age examples are not tightly grouped within the enclosures, nor (as far as the limited chronology allows) do they appear to be strictly separated from other types of feature of the same phase. On present evidence, therefore, early Iron Age settlement appears to have been less ordered, a view also borne out by the lack of boundary ditches and gullies, except for those at the east end of Site G and (possibly) in Site H.

A proportion of the pits, including most of the deeper examples, contain rich and structured assemblages of finds that indicate structured deposition rather than simply chance discard of rubbish. The largest group are those of the early Iron Age, and particularly those in L, C and G that date to the later 5th/4th centuries BC, but a number of others are known in the middle and late Iron Ages, clustering at the transition between these two phases of the Iron Age.

Although the numbers of pits containing these objects is relatively small, the variety of materials included in this structured deposition is very wide. In the early Iron Age this comprises: pots (whole or smashed), fired clay loomweights/oven bricks, quernstones (and probably spindlewhorls), metal-working debris, briquetage, human and animal bones (the latter including whole and partial skeletons of both domestic and wild animals, together with deer skulls and shed antlers), a raven skeleton, fishbones and marine shells, charred cereals and

hazelnuts and ash. If the pits from the adjacent part of the HS1, which clearly belong to the same (or neighbouring) communities, are included, then early La Tène brooches, an awl, bone tools and stone sharpening tools can also be added (Askew 2006; Bull 2006). In the middle and late Iron Age deposition of these types of materials along the A2 project continues, and is added to by a polished Neolithic axe (probably reused as a burnishing or polishing tool), chalk weights, iron objects, oven structure and potin coins.

This covers virtually the full range of types of material suggested by Poole from her study of ritual deposition at Danebury (1995b). It is clear that much the same practices were at work in Iron Age Kent as in Iron Age Wessex and the Upper Thames Valley. Isolated examples of ritual deposition had been found, though not always recognised, in Kent, such as pit 16, half-full of complete and partly-complete pottery vessels, or pit 10 with a potin coin at the base, at Farningham Hill (Philp 1994). An unusual example of such structured deposition, comprising the multiple burials of calves and deer in pit 156 at West of Northumberland Bottom, was found adjacent (Askew 2006), but on neither this nor on the adjacent Tollgate stretch of the HS1 (Bull 2006), was an approach to the excavation of pits designed to examine this issue, indeed the strategy was only to excavate the second halves of pits if finds had not been forthcoming from the first half (Askew 2006). While more than 100 early–middle Iron Age pits were examined at White Horse Stone on the HS1, and structured deposition on this site was examined (Hayden 2006a), the pits were shallower there, with correspondingly smaller numbers of fills. This site was also much further east, raising the possibility of comparing depositional practice geographically as well as over time. The presence of groups of deep pits with large numbers of varied structured deposits on the A2, and the persistence of this practice throughout the Iron Age, has therefore provided a good opportunity to examine structured deposition during the Iron Age in north-west Kent.

The variety of materials spread amongst these pits, and their relatively small number, makes analysis of repeated patterns of filling unproductive, but structured deposition can still be examined at three levels: by considering the sequence and characteristics of deposition in some individual pits, by the associations of types of deposit across groups of broadly contemporary pits, and by a consideration of the chronological patterning of deposition within the Iron Age.

Among the individual pits, pit 12527=12700, which is radiocarbon dated to 410–350 cal BC (NZA 32308; 68.9% confidence), has a striking sequence of deposits whose characteristics are particularly clear. At the base were two successive deposits of clean charred grain, separated by a layer of ash associated with most of a decorated pottery vessel placed at one side of the pit. The association of this pot with the ash and charred cereals emphasises the deliberate deposition of the environmental remains (see Smith this vol.). The absence of any *in situ* burning on the pit sides, and of sprouted grains, shows that this was not the result of firing the pit to sterilise it after removing the stored grain. The second layer in 12527 contained a large assemblage of pottery including barrel-jars not found elsewhere on the scheme, and a part-skeleton of a sheep. This was followed by an almost sterile sealing layer, except for one triangular clay loomweight or oven brick. In contrast, the top surviving fill contained 12 further triangular clay bricks, charcoal, two quernstone fragments and another large pottery assemblage. The pottery included rimsherds of two further barrel jars stylistically similar in manufacture to those below, but was dominated by fine bowls not found in the lower fills.

A number of pits at White Horse Stone shared primary fills of clean charred grain (though without associated ceramic vessels) and large assemblages of pottery and animal bones in the upper fills. The separation of two pottery-rich fills that were clearly linked, but of differing pottery types, is a refinement not previously noted, as is the association of part-skeletons with the jars, and of clay bricks with the pottery bowls and quernstones. It is also possible that there were further deposits of charred grain, although Smith (this vol.) has interpreted these as derived by post-depositional movement from the primary deposit at the base.

If the triangular clay objects are oven bricks rather than loomweights, as is suggested (see Stansbie this vol.), the whole assemblage may represent materials associated with feasting. The present author has noted a preponderance of large cooking pots and of fineware bowls in association with the skeletons of lambs in an early Iron Age pit at Castle Hill hillfort, Little Wittenham, Oxfordshire (Allen *et al.* 2010), and has linked this to feasting (ibid., 255–6). The contents of pit 12527 also show that the rituals attached to the commemoration of such a feast could be complex, involving the deliberate separation and deposition of a wide variety of materials in particular associations.

Pit 9010 on Site G, whose radiocarbon dates are 405–365 cal BC (NZA 32405) and 400–350 cal BC (NZA 32401 at 72% confidence), very like that of pit 12527, has also been linked to feasting, and its structured deposits contain both similarities and differences to those of pit 12527. Here, overlying the primary fill were two layers of silt and ash containing the smashed remains of a very large storage vessel with roughened exterior and a highly burnished black tripartite jar, together with a fragment of human skull. Sitting upon the smashed large jar was a virtually complete smaller fingertip-decorated jar, and with the remains of several small crude pots, possibly beakers, in the surrounding fill. The pottery represents a set of vessels of different sizes and finishes (Fig. 3.91), very similar to 'feasting' sets found in pits in

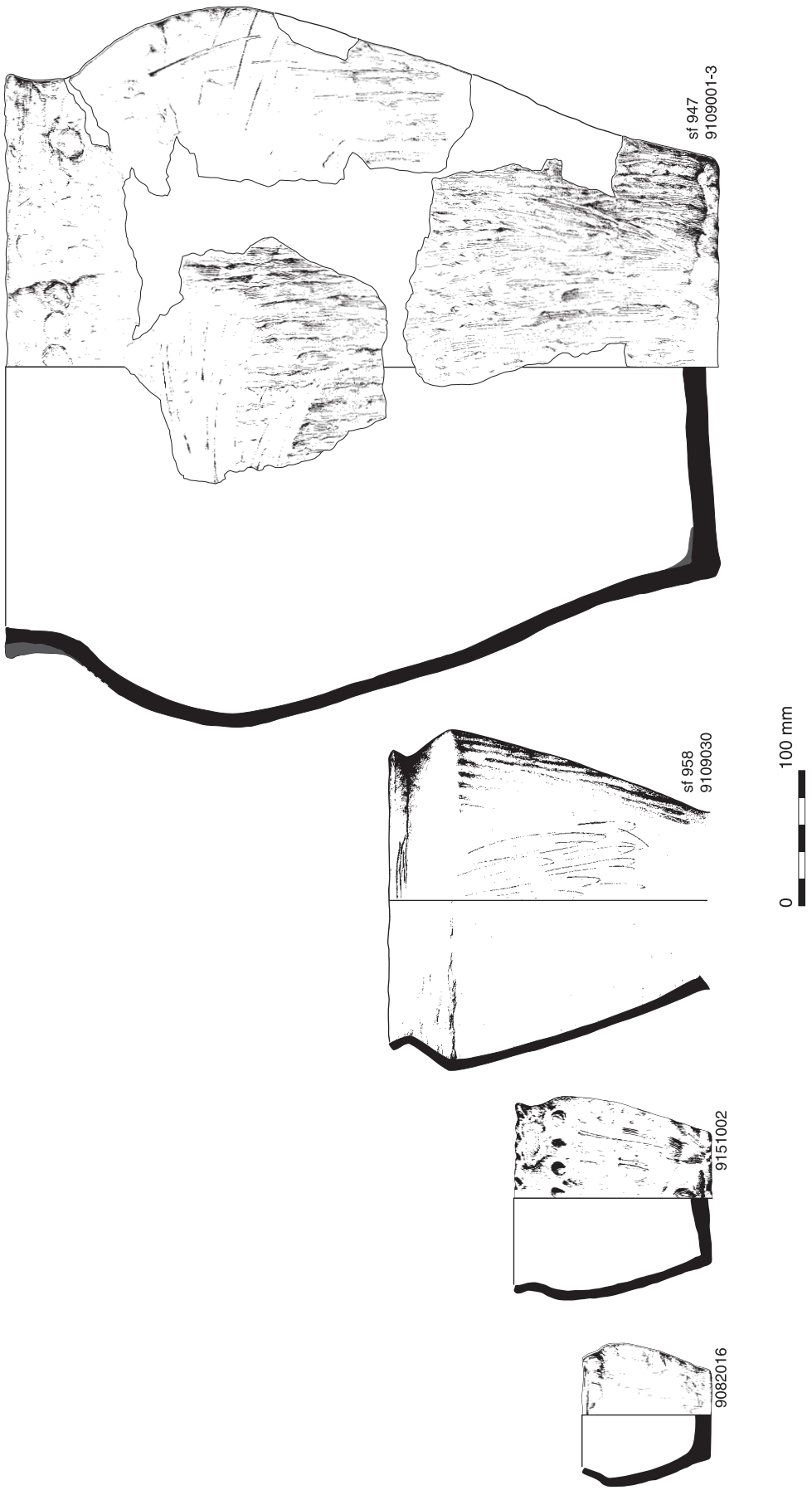


Fig. 3.91 Set of vessels of graduated size and finish in pit 9010

Warwickshire associated with late Bronze Age cremations (Woodward 2008, 303–5). Woodward links the presence of very large vessels to communal feasting events, and suggests that such feasting sets disappear in the Iron Age proper, but this assemblage would suggest that, in Kent at least, such traditions continue. How such concepts were transmitted raises interesting questions about social relations and travel at this time, as similar assemblages have not otherwise been identified in the Thames Valley.

The complete pot contained fish bone, marine shell and a pig bone, and associated with the 'beakers' were four triangular clay bricks and a bone toggle. Also in this layer were the remains of two sows, one of them burnt, and bones from two piglets, one also burnt. After a period of natural silting and possible deliberate sealing with sterile fill, a further ash deposit was associated with a chalk spindle whorl, a complete shed red deer antler, and another piece of human bone. The presence of a marine fish bone and marine shell demonstrates the inclusion of resources brought from several km away, but the small numbers of marine shells and bones does not suggest that marine resources were consumed in any quantity. Part of an articulated cattle leg was also included in the top fill of the pit. This mixture of wild and domesticated animals indicates the range of resources incorporated into the rituals of deposition, and the absence of deer bones, and of cattle bones, before the middle fills of the pit, may also be deliberate.

The presence of human bone, which only occurs at this period in this particular pit on Site G, may be connected to the feasting vessels represented in this pit. If so, the pits from the A2 would appear to indicate that different types and combinations of vessels were appropriate for different feasting events.

A third pit, 5992 on Site C, also showed evidence for the selection, or perhaps avoidance, of particular types of pottery vessel. Although it contained over 6kg of pottery, the assemblage was notable for the absence of fineware bowls. The back legs of a sheep/goat skeleton were also included in the fills, but there was less distinction between the types of material deposited in the successive fills, and in the associations between them.

Overall the choice (and combinations) of animals for consumption or sacrifice was varied. Although sheep/goat was found in pits 12527 and 5992, and pig and cattle in pit 9010, another pig was buried over a red deer and a raven skeleton in a second pit on Site G, and in Site C the bones of at least two neonatal piglets came from pit 7228, and a red deer skull from pit 5130. Pit 156 in the HS1 excavations contained calf and deer skeletons. If there is any pattern, it is perhaps that wild and domesticated species could be mixed more easily than different types of domesticated animal.

Champion (2007b) has noted that Iron Age spindlewhorls were only found in association with human bones along the line of the HS1, and only at White Horse Stone, where the two spindlewhorls from the site were found with an inhumation burial in pit 2296 (Hayden 2006a, 158). The spindlewhorl in pit 9010 was also the only example of this period from the A2 scheme, and although unfinished was also associated with a human bone. A similar association with burials has been noted in Oxfordshire, for instance at Gravelly Guy, Stanton Harcourt, where a shale spindlewhorl was buried with an adult female in pit 2118 (Lambrick and Allen 2004, 232) and, less certainly, half of a spindlewhorl was found with a male inhumation in a grave at Spring Road, Abingdon (Allen and Kamash 2008, 18). At Spring Road this was again the only spindlewhorl from the site, but at Gravelly Guy there were others with no apparent association with burial. It may be significant that one of the few other grave goods at Gravelly Guy, this time accompanying an adult male, was a bone toggle (ibid., figure 6.1). The only bone toggle from the A2 excavations was again that found in pit 9010. These objects clearly had other, practical uses, but were objects suitable for deposition with the dead, perhaps seen as particularly personal due to their use, and on some sites the circumstances in which they could be deposited may otherwise have been circumscribed by custom or taboo.

In contrast to the complete, or at least reconstructable materials in the lower fills of pit 9010, the final filling of this pit included broken up and abraded pottery, possibly derived from a surface midden. This was a characteristic of the pottery from many of the layers within the pits of this date on Site C, which contained very large overall assemblages of pottery, although there were some deposits of fresher material, and one virtually complete miniature vessel (possibly a crucible) in pit 5066. Champion (2007b) noted a similar phenomenon in the large early Iron Age assemblage from Tutt Hill on the HS1, and suggested that, although not representing immediate deposition after significant social events, they should still be regarded as event-marking or closure deposits.

Middening is a recognised phenomenon on a variety of later Bronze Age and early Iron Age sites, the most extreme examples being the huge middens of the Vale of Pewsey such as Potterne, East Chisenbury and All Cannings Cross (McOmish 1996). Smaller but still extensive examples have now been recognised at Little Wittenham, and possibly at Woodeaton, in Oxfordshire (Allen *et al.* 2010, 262–4). These monumental middens were clearly the result of centuries of accumulation, and the huge numbers and diversity of finds from them has led to their interpretation as the sites of large communal gatherings. While middens on this scale are still relatively rare, and possibly restricted to certain tribal groupings, it is plausible that middens were also created more widely as the outcome of social gatherings, and that material from them, the repository of previous gatherings, was considered suitable for inclusion in pits at the conclusion of later rituals.

The pits on Site C, however, also included some of the clearest examples of structured deposition, including a red deer skull with the antlers chopped off on top of two triangular oven bricks and a large charred wooden board, and the enormous deposits of briquetage in the upper fills of two of the pits. The residues of industrial activity of various kinds were common, characterised in several pits by reddened soil layers overlain by burnt flints and charcoal, and on Site K by two successive deposits of this kind. A number of the selected items from the early Iron Age pits appear to have been related to processes of transformation, such as the metal-working slag, the (unused) crucible and the briquetage trays and pedestals, and this may also have been the case with other industrial residues, although the precise processes involved are unclear. This may also be true of the unfinished spindle-whorl. It is even possible that the sow with neonatal piglets and the charred cereal grains stored as seed corn were seen in this light, although more prosaic explanations for these are also possible.

A similar-sized group of pits, almost all dated to the early Iron Age, was excavated at White Horse Stone, and was analysed for evidence of structured deposition. Significant variations were noted in the fills of some, but the incidence of placed or smashed vessels, and of animal skeletons or part-skeletons, was considerably less, while in contrast deposits of cleaned grain at the base of pits were more common.

In the middle and late Iron Age structured deposition of these materials continues, not only into deep pits, but also into shallow ones, and into ditches. Few of the pits have such complex sequences of fill, but two pits stand out; pit 4969 with fourteen fills and pit 3676 with nine. In 4969 the sequence of deposits comprised a potin coin, a pig skeleton and a smashed handmade pot of middle Iron Age type, ash and charred cereals, a very large piece of clay oven and a further complete but broken late Iron Age pot, topped by four deposits rich in mixed finds and environmental remains. This was the only very large piece of structural fired clay from the site; sizeable fragments were otherwise only found in the earlier pits with briquetage, but Poole (1995b, 263) notes the deliberate inclusion of parts of oven within her catalogue of structured deposits.

Pit 3676 had a basal layer of ash, and also had a potin coin, but in association with an inverted complete saucepan pot, an iron linch pin and a chalk weight. All of these finds were in a second layer of ash, and higher up a further layer of ash contained another smashed vessel and chalk weight. Poole (1995b, 262) noted a strong association between metal objects and carbonised layers, particularly at the base of pits. She suggested that some objects were the remains of composite wood and metal objects previously burnt, but that others were associations of carefully placed materials. In this case the association with ash rather than charcoal, and the presence of the other finds, makes it clear that this was a deliberately placed deposit.

While there were no animal skeletons, the lower deposits were associated with sheep/goat bones, the second with cattle bones, perhaps suggesting deliberate choice of bones to accompany the other deposits. The use of potin coins in structured deposits like these is particularly clear on the A2, and matches examples from other sites such as Keston and Cliffe (see Holman this vol.). The number of coins (five or six) deposited in this way on the Site B/C settlement, both singly and in association with other deposits, is also unusually large.

A pair of largely complete pots was also recovered from pit 226 at Eyhorne Street, from which a radiocarbon date of 400–260 cal BC was recovered (Hayden 2006b, 22–7). In that case, however, the pots appear to have been deposited together, like those in early Iron Age pit 9010, whereas in both the later pits at the A2 the impression is of successive deposits, in one case spanning the middle–late Iron Age transition.

In addition to these deep features, however, shallow pits were also selected for deposition, such as pit 5953 in Site C, which contained an iron gouge and a Neolithic polished granite axe, the latter probably valued for the exotic material of which it was made and its shape. In Brittany Neolithic axes are commonly found in Iron Age sites, and are believed to have been used as polissoirs, ie polishing or burnishing tools (the author is grateful to Yves Menez for this information).

Ditches, of which there were very few in the early Iron Age, also contain structured deposits in the middle and late Iron Age. These include both complete or smashed pots, such as the two found in the ditches surrounding pit 3676, and large deposits of animal bones. Animal skulls and skeletons have long been known in Iron Age ditches further up the Thames, for instance at Farmoor and Gravelly Guy, Oxfordshire (Lambrick and Robinson 1979, fig. 13; Lambrick with Robinson 2009, 285), and virtually complete vessels from ditch termini at several sites, including Little Wittenham (Allen *et al.* 2010, 161).

Regrettably not all of the middle and late Iron Age ditches were excavated, and combined with the effects of truncation this has left an incomplete pattern of deposition within them. The clearest associations are all with the sickle-shaped enclosure east of the metalled trackway, or with the small curving enclosure ditches next to it that surrounded pit 3676 and later shaft 3541 just inside its southern terminus. The pots within these ditches appear to be supplementing, and perhaps reinforcing, the deposits made within pit 3676, though whether the purpose was apotropaic, or placatory, is unclear.

Looking at the structured deposits overall, there appears to be a clustering of deposition at two particular periods within the Iron Age, one in the late 5th and earlier 4th century BC, the other at the time when potin coins were in use, at the transition from the middle to late Iron Age. The early Iron Age

pits that were radiocarbon dated all cluster in the late 5th or earlier 4th centuries BC, and this is not the dating profile that would be expected had pits been receiving structured deposits with consistent regularity throughout the early Iron Age. Indeed, given that pits with complex series of fills were targeted for radiocarbon dating, this only emphasises the relatively short periods in which complex deposits were occurring.

It could be argued that the early Iron Age dates simply reflect the late start of early Iron Age activity on the scheme, but there is also evidence for early Iron Age activity on the site before this. It may also be relevant that at White Horse Stone, where the whole of the early Iron Age was more clearly represented, such complex sequences of deposits in pits were rare, and the most complex was a pit of similar date to those at the A2 (Hayden 2006a). More importantly, this number of complex pits is not found at the A2 during the succeeding middle Iron Age until the period in which potin coins were in use.

Current orthodoxy suggests that potins were manufactured from the late 2nd to the late 1st centuries BC (Hobbs 1996), and remain in circulation for some time afterwards, but all of the pottery associations on the A2 are with middle Iron Age pottery, or with a mixture of middle and late Iron Age pottery including virtually complete middle Iron Age vessels. It therefore seems reasonable to conclude that the potin coins on the A2 were not residual or curated items, but were deposited during their main period of manufacture and use. Champion (2011) argues that the transition from middle to late Iron Age pottery should be dated around 100 BC, but the evidence is not particularly secure, and although Hobbs (ibid., 16–17) does not follow Allen's classification of potins into earlier and later types, Holman would prefer to see the A2 potins dating to the mid 1st century BC (Holman this vol.).

To some extent, exactly what date we give to the potins is less important than the fact that they represent a fairly brief period of structured deposition that stands out from what went before and after. Both periods in which complex deposition occurred were at times of transition, one from the early to the middle Iron Age, the second at the transition from the middle to the late Iron Age. Cunliffe has argued (1995, 80–8) that the structured deposits in pits were offerings, perhaps to cthonic deities, and he has also suggested (ibid., 87) that at Danebury what were relatively 'rare offerings of this kind were only made in extreme conditions when conditions of stress prevailed'. The increase in offerings, and in their complexity, over time at Danebury was argued to indicate an increase in stress over time. The pits from the A2 would seem to offer plausible evidence for two periods of particular stress at the site, both coinciding with periods of transition within the Iron Age.

For the later period, which can most probably be dated to the first half of the 1st century BC, a direct link to events in Gaul, if not in Kent itself, could be made with the advance of Rome to the channel, and even to Britain, during this time. The stresses are, however, just as likely to be the indirect social stresses caused by the bow-wave of Roman ideas and technology, and the threats to traditional beliefs and social interactions that these entailed. For the transition from early to middle Iron Age, the changes evident in material culture are less clearly reflected in other ways, although in Kent the main period of hillfort construction appears to belong to the middle, rather than the early Iron Age (Champion 2007b, 118–9), suggesting major changes in society at the transition.

Other aspects of middle–late Iron Age settlement

Large boundary ditches

Even allowing for truncation, the dimensions of the enclosure ditches of the middle and late Iron Age settlement are not particularly substantial, and (except perhaps for ditch 4615=HS1 ditch 332, western Site B), not defensible. Even this ditch was, however, narrow in relation to its depth, such that a bank made from the upcast would not have been particularly high, nor the ditch difficult to leap. Ditch 4615 appears to have been a straight boundary 130m long, and as such is more akin to the major ditched boundaries on Sites L and A than to any other features within the settlement. This group of boundaries do not form any defensible or continuous barrier, there is no evidence of any middle Iron Age activity protected by ditch 13161 in Site L, and each is significantly different to the others. They were thus clearly not designed as one, nor necessarily dug at the same time, and may have originated as separate boundaries whose purpose was as much symbolic as practical. Long boundaries of middle Iron Age date are now beginning to be recognised in the Upper and Middle Thames Valley, (Lambrick with Robinson 2009, 66–7), although none of these have such large gaps, and no others are as substantial as ditch 13161.

This system of interrupted boundaries is more reminiscent of the large dykes of late Iron Age date associated with some oppida (Lambrick with Robinson 2009, 268–70). The individual lengths of ditch may have been linked symbolically in the late Iron Age, when it appears that a settlement, and possibly a ritual focus, developed at Springhead at the source of the river Ebbsfleet. These ditches could then have been seen as marking one edge of the dry valley leading down to the spring head, and also leading to a trackway that was created in the late Iron Age along the east side of the Ebbsfleet. This trackway is described in the report as a 'processional way' (Andrews *et al.* 2011).

The arrangement at the south end of 4615=332 in the HS1 excavations, where the ditch ends just before a ditched droveway continuing south-west, is however on the same alignment as the system of ditches forming fields west of the boundaries in

Sites L and A. It therefore seems most likely that all three long ditches came to form part of one system, marking a significant landuse boundary between the chalk plateau and the Downs Road dry valley.

The placing of burials within and adjacent to such large boundaries is not uncommon in the middle Iron Age; similar examples are known at Roughground Farm, Lechlade, Glos., Horcott Pit and Latton Lands, Glos. (Allen *et al.* 1993, 45–6; Lambrick with Robinson 2009, 309–311). On Site L, these burials may have marked the start of a long-lived tradition of burial that continued throughout the Roman period (see Chapter 4 below), and this may have been a wider pattern locally, as two middle Iron Age inhumation burials, again without apparent adjacent occupation, were also found within the Roman cemetery at Pepperhill (Biddulph 2006, 9–11).

The layout and organisation of the Site B/C settlement

Understanding the overall organisation of this settlement is not helped by the partial nature of excavation, to which cropmarks and geophysical survey data unfortunately add very little. The problem is also exacerbated by the nature of much of the HS1 investigation, which was carried out as a Watching Brief; it is evident from the plan that in some areas ditches were either truncated before recording, or were not adequately exposed and recorded.

Although the plan clearly indicates that the metalled trackway ran through the middle of the site, and that the enclosures, four-post structures and pits lay to either side, there is not any indication of a planned layout, rather of organic development over time. Although some of the enclosure ditches are considerably deeper than others, there is no clearly-defined principal enclosure within either the A2 or the HS1 excavation areas, and the limited cropmark and geophysical evidence does not add clarification. Local parallels for this type of settlement are few; perhaps that partly revealed at Keston (Philp *et al.* 1991, fig. 5; Philp *et al.* 1999, figs 1 and 66–7) is closest in west Kent.

On the west side the earliest features were a pair of curvilinear enclosures, with the smaller 'banjo-shaped' enclosure added on the north (see Fig. 3.24). The western of these enclosures was bisected by the addition of ditch 4615, and the western part may well have been abandoned, the enclosure becoming D-shaped. The late Iron Age ditches were more rectilinear (see Fig. 3.38), and the plan of 4779/4626 in particular suggests that it was added to the south-east side of the banjo-shaped enclosure, which may have survived as boundary above ground. On the east the sequence is apparently different, with part of a rectilinear enclosure adjacent to a trackway evident on the south (see Fig. 3.32, ditch 7194), and two lengths of ditch that probably formed part of a large enclosure (5910 and 5827) east of that. There was an entrance between these two ditches, and a corresponding entrance through ditch 7192 may be indicated by a sudden change in the width of this ditch just west of intervention 5252. There may therefore have been a way into the Iron Age enclosures along much the same line as the later medieval holloway, and it was tentatively suggested that this entrance might have been secondary. Whatever the truth of this, in the late Iron Age the eastern settlement had a large curving enclosure made up of ditches 7992 and 7192, possibly accompanied by an outer annexe between 7192 and 5910/5827, if the latter ditches continued in use. This enclosure was subsequently both enlarged and divided by several NNE aligned ditches, and again on the east side by a NW-SE ditch 7197. The alignment of this ditch may support the idea that the putative entrance through 7192 was secondary

There are a number of differences between the character of the west and east halves of the settlement, although how much significance should be attributed to these, given that only part of the settlement was examined, is uncertain. Four-post structures were few on the west side, and were limited to a line close to the trackway, a suitable location for access from the fields and for transport elsewhere. East of the trackway there were more of these structures, though few closely dated, and they appear to have formed two clusters in lines running just west of south-north. It is possible that the western group were positioned for access from the entrance between ditches 7992 and 7192 on the south, and the eastern group was approached via the entrance between 5910/5827. The principal subdivision of the large curving enclosure was dug between these two groups of four-post structures, perhaps indicating the existence of two families within this part of the settlement, or the partition of the enclosure belonging to one family between two descendants at some point.

The distribution of structured deposits clearly varied. Although large pits containing complex deposits were present in both halves of the settlement, there was a greater concentration of smaller pits with structured deposits in the west, particularly in relation to potin coins, although these were not clearly grouped. In contrast, pit 3676 was surrounded by a small enclosure, of whose ditches 7989 also contained structured deposits, and this subsequently became the site of a shaft, which was not bottomed.

The contents of these pits cannot necessarily be used as indicators of adjacent activities. Discounting the finds from them, the quantity of most types of finds is too small to detect differences across the site, or specific activity areas. A predominance of pig bones was, however, noted in both of the curvilinear Iron Age enclosures on the west side of the site, and this matches a predominance of pig bones in HS1 ditch 271 to the south. These are not articulated bone groups, and whether this relates to status (pigs being regarded as an indicator of high status consumption), or simply to differences in animal husbandry, is

unclear. In the late Iron Age, there was also an articulated pig skeleton from pit 4969 on the west side of the site, but as there were also bones from several pigs in pit 3671 on the east side, there may not have been any difference by this stage. On the east side, very large numbers of animal bones were recovered from ditch 7992, involving bones of all of the main domestic species, but dominated by the mandibles of nine sheep/goats. The bones were not articulated groups, indeed few bones of most individuals were present, and the distribution of elements did not clearly indicate what activities had generated this material. It was suggested that this might have been secondary material previously deposited on middens, although larger numbers of the bones of two dogs, and a complete horse skull, were also present. A combination of carcass processing and domestic consumption may have been involved.

Human bones from the settlement were few, but the only cremation burial came from a large pit or quarry on the west side of the metalled trackway, while one complete inhumation and an articulated group of foot bones were both deposited in pits in the eastern half. The high status cremation burials were also located on the west side of the settlement, though with the long period between these and the previous cremation burial, this is unlikely to be significant.

Iron Age human burials and other bones found on the A2 scheme all fall within the range of categories seen across most of Southern Britain, namely: crouched inhumations in purpose-dug graves (1 in Site L), inhumations in pits (1 in Site C), whole or part inhumations in ditches (2 in Site L), articulated groups of bones in pits and ditches (1 in Site A and 1 in Site B) and individual bones in pits (2 in Site G). As discussed previously, the early–middle Iron Age cremation burial in pit or quarry 3400 is more unusual, but another burial of similar date was found at White Horse Stone (Hayden 2006a, 159). Both cremation burials were accompanied by grave goods, and this is important as evidence of a pre-existing native Iron Age tradition of accompanied cremation burials before the arrival of Aylesford-Swarling burials in the late Iron Age. Both the vessel that accompanied the cremation in 3400, and that containing the cremation at White Horse Stone, were refired and thoroughly burnt, and so had been placed on the pyre, rather than being intended as a container for the ashes.

The settlement at Pond D North

Also dating to the late Iron Age was the settlement partly uncovered at Pond D North (see Fig. 3.43). Only a single small pit here may possibly have dated to the middle Iron Age. The principal occupation appeared to represent part of a rectilinear enclosure, whose ditched boundaries shifted position several times, possibly due to the friable nature of the soil and its tendency to erode rapidly into the ditches. Finds from this were very few, and there were no associated internal features in the limited area exposed. On the south-west, however, was part of a second enclosure, apparently added to the first, whose ditches contained two virtually complete pots, one upright, the other inverted in the ditch fill. These were very reminiscent of the pots found in ditch 7989 around pit 3676 in Site B, but no similar pit was found in the limited area exposed within this enclosure.

Due to the acidic nature of the soil here, there was no animal bone, and there was very little other environmental evidence. It seems unlikely that the areas exposed were close to a domestic focus, or were involved in industrial activity of any kind. Possibly these were agricultural enclosures for stock and for the storage of produce. The focus of the settlement may have lain to the west, under the Cobham Service Station. Given that only a part of the settlement was investigated, occupation of Roman date may have continued further west or north.

The high status cremation burials

Burials 4298 and 4312 lay on the edge of the late Iron Age settlement, and may not necessarily have been within an enclosed area. There was a concentration of pits containing structured deposits in the surrounding area, particularly of those containing potin coins, but chronologically these are very likely to predate the burials. This concentration of deposits may well have denoted an area of particular significance within the settlement, however, influencing the choice of burial site.

The high status graves represent the fifth site in Kent where bucket burials have been found, and the first in north-west Kent (Fig. 3.92). The burials at Aylesford and Swarling were recovered a long time ago during the course of quarrying, so details of their wider context are uncertain, but they were clearly small cemeteries (see also Fitzpatrick 1997, 234 and fig. 136). The third group, at Alkham, also consisted of at least four burials; it was found during construction work in 1989, and the archaeological excavations that followed by the Kent Archaeological Rescue Unit appear to have been of limited extent (Philp 1991). These sites therefore represent cemeteries, unlike the two graves on Site B. The burial at Westhawk Farm was also found during construction on a building site, and was salvaged (Booth *et al.* 2008). No other burials were noticed, but due to the heavy truncation of this site by ploughing, and the circumstances, it is uncertain whether this burial was isolated, or part of a larger group.

As stated above, the relationship of these other bucket burials to contemporary settlement is uncertain, though none appears to have been particularly close, unlike those at the A2. Indeed Champion (2007b, 126) speaks of the organisation of formal cemeteries away from areas of occupation. In the case of Westhawk Farm, for example, the nearest known late Iron Age settlement is at Brisley Farm, some 700m distant. At Brisley Farm, however, there

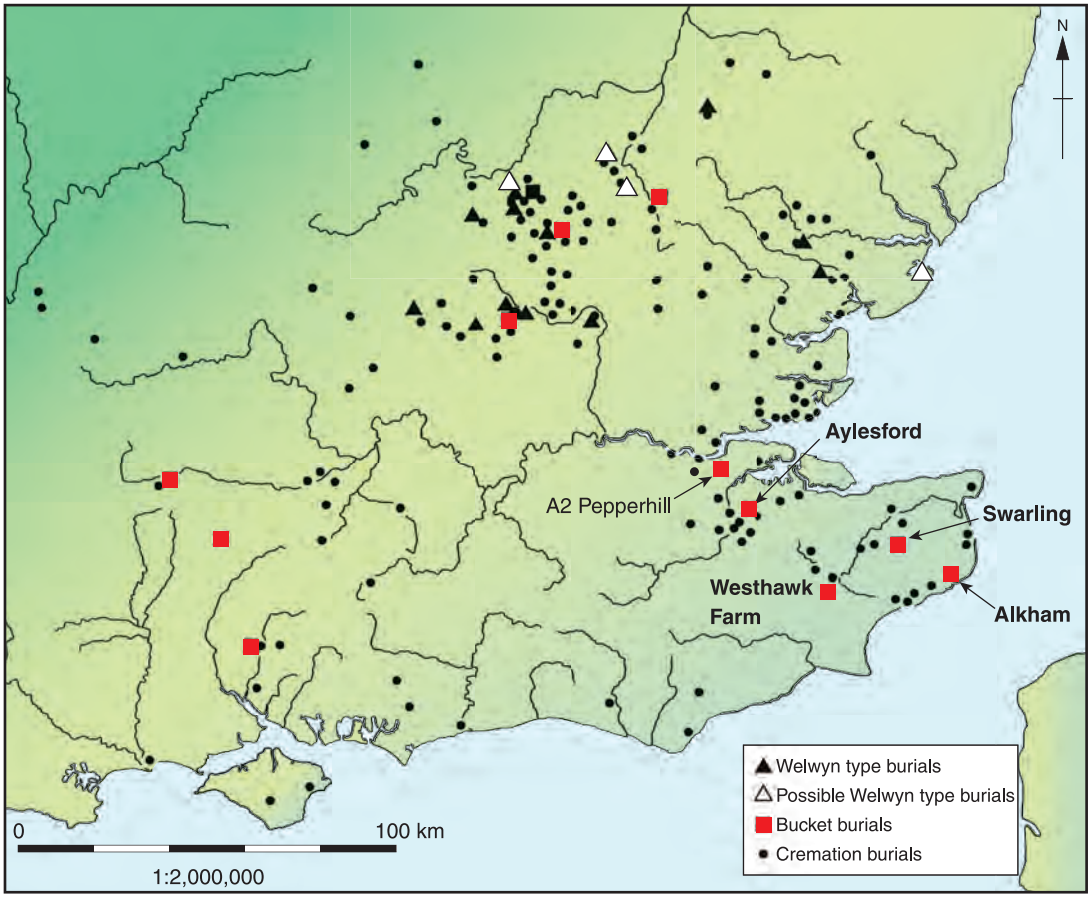


Fig. 3.92 Cremation cemeteries of the Aylesford-Swarling culture (after Cunliffe) showing location of bucket burials

were a variety of other burials, including warrior burials, more closely associated with settlement, and Hamilton notes other such associations (Hamilton 2007, 89)

The graves are circular rather than square or rectangular, like many of those of the late Iron Age, for instance at Aylesford and at Hinxton Rings, Cambridgeshire (Hill *et al.* 1999). The arrangement of the objects within the graves was not haphazard, the two jars in grave 4312 lying along the north-south central axis of the grave, with the bucket containing the cremated bones between them on the west, while in grave 4298 three pottery vessels were in a row on the west, with the brooches overlain by the cremated bones in the centre, and one further vessel on the east. Nevertheless, the pots in grave 4312 were not arranged according to the cardinal points of the compass, but SW-NE, possibly following the line of the adjacent former enclosure ditch. It is, however, difficult to make comparisons with the other high status graves in Kent as most were not recorded in detail, or have not been published. The cremated bones in grave 4312 were contained in the bucket, as they were at Swarling and in at least one of the bucket-burials at Alkham (Stead 1971; Stead pers. comm.). In the case of grave 4298 the cremated bones were heaped over the brooches; this was also commonly the case at Westhampnett, although at Hinxton Rings the metal finds were separate from the cremated bones (Hill *et al.* 1999). Practice clearly varied. In the absence of any accompanying fittings, it is difficult to determine what the wood next to the iron brooches represented. Possibly this was the remains of a board covering the cremation; the remains of boards were found overlying the bones in Cremation 1 at Hinxton Rings, and in a number of graves at King Harry Lane (Hill *et al.* 1999, 247; Stead and Rigby 1989, fig. 44).

In a review of the British and continental buckets, or fragments of the same, and drawing upon Stead's study of the British examples (Stead 1971), Vidal showed that, while some might date to the late La Tène period, the most closely-dated continental examples (those at Vieille-Toulouse, Montfo, Hérault and Goeblingen-Nospelt) were deposited in the last quarter of the 1st century BC (Vidal 1976). Among the more recent continental discoveries are the three buckets from the grave at Antran, Vienne, part of a very rich collection of finds dated AD 1–25 (Pautreau 1999). The Aylesford patera and jug are dated 50–15 BC, and probably after 25 BC (Stead 1976, 412). In Britain, iron bands probably belonging to bucket burial were found at Westhampnett (Fitzpatrick 1997, 193 Grave 20622), where his preferred dating for the cemetery falls in the first half of the 1st century BC. In

Kent, two further buckets, each in a separate grave, have been found at Alkham, and another bucket during excavations at Westhawk Farm (Booth *et al.* 2008). The former have not been published, but the associated finds, which are now in the British Museum, indicate that one bucket was accompanied by two tazze, and the other by ripple-decorated jars, perhaps indicating dates in the 1st century AD (*pace* Champion 2007b, 127). The Westhawk Farm example was accompanied by a patera and ewer of Nuber's Hagenow service (Cool in Booth *et al.* 2008, 31–3), and these suggest a date in the 1st century AD, probably not long before the Roman conquest.

The remains of the bucket in burial 4312 does not include anything that aids its dating. This can only be narrowed down by the Eggers Type 16 cup, since the quoit-shaped pedestal bases could date anywhere between 50 BC and AD 50. As Scott (this vol.) has shown, Eggers Type 16 cups are dated to the latter half of the 1st century BC, with continuing currency for another decade (Guillaumet 1991, 10). This continental dating may be too precise, but indicates that the burial probably dates to the later 1st century BC, or possibly to the early 1st century AD.

The brooches from grave 4298 include two boss-on-bow brooches made of brass. Stead dated this brooch type largely to the later 1st century BC (Stead 1976, 412). In the light of more recent finds, for instance at Westhampnett, the dating has been pushed back (Fitzpatrick 1997, 204). A boss-on-bow brooch was found at Stanway, Colchester, though not in association with other finds, and Crummy dated the type to 100–25/20 BC, although she noted a possibly later example at King Harry Lane (Crummy 2007, 314–5). Like the pair in grave 4298, however, the boss-on-bow at Stanway was made of brass, which Dungworth suggests was not widely used in the Roman Empire until the last quarter of the 1st century BC (Dungworth 1996). It would therefore seem likely that this type of brooch was still being made after 25 BC. Another of the brooches in grave 4298 was a simple bow brooch, a type dated stylistically to shortly before the Roman conquest. This was a leaded bronze brooch, which gives no metallurgical clue to closer dating.

The pottery vessels accompanying the cremation included a necked bowl and carinated cup of types not usually found before the last quarter of the 1st century BC, and one of the pedestal-based jars is of a type that was probably not produced after AD 20 (Brown and Couldrey this vol.). These dates make no allowance for curated items or heirlooms, and may in any case be a little too precise. None of the surviving sherds, however, suggested that any of the pottery vessels was an antique, and the dating of the brooches and the ceramic vessels is generally in good agreement, suggesting a date after 25 BC and possibly after AD 1, but not later than AD 25. As the simple bow brooch is such a straightforward type, it is possible that this example may be a little earlier than the given date range, rather than that the other items in this grave were curated, and that the grave dates to the second quarter of the 1st century AD.

Only a proportion of the bone normally generated by modern cremation was present in either burial. This was probably due to truncation, rather than the inclusion of only a token amount of bone during burial. The surviving bone fragments showed that both individuals were adults, and suggested that the bucket burial 4312 was that of a male, and the brooches burial 4298 was probably that of a female. The individual cremated at Westhawk Farm was also probable male (Booth *et al.* 2008, 306). Unfortunately, details of the sex of other individuals accompanied by buckets is insufficient to identify this as a distinctively 'male' burial assemblage. It was not possible to sex cremation 2 at Hinxton Rings, which contained a similar assemblage of finds to that in grave 4298 (Hill *et al.* 1999), but brooches accompany a large proportion of late Iron Age cremation burials in Britain, and no difference in the provision of brooches was noticed between male and female at King Harry Lane (Stead and Rigby 1989, 102). At Alkham, three and four brooches respectively accompanied the two bucket burials.

The finds from the A2 graves all fall within the general range of other late Iron Age high status burials in Britain, and among these were not particularly richly furnished. The Aylesford buckets were accompanied by a variety of other metal vessels, and the Alkham bucket burials by groups of brooches and by other metal toiletry items. While the number of brooches in grave 4298 is larger than in most others, four brooches are not unusual, and these brooches of brass and bronze, not of silver like those from Great Chesterford (Hill *et al.* 1999, 256) and Maldon Hall Farm, Essex, or of gold, like those from a hoard in Winchester (Crummy 2007, 315). Nevertheless, the metal cup of Eggers Type 16 is the first of its kind to be found in Britain, demonstrating the continental links of its owner. Its size is particularly small compared to the others in this class, but matches very closely the height of the bronze-sheathed wooden tub or cup found accompanying the bucket from Aylesford Grave Y (Stead 1971, 271 fig. 10), which Earwood thought might be a drinking vessel (Earwood 1993, 71–2). It was in the late Iron Age that tankards, wooden stave-built vessels with bronze fittings, first appear, and the earliest of these was from grave Z at Aylesford, though not found with a bucket (ibid., 72–5). Whether the Eggers metal cups developed from wooden prototypes, or whether these cups and tankards were intended to mimic the metal vessels using wood, is uncertain; the Aylesford vessel may represent a fusion of two different traditions, the wooden tub or cup being British, and derived from vessels such as those found at Glastonbury (Bulleid and Gray 1917), and the metallic sheathing deriving from cups like those of the Eggers series. Whatever the explanation, it does, however, indicate that the practice of including small cups, tubs or tankards was shared by at least two bucket burials in Britain.

Despite its very partial preservation, the bucket has one feature that sets it apart from most other British and continental examples. This is the absence of any tacks to attach the metal bands to the wooden bucket, the bands being soldered onto backing plates (Fig. 3.93). No mention is made of such plates, or of soldering, in any of the accounts of the other British examples, nor in those reviewed by Vidal, or the three from Antran. It is possible that others of the buckets were originally attached in this way, but that the solder failed, and that the backing plates were then replaced by tacks. Re-examination of the insides of bands from some of the other buckets might resolve this point. Otherwise, this appears to represent an experiment in fixing that was not followed elsewhere.

As is the case almost without exception for buckets associated with burials, the bucket at the A2 was made of yew, a toxic wood. Buckets of the 1st century BC in wells without burials are rare, but an important group has recently come to light at Tregueux in Brittany (Allen *et al.* 2012), and these are a mixture of oak, yew and other species. It therefore appears that yew was used for receptacles of this kind in other circumstances, but was preferentially selected for the manufacture of decorated examples used in burials.

Stead (1971, 276–8) argued that the buckets were the Iron Age equivalent of the wine-mixing bowls that accompany patera and ewer sets in the Roman world (see Chapter 4 grave 6260). Fitzpatrick, however, suggested that the patera and ewer sets were used for washing or ritual cleansing, and not as part of a wine service (Fitzpatrick 1997, 208). It is true that no examples of such wine-mixing bowls have been found in pre-Roman burials in Britain, but it is also clear that buckets are more often found, as on the A2, without these other Roman vessel types, and in Kent, are never accompanied by amphorae. For the present, therefore, use in relation to wine-consumption remains unproven. On the continent wells are used as graves (puits funéraires), and the association of well-graves and buckets, as at Vieille-Toulouse (Vidal 1976), does indicate a strong link between water and burial, and perhaps the role of water in preparation for burial. One possibility is that buckets were used more widely in dining, and may have held the water obtained for ritual cleansing, either of the corpse or of the mourners, perhaps obtained from springs of particular significance, such as that at Springhead.

Fig. 3.93 Artist's reconstruction of the bucket from grave 4312

Neither of the graves shows the level of interest in personal hygiene evident at Alkham or at Hinxton. One point of interest, however, is the mixture of copper-alloy brooches found in grave 4298, two of them of the same type linked by a chain, and two others of different sizes and types. Hill noted that cremation 2 at Hinxton Rings had three large brooches, two probably linked by a chain, and one smaller type, and that seven examples of the same also came from the King Harry Lane cemetery at St Albans (Hill *et al.* 1999, 254). These presumably indicate a particular means of arranging clothing, the paired brooches and chain probably on either side of the neck, and the two others used to fasten items of different bulk, perhaps a cloak and an item of headgear.

Overall settlement pattern

The excavations along the line of the A2 widening scheme, in conjunction with those of the HS1, have indicated that in the early Iron Age there was a cluster of activity, consisting of pits and probably four-post structures, spaced at intervals of 1–1.3km across this landscape. The principal foci were at Hazells Road diversion/Site K, Site C/A2 Activity Park and Site G/Tollgate. The last of these had smaller foci of pits at a distance of around 200m to the west and south, and the cluster of four-post structures. On the edge of the Tollgate dry valley, 800m west of this, and the same distance east of Site C, was a cluster of four-post structures, some probably early Iron Age. Some 300–400m west of the Site C cluster there were scattered features including a four-post structure, and 200m to the north an early Iron Age pit was found at Coldharbour Road (Mudd 1994, 365–6). There was a sprinkling of pits beyond this in Sites L and A, and the large pit found in Site K lay around 150m north of the Hazells Road site. Each focus was therefore surrounded by a dispersed spread of further features, and unenclosed four-post structures were apparently dotted around the landscape.

Environmental evidence indicates that by the early Iron Age the landscape was fairly open,

although trees and shrubs may have grown along some of the ditches, perhaps as hedges. The foci at Sites C and G may well have been intervisible, and certainly the four-post structures will have been visible from one or more of these, although that at Hazells Road lay within the Downs Road dry valley out of sight. The absence of ditched enclosures, and the presence of these (?storage) structures scattered around the landscape, would suggest a relatively ordered and peaceful environment.

Since radiocarbon dates have shown that activity at Sites L, C and G at least was taking place within the same 70 years or so, it would appear that this landscape was well-utilised. Whether the activity represented domestic occupation has already been discussed, but it remains possible that these were sites visited only periodically, though repeatedly, rather than being permanent farmsteads. Evidence of industrial activity has been recovered from Hazells Farm in the form of probable bowl furnaces, and at Site C in the form of large quantities of briquetage, a little iron-smelting debris and an unused crucible. The evidence from Site G is less certain, although substantial quantities of briquetage were also recovered here, as was a firepit for cereal processing and antler-working. It is therefore possible that occupation was seasonal or periodic, attached to the performance of particular industrial activities. Against this, Bull (2006, 14–15) argued that the scale of cereal-processing at Tollgate suggested more permanent occupation in the immediate area. The storage structures and pits scattered about the landscape could be interpreted as supporting the seasonal interpretation, each being the focus of an activity carried out in a round of visits. In the absence of proven evidence for other types of settlement this is, however, speculative. A large cropmark enclosure just 300m south of Site E includes what appears to be a circular enclosure 100m across, overlapped by a rectangular enclosure containing pits, but these are currently undated.

In the middle Iron Age many of these sites were abandoned, and occupation was concentrated in a band of enclosures between the Downs Road and Tollgate dry valleys. The settlement area was spread over 500m west to east, The southern limit is provided by the line of the HS1 excavations; only in the centre did a single enclosure, which appears to have had late Iron Age origins, continue south across the line of the HS1. To the north, the A2 Activity Park excavations demonstrate that the site did not continue further east, and also provided a norther limit to the eastern part of the settlement. The corner of a rectilinear enclosure was however found just over 100m north of the trackway, and was dated by three sherds of later prehistoric pottery to the middle Iron Age (Dawkes 2010, 17). This enclosure was also cut by a number of inhumation burials, which were undated but believed to be Roman. Although it is equally likely that the enclosure is of late Iron Age, or even early Roman date, it does suggest that a considerable portion of the later Iron Age settlement may lie (as yet undiscovered) in this direction.

Springhead, at the head of the Ebbsfleet, lay 2km to the north-west, but currently excavations have not revealed any early or middle Iron Age activity associated with the spring. A settlement, or possibly a ritual centre, appears to have come into existence at the start of the 1st century AD (Andrews *et al*. 2011). The appearance of high status graves at Site B, and the commencement of late Iron Age settlement at Springhead, are close in date, but the nature of the relationship between these events, if any, remains unclear. The nearest other certain middle and late Iron Age settlement is at Hillside, just under 3km to the east (Philp and Chenery 1998). There the scale of excavated middle and late Iron Age activity was relatively slight, but this was concentrated on the very western boundary of the excavation area, and it is possible that more substantial settlement lay in the unexcavated areas further west. There is also a cropmark site 400–500m south-west of this, and just 400m to the north-east of Site G, which comprises a complex of curvilinear enclosures, including a sub-rectangular enclosure that from its shape is very likely to be of middle or late Iron Age date. This would suggest another extensive focus of middle and late Iron Age activity in this area, perhaps indicating that the same process of nucleation was at work here.

The partial enclosure at Pond D North lay some 800m south-east of this, alongside what was later to become Watling Street. On present evidence the construction of the road may have signalled the end of this settlement, rather than a stimulus to greater activity. The settlement to the north-west at Hillside was much more extensive in the early Roman period than before (Philp and Chenery 1998), and it is possible that further nucleation of the late Iron Age settlements in this area, including the cropmark site north of Singlewell, took place at this time, leading to the abandonment of Pond D North.