

# Chapter 2: From the Palaeolithic to the Late Bronze Age

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## FROM THE PALAEOOLITHIC TO THE EARLY BRONZE AGE

Little evidence for activity in these periods was found along the A2. All of the Palaeolithic and Mesolithic material, and much of that from the Neolithic and early Bronze Age, consisted of residual flint in later features (Figs 2.1–2). Just two sites (G and D) contained significant features and deposits, although in both cases the features were few.

### Residual Late Upper Palaeolithic flint from Site A

The only tentative indications of Late Upper Palaeolithic activity found along the A2 were two residual blade-like flakes, one of which exhibited edge-damage comparable to the characteristic ‘brusing’ found on blades in Long Blade assemblages. These were found on Site A in a pit (3030) which also contained middle Bronze Age finds (see below). These two pieces were more heavily corticated than the other flint associated with the pit.

### The Mesolithic

No features or surfaces dated to the Mesolithic were found. The only evidence consisted of residual finds in later features or within scatters of artefacts of several periods in colluvial layers or the topsoil. Two main concentrations of Mesolithic material were, however, recognised, one occurring on Site B and the other at the boundary between Sites F and G.

### Mesolithic flint from Site B

A range of residual Mesolithic flint was found in features in the central and western parts of Site B (Fig. 2.1). This flint included a rod microlith in pit 4612, a narrow blade and a single platform pyramidal core of Bullhead flint in ditch 7985 and a probable tranchet axe or adze fragment from gully 4518 (see Chapter 3 for details of these features). Several blades and blade-like flakes, as well as micro-burins, were recovered from a scatter of probably middle Neolithic material in layer 3424.

### Mesolithic flint from the boundary between Sites F and G

A range of Mesolithic flint, as well as a considerable number of blades and blade-like flakes, which could date from either the Mesolithic or the early Neolithic, were found in a large natural hollow, probably the upper end of a dry valley, at the boundary between Sites F and G (Fig. 2.2). This material also included a bi-truncated point from middle Bronze Age posthole 9392 (part of posthole alignment 9612), and a backed bladelet from middle Bronze Age ditch 9179. Many blades, including one in quartzite, and three possible burins were also recovered.

### Mesolithic material from other sites

Further residual Mesolithic flint was found in later features on Site C. This included three bladelets from pit 5066, one of which was broken and resembles a distal micro-burin, and a small partly denticulated thumbnail end scraper from pit 5110, which is more likely to be Mesolithic than early Bronze Age in date.

Other blade-like flakes, blades and bladelets, which could be either Mesolithic or early Neolithic in date, were identified on nearly every other site. This material includes two bladelets that were associated with a possible posthole/stakehole arc (10538) on Site K at the western end of the route.

### The early and middle Neolithic

#### *The early Neolithic ramped posthole and other features on Site G*

The most intriguing Neolithic feature was a large ramped posthole (9539) found on Site G (Figs 2.2 and 2.3; Plate 2.1). No other comparable features were found on the site, although a layer on the edge of the natural hollow some 45m to the south-east, and a small number of pits and postholes that cut it, might also have dated from the early Neolithic. Although only early Neolithic flint was recovered from these features, an early Bronze Age radiocarbon date came from the only pit (9223) that was dated, showing that in this case the flint was residual.

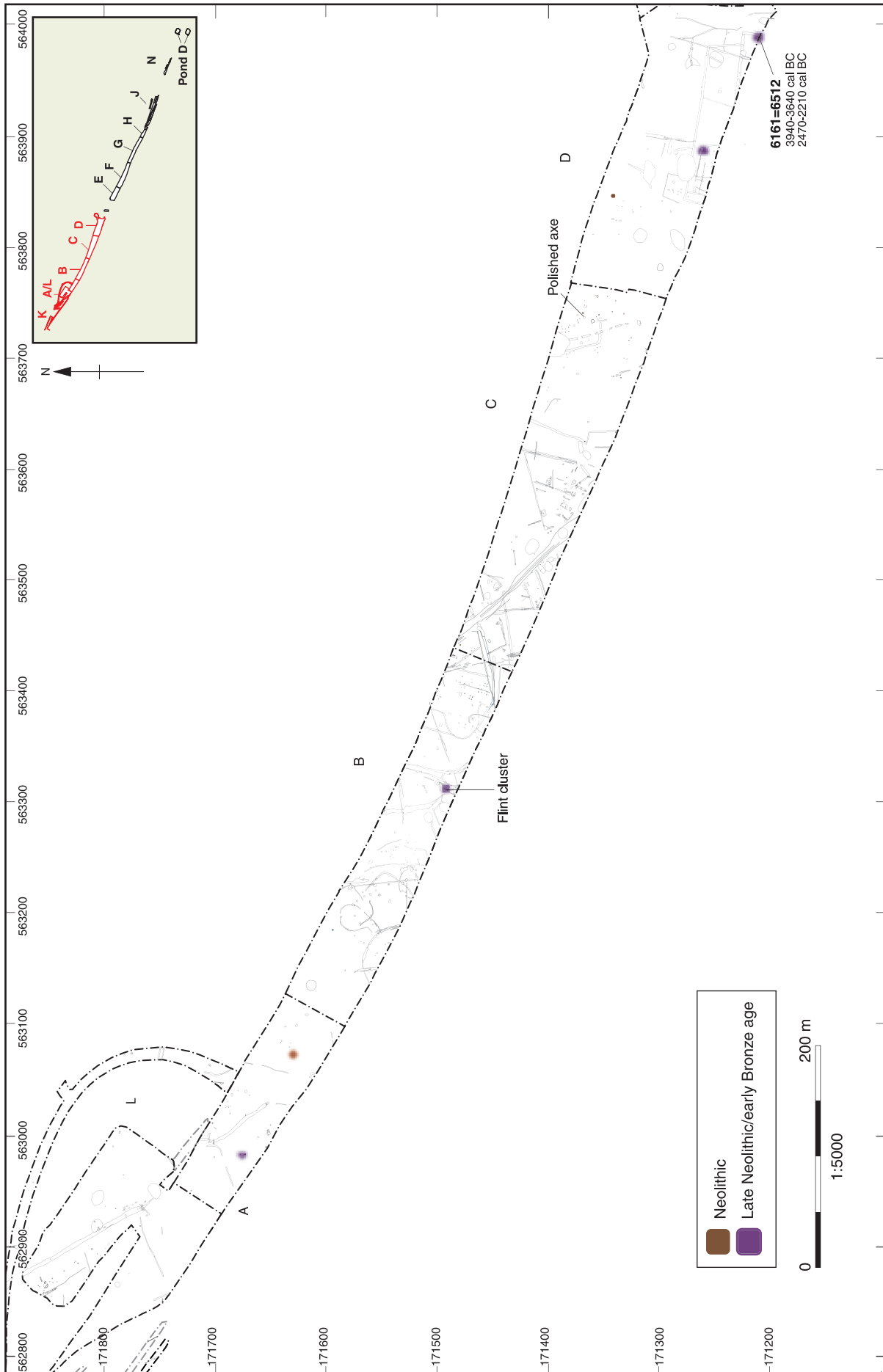


Fig. 2.1 Plan showing Neolithic and early Bronze Age features in areas L-D and giving radiocarbon dates

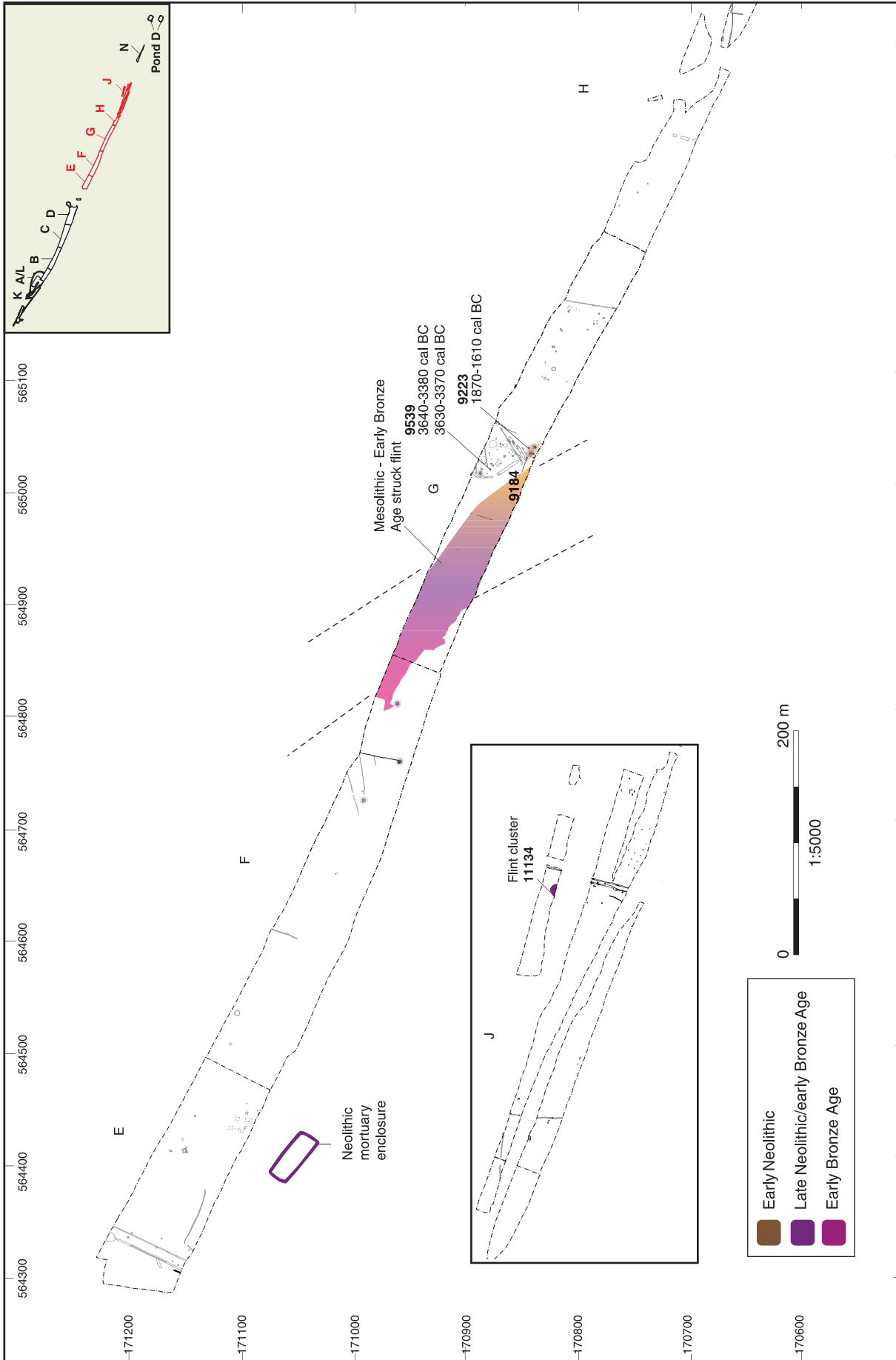


Fig. 2.2 Plan showing Neolithic and early Bronze Age features in areas E-J, with radiocarbon dates.

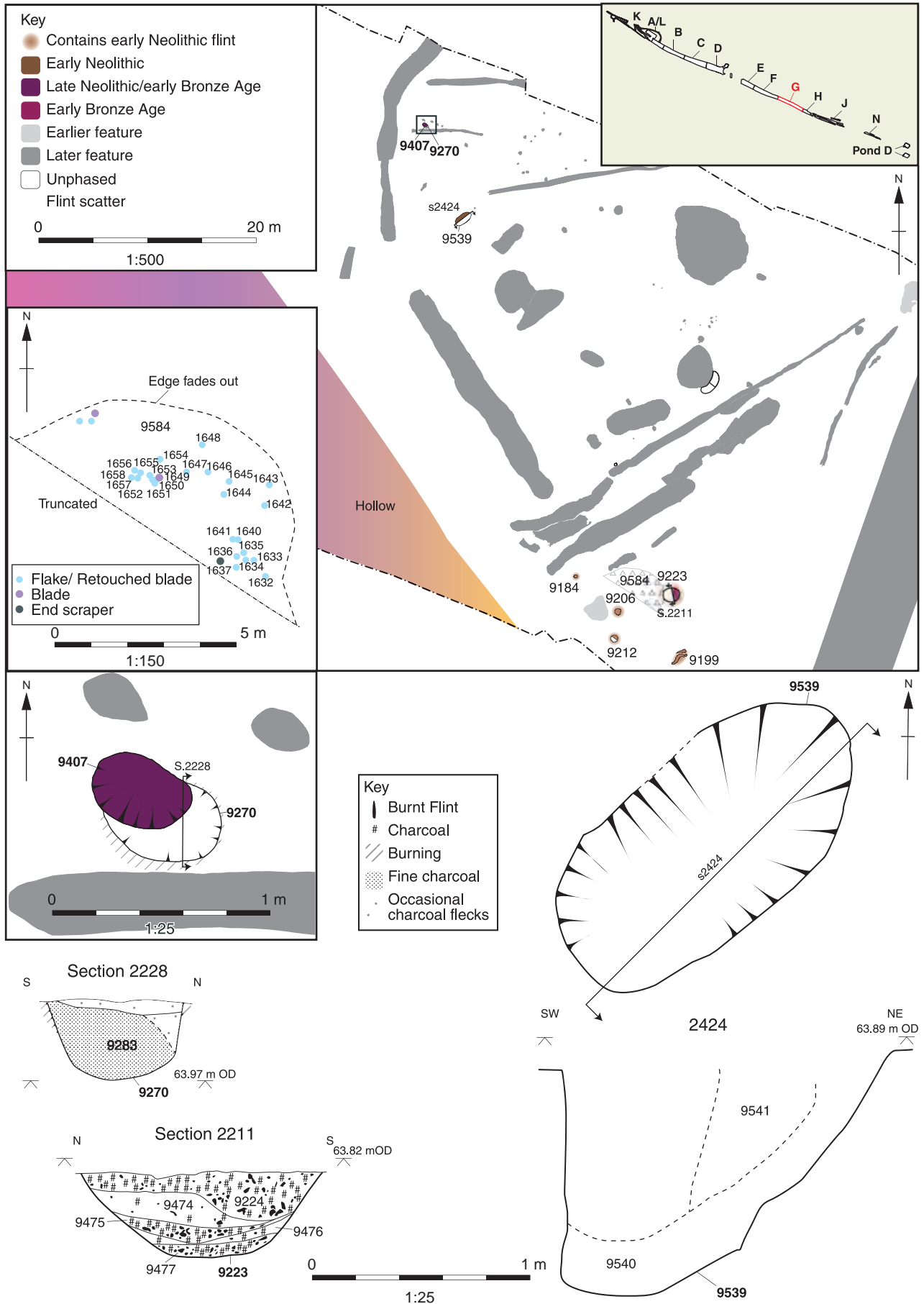


Fig. 2.3 Plan of Site G west showing distribution of features, plus detailed plans, sections and flint scatter





Plate 2.1 Site G early Neolithic posthole 9539

The large ramped posthole (9539) lay near the centre of Site G, in the area later occupied by a middle Bronze Age enclosure (see below). The presence of this middle Bronze Age activity may have obscured the presence of other early Neolithic features, or removed them entirely. The date of the ramped posthole is, however, established by two radiocarbon dates obtained from oak and hazel charcoal at the base. The oak charcoal may have derived from the post. The oak gave a date of 3640–3380 cal BC (NZA 30123) and the hazel a date of 3630–3370 cal BC (NZA 32317). These dates pass a  $\chi^2$  test (df=1 T=1.4 (5% 3.8), indicating that they could have been contemporary.

The ramped posthole was oval in plan, measuring 1.6m by 0.8m. In profile it was asymmetrical, sloping from the north-east, with a slight step, to a rounded socket, 1.2m deep (Fig. 2.3). The size of the socket suggests that the feature would have held a post with a diameter of up to 0.55m.

The lower fill (9540) contained charcoal fragments and a charcoal band which extended up the western side of the feature. This band of charcoal might indicate the use of a post that had been charred before being set into the posthole. The fill above this (9541) might derive from the use of the material excavated from the posthole to pack the post. The pottery recovered from this feature consisted of three sherds (6g) in flint-tempered fabrics but also an intrusive grog-tempered sherd. A flint blade, an end scraper and two flakes were also recovered.

#### *Early Neolithic flint from layer 9584 and from pits cut into it*

Some 40–45m south-east of the ramped posthole, a small area of soil containing a scatter of struck flint

was found on the edge of the natural hollow, dipping slightly south-westwards (Fig. 2.3). The flint was plotted, but examination did not find any refits, and this small assemblage was heterogeneous in character, with few tools, none of them diagnostically early Neolithic. The layer was truncated by ploughing upslope to the north and east, but almost certainly continued south-westwards down into the hollow, though due to the impact depth of the road this was not investigated further (but see also below). One pit (9223), three postholes (9184, 9206 and 9212) and an irregular feature (9199) cut this layer, and all contained flints, some clearly of early Neolithic date. Charcoal from a layer in pit 9223, including much burnt flint, was radiocarbon-dated, but gave an early Bronze Age date of 1780–1610 cal BC (NZA 30115), and in this case it is clear that the flints were residual. The postholes measured from 0.3 to 0.6m in diameter, and from 0.20 to 0.3m deep. None had a clear post-pipe. There were other features of a similar size without struck flint in the same area that may also have belonged to the same phase of activity.

The irregular feature (9199) had very indistinct edges, but its fill was distinguished from the surrounding natural by its darker colour and by the presence of charcoal. The fill appeared to cover an area of around 1.5m by 2.0m and was around 0.15m deep. It may have been an area of disturbance rather than a cut feature.

#### *Colluvium at the boundary between Sites F and G*

A band of colluvium filling the top of a late Pleistocene hollow was identified running from north-west to south-east, spanning the boundary between Sites F and G (see Fig. 2.2). This was initially investigated by machine during the stripping of Site F, which revealed a sparse scatter of struck flint at various levels. However, work was halted when it was realised that most of the sequence would be preserved beneath the impact level of the new road. There were no obvious patterns or concentrations in the distribution of the flints, which ranged in date from Mesolithic to Bronze Age, and many may have been deposited in the hollow through in-washing or soil creep. Much of the flint displayed a rolled outer surface with significant edge damage. During a later watching brief, further struck flints were recovered from a trench which crossed the deeper central part of the hollow, but no buried surfaces or features were identified.

The date of the colluvium is uncertain. In some places probably Iron Age pottery was recovered from it, whilst at others it was cut by early Bronze Age features (see below). It is probable that differing colluvial layers were deposited intermittently from the Neolithic onwards.

#### *Site B: flint scatter 3424*

A small assemblage of flint was recovered from a deposit (3424) which lay near the south edge of the

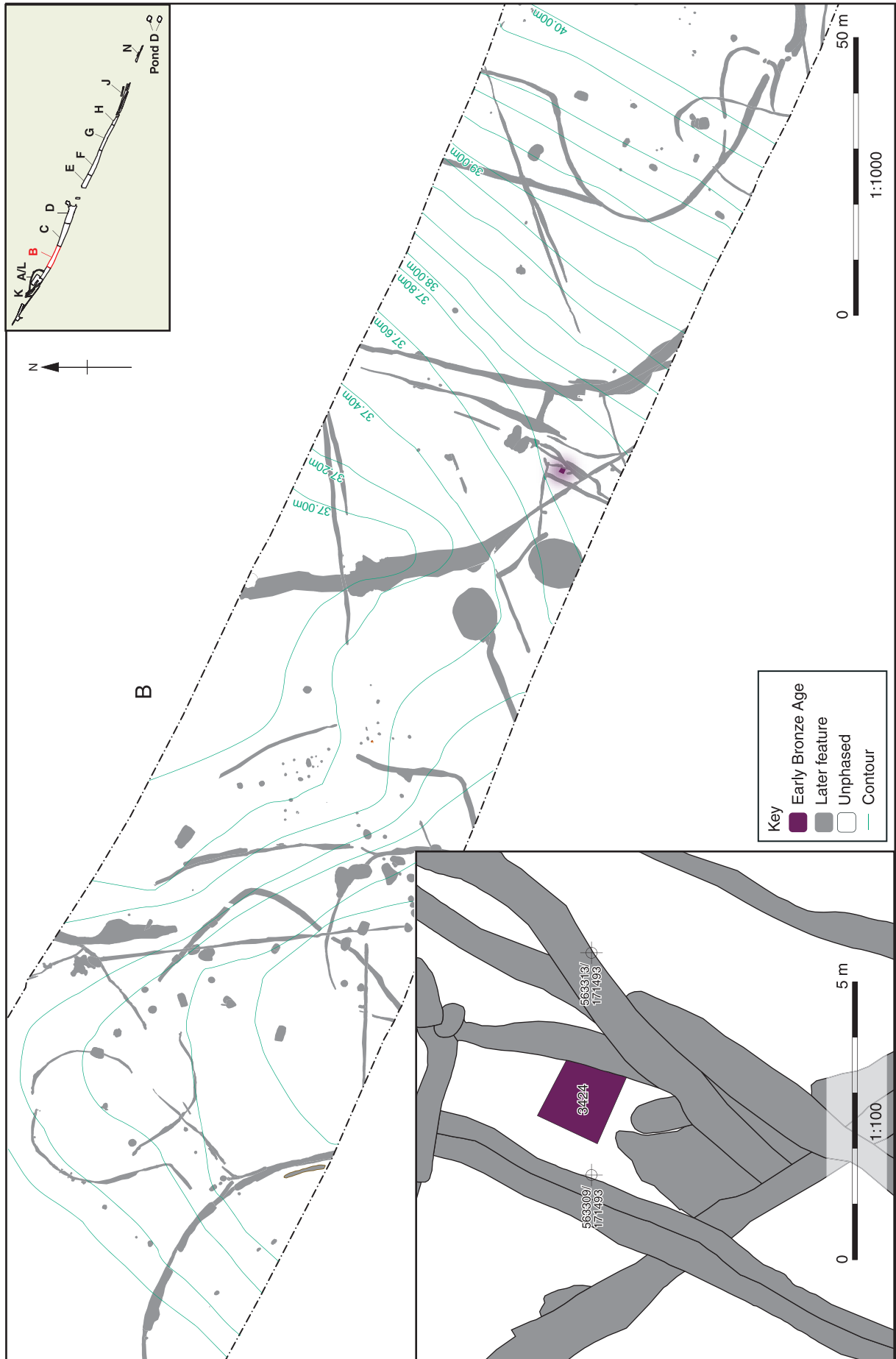
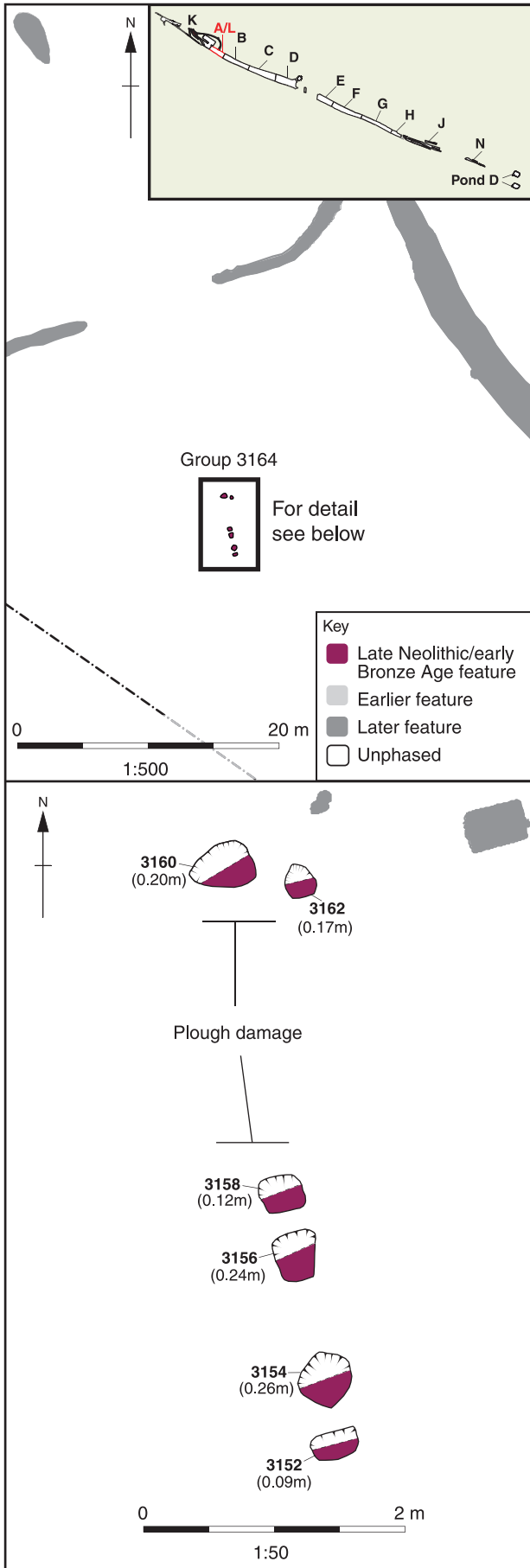


Fig. 2.4 Plan showing topographical location of flint scatter in Site B



centre of Site B (Fig. 2.4). It is possible that this deposit was associated with an Iron Age trackway (7980: see below), although there are several refits between the 35 pieces of flint recovered, 18 of them probably coming from the same core, so the flint may derive from an earlier, *in situ* deposit, truncated by the trackway. The deposit was originally sampled through the excavation of a 1.3m by 1.2m slot (Fig. 2.4; its full extent was not determined); subsequently a bulk sample of the deposit was also taken. The flint recovered from the deposit includes a chisel arrowhead, a notched piece and an irregular scraper, suggesting a middle Neolithic date. The presence of a micro-burin, in a much more rolled condition than the other flint, indicates that some earlier, residual material, had also become incorporated.

**Site A**

On Site A, a linear arrangement of postholes (Group 3164) was found (Fig. 2.5). The only artefacts associated with these postholes were a flint flake and a bladelet. The date of these features is, therefore, unclear, but since the only finds were flints, they are described in this chapter.

The group consisted of six paired postholes in a broadly north-south alignment, with large gaps of 0.5m and 2.2m between the pairs. The postholes measured from 0.24 to 0.48m across and from 0.09 to 0.26m deep. Even assuming that these postholes were all contemporary, the nature of the structure with which they were associated is unclear. Given their linear arrangement, it may have been nothing more complex than a fence. No other features were found in the surrounding area, and, given that the southernmost (3152) was only 0.09m deep, it is possible that other features have been entirely removed by truncation.

**Residual early and middle Neolithic finds**

Sites B and C produced several Neolithic tools, including a complete granite axe of Cornish origin from an Iron Age pit (5953) and a flake from a Neolithic polished implement from early Iron Age pit 5130. The axe was in excellent condition and was discovered alongside a socketed iron gouge.

On Site L a flint arrowhead was recovered from a Roman grave (12554), but was too broken to determine its original form or date. On Site K, a small assemblage of 23 flints was identified which included two residual, possibly Mesolithic/early Neolithic blades recovered from a stakehole (10536), which probably dates from the Iron Age. Blade-like flakes, blades and bladelets were identified on almost all of the others sites including Sites D, E, F and J, but some or all could easily belong to the Mesolithic period.

Fig. 2.5 Plans of possible post-alignment or building in Site A



## **The late Neolithic/early Bronze Age**

### ***Beaker pits on Site D***

A late Neolithic/early Bronze Age Beaker pit (6161=6512) containing Beaker pottery and significant quantities of struck flint was found against the southern edge of the site (Fig. 2.6). Other finds of residual pottery, flint and a pit (6910) with similar struck flint also probably date to this period. The distribution of features and that implied by the residual finds indicates a scatter of activity without any specific focus. Struck flint of this date was found in this area during the HS1 field walking survey (OAU 3103) and the field walking carried out for the A2 scheme itself (OA 2003), while excavations during the HS1 work at Northumberland Bottom revealed a double beaker burial some 130m to the south. This location clearly acted as an important focus of activity during the late Neolithic/early Bronze Age.

The two halves of pit 6161 were excavated in a different fashion. The western half was excavated by context bulk sampling, which led to the recovery of the entire assemblage and allowed us to examine context variability but did not allow any detailed examination of the spatial distribution of finds within contexts. The second half was excavated by controlled spits, with detailed 3D recording of each find. Residual spoil from this was also retained for micro-debitage and environmental analysis. Most of the finds and nearly all the pottery, however, proved to have been in the western half.

The pit was 1.2m long by 0.95m wide and was 0.33m deep (Fig. 2.6). The feature had four fills, all sandy silts, which contained charcoal, burnt flint and pottery. A maximum of 17 pottery vessels were identified from the pit (see Figs 2.36 and 2.37), some being represented only by single fragments. Additionally, 485 pieces of struck flint were recovered, mostly from the middle fill (6163). Much of the assemblage is flake debitage, but tested nodules, cores, fine shatter and some tools are also present, indicating that knapping occurred here or nearby.

Fragments of animal bone were recovered but none could be identified, and although all of the fill was floated, only one indeterminate cereal grain and some vetch/vetchling seeds were recovered. Hazelnut shells were, however, more numerous, and oak and birch/hazel-family charcoal was identified. Two radiocarbon dates were obtained on material from this pit. One, on charred residue on one of the potsherds, gave a date range of 3940–3640 cal BC (NZA-31250), which is clearly too early (the Beaker period spanning 2400–1700 BC). The other, on a hazelnut, gave a date range of 2470–2210 cal BC (NZA-32282), and does fall within the earliest part of the Beaker period.

One other feature on Site D—pit 6910—may also be of this date. This was around 110m to the north-west of pit 6161, and measured 0.7m by 0.65m and 0.18m deep (Fig. 2.6). The single fill contained four thin regular flint flakes, which are likely to date

from the late Neolithic/early Bronze Age, and part of an antler (sf 1936).

Much of the remaining struck flint from Site D is also likely to be of this date, and was recovered as residual material in a variety of features including Roman ditches (6384, 6940, 6941 and 6944). The only other Beaker activity was a residual Beaker sherd from gully 3005 on Site A.

### ***Pits and residual finds on Sites E and F***

An isolated, burnt pit (8038) containing five abraded sherds of probable Beaker pottery was found near the eastern end of Site F (Fig. 2.7), while a large sherd from the rim and collar of a Collared Urn was recovered from the surface of a burrow which cut this feature. It was also cut by gully 8037. Although it is possible that the Beaker pottery was residual, or already old when it became incorporated into the pit, an early Bronze Age date seems most likely. The pit was roughly oval in plan, measuring 1.6m by 1.2m across, and was 0.6m deep. It contained a number of burnt fills, indicating that several episodes of burning had taken place within the pit.

Two further pits on Site F might also have belonged to the same period, although they did not contain chronologically diagnostic artefacts. Pit 8062 lay around 50m to the south-east of pit 8038, and also contained burnt fills, although in this case there was no indication that the fire occurred *in situ*. The only finds recovered from this pit were a large number of fragments of fired clay (306 pieces, 105g) and a fragment of glass. The third feature, pit 8022, lay around 45m to the north-west of pit 8038. The only finds recovered from it were two flint flakes and a flake core.

A small assemblage of flint was recovered from Site E, mostly as stray finds in later features. Much of this flint appears to be late Neolithic/early Bronze Age in date, but some may also be of later Bronze Age date, associated with the enclosure found in Site G just to the east.

### ***Pits and residual finds on Site G (9407 and 9270)***

Around 9m to the north-west of the early Neolithic ramped posthole described above, two small pits were found which may have dated from the late Neolithic/early Bronze Age. These two features intercut (see Fig. 2.3).

The earlier pit (9270) was oval, measuring 0.35m across and 0.18m deep, and the upper edges of the pit were reddened by burning. The pit's fill contained a high proportion of highly comminuted charcoal, suggesting that this feature was used as a hearth or cooking-pit. The only finds recovered from the small area of fill not truncated by later oval pit 9470 were four flint flakes and a small fragment of unidentified animal bone.

Pit 9407 measured 0.5m by 0.4m across and was 0.35m deep. This pit contained an unusually

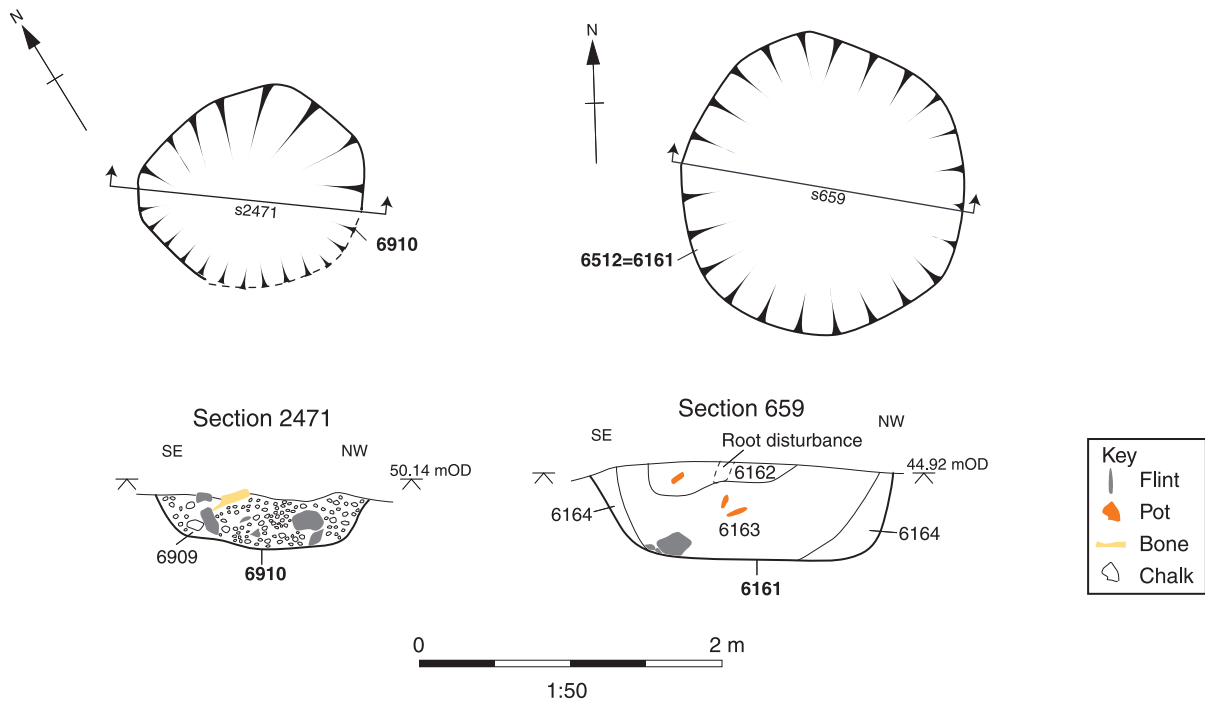
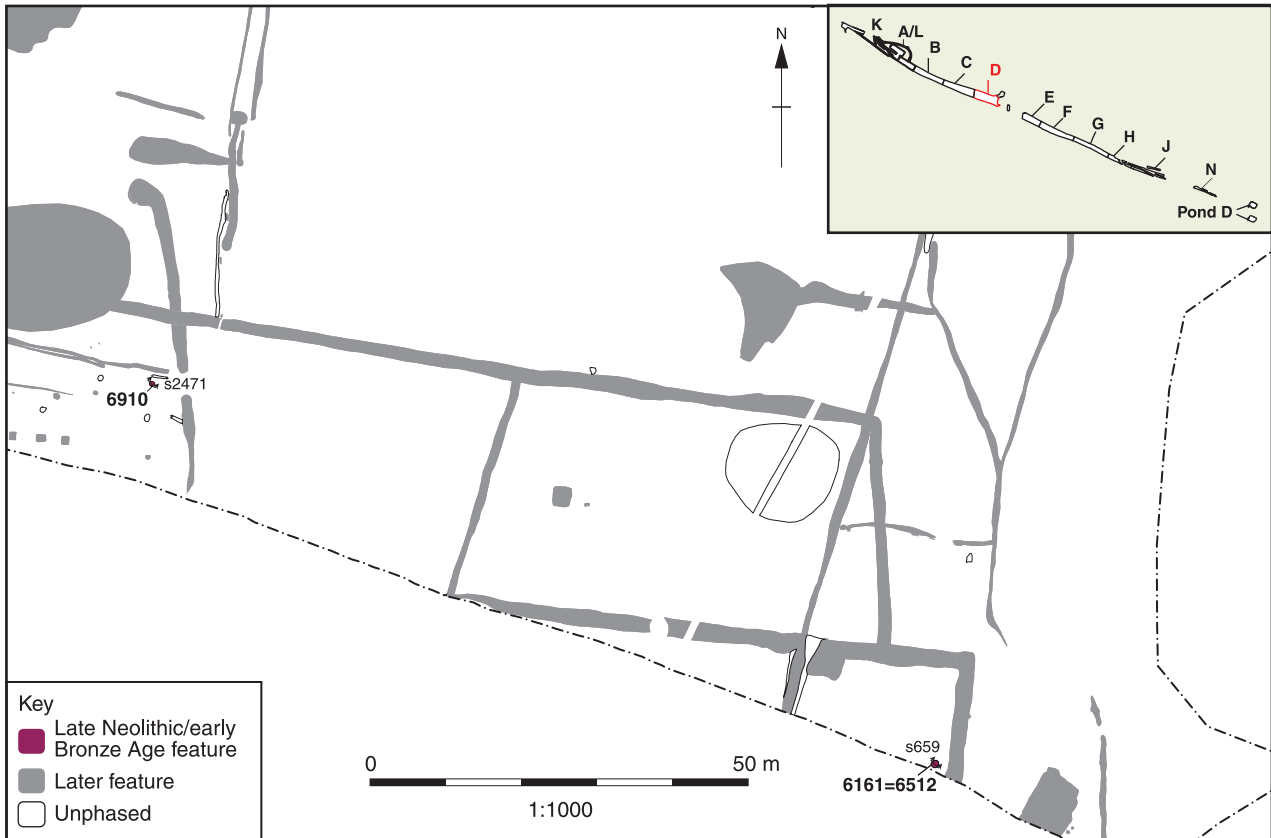


Fig. 2.6 Plan showing location of Beaker pit 6161 and pit 6910, together with detailed plans and sections

arranged assemblage of flints, some of which were found on edge within the cut. The flint was very fresh, suggesting that it was not residual, and the assemblage has been dated to the late Neolithic or early Bronze Age. It may be pure coincidence that this pit lay almost entirely within earlier feature

9270, but it is more likely that this feature was of a similar date, and so was still visible and remembered when 9407 was dug.

A single pit (9223) on Site G contained flints that suggested an early Neolithic date (see Fig. 2.3), but radiocarbon-dating of charcoal gave an early

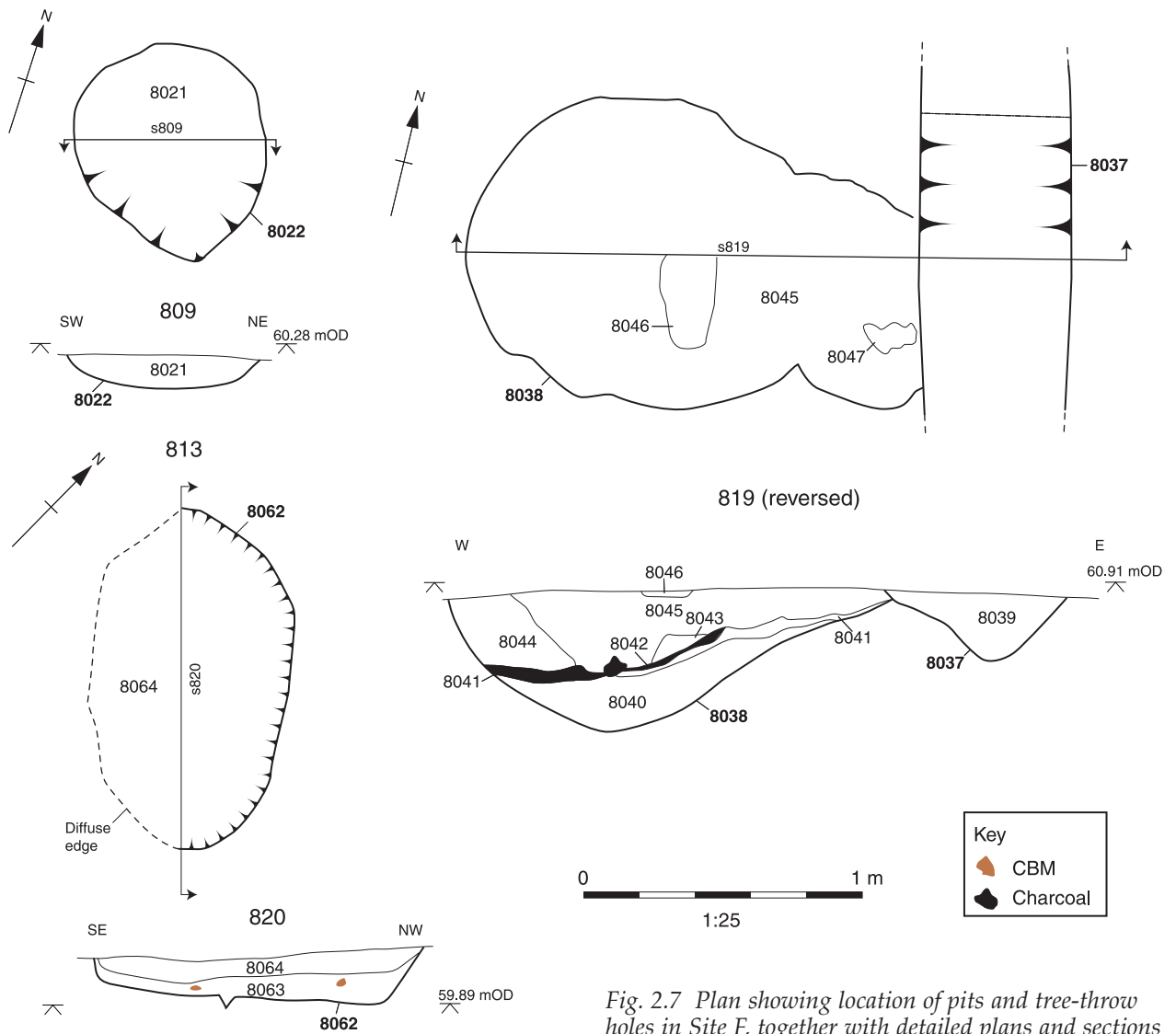
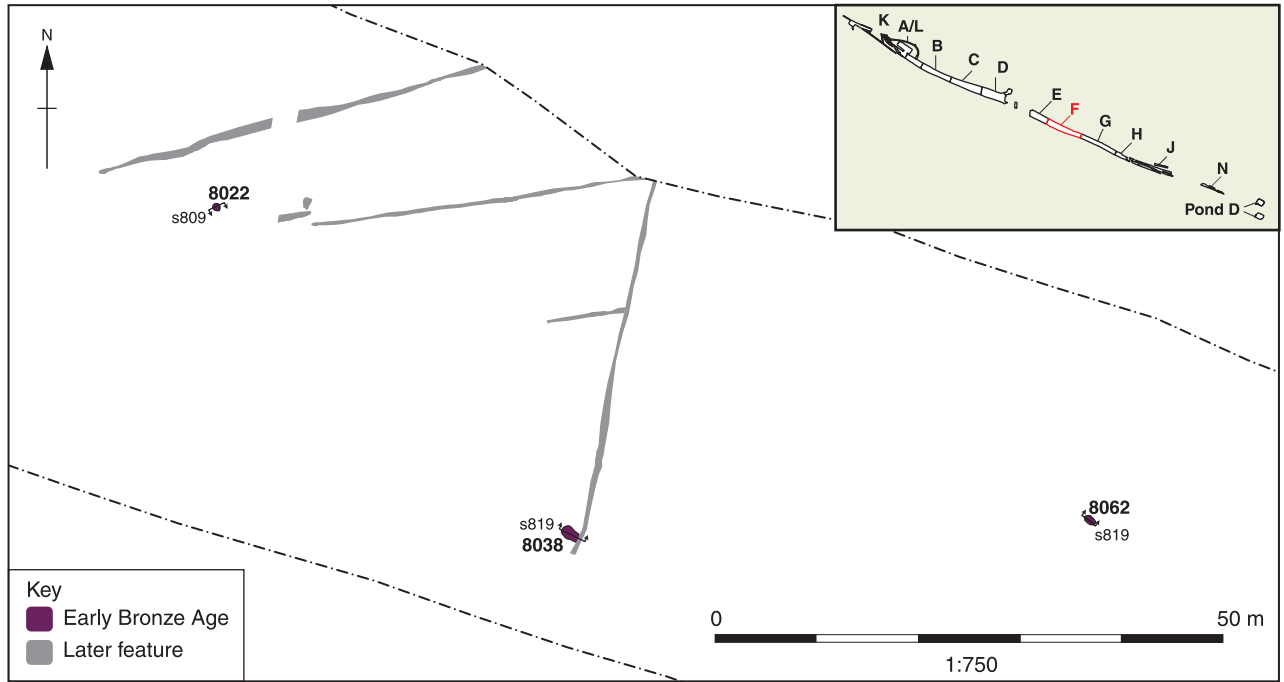


Fig. 2.7 Plan showing location of pits and tree-throw holes in Site E, together with detailed plans and sections

Bronze Age date of 1780–1610 cal BC (NZA 30115). The feature cut a spread of colluvium (9584) containing early Neolithic flints (see above), and it is most likely that the flints are residual, given that the sample came from a lower fill rich in charcoal and burnt flint, one of several within the pit. The pit measured 1.5m by 1.1m across and was 0.4m deep. It contained a series of charcoal-rich fills with burnt flint, some fired clay, and struck flint which included a small leaf-shaped arrowhead and a flint end scraper (SFs 1627 and 1625).

Other finds probably of late Neolithic/early Bronze Age date from the vicinity include a fine early Bronze Age plano-convex knife and a probably early Bronze Age thumbnail scraper, from linear hollows 9461 and 9537 respectively. Both of these features contained middle Bronze Age pottery, so the early Bronze Age flint is probably residual (for details of the hollows see below). Hollow 9461 also contained a middle Neolithic transverse arrowhead.

#### *Flint from a colluvial deposit (11134) on Site J*

A small collection of flint, mostly probably dating from the late Neolithic/early Bronze Age, was recovered from Site J. This flint included a small group, in a fresh condition, from the surface of a colluvial deposit (11134) within a natural roughly semicircular depression 12m by 5m across. A wide slot was excavated through this, but recovered only a very few further finds, probably indicating that the activity had taken place on the surface of the feature. Four scraps of Beaker or early Bronze Age pottery (weighing only 4g) were also recovered from this deposit.

Site J also yielded a stray later Neolithic Levallois-style discoidal core, which was found close to the boundary with Site H. This piece lay at the interface of the subsoil with HS1 backfill and may not have been in its original context.

#### *Residual finds from other sites*

Numerous smaller areas of late Neolithic/early Bronze Age activity were identified along the route. Several flints were recovered from Site K that are typical of this period, usually as residual finds in later features, including, for example, a backed knife from Iron Age pit 10515. Cremations of early Bronze Age date were found close by during the HS1 excavations, and there was probably other activity connected with these from which the finds derived. Alternatively it is possible that the finds were brought downslope in colluvium from Sites L or A, although apart from one possible Beaker sherd on A and a residual flint arrowhead of uncertain form and date from a Roman grave on Site L, there was very little early prehistoric material found on either site.

A single early Bronze Age rim was found on Site B in a late Iron Age pit (4458). On Site C, several residual flint tools were identified that may also be of this date, including a triangular arrowhead (ditch

7393), a thumbnail scraper (pit 5992) and a backed knife (ditch 5910).

Pond D North yielded a significant assemblage of flint, all residual in later features or layers. Analysis of these has indicated that many of the retouched forms are probably of middle to late Bronze Age date while much of the reduction sequence, including many of the cores, indicated a late Neolithic/early Bronze Age date. Two different phases of activity appear to be indicated, the earlier being knapping activity that probably took place on a slight knoll just north-west of the excavated area, and from which flint has been moved southwards downslope by later colluviation. Pond D South also produced a very small assemblage of struck flint (24 pieces). The assemblage has characteristics both of the late Neolithic/early Bronze Age and the later Bronze Age.

#### **MIDDLE TO LATE BRONZE AGE SITES**

The most significant of the middle and late Bronze Age discoveries along the A2 (Figs 2.8–9) was the remains of a middle Bronze Age L-shaped ditched enclosure associated with a roundhouse, a short posthole alignment, and a variety of pits and hollows on Site G. A further middle Bronze Age ditched L-shaped enclosure was found on Site C, and was associated with a pair of gullies or palisade slots to the west, one of which also contained Deverel-Rimbury pottery. Domestic activity may also have been represented by a small group of pits on Sites L and A, as well as by a very poorly dated group of post- and stakeholes and a pit on Site D.

Later Bronze Age funerary evidence is represented by small groups of cremated remains on Site C west of the L-shaped enclosure, and one more to the east on Site D. A further isolated cremation deposit was found on Site B. A more unusual deposit of cremated animal remains, associated with a group of Deverel-Rimbury vessels and a large deposit of fired clay, was found on Site L.

Due to the scarcity of material suitable for radiocarbon dating and the often very fragmentary condition of the pottery, it has not been possible to establish a more detailed chronology for many of these remains. This is the case for the enclosure on Site G, where only a small assemblage of pottery was recovered, and which, despite obtaining a series of OSL and radiocarbon dates, can be dated only broadly to the middle Bronze Age. The date of the enclosure on Site C is established by two radiocarbon dates from a middle fill, which are both of the 14th or 13th centuries cal BC, in the middle Bronze Age. There was no material suitable for radiocarbon dating from the pits on Site A, but both contained pottery with Deverel-Rimbury and Plain Ware attributes and may date from the transition between the middle and late Bronze Age (Morris 2006). Too little evidence was recovered from the features on Site D for any chronological certainty to be possible.

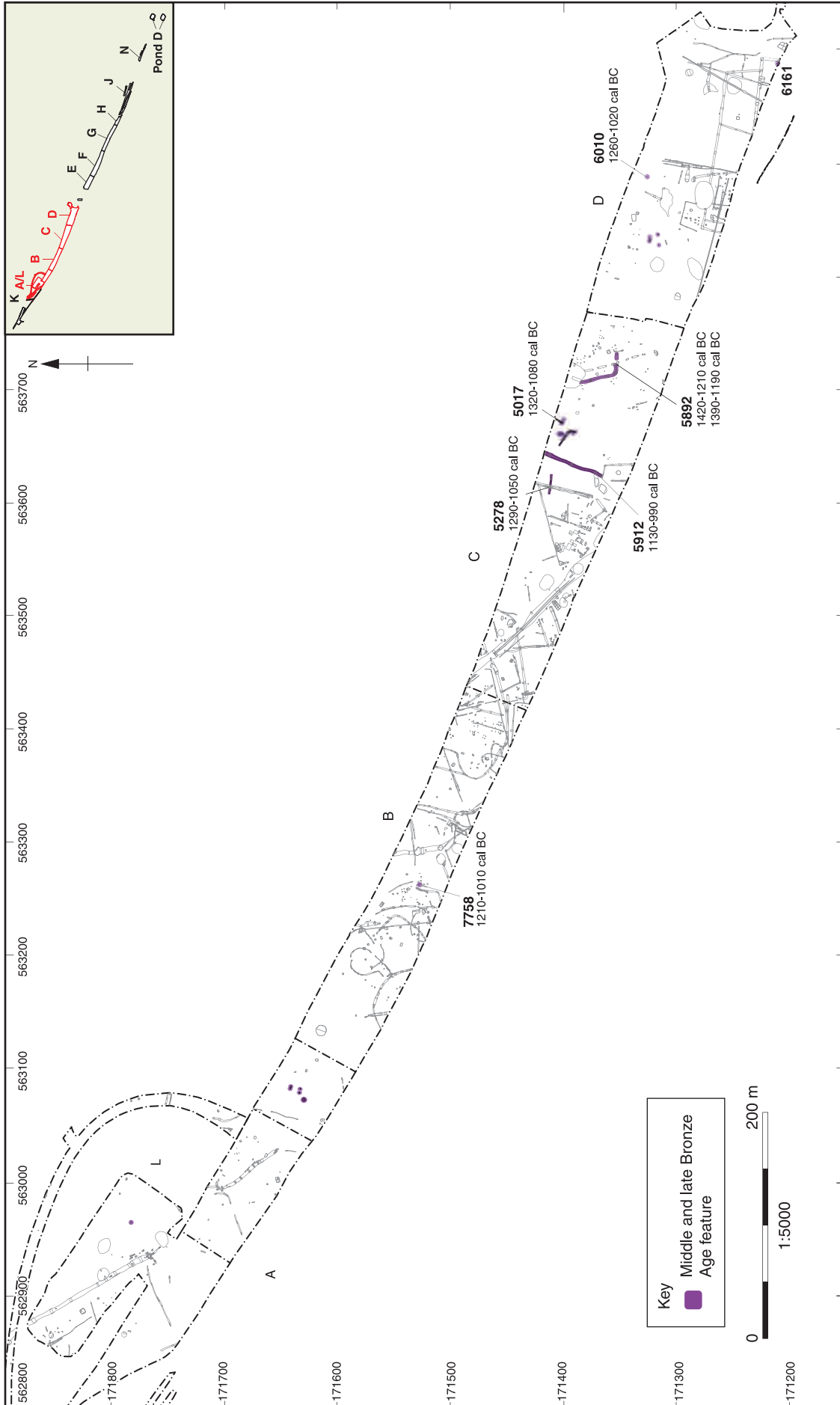


Fig. 2.8 Plan showing middle and later Bronze Age features in areas L-D with radiocarbon dates



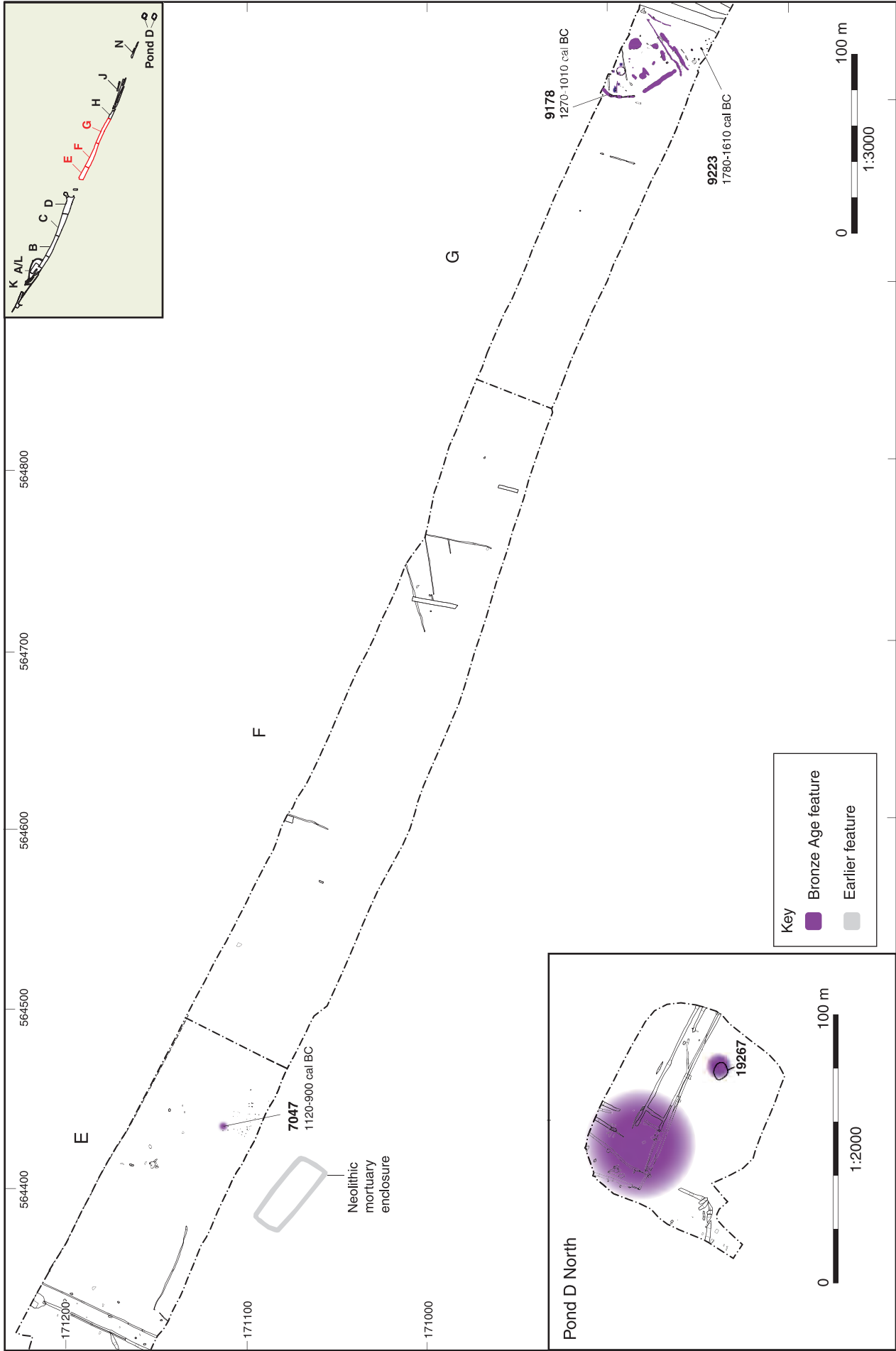


Fig. 2.9 Plan showing middle and later Bronze Age features in areas E-G and Pond D North, with radiocarbon dates

Radiocarbon dates have, however, been obtained from a number of the cremation deposits and their chronology is, therefore, more certain. The cremation deposits on Site C probably date from the 13th or 12th centuries cal BC, again suggesting a transitional middle-late Bronze Age date, and pottery in one of the undated cremation burials suggests that cremation continued in the succeeding Plain Ware phase of the late Bronze Age. The cremation deposit on Site B, whose radiocarbon date range centres upon the 11th century cal BC, also belongs to the late Bronze Age.

With the exception of pit 5280, however, there is no clear ceramic evidence for late Bronze Age activity associated purely with Plain Ware. There is also no middle Bronze Age evidence which can be clearly shown to date from before the 14th century cal BC, although it is possible that activity at the Site G enclosure began before this date.

### **Enclosure and trackway in Site G**

Near the centre of Site G several stretches of curving ditch forming the west and south sides of a probable ditched enclosure were found, the ditch continuing on the north-west beyond the edge of the excavation (Fig. 2.10). A series of gullies much shallower than the main enclosure ditch appear to have defined the south-eastern side of this enclosure, and both cut and were overlain by an area of flints interpreted as a cobbled trackway. Within the excavated part of the interior, the northern part contained the remains of a roundhouse and a short alignment of postholes (Plate 2.2). The southern part, in contrast, was occupied by a variety of pits and hollows. The hollows fall into two groups: one of roughly rectangular linear features, and the other of large circular features.

### **Chronology**

Two sources of evidence have been used to date these features. A sequence of three optically stimulated luminescence (OSL) dates and a radiocarbon date from the enclosure ditch provide absolute dates (Table 2.1). The pottery provides a more widely distributed means of dating.

The three OSL dates were obtained in a stratigraphic sequence from section 925 (cut 9105) across ditch 9178 (see below; Fig. 2.11). The lowest sample (OSL 4), which gave a date range of 1780–1290 cal BC at 68% confidence, came from the second major layer of fill (9117) within the ditch and thus probably slightly post-dates the cutting of the ditch. The uppermost sample (OSL 2), with a date range of 1580–500 cal BC at 68% confidence, came from the uppermost layer of fill within the ditch (9112). The OSL dates thus span almost the whole period over which the ditch filled.

Since they lie in a stratigraphic sequence, the three OSL dates can be refined using Bayesian modelling, as it is implemented in the programme OxCal (v. 4.0). The model that has been used is shown in Fig. 2.12. It should be stressed, however, that the three dates do not correspond very well to the stratigraphic sequence. The middle sample (OSL 3: 2170–1600 cal BC) could be earlier than the date indicated by the lowest sample (OSL 4: 1780–1290 cal BC), although the large errors associated with both, and especially with the lower date (OSL 4), means that they do not necessarily contradict each other. When they are placed in a sequence by the OxCal model, however, the estimated posterior distribution for the middle date (OSL 3) is significantly different from the prior distribution, as the



*Plate 2.2 Site G middle Bronze Age enclosure interior showing roundhouse 9440 and pits*

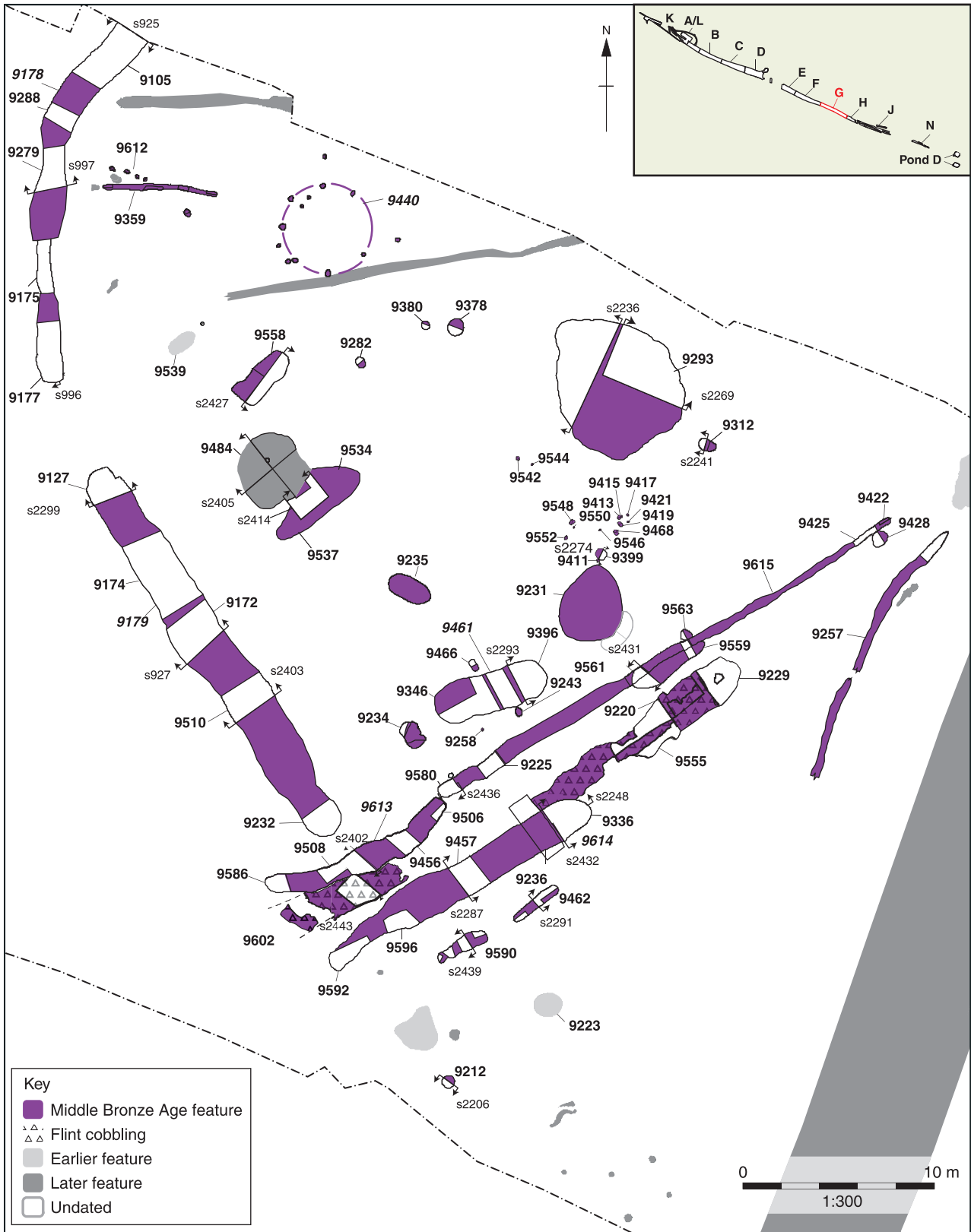


Fig. 2.10 Plan of Site G west

Table 2.1: summary of OSL and radiocarbon dates from ditch 9178 in Site G

Sample/ Lab. no.	Context	Date	Date range (cal BC)	Estimated posterior distributions (cal BC)	Material
Boundary (end of deposition)				1360- cal AD 170 (95.4%)	
OSL 2	Ditch 9178, cut 9105, context 9112	3050±540 before 2007	1580-500 (68.2%)	1640-600 (95.4%)	
OSL 3	Ditch 9178, cut 9105, context 9113	3980±290 before 2007	2170-1600 (68.2%)	1850-1100 (95.4%)	
NZA 30234	Ditch 9178, cut 9177, context 9159	2939±40 BP	1260-1050 (68.2%) 1270-1010 (95.4%)	1300-1020 (95.4%)	Large mammal bone, shaft fragment
OSL 4	Ditch 9178, cut 9105, context 9116	3540±240 before 2007	1780-1290 (68.2%)	1990-1160 (95.4%)	
Boundary (start of deposition)				2840-1120 (95.4%)	

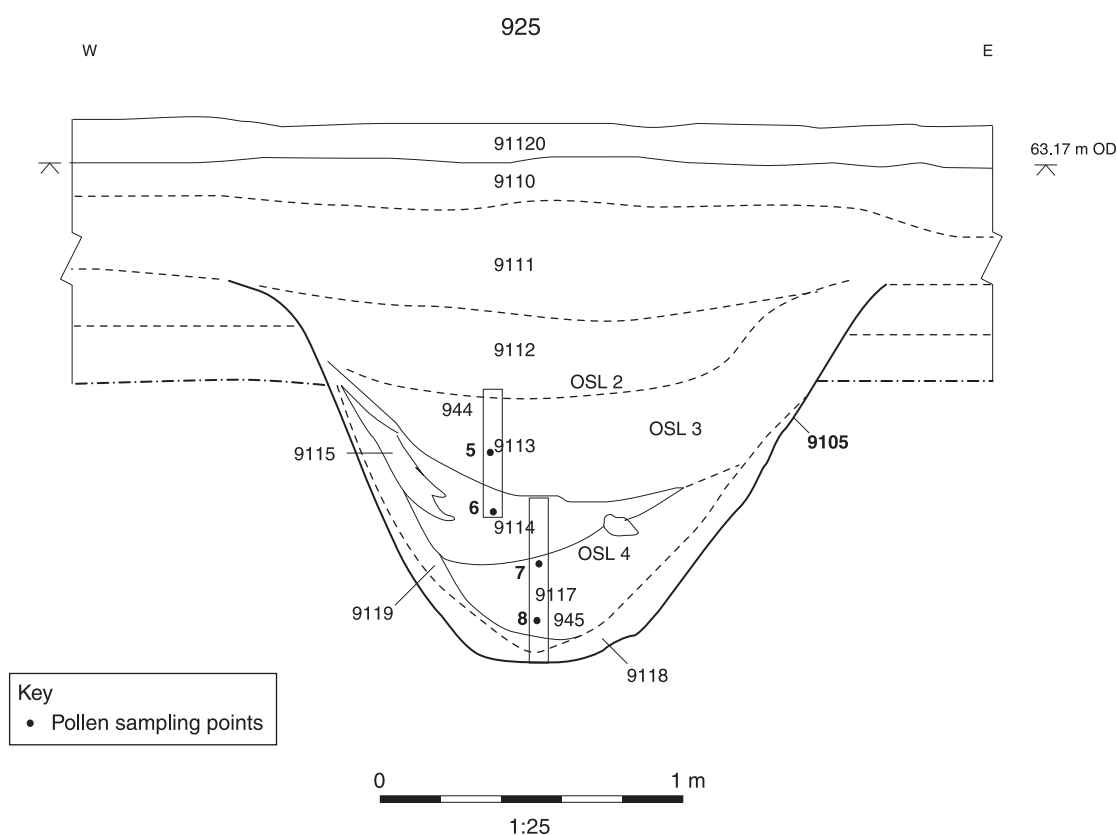


Fig. 2.11 Site G enclosure ditch 9178 section 925, showing location of OSL samples and pollen monoliths

index of agreement between these two distributions calculated by OxCal makes clear ( $A= 54.5\%$ ; generally accepted levels are  $> 60\%$ ).

Better control is provided by the single radiocarbon date of 1270–1010 cal BC (NZA-30234), which was obtained from a fragment of large mammal bone (9159) from one of the middle layers of fill (9157) in cut 9177 across the same ditch (Fig. 2.13). This bone formed part of a large group that at the time of excavation was believed to include some articulated remains. Most of these bones did not survive lifting, however, and very few could be identified, so this could not be established for certain. Nevertheless, the

large group of bones suggests that the incorporation of residual material is highly unlikely, so this date can be regarded as secure.

Because they were obtained from different sections, at the southern and northern ends of the exposed section of the ditch, the radiocarbon and OSL dates cannot be correlated precisely, although it is clear that the radiocarbon date falls between the earliest and latest OSL date. The model therefore placed the radiocarbon date in sequence post-dating the lower OSL date and predating the upper OSL date. Due to the lack of congruence between the radiocarbon date and OSL3, OSL3 is believed to be suspect, probably incor-

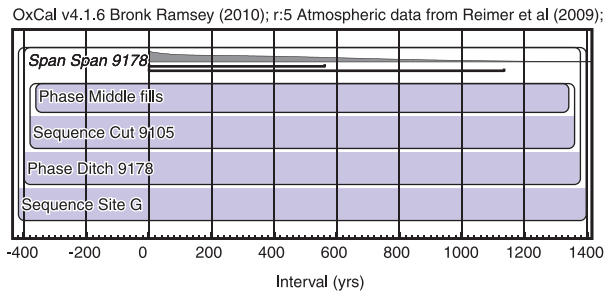
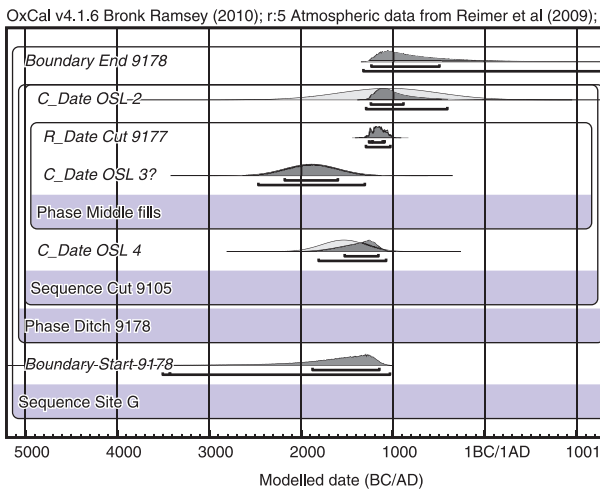


Fig. 2.12 (left and above) Modelled OSL and radio-carbon dates from Site G ditch 9178

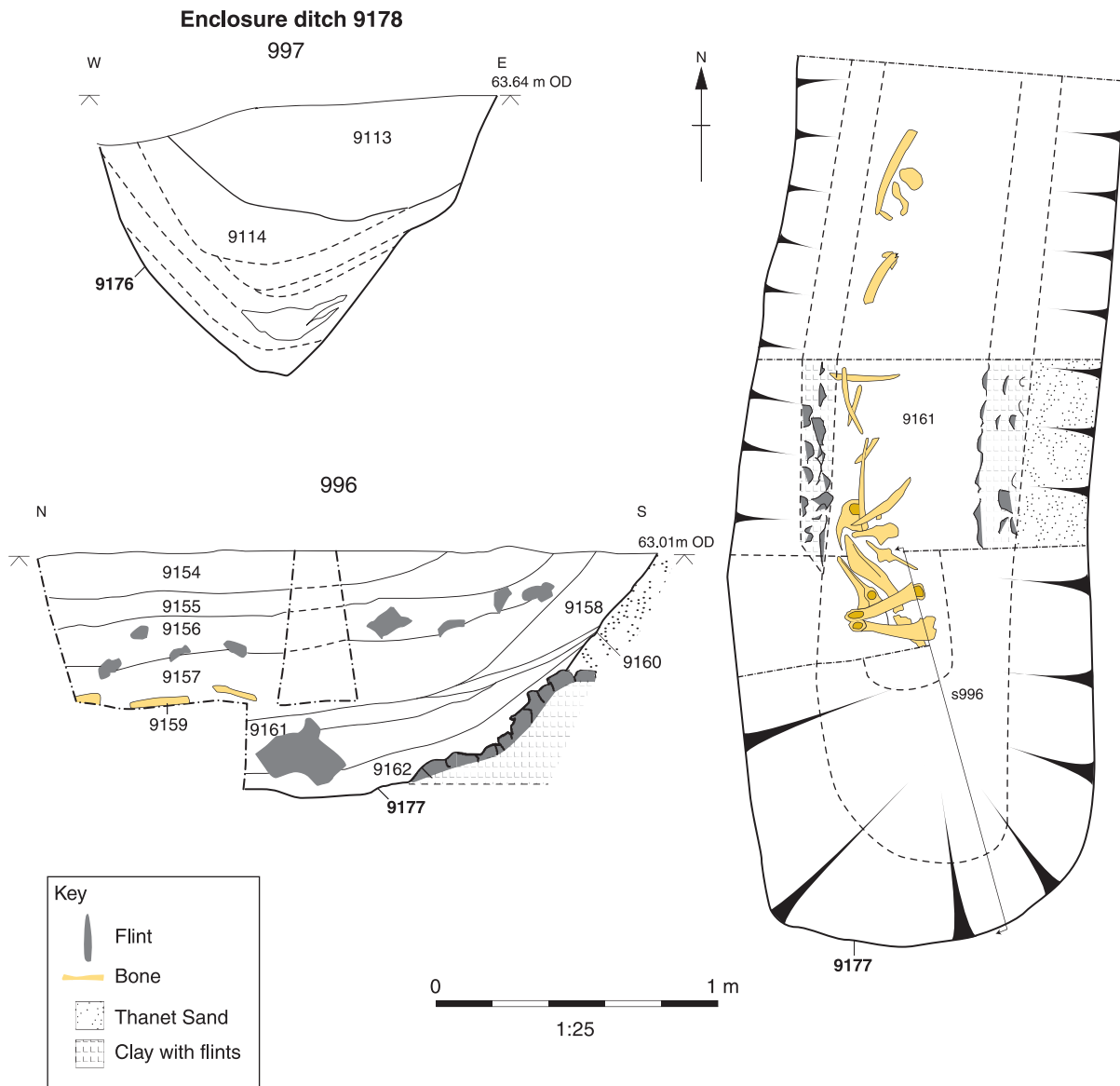


Fig. 2.13 Plan and sections of south terminus of enclosure ditch 9178 showing bone spread



Table 2.2: Summary of the proportions of pottery by fabric groups from features and structures in Site G, quantified by weight (g) (Total weight of pot per fabric group as a percentage of all pot in the same group; 0 = <0.5 %)

Group	Total weight (g)	Grog	Grog & flint	Flint & grog	Flint	Flint in sandy	Shell	Unident. frags	Comments
Enclosure ditch									
9178	71	34	6		61				
9179	136			32	65		2	1	
9614	39			3	79	18			
Shallow gullies									
9613	114				100				
9462	6				100				
Features within the enclosure									
Pit 9212	7				100				
Hollows									
9234	12				100				
9235	8				100				
9461	101		1		99				
9537	7				100				
9559	2				100				
9231	209				100				Globular urn?
9293	234	4			96		0		

porating residual earlier quartz grains, and was therefore excluded from the revised model.

Overall, even after modelling, the OSL determinations do not help to fix the date of the ditch very precisely. They suggest that the life of the ditch, from cutting to final fill, probably spanned a period of up to 600 years (68.2% probability) lying somewhere in the 2nd millennium cal BC (Fig. 2.12). The date at which the ditch was cut can be defined only to between 2000 and 1260 cal BC (68.2%), and its final infilling probably from 1250 to 770 cal BC (68.2%). The radiocarbon date alone provides a better basis for estimating the date, as from the size and profile of the ditch, and the geology through which it was cut, it is very unlikely that the ditch fills below the bone deposit took more than 200 years to accumulate. The ditch is therefore most likely to have been middle Bronze Age in origin.

The pottery in almost all of the features in Site G belongs to the flint-tempered fabric group (Table 2.2), and has been attributed to the middle Bronze Age. A sherd of probable globular urn in hollow 9231 also suggests a middle Bronze Age date. The uppermost fills of the enclosure ditch (9614 and 9179) did contain some later pottery, which was tentatively ascribed to the late Bronze Age and early Iron Age, and this is plausible for the tertiary silting of the ditch, also being consistent with the dating suggested by OSL2. Some grog-tempered sherds were found in ditch (9178) and in one of the hollows (9293), but always in association with larger quantities of flint-tempered pottery. The grog-tempered sherds have been attributed a late Neolithic/early Bronze Age date, and could, therefore, have been

residual. Grog temper is, however, also characteristic of the transition from the middle Bronze Age to the late Bronze Age (Morris 2006), and these sherds could indicate that activity on the site continued into this transitional period. Many of the pits, hollows, gullies and postholes, including those associated with roundhouse 9440 and posthole alignment 9612, did not contain any pottery. It is only on the basis of their locations that these features are regarded as contemporary with the ditched enclosure.

Overall, then, it seems likely that the bulk of the occupation occurred in the middle Bronze Age (c 1600–1100 cal BC), but may have continued into the early part of the late Bronze Age.

#### The L-shaped enclosure ditches

The most conspicuous features on Site G were a series of ditches which defined what may have been an L-shaped (or more literally a J-shaped) enclosure, though because this enclosure lay only partially within the area of the excavation its full size is unknown (see Fig. 2.10; Plate 2.3). From the south-east to the north-west the ditches covered a distance of 44m, and given the curve to the east in the northern end of the ditch, this may be close to the full width of the enclosure. From the south-west to the north-east, features extended for a distance of 38m.

The western side of the enclosure was defined by two ditches, 9178 and 9179 (Fig. 2.10). The northern ditch, 9178, curved for nearly 20m from the northern baulk to its southern terminus. There was a gap of 5m between this ditch and ditch 9179,

which ran south-east in a straight line for 22.5m (Plate 2.4). A further gap of 4.5m separated ditch 9179 from the line of ditch 9614, which defined the south-eastern side of the enclosure, and ran north-east for 16m.

There was a gap of 31m between the end of ditch 9614 and the northern edge of the excavation (measured in a straight line following the alignment of the ditch). Two shallow gullies (9615 and 9257) ran most of the way across this gap, as did one of the hollows (9555), and it is clear that any boundary along this line was defined in a quite different way from that marked by the main enclosure ditches.

The profiles of the enclosure ditches varied. Ditch 9178, for example, was generally U-shaped in section (Fig. 2.13), while ditches 9179 and 9614, in contrast, were usually Y-shaped in section (Figs 2.14–15). In several of the sections across these ditches (2299, 927,

2432 and 2248) the profiles were distinctly stepped at the transition between the lower steep-sided part of the profile and the splayed upper part. This pattern is similar to that found in sections cut across the ditch of the experimental earthwork at Overton in its 32nd year (Bell *et al.* 1996, figs 7.5–6), where the upper part of the profile had collapsed due to erosion, the original profile only surviving at the bottom where it had been protected from erosion by the rapid accumulation of the ditch's primary fill. This suggests that at Site G, ditches 9179 and 9614 originally had much steeper, straighter sides and were much narrower, only around 1.0–1.4m wide at the surviving surface. The recorded maximum widths of these ditches varied from 1.0 to 2.4m, but was typically around 2.0m. The depths of the ditches varied, ranging from 0.8 to 1.7m. All of the ditches became shallower towards their ends.



Plate 2.3 Site G view looking south along the middle Bronze Age enclosure ditch





*Plate 2.4 Site G middle Bronze Age enclosure ditch 9179 looking north-west*

The ditch fills appear to have accumulated from both sides, and probably derived primarily from collapse of the sides of the ditch itself. There was no clear indication of greater fill on one side to suggest the location of a bank. Although there was a strip, nearly 5m wide, to the north-east of ditch 9179 (within the enclosure) which was devoid of any features and could have been occupied by a bank, features extended up to only 1.5m from ditch 9178 and almost up to edge of ditch 9164. If all these features were contemporaneous with the ditch, any associated internal bank could only have been quite narrow.

Small quantities of finds were recovered from most of the sections that were cut across these ditches. The pottery belonged almost entirely to the flint-tempered group (Table 2.2; see above), and mostly came from the uppermost fills of the ditches. Only small quantities of sherds in other fabric groups were recovered. The flint consisted mostly of flakes, although there were a few examples of other types including blades, bladelets, blade-like flakes, a denticulate, scrapers, notches, a serrated flake and a core. A fragment from a quern made of purple ferruginous sandstone was found in one of the middle fills of ditch 9178 (cut 9105; Fig. 2.11).

Due to the acidic nature of the soils overlying the chalk, very little animal bone was recovered intact from the ditches. That a significant deposit had occurred in the terminus of ditch 9178 is clear (Fig. 2.13), but aside from presumably chance occurrences of bones from a toad and an unidentified amphibian, a single fragment of cattle bone was the only piece that could be identified. The site records, however, make clear that there was a pattern in the deposition

of animal bone, as the second largest deposit (after that at the south end of ditch 9178) was from the southern end of ditch 9179. A small amount of animal bone was also recovered from a cut (9457) in the centre of ditch 9614, and from a small number of other features in the southern part of the site.

Although it was evidently uneven, no clear pattern was observed in the distribution of other finds along the ditches. An intrusive cast iron blade, probably part of an agricultural implement, was recovered from the uppermost fill (9124) of cut 9127 across ditch 9179.

#### *Gullies running along the south-eastern side of the enclosure*

A series of gullies, much shallower than the main enclosure ditches, ran along the south-eastern side of the enclosure (Fig. 2.10). Gullies 9613 and 9615 ran roughly parallel to the inner side of enclosure ditch 9614, ending 7m from the northern edge of the excavation. Outside the enclosure, two further small gullies (9590, 9462) also ran parallel to enclosure ditch 9614. A final gully (9257) extended for 15m outside the enclosure, curving slightly, from the south-west to the north-east, ending near to the northern edge of the excavation, close to the end of gully 9615.

Given that these features were so shallow (with depths of between 0.1m and 0.4m) it is possible that the gaps between some of them have been produced only as a result of truncation of their shallowest parts. It is thus possible that gullies 9613 and 9615, and gullies 9590 and 9462, were parts of what were originally continuous features. The widths of these gullies varied from 0.6m to 1.6m, but given that they



Enclosure ditch 9179

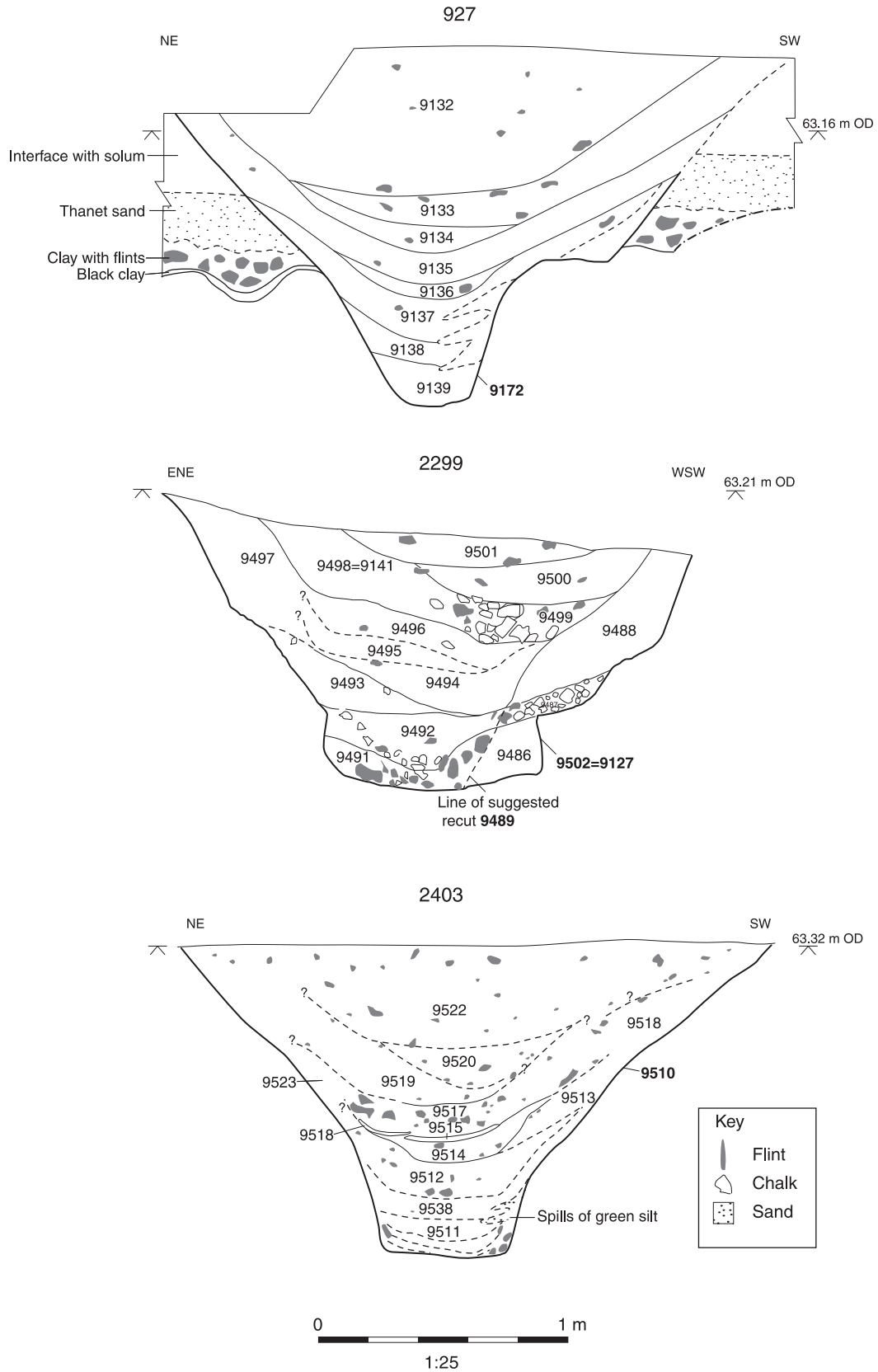


Fig. 2.14 Sections of enclosure ditch 9179

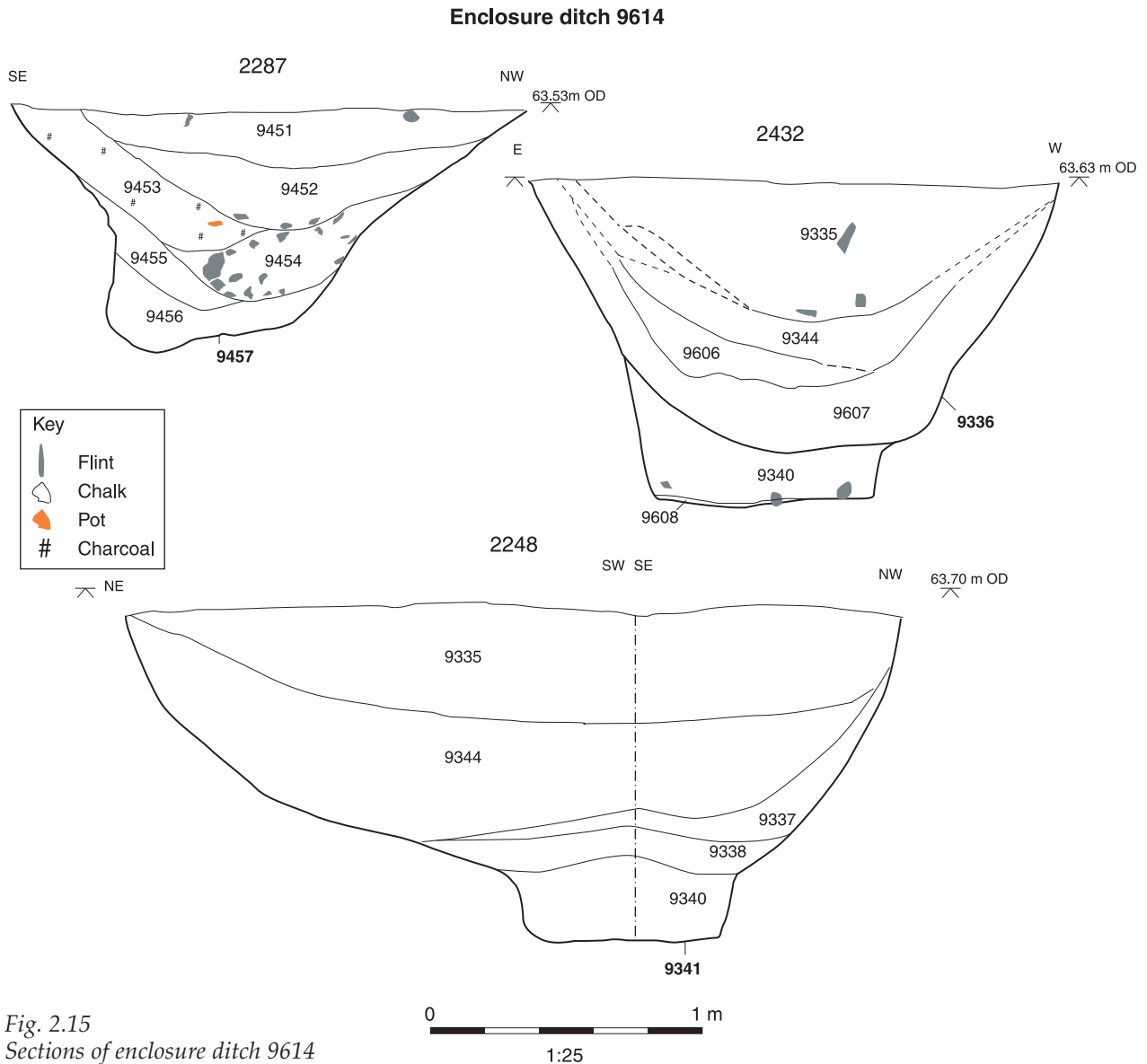


Fig. 2.15  
Sections of enclosure ditch 9614

were bowl-shaped in profile, such variation may reflect the degree to which they have been truncated rather than variation in their original size.

Not surprisingly, given that they were such shallow features, the quantity of finds recovered from these gullies was small. Limited quantities of pottery, all belonging to the flint-tempered group, were recovered from two of them (9613 and 9462). Flint, consisting of blades, blade-like flakes, flakes and chips, was recovered only from gully 9613. Of the small quantities of animal bone recovered from gullies 9613 and 9462, only one fragment of cattle bone could be identified.

**Flint cobbling along the south-east side of the enclosure**

Running between ditches 9613 and 9614 in a north-easterly direction was a band of flint (9594, 9531) that formed a closely-packed surface in places, but

was sparser in others (Figs 2.10, 2.16 and 2.17; Plates 2.5–6). This horizon was just over 2m wide at the south, narrowing to little more than 1m wide as it ran northwards. It was not traced beyond the end of feature 9229 to the north, nor beyond the end of ditch 9614 to the south. Towards the north this flint horizon was rarely more than one layer thick, but further south, where the flints were densest, there were patches where two superimposed layers were evident (Fig. 2.16 section 2443). The horizon was made up of irregular flint cobbles up to 0.18m long, but mostly in the range 30-100mm long. There was little clear sign of wear on the areas that were exposed, and no cart-ruts were seen. The flint horizon was cut by the east edge of ditch 9613, and by the north-west end of ditch 9614, but overlay broad shallow hollow 9229. It did not produce any finds, and it is possible that it was a natural hollow in which flints had accumulated. Only the faintest hollowing (9602) was evident further south in

section 2443, where the flint was densest, and this might just as easily have been formed by the passage of people and animals along a metallised surface.

Bands of what was interpreted as natural flint were found in Site C, but in the light of further excavations immediately north of Site C, one of these has been reinterpreted as a probable metallised

holloway of late Bronze Age or early Iron Age date (see Site C below). In the case of the Site G layer, the juxtaposition of the flint band with the south corner of the enclosure ditch, and the common alignment of the flint and the ditches and gullies along the enclosure's south-east side, seems more than coincidental. The flint band did not appear within the



Plate 2.5 Site G middle Bronze Age cobbled surface 9594 looking north-east

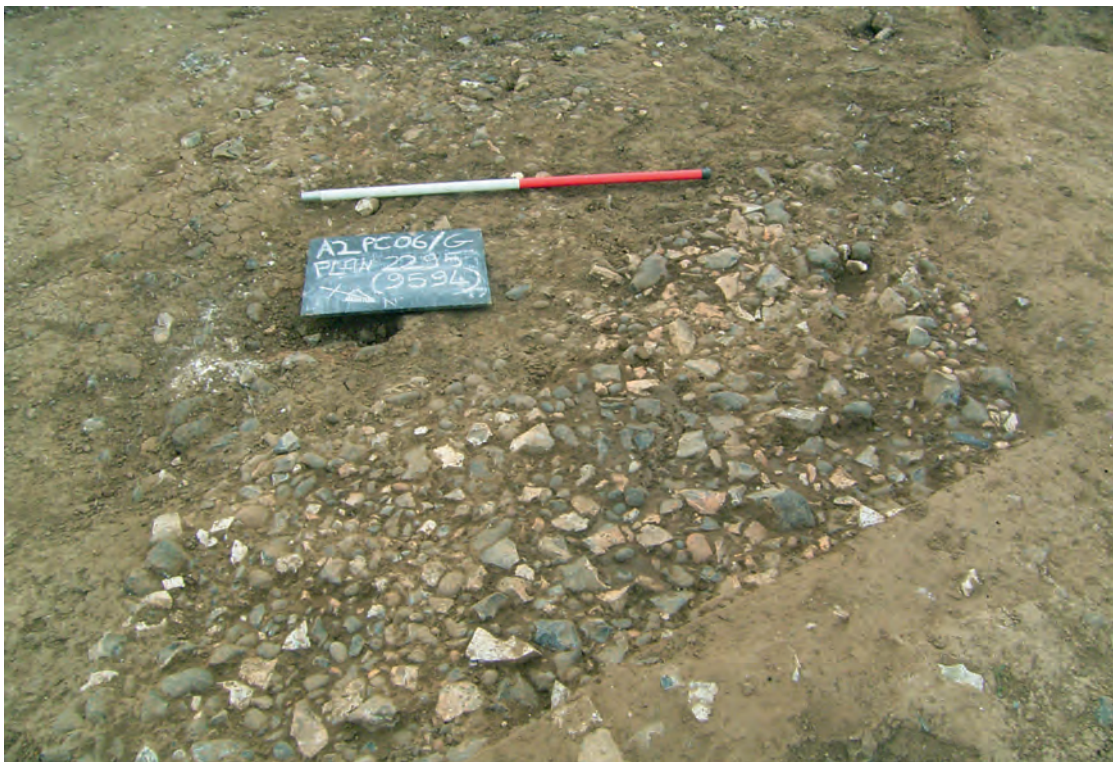


Plate 2.6 Site G detailed view of cobbled surface 9594



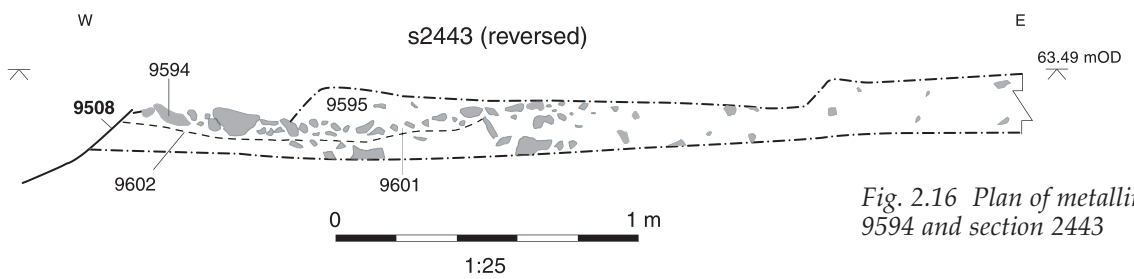


Fig. 2.16 Plan of metalling 9594 and section 2443

2248

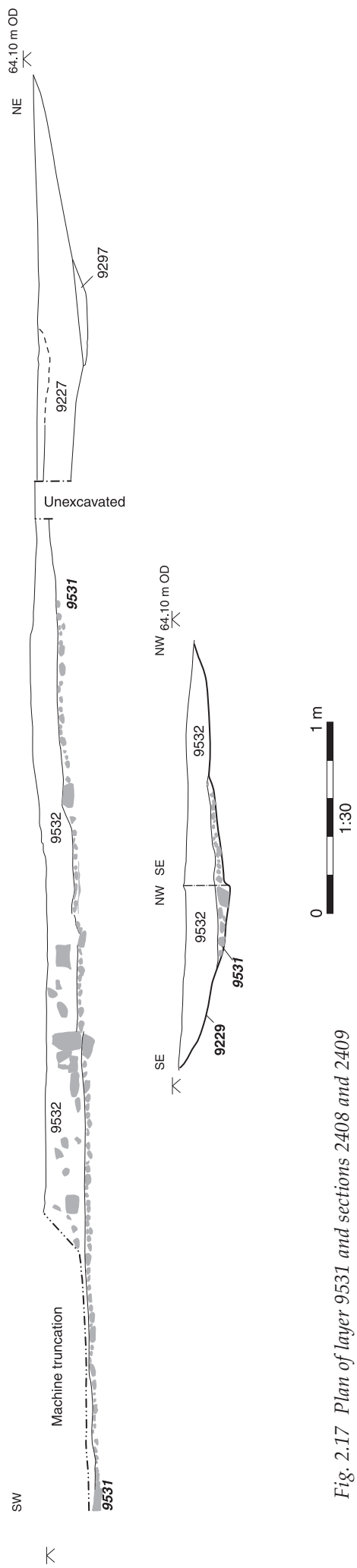
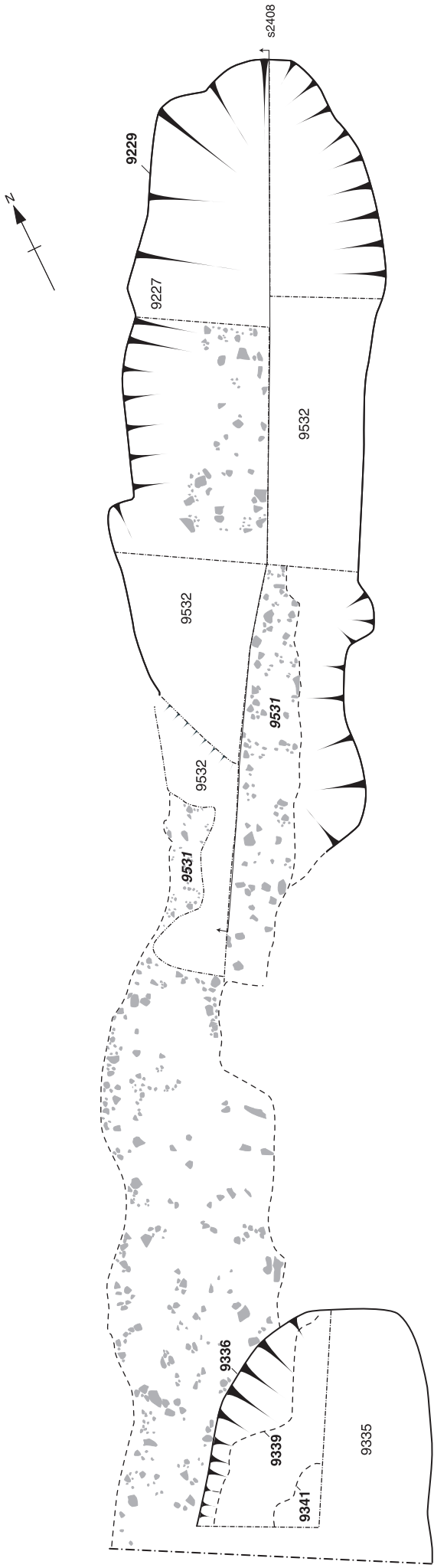


Fig. 2.17 Plan of layer 9531 and sections 2408 and 2409

interior of the enclosure, and only its edge was cut by ditch 9613. Given the erosion of the ditch sides discussed above, it is possible that the flint was originally respected in its entirety by the ditch, only apparently being cut by it as the ditch side eroded.

As this flint layer lay below the general Bronze Age ground surface, it seems unlikely that it would have been visible to the enclosure builders, had it not already become exposed by some means. If it was first encountered in digging the ditches, it was not a sufficiently thick deposit to have deterred them from digging through it. As the ditch did not follow it for any great distance, it clearly did not determine the alignment of this side of the enclosure. On balance, it is probable that the line of the flint was originally an unmade pathway, one that probably preceded the enclosure and was worn down by a combination of use and erosion due to the natural slope of the ground, forming deeper puddles in places such as feature 9229. Eventually it was decided to reinforce the pathway over a short distance, where the ground dropped south-south-westwards into the larger dry valley. This may have coincided with, or have slightly preceded, the digging of the enclosure ditches. The enclosure was then constructed to one side of this pathway, a pattern possibly also followed on Site C (see below).

#### *Stratigraphic relationships along the south-eastern boundary of the enclosure*

The south-eastern boundary was the focus for a range of other features, and the stratigraphic relationships between them show that they belong to more than one phase of activity. The stratigraphic relationships were not, however, sufficient to allow a simple sequence of all of the features in this area to be constructed. The longest sequence centred on gully 9615, which cut one of the large linear hollows discussed below (9559) and was in turn cut by two small pits (9563 and 9428). The south-eastern enclosure ditch (9614) and a second gully (9613) also cut large linear hollows (9229 and 9602 respectively). These latter two hollows, however, were distinguished by their flinty fills (see above) and may have been natural features.

#### *Features within the enclosure*

With the exception of one small pit (9212), all of the remaining middle to late Bronze Age features lay within the enclosure (see Fig. 2.10). The space within the enclosure can be divided into two parts according to the kinds of features which predominate. In the north-western part postholes predominate, some of which defined a small roundhouse (9440) and others a short posthole alignment (9612) (Fig. 2.18). Whilst a number of postholes were found in the south-eastern part of the enclosure, they did not define any clear structures, and in this area a range of pits and shallow hollows, both linear and circular, were the predominant features.

#### *Roundhouse 9440*

The clearest structure within the enclosure was a roundhouse defined by a circle of seven postholes (Fig. 2.18). An eighth posthole (9370) may have defined part of a porch which would have faced the east or south-east.

The post ring had a diameter of 4.0–4.5m. The postholes were quite evenly spaced, ranging from 1.2m to 1.9m, but most being 1.4m to 1.6m apart. The spacing suggests that a posthole was missing between postholes 9372 and 9368. Given that most of the postholes were from 0.1m to 0.3m deep, it is possible that this missing one had been removed by truncation. The widths of the postholes were very consistent, almost all measuring roughly 0.3m (Fig. 2.19).

The single posthole (9370) which may have been related to a porch was very similar in width to the postholes in the post ring (0.25m) but even more shallow (0.05m), underlining the possibility that the second posthole which would have been required to form a porch may not have been preserved. This posthole lay around 1.3m to the east of the post ring.

The only finds recovered from the postholes were two flint flakes. Charcoal was noted in two of them.

#### *Posthole alignment 9612 and gully 9359*

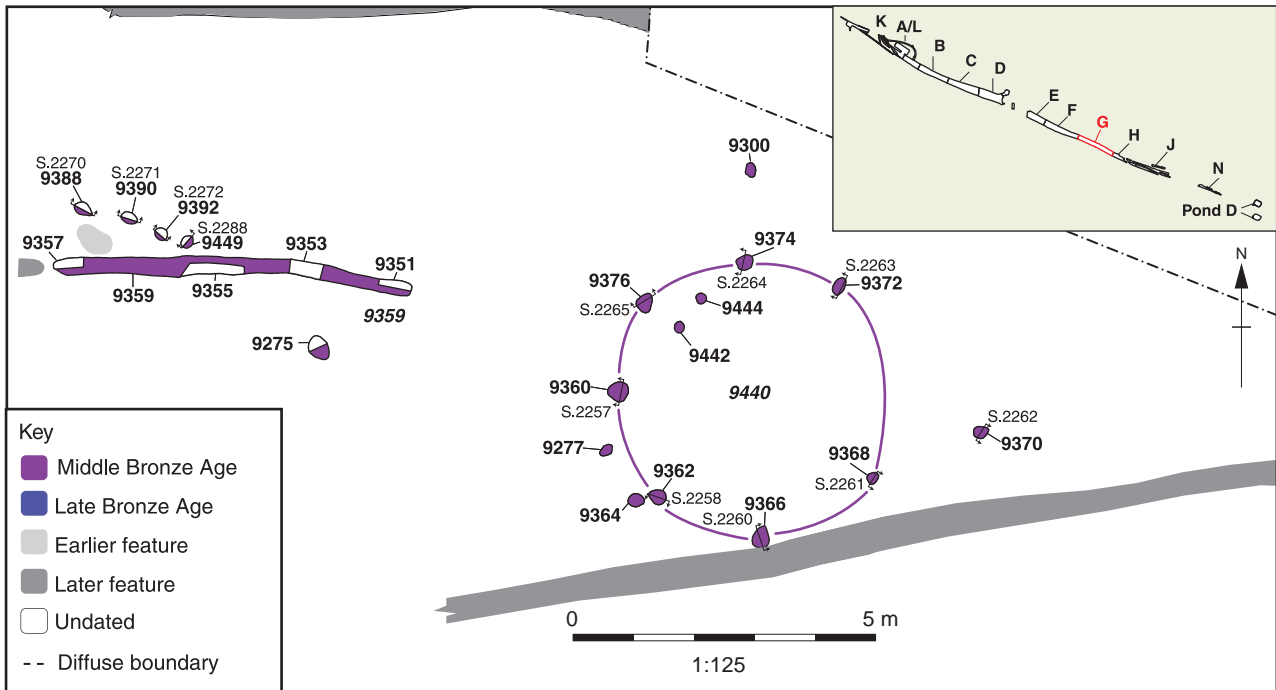
West of the roundhouse four postholes formed a row 2m long, aligned just off east-west. These postholes were slightly smaller than those related to the roundhouse (Fig. 2.19), measuring 0.2–0.3m across and 0.05–0.1m deep. Just to the south of this alignment, a short gully, 9359, ran for 6m east to west. The gully was narrow (0.2–0.3m wide) and shallow (0.1m), and was filled with orangey brown clayey silt. No finds came from either the posthole alignment or gully. Given the similar alignments of the postholes and gully, it is possible that one was a replacement for the other.

#### *Other postholes, pits and hollows*

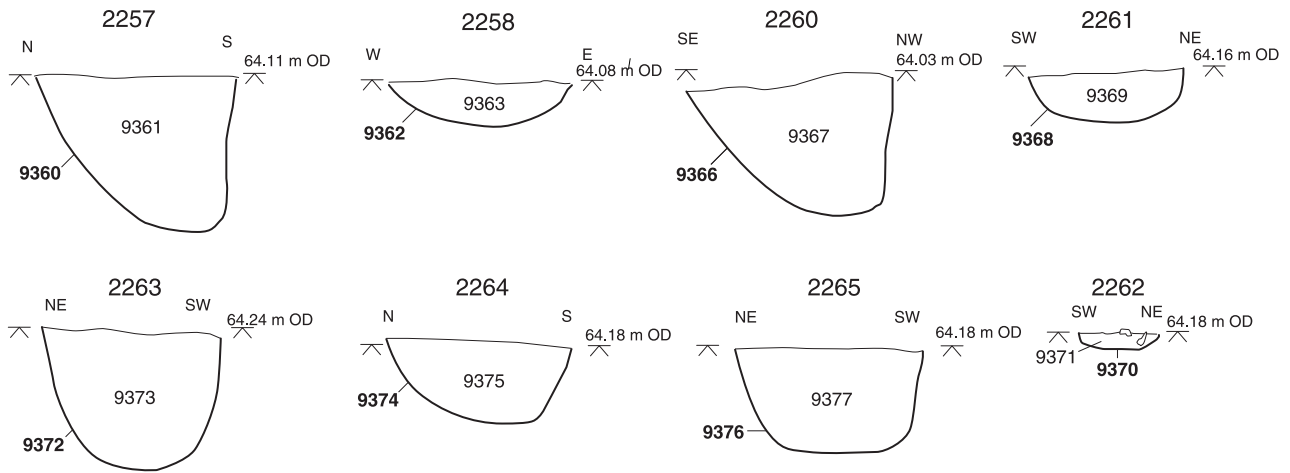
A number of other postholes were found scattered throughout the enclosed area. The largest cluster, within which no order was apparent, lay in the south-eastern part of the enclosure, to the north of circular hollow 9231, but there were also two postholes within roundhouse 9440, three just outside it, and a few others scattered across the enclosure (see Fig. 2.10). Most of these postholes were smaller than those associated with the roundhouse and the posthole alignment, and were very shallow (Fig. 2.19). Apart from charcoal, none produced any finds.

A scatter of pits and hollows (linear and circular) was found with the southern part of the enclosure. All were shallow, but their size and shape was otherwise very varied (see digital report for detailed analysis of form).

Finds from the pits were fairly minimal for the most part, although the uppermost fill of pit 9399 was distinguished by the presence of a large quantity of flint, along with a fragment of copper-



Roundhouse 9440



Posthole alignment 9612

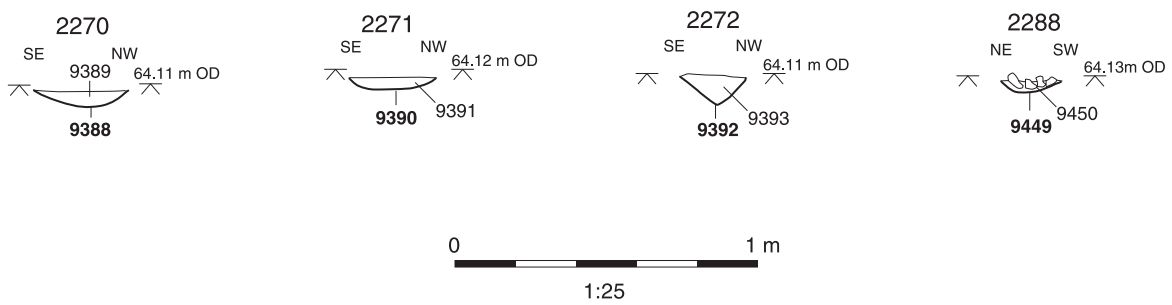


Fig. 2.18 Roundhouse 9440 plan and sections

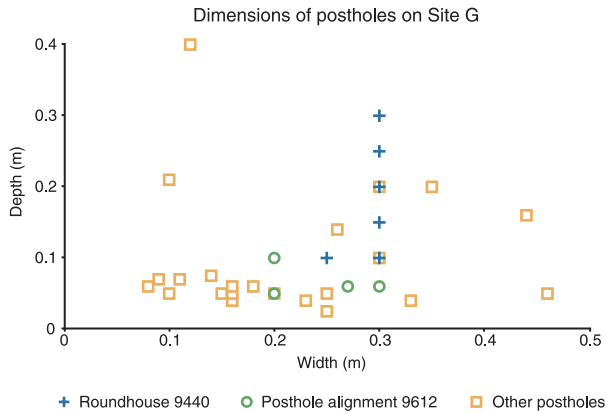


Fig. 2.19 Graph showing size of Bronze Age postholes on Site G

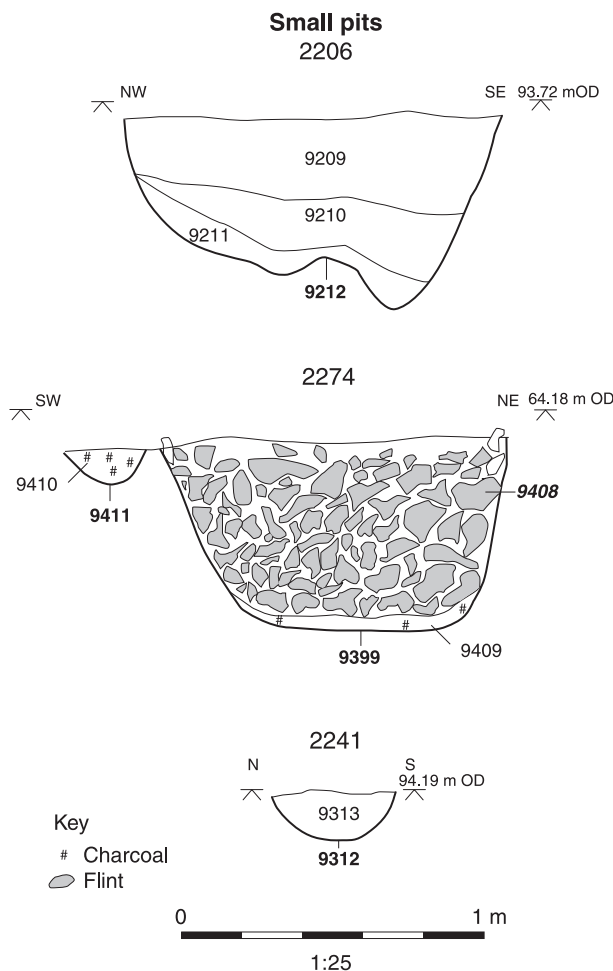


Fig. 2.20 Sections of pits on Site G west

alloy, and pit 9212, which lay outside the enclosure, contained two pottery sherds (both belonging to the flint-tempered group), a small quantity of animal bone and some unidentified charred grain (Fig. 2.20). Most of the hollows contained small quantities of pottery, but the larger circular hollows contained more. Almost all of this pottery belonged to the flint-tempered group, although single sherds

in grog- and grog and flint-tempered fabrics were also recovered. A further circular hollow (9484) near to the centre of the enclosure, contained a large assemblage of early Iron Age pottery (see Chapter 3). Fragments of worked ferruginous sandstone, possibly fragments of querns, were found in three of the hollows (9231, 9293 and 9235).

### Sites B and C

The later Bronze Age features in Site C have been dated on the basis of five radiocarbon dates (see Fig. 2.8 and Table 2.3) and pottery, and can be divided into three groups. At the eastern end of the site were two ditches (5892, 7424) forming an L-shaped partial enclosure (Fig. 2.21). Two radiocarbon dates of the middle Bronze Age were obtained from a middle fill of the main ditch (5892). The dates indicate that it predated a scatter of cremation burials and other small pits to the west. Radiocarbon dates from several of the cremations place them in the latter part of the middle Bronze Age (13th and 12th centuries BC), and overlap the transition to the post-Deverel-Rimbury phase of the later Bronze Age. Also in this central part of the site were two short lengths of gully or palisade slot (5740, 5289), which contained middle Bronze Age pottery, and so may have been contemporary with the L-shaped enclosure. The third element consisted of a north-south aligned ditch (5912) that lay to the west of the cremation burials. Although the chronological evidence for this feature is less clear than that for the cremation deposits, it appears to have been later, and probably dates from the late Bronze Age or later.

An isolated cremation burial (7758) was also found on Site B, from which a single radiocarbon date was obtained (Table 2.3), dating to the 11th century cal BC (see below, Fig. 2.25).

### L-shaped enclosure: ditches 5892 and 7424

At the eastern end of Site C, an L-shaped enclosure was defined, primarily by ditch 5892 (Fig. 2.22; Plate 2.7). This ditch ran in an almost straight line, just off north-south, for 31m, and then turned at the south, just under 90°, to run for 10m east-west. A second, smaller ditch, 7424, may have been an extension of the east-west aligned section of ditch 5892, starting 4m to the west and continuing for 5.5m on the same alignment. The ditches thus defined the eastern and southern edges of a space which measured over 31m north-south and 19m east-west. To the north, ditch 5892 was destroyed by a much later denohole. No trace of an eastern side to this possible enclosure was seen within the excavated area. Further excavation work in the A2 Activity Park (Dawkes 2010), some 20m to the north, did not encounter a continuation of this ditch, suggesting that it must have ended or returned east just beyond the edge of the site.

No finds were recovered from the primary silts of ditch 5892, but layers of dark soil containing much pottery, charcoal and other finds came from middle-



upper fills 5484–6 and 5451 (Fig. 2.22). Two radiocarbon dates were obtained, one from a bone point, the other from some grains of barley, both of which were recovered from layer (5451) in section 858 (Fig. 2.22). The results from these samples were very

similar, and pass a  $\chi^2$  test (df=1 T=0.3 (5%=3.8) indicating that the samples could have been of the same age. They suggest that the samples date from the 14th or 13th centuries cal BC (Table 2.3). Although this range overlaps with that suggested for the

Table 2.3: Summary of radiocarbon dates from Sites C and B

Site	Context	Material	Lab no.	Date	Cal date BC (95.4% probability)	Cal date BC (68.2%)
Cremation deposits near the centre of Site C						
C	Cremation pit 5017	Cremated human bone	NZA-30222	2979±35 BP	1380-1080	1270-1120
C	Cremation pit 5278	Cremated human bone	NZA-30145	2955±30 BP	1290-1050	1260-1120
Ditch 5892						
C	Ditch 5892, upper fill 5451	<i>Hordeum</i> sp.	NZA-30124	3044±35 BP	1420-1210	1380-1260
C	Ditch 5892, upper fill 5451	Bone point	NZA-30148	3018±30 BP	1390-1190	1370-1210
Ditch 5912						
C	Ditch 5912, upper fill 5298	Animal bone	NZA-32400	2884±20 BP	1130-990	1110-1010
Cremation deposit on Site B						
B	Cremation pit 7758	Cremated human bone	NZA 30151	2915±25BP	1210-1010	1190-1040

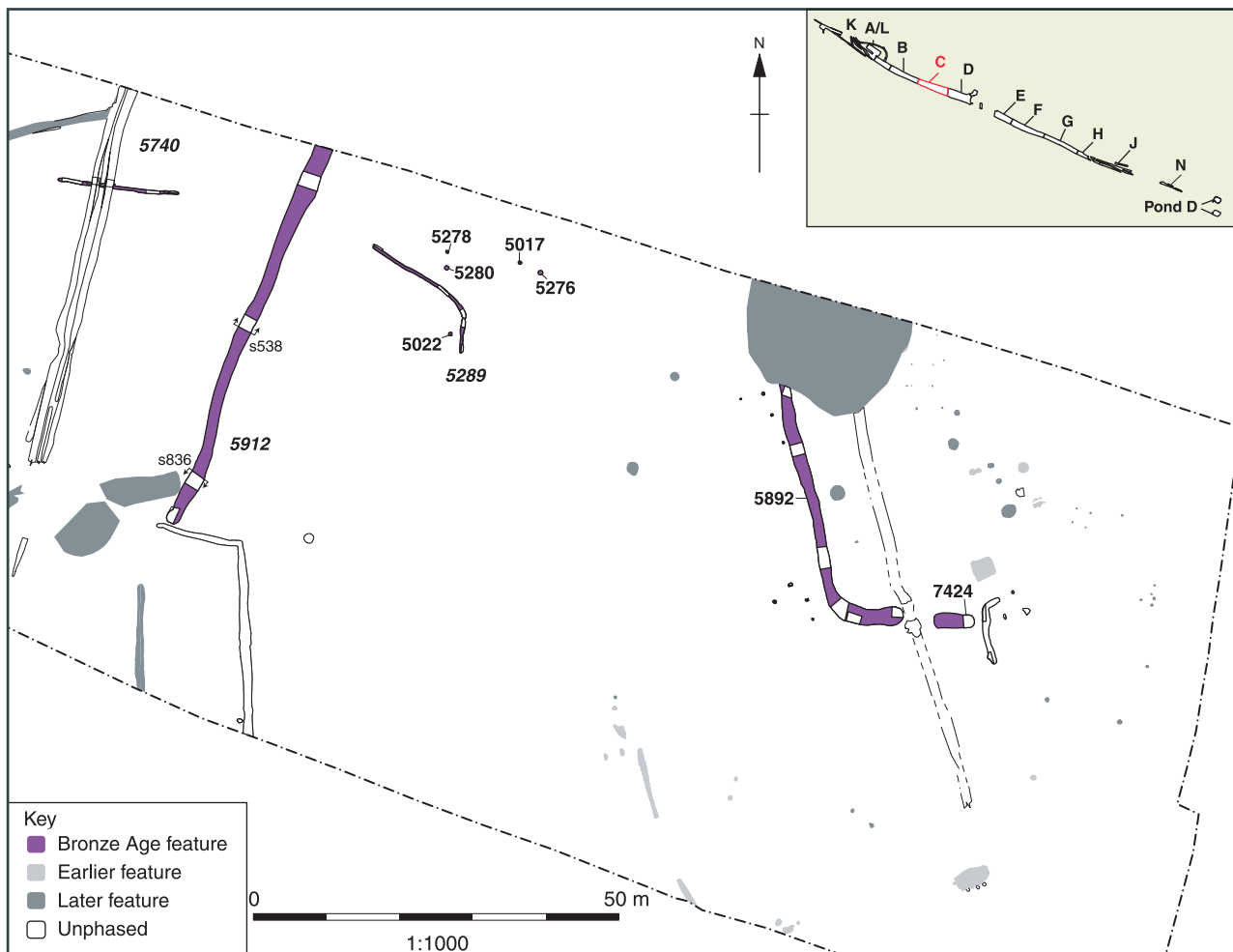


Fig. 2.21 Plan of later Bronze Age features on Site C

cremation deposits to the west, the overall probability distributions indicate that the samples from the ditch probably predate the cremation deposits. Given that these samples came from the upper layers of fill (and assuming that they were not residual), this suggests that the cutting of the ditches probably even more clearly predated the cremation deposits.

A considerable quantity of pottery was recovered from two of the cuts (5450 and 5483) of ditch 5892, and smaller quantities from two other cuts (5165 and 5501). Almost all of this was, however, recovered from upper layers of fill and thus, like the radiocarbon samples, its chronological relationship with the cutting of the ditch is uncertain. The diagnostic pottery from the ditch had Deverel-Rimbury characteristics, but only a small proportion of the pottery was in purely flint-tempered fabrics. The remainder was in a range of fabrics that are more common in the late Bronze Age. No pottery was recovered from ditch 7424. It is possible that the material that was radiocarbon-dated was residual, and that the pottery fabrics correctly indicate a later date, but given that two matching dates were obtained, and that the bone point was in very good condition, it is felt more likely that the variation in pottery fabrics is due to local differences between sites within the middle Bronze Age.

In profile, ditch 5892 had more or less steep, undulating sides, and a quite narrow, but irregular base (Fig. 2.22). As in the case of the enclosure ditches in Site G (9178, 9179 and 9614), the width of the ditch at its excavated surface has probably been exaggerated as a result of the collapse of its sides (and especially of the upper edges). The undula-

tions in the side of the ditch, especially evident in section 587 but also elsewhere, may have been produced by such collapse. On the basis of its profile at the base of section 587, where the original profile is most likely to have been preserved, the original width may only have been around 0.8m. The depth of the ditch was quite consistent, generally falling between 1.0 and 1.2m. Ditch 7224 was of similar size, but was V-shaped in profile. It was 2.6m wide and 1.3m deep.

The distribution of flint in ditch 5892 roughly mirrored that of the pottery, most having been recovered from cuts 5450 and 5483, but with smaller quantities from other cuts. The flint consisted predominantly of flakes and chips, although there were also a small number of other types including a bladelet, end scrapers, piercers and a hammerstone.

The distribution of animal bone also roughly follows that of the pottery, the largest groups having been recovered from cuts 5450 and 5483, although there were also appreciable quantities in cuts 5165 and 5501. Much of this bone could not be identified, but amongst the identified bone, sheep/goat predominated followed by cattle. Smaller quantities of red deer and a single fragment of horse bone were also recovered. There was also a range of small species including bank vole, common shrew and lizard which, presumably, were incidentally included in the ditch fills. Two bone points made from roe deer and sheep/goat metatarsals were found in layer 5451. A cylindrical loomweight was recovered from cut 5483, and other fragments of fired clay from cut 5450.

A sample taken from cut 5450 contained charred grain and weed seeds as well as charcoal, whilst



*Plate 2.7 Site C middle Bronze Age enclosure ditch 5892*

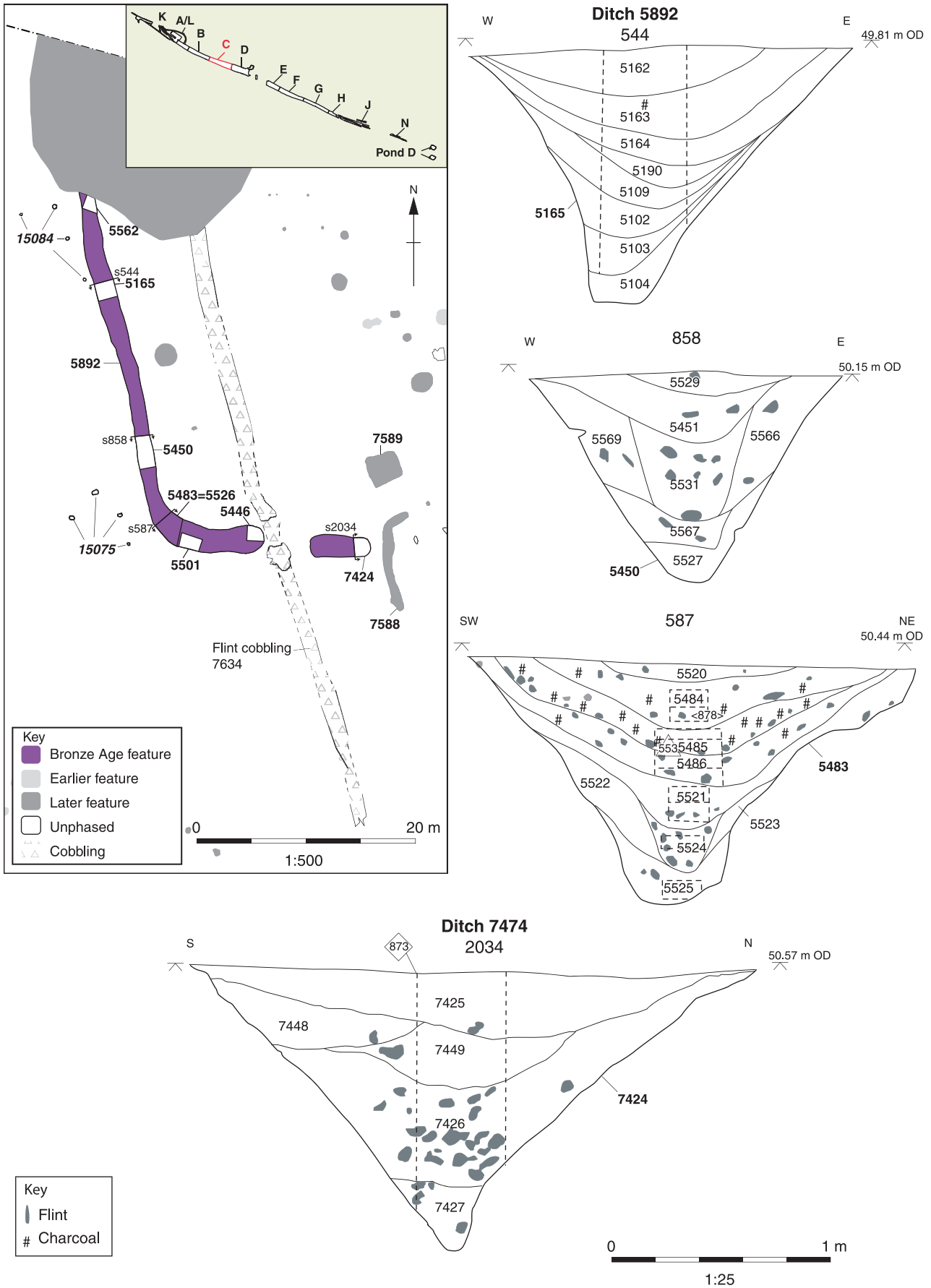


Fig. 2.22 Detail and sections of middle Bronze Age enclosure 5892, possible metallised track and associated features



molluscs from a sequence of samples taken from cut 5483 were also analysed (Fig. 2.22, section 587). The samples from the primary fill contained few shells, but in the layers above this, a larger assemblage was recovered in which open-country species predominated, although some shade-demanding species were also present. Further up the profile, shells became even more abundant, and shade demanding species predominated. In the uppermost fills of the ditch, however, there was a large increase in the proportion of open country species.

There was no feature marking the east side of the enclosure. A short length of gully (7588) ran roughly at right angles to 7424 just to the east, and a large sub-rectangular pit (7589) lay 4m north of that, but the gully contained undiagnostic potsherds, and the pit only fired clay, so neither is conclusively Bronze Age. No contemporary features were found within the area of the enclosure.

Just west of the enclosure ditch two groups of four small, shallow features (15075 and 15084), each with a single similar fill, were found. These were probably postholes, and had similar spatial arrangements, but formed no clear structures. There were no finds, but these may also have been Bronze Age. Some of the features to the east may also have been associated, but none contained pottery diagnostic of the Bronze Age, so all these features are described as part of the Iron Age occupation (see Chapter 3).

After stripping of the site, a band of flint nodules about 1m wide (7634) was observed running north-south across the interior of the enclosure, passing through the gap between 5892 and 5474, and continuing for another 20m before petering out (Fig. 2.22). The edges of the band were fairly straight, and the flint directly overlay both the natural chalk and the patches of silty clay Head deposit. A second shorter band, almost parallel to this, was seen on the north edge of the site some 20m further west, and a cross-section across this showed that the east edge of the flint band dived vertically for around 0.2m before levelling off and ending. This suggested that the flints were part of the natural geology, and so band 7634 further east was also interpreted as natural, and was not further investigated. Subsequent excavation by Archaeology South East (Dawkes 2010), however, revealed a holloway running from the north into the southern edge of their excavation, only 20m north of Site C. This Bronze Age feature was surfaced with a layer of flint in the late Bronze Age or early Iron Age, and it therefore appears likely that band 7634 was a continuation of this, and marks the bottom of a middle Bronze Age holloway that ran through the enclosure.

#### *Cremation deposits, pits and gullies near the centre of Site C*

The small cluster of features near the centre of Site C consisted of a group of five pits, three of which contained cremated human remains (5017, 5276 and 5278) and two short stretches of gully (5740 and

5289) (Fig. 2.23). Of the pits, one (5022) lay south of gully 5289, whilst the others were in pairs to the north of the gully.

#### *Chronology*

Single radiocarbon dates were obtained from the two of the cremation deposits (pits 5017 and 5278). The dates are very similar and pass a  $\chi^2$  test ( $df=1$   $T=0.3$  ( $5\%=3.8$ )) indicating that they could have been contemporaneous. The dates indicate deposition in the latter part of the middle Bronze Age, probably in the 13th or 12th centuries cal BC (Table 2.3).

Of the pits containing cremated remains, only one (pit 5278) contained any pottery. This consisted of just six sherds (65g) in a sandy fabric which is not typical of the middle Bronze Age, supporting the suggestion that there was local variation in the fabrics used for pottery at this time, though it may indicate that the date of the cremation deposit falls in the later part of the date range.

The pair of small pits that did not contain cremated human remains (5280 and 5022) both contained much larger groups of pottery, all in flint-tempered fabrics. In the case of pit 5022 the pottery included sherds with Deverel-Rimbury attributes (see Mullin and Brown below) which suggest that the pit may have been contemporary with the nearby cremation deposits. In the case of pit 5280, however, some of the pottery had features more typical of the post-Deverel-Rimbury Plain Ware tradition, which—like the pot from pit 5278—again suggests a slightly later date.

All of these features lay near two stretches of gully or slot (5289), which also contained pottery almost entirely in flint-tempered fabrics and with typical Deverel-Rimbury attributes. Overall, then, the pottery and radiocarbon dates from this group of features suggest activity predominantly in the middle Bronze Age, perhaps in the 13th or 12th centuries cal BC, which may have continued into the late Bronze Age.

#### *Cremation burials and other pits*

All of the pits were roughly circular, but they varied in profile, most having steep sides, but flat, sloping or rounded bases (Fig. 2.23). They varied from 0.36m to 0.70m across and from 0.07m to 0.25m in depth.

The pits that contained cremated remains were filled with dark grey or black silty clays containing a high proportion of charcoal. Those without cremated remains (5280 and 5022), in contrast, were filled with light, brownish yellow or yellowish grey silt clay deposits. The quantities of cremated remains associated with three of these pits were small (100–234g) and were distributed throughout the fills. The small quantities of cremated remains may be due to truncation of these features, but it is also possible that only a small portion of the pyre debris had been deposited in these pits. Very little flint was recovered from these features: just two chips from cremation burial 5276 and six chips from pit 5022. The only animal bone consisted of a few

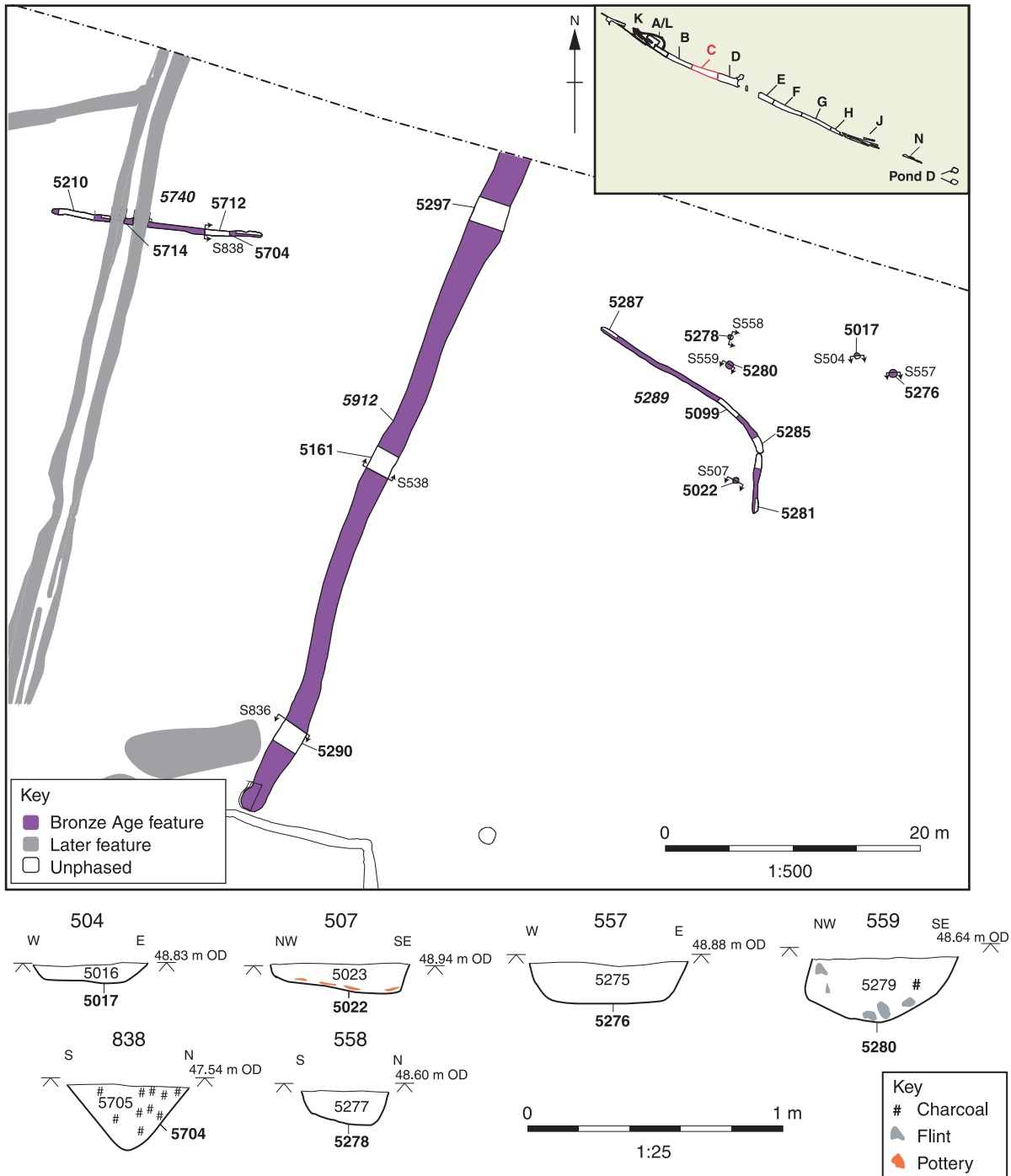


Fig. 2.23 Plan of slots 5740 and 5289, surrounding cremations and pits and ditch 5912, plus sections

unidentified fragments in the pits which did not contain cremated remains (5280 and 5022).

*Gullies 5740 and 5289*

A J-shaped gully (5289) made up of two lengths lay close to the cremation deposits. Together these gullies had a total length of 20.5m (Fig. 2.23). Their width was quite consistent, generally measuring around 0.5m. These gullies had very shallow, bowl-shaped profiles, at most only 0.08m deep, and the

small gap between them was probably due to truncation. A further 27m to the west was another stretch of gully (5740), 16.5m long and aligned east-west (Fig. 2.23). Despite the distance between them, their similar width and alignment suggests that they were related. Gully 5740 was slightly deeper (0.12m to 0.32m). Its profile varied along its length, being V-shaped at some points, but having steep sides and a flat base at others (Fig. 2.23, section 838). The gully fills contained clusters of stones and

abundant charcoal. These stones might have been packing for posts, suggesting that the gully could have been for a palisade or fence. The limited depth of the gully, however, suggests that any such structure would have been quite slight.

Not surprisingly, given that gully 5289 was so shallow, finds were recovered only from gully 5740. Other than pottery, the finds comprised flint, a fragment of saddle quern in purple ferruginous sandstone (from cut 5714, context 5735), and two unidentified fragments of animal bone. The flint was mostly flakes and chips, although an awl, a blade and a core were recovered.

### ***Boundary ditch 5912***

A ditch (5912) ran north-south for a distance 55m from the northern edge of the excavation across the middle of the site midway between the two gullies just described (Figs 2.23–4; Plate 2.8).

The evidence for the date of this ditch is ambiguous. A radiocarbon date on animal bone from the uppermost fill (5298) of the ditch gave a result indicating that the bone probably dated from the 11th century cal BC, at the very beginning of the late Bronze Age (Table 2.3). This suggests that the final filling of the ditch probably post-dated the cremation deposits, pits and gullies to the east, but it is possible that the ditch was cut at around the same time as the cremated remains were deposited. The pottery from this feature was, however, mixed, and although much of it was in flint-tempered fabrics and could have belonged to the middle Bronze Age, there were also large quantities in other fabrics, including some attributed to the earliest

Iron Age. Almost all of this pottery was recovered from the upper layers of fill, and no very clear change was apparent in the character of the pottery in the sequence of fills. Overall, however, the pottery and radiocarbon dates are consistent in suggesting a late Bronze Age or later date, at least for the later stages of filling of the ditch.

The profile of the ditch varied (Fig. 2.24). Section 836 had a Y-shaped profile with a flat base and very steep sides at the base. The maximum recorded width of the ditch was 2.9m, while the depth of the ditch varied from 1.3m to 1.8m. As in the case of the ditches in Site G, this form suggests that the profile of the ditch had been substantially modified by the collapse of its edges, and particularly the upper edge, and, as a result, that the width of the ditch had been exaggerated. An estimate of the original width of the ditch based upon the steep sides at the base of the ditch suggests that it was originally only around 0.8m wide. The other sections, such as section 538, have more continuously sloping edges and a more rounded base, but are still likely to have been affected by the collapse of the edges of the ditch.

Two fragments of an adult human femoral shaft, probably from the same bone, were recovered from the upper fill (5298) of cut 5297 where they were associated with an appreciable group of animal bone (NISP = 118), including fragments of cattle, dog, horse, pig and sheep/goat, although most of the fragments could not be identified.

The quantity of animal bone recovered in the other sections varied, but even where large groups were recovered, only a small proportion could be identified. The identified fragments consisted predominantly of cattle bone, although there were



*Plate 2.8 Site C Bronze Age ditch 5912 (cut 5290) looking north*



also small numbers of pieces from sheep/goat, pig, dog, horse and red deer.

The pottery, discussed above, was recovered from all of the sections across this ditch, while the only other finds comprised a flint flake, a small amount of fired clay and charcoal from cut 5290. The molluscs from the northern-most cut across this ditch (5297) were analysed. The samples from the lower and middle fills were dominated by shade-demanding species suggesting that the ditch was cut in a wooded, or only very recently cleared environment, and that even if the area had been cleared, woodland had quickly regenerated. The poorer samples from the upper fills, in contrast, suggest a much more open environment.

**Isolated cremation deposit 7758 on Site B**

The only feature dated to the middle to late Bronze Age on Site B was a small, circular pit (7758)

containing a small quantity (195g) of cremated human remains (7759; Fig. 2.25). A radiocarbon date obtained from the cremated bone suggests a date of 1210–1010 cal BC (NZA-30151). This date range is a little later than those obtained for the cremation burials on Site C, but together the dates pass a  $\chi^2$  test (df=2 T=3.0 (5%=6.0)) indicating that they could have been contemporaneous. The pit was bowl-shaped in profile and measured 0.4m across and 0.14m deep. It was not associated with any finds.

The pit lay near the centre of the site, in an area of Iron Age and Roman features, with no other features of middle-late Bronze Age date identified in the vicinity. It is, however, possible that the cremation pit was related to four other features (7858, 4952, 7794 and 4987), which formed a rough alignment at intervals of 4–7m extending for nearly 15m NW-SE across the centre of the site. The only finds recovered from these other features were

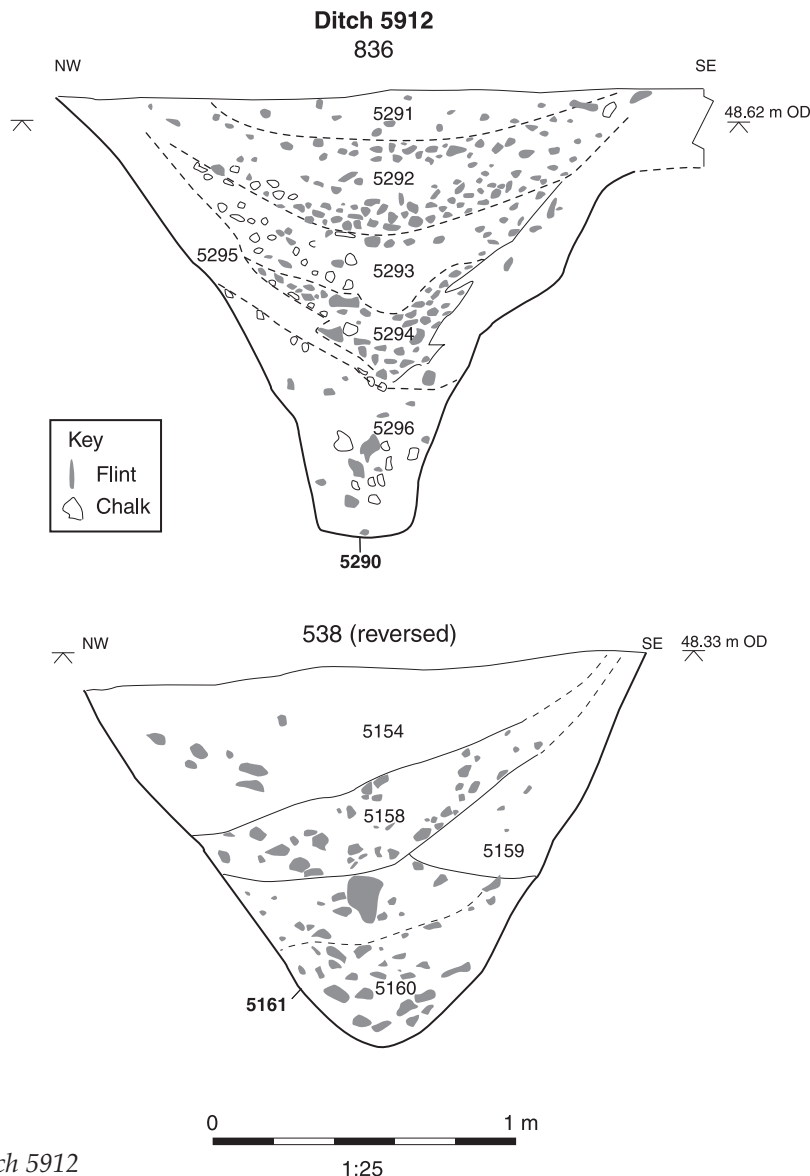


Fig. 2.24 Sections of ditch 5912



charcoal and burnt flint from pit 4952 and flecks of charcoal from pit 4987.

**Pits in Sites A and L**

An unusual deposit of cremated animal bone, Deverel-Rimbury pottery and fired clay was found in a pit (12510) on Site L, while a small cluster of pits which probably also date to the middle Bronze Age were found on Site A (Fig. 2.26).

**Site L: pit 12510**

Isolated pit 12510 lay near the eastern end of Site L (Fig. 2.26, B). The pit itself was roughly circular in plan, and measured 0.63m in diameter and 0.46m deep. It had almost vertical sides and a deep, concave base.

The pottery recovered from the pit consists of fragments of a Deverel-Rimbury urn, sherds from a cup, the base of another cup and rims from a further four vessels, including plain and inturned upright rims, which may belong to the late Bronze Age Plain Ware tradition. Fragments of the urn (12511) were visible on the surface of the pit after the site had been stripped, although the largest pieces, as well as fragments of a few of the other vessels, were exposed only after the first 20mm spit had been removed. Most of the cremated animal remains, which may originally have been contained within the urn, lay within this and the next spit, while most of the other pottery was found below the fragments of the urn.

The fragmented state and position of the pottery shows clearly that the deposit had been badly disturbed, while their position also suggests that the vessels were not originally placed on the bottom of the pit. Given the likely differences in the height of the vessels, it is quite possible that all of the vessels were, however, all originally placed at roughly the same level, and that it was only as a result of disturbance that sherds from the taller urn have come to lie above the other pottery. A small fragment of iron was recovered from the uppermost fill of the pit, and was clearly intrusive. Below the pottery and cremated remains, a large deposit of fired clay (470 fragments, 2533g), some bearing impressions of wattles, was found on the southern side of the base of the pit.

The pottery (including the urn) was predominantly in shell and flint-tempered fabrics (2512g including the urn), but there were also sherds in a range of other fabrics belonging to the flint- (222g), sandy and organic- (31g), flint and grog- (9g) and flint and shell-tempered (32g) groups, suggesting that the deposit may date from the transition to the late Bronze Age (Morris 2006), as do the possible Plain Ware sherds.

Fig. 2.25 (left) Plan and section of cremation burial 7758 on Site B



*Site A: pit cluster*

A loose cluster of five pits was found near the eastern end of Site A (Fig. 2.26, A). Four of these pits were small, shallow features with diameters of between 0.65m and 0.91m and depths between 0.09m and 0.30m. They lay in two pairs: 3166 and 3168 lay less than 1m apart, around 8m to the north of pits 3024 and 3040, which lay 3m apart. The fifth pit, 3030, was a much larger feature, measuring 2.2m across and 1.4m deep (Plate 2.9). It had more or less vertical sides which were rather irregular, probably as a result of their partial collapse, and a flat base (Fig. 2.26).

Only two of these pits contained any pottery: the large pit (3030) and pit 3024. The pottery in pit 3030 included Deverel-Rimbury forms and decoration as well as features which belong in the late Bronze Age Plain Ware tradition, an example of which was found in the lowest fill of the pit. Since many of the distinctively Deverel-Rimbury sherds were abraded, the pit probably dates either from the late Bronze Age, or from the transition between the middle and late Bronze Age.

In pit 3030 flint and shell-tempered pottery predominated, followed by flint-tempered sherds. There were also small quantities of flint and grog-, shell-, sandy- and flint and shell-tempered sherds, as well as a residual flint and grog-tempered Beaker sherd. In pit 3024 flint- and shell and flint-tempered pottery were present in roughly equal proportions. Four shell-tempered sherds were also recovered.

The only flint was recovered from the same two pits. It consisted almost entirely of flakes and chips, but a core and a blade-like flake were also recovered from pit 3030, and a blade, an end scraper, a core and a hammerstone from pit 3024. Both of these pits, as well as pit 3166, also contained fired clay.

Pits 3030 and 3024 also contained large groups of animal bone. In both cases most of the bone could not be identified, but cattle, pig and sheep/goat bones were noted in both, and red deer and wild cat in pit 3030. Samples from both pits 3030 and 3024 contained a little charred grain and chaff as well as charcoal.

Two further large pits, 3039 and 3097, which lay some 55m north-west of pit 3030, are also tentatively ascribed to the late Bronze Age (Figs 2.26–7). Both contained small numbers of sherds that could only be characterised as later prehistoric (ie middle Bronze Age to middle Iron Age), but pit 3097 contained 140 struck flints of later Bronze Age character, and both features are of broadly similar size to pit 3030.

Pit 3039 was a very large feature, measuring 2.5 x 2.3m across and 0.7m deep with one steep and one more sloping side and a flattish base (Fig. 2.27). It contained three fills but produced only 21 small and undiagnostic sherds of pottery weighing 76g. A complete saddle quern was found in the centre of the base of the pit (SF 302) in fill 3078, a fragment of another quern in the second fill 3077 and a rubber (SF300), all made from the same purple sandstone, in top fill 3038 (see Stone report and Fig. 2.42). Pit 3097 was of a similar size (1.9m in diameter and 1.15m deep) and contained a large assemblage of



Plate 2.9 Site A middle-late Bronze Age pit 3030

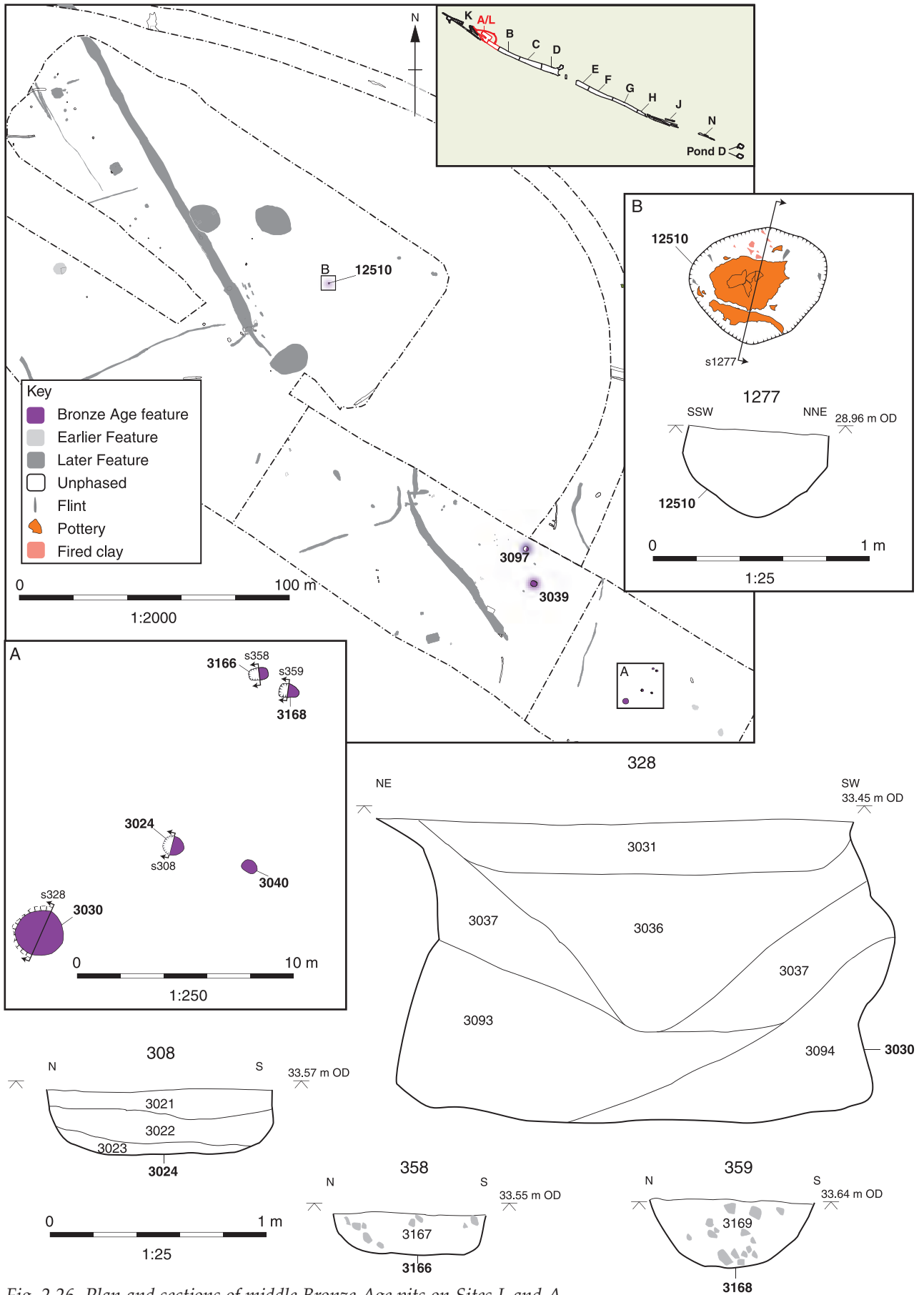


Fig. 2.26 Plan and sections of middle Bronze Age pits on Sites L and A.

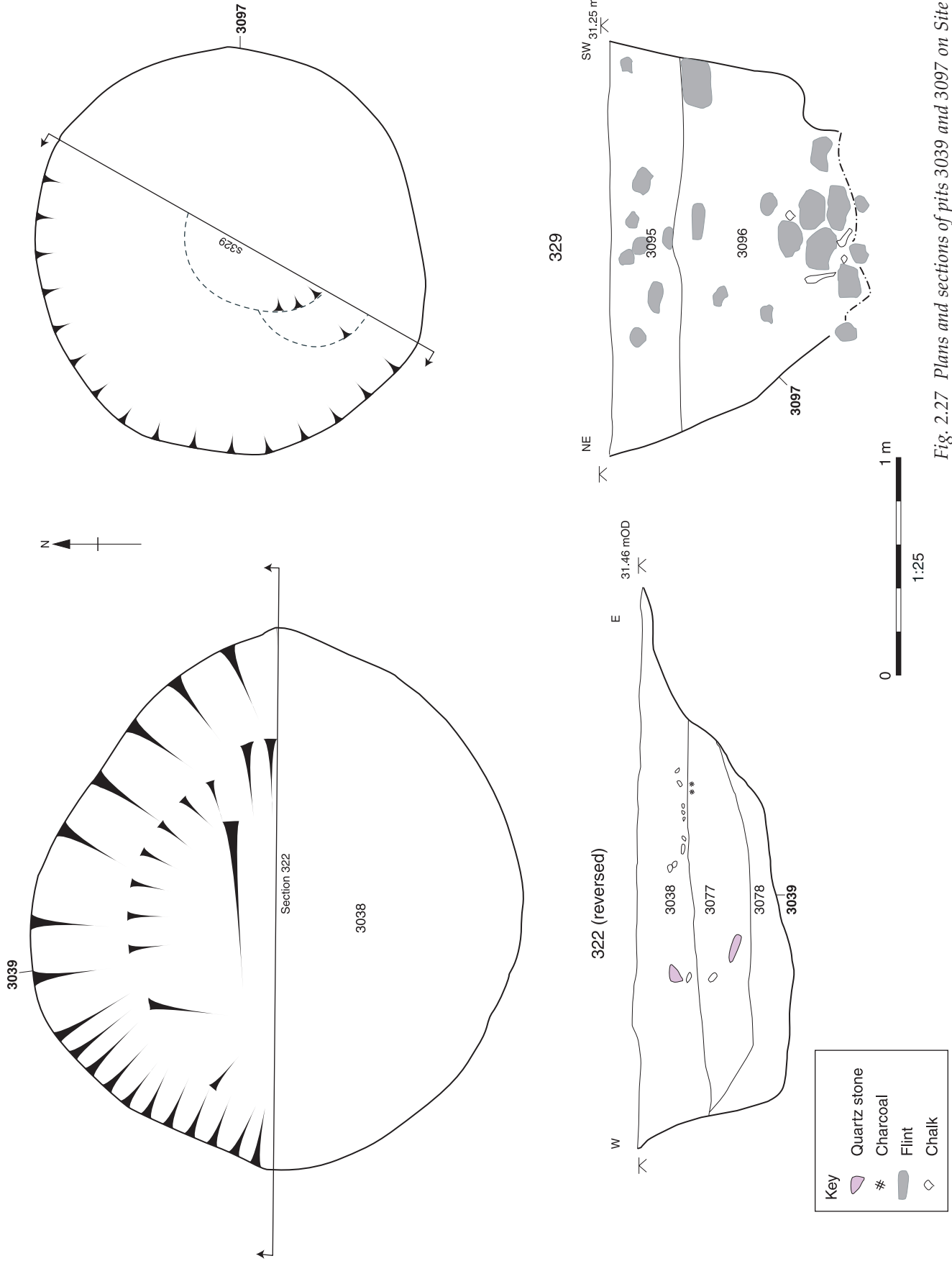


Fig. 2.27 Plans and sections of pits 3039 and 3097 on Site A

animal bone including the standard domestic species and also bones of rodents and birds, presumably incorporated by chance. An environmental sample from the pit yielded a few charred cereal grains. There were however only six sherds of undiagnostic pottery, all from the top fill.

### Site D

One further cremation burial (6010) was found on the north side of Site D, some 110m east of the enclosure in Site C (Fig. 2.28). The cremation comprised 402g of bone from an adult, together with charcoal in a small circular pit. The pit was, however, very shallow, indicating that the cremation had been truncated. A radiocarbon date of 1260–1020 cal BC (NZA-31264) was obtained from cremated bone. The bones indicated that the burial was that of an adult.

A small cluster of postholes and stakeholes (6505, 6422, 6426, 6428 and 6430), as well as a pit (6202), were found near the eastern edge of Site D. The only dating evidence was three flint-tempered sherds, one in posthole 6505, and two in pit 6202, which may be middle Bronze Age in date. The sherd from posthole 6505 was decorated with linear grooves. Two flint flakes also came from posthole 6505. The remaining features on the site date from the Iron Age and Roman periods, so these sherds may have been residual, though they do demonstrate some Bronze Age activity in this area.

The pit (6202) was roughly oval in plan, measuring 1.9m by 1.4m across and 0.28m deep. It had a slightly undulating base and steep sides. The postholes were roughly circular and were from 0.14–0.38m wide and 0.06–0.17m deep. They did not form any clear shape.

### EARLY PREHISTORIC FINDS ASSEMBLAGE

#### Struck flint by Hugo Anderson-Whymark and Mike Donnelly

Excavations along the route of the A2 Pepperhill to Cobham widening scheme yielded 5156 struck flints (Table 2.4). Flints were recovered from all of the excavated sites in varying quantities, and ranged in date from the Late Upper Palaeolithic through to the early Iron Age, though the majority of the assemblage dates from the middle to late Bronze Age (see phase summaries below).

#### Methodology

The artefacts were catalogued according to broad artefact/debitage type, with retouched pieces classified according to standard morphological descriptions (Bamford 1985, 72–7; Healy 1988, 48–9; Bradley 1999, 211–27; Butler 2005). Additional information was recorded on condition (rolled, abraded, fresh, burnt and broken) and degree of cortication. Following on from this, selected assemblages were

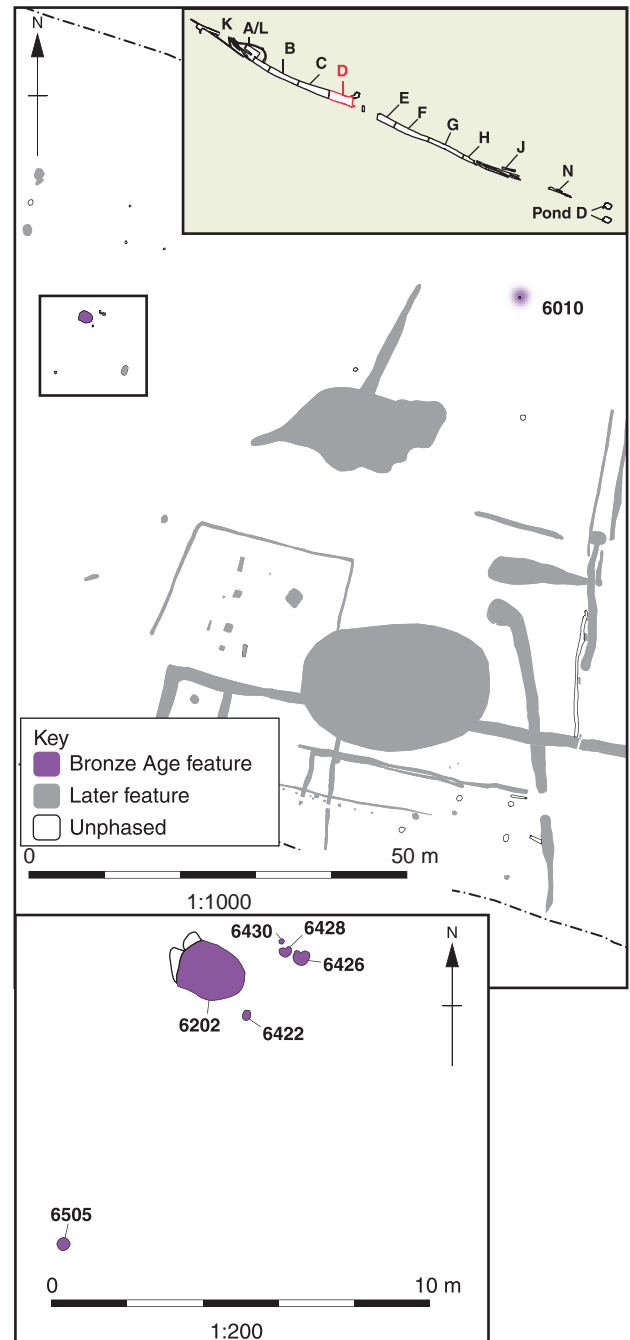


Fig. 2.28 Plan of Bronze Age pits and postholes on Site D

studied in greater detail. Metric analysis was conducted (Saville 1980) as was hammer mode (Onhuma and Bergman 1982), termination type, butt type (after Inizan et al. 1992), cortex cover and flake type (after Harding 1990). Where numbered, all four figure numbers refer to the detailed catalogue. Small finds numbers given out during excavation will be prefixed with “sf”.

Refits were sought to clarify reduction strategies and investigate activities represented in specific contexts and locations. Refitting exercises were carried out on all contexts identified as of high



potential, but the number of refits identified was low, and were only significant in the small Neolithic assemblage from Site B and the Beaker pit on Site D.

### *Raw material and condition*

Flint was the only raw material employed, with the sole exception of a single blade-like removal in orange-red quartzite from pit 9293 on Site G. Similar flint raw materials, probably sourced from local flint gravel deposits, were exploited along the entire length of the route. The flint was available in the form of irregular nodules of variable size, with heavily abraded cortical surfaces, and is generally mid to dark brown in colour, frequently containing mottled grey cherty inclusions. The raw material is generally of reasonable flaking quality, but thermal fractures were common and frequently hindered knapping. Bullhead Bed flint, which exhibits an olive green cortex with an underlying orange band, was recovered from most sites (Dewey and Bromehead 1921). This flint may have been collected directly from the base of the Reading Beds, but the abraded condition of the cortex on some pieces may indicate a secondary gravel source. The materials employed demonstrate that little care was taken over raw material selection, except perhaps for some of the finer Neolithic tools.

The condition of the flint was variable and is discussed further in relation to individual sites and contexts below.

### *The assemblages*

The flint assemblages from the various sites across the landscape are summarised in Table 2.4. All of the flint was assessed, and are briefly described on a site by site basis in the digital report. Assemblages (from Sites G, B, D, D North, and C) that underwent more detailed analysis are presented in Table 2.5 and are described here.

#### *Site G Neolithic Activity*

The Site G flint assemblages from Neolithic contexts are limited in size, with surface scatter 9584 containing 36 flints, and much smaller amounts from the pits. Posthole/pit 9407 contained 38 flints from three fills. Pit 9223 contained 21 flints, ramped posthole 9539 four, whilst postholes 9184 and 9206 each produced seven and features 9212 and 9199 contained two and ten flints, respectively.

Only the assemblages from the buried soil 9584, pit 9223, posthole/pit 9270 and ramped posthole 9539 were examined in detail, amounting to 99 flints. The assemblage comprised 57 flakes, with 8 blades and 6 blade-like flakes and 7 tools. While knapping waste was present (chips (16) and irregular waste (4)), the numbers were far from significant and cores were absent (one tested nodule was present). No refits were identified from or between any of these assemblages.

Of the tools, a very finely worked leaf-shaped

arrowhead (Fig. 2.29, no. 2), a fine end scraper on a distal trimming flake blank (Fig 2.29, no. 3), a serrated flake (4006), a double notched flake (3997) and a retouched/utilised blade (4005), all came from pit 9223. Two further end scrapers were recovered, one from ramped posthole 9539 (sf 1631/4016) and another from buried soil 9584 (sf 1638/3965) along with a retouched blade-like flake (sf1640/3966). All three end scrapers were formed on sizeable flakes as were the majority of the retouched pieces. Despite three items being incomplete the tools average 55mm by 33mm by 9mm. In total retouch was identified on eight of 83 pieces or 9.9% of the assemblage (excluding chips), a very high number. Moreover, pit 9223 contained five retouched pieces in an assemblage of only 21 flints or 23.8% and must be seen as a highly selective assemblage. The arrowhead was broken, but the fine end scraper was intact and still readily usable.

The early Neolithic assemblage from Site G while small does appear to indicate an area of domestic activity in which formal flint tools and flake and blade blanks were utilised. The lack of fine debitage may indicate limited upkeep, repair or re-sharpening of tools but clearly does not represent the intense levels of debitage one would expect from tool production and *in situ* knapping floors.

#### *Site B in situ middle Neolithic Activity 3424*

A small assemblage of 35 flints was recovered from a clay layer, believed at the time to represent part of the cobbling for an Iron Age road. The flints all display moderate patination and some are clearly broken (8). There were several refits within the assemblage. These included a laterally split flake, perhaps a double removal (4956 and 4957), another laterally split piece (Fig. 2.30, nos 1–2; 4948 and 4949), and a flake struck at 90 degrees to the right handed edge of the previous removal (4953 and 4954). This last indicates either a platform shift or the use of a multi-platform core (Fig. 2.30, nos 5–6). There was also a pair of refits that indicates the core being worked for flakes from left to right (Fig. 2.30, nos 3–4, 4951 and 4952). No detailed sequence was identified and it is likely that much of the assemblage had been lost to later truncation by Iron Age features. It is, however, also likely that some flints were missed in the field.

In total, 18 of the 35 pieces originated from the same core and this was probably also the case with some of the other inner removals, although they lacked the distinctive banding immediately below the cortex. A solitary rolled micro-burin (4936), however, shows that not all of the flint was contemporary. Other tools consisted of a chisel arrowhead (Fig. 2.30, no. 7, 4958), a notched piece (4950), an irregular scraper (4959) and a miscellaneous retouched flake (4943).

#### *Site D Beaker Assemblage*

Beaker pit 6512/6161 yielded 496 flints, including 216 chips. The pit contained four fills, but the

majority of the flint was recovered from the middle fill 6163/6514. The assemblages from the other fills are of similar character, and the assemblage has been considered as a whole. The flint assemblage (Table 2.6) is dominated by flakes (228, 46%), with a minimal blade (3, 0.6%) or blade-like component (6, 1.2%). The flakes generally exhibit plain platforms (146, 57.3%) with only very rare preparation of the platform-edge. The cores are, however, more complex, with three single platform examples (4460, 4463 (Fig. 2.31, no. 3) and 4467), three with two platforms (two at ninety degrees (4430 and 4462) and a single opposed platform example (4914)) and a single core with three or more platforms (4461). A further five tested nodules exhibit only a couple of flake removals before they were abandoned. The presence of several cores, numerous chips and a flint hammerstone made from a re-used core indicated that the pit contains knapping debris. This is further supported by the presence of similar cortical surfaces throughout the flake assemblage.

Eight retouched flints were present in the pit, representing 2.9% of the assemblage excluding chips. These comprise two side scrapers (4432 and 4530), an end scraper (Fig. 2.31, no. 5; 4529), a spurred piece (4531), a notch (4532), two simple edge retouched flakes (sf 1446/4837 and sf 1461/4852) and a miscellaneous retouched flake (4538). A small number of flints were burnt (7.9%), indicating that the assemblage does not simply represent knapping waste.

Refitting identified four sequences, involving a total of 10 flints. The first refitting sequence consisted of three flakes and involved the removal of a large step fracture from a flawed core. Flake 4874 (1495) failed to remove the step wholly and the core was then worked perpendicular to the initial platform before another two attempts were made to correct the initial step, the second of which was successful. This reveals some attempts at curation of the core.

The second refit involves a blade-like flake (4858) from a large conical/pyramidal single platform core refitting onto a regular flake which had been made into a notch (4532) (Fig. 2.31, nos 1–2). A third piece came earlier in the sequence (one or two removals missing) and was a side trimming flake (4864). All were struck from the same platform.

The third refit involves the direct refitting of two inner flakes (4484 and 4488). These may have originated from earlier on in the reduction of core 4463, which contains the fourth refit sequence where a small inner flake refits directly to the dihedral platform (Fig. 2.31, nos 3–4). Numerous other flakes were clearly from this core but no further refits were identified.

The assemblage from pit 6161 can be compared with similar Beaker assemblages recovered from HS1 sites Beechbrook Wood and South East of Eyehorne Street (Devaney 2006). The similarity in terms of technological characteristics between Site D and Beechbrook Wood pit 1374 is striking (Cramp

Table 2.4: The flint assemblage by excavation area

CATEGORY TYPE	Site											Grand Total			
	N	A	B	C	D	E	F	G	H	J	K		L	PDN	PDS
Flake	7	233	396	357	475	22	270	850	17	76	17	263	259	19	3261
Blade		4	6	8	10	2	14	32				7	10	1	94
Bladelet		1	5	5	5	1	3	14		2	1	3	3		43
Blade-like		6	11	8	12		10	54	1	6	1	5	23	1	138
Irregular waste		9	16	12	34	2	6	56	2	2		11	21		171
Chip			19	98	118	17	4	52		1		1	24	1	459
Sieved chips 10-4 mm		363	64	41	128	8		68				145			693
Rejuvenation flake core face/edge				2			1	6					1		10
Rejuvenation flake other				1								1			2
Flake from ground implement				1	1										2
Single platform blade core			1												1
Double platform blade core														1	1
Tested nodule/bashed lump		1	2	3	6		1	14	1	1		1	6		36
Single platform flake core		1	2		2	1	4	9		1		1	5		26

Chapter 2

Multiplatform flake core	3	1	4	4	5	22	1	15	1	56	
Keeled non-discal flake core	1	1					1	3		4	
Levallois/other discoidal flake core			2	5	2	3		1		11	
Core on a flake								1		3	
Unclassifiable/fragmentary core										3	
Microolith		1				2				1	
Microburin		1				1				1	
Leaf arrowhead		1				1				1	
Chisel arrowhead		1				1				2	
Barbed and tanged arrowhead									1	1	
Triangular arrowhead			1							1	
Fragmentary arrowhead									1	1	
End scraper	2	7	3	6	1	11	1	6		40	
Side scraper		2		2		2	1		1	8	
End and side scraper							1			1	
Disc scraper						1				1	
Thumbnail scraper			1			1				2	
Scraper on a non-flake blank			1			1				2	
Other scraper		1	4	1	3	1	1		1	12	
Awl	1	3	1					1		6	
Piercer	3	2	4	1	2	3		3		15	
Spurred piece		2	1			1		1		8	
Serrated flake						3				3	
Denticulate		1				4		1		6	
Notch		2	2	5	1	7	1	12		31	
Backed knife		1	1		2		1	1		6	
Plano-convex knife						1				1	
Other knife				1		3				4	
Retouched flake		1	3	5	1	16	1	19		46	
Burin					2			1		3	
Axe		1								1	
Other heavy implement								1		1	
Misc. retouch	1		1	1		2		3		8	
Other			1			2		2		5	
Hammerstone	1		1	1	1	2		4		10	
Grand Total	7	629	550	824	53	1244	22	444	23	5240	
No. of burnt flints (%)*	18 (6.77)	1 (0.21)	19 (4.47)	25 (4.25)	7 (2.1)	47 (4.4)	82 (7.22)	1 (4.5)	17 (5.7)	2 (8.7)	236 (5.77)
No. of broken flints (%)*	33 (12.40)	54 (11.56)	64 (15.05)	62 (11.81)	3 (10.7)	74 (22.5)	144 (12.68)	4 (18.2)	58 (19.5)	2 (8.7)	570 (13.94)
No. of retouched flints (%)*	7 (2.63)	25 (5.35)	23 (5.41)	23 (4.38)		12 (3.6)	63 (5.55)	1 (4.5)	6 (2)	1 (4.3)	220 (5.39)

\* Percentage excludes chips

2006) and conforms well with what would be expected for an early Bronze Age assemblage (Butler 2005). These pits feature squat or broad flakes with direct hard hammer percussion and a virtual absence of platform abrasion. Elsewhere, the beaker material from Barrow Hills Radley was also focused on small hard-hammer struck flakes with numerous hinged terminals. (Bradley 1999, 219).

Plain platforms are dominant here and at the HS1 sites (57.3% here and 60% from HS1). There are some differences which can best be explained by the choice of nodule, with very small nodules at Beechbrook Wood (average 47g) compared to much larger nodules at Site D (139g). The smaller nodules yielded significantly higher numbers of trimming flakes (51.8% compared to 35.1%) and significantly lower incidences of non-cortical flakes because there is far less inner material to work with.

Pit 1374 and adjacent pit 562, however, displayed very high incidences of burning and breakage (Table 2.7) amongst the flint, and contained significant amounts of animal bone, so much so that it has been argued that they represent the residues of feasting (Cramp 2006). In contrast only around 8% of the flint from pit 6161 was burnt, and very little animal bone was found. A more appropriate model for pit 6161 is that Beaker pit assemblages represent formalised deposits rather than straightforward accumulations of domestic waste (Allen 2005, 222).

Despite very careful study, only four separate small refitting sequences were identified from pit 6161. The lack of further refits may be due to truncation having removed many of the flakes, to middening before burial, as has been argued for many Neolithic and later Bronze Age assemblages (Garrow *et al.* 2005), or conscious selectivity about what was buried. It is possible that all three were contributory factors. While some truncation of the pit had certainly occurred, the abraded state of some of the Beaker vessels strongly implied middening before deposition, and the different representation of rim and base sherds may indicate deliberate selection. In the case of pit 6161, however, the general uniformity of surface condition of the flint makes middening of this material less likely. Deliberate selection, whether of specific pieces or of a 'token' proportion of knapping debitage, seems more probable. The burnt flint may perhaps have been subject to the same process.

*Site Pond D North mixed Neolithic–Bronze Age assemblage*

A total of 437 flints was analysed in detail. The assemblage is clearly dominated by flakes (261, 59.7%), but does include blades (13, 3%) and blade-like flakes (23, 5.3%) giving a total of 8.2% for blade forms. Platforms are generally plain (4, 9%) though complex, linear and punctiform platforms (25.1%) hint at a more careful reduction strategy, while cortical examples (19%) indicate that the full range of reduction of nodules into blanks, tools and waste occurred here. The assemblage contains significant

Table 2.5: The flint assemblage by detailed analysis areas

CATEGORY TYPE	Site analysed in detail										Grand Total
	Early Neolithic G	Middle Neolithic B	Neolithic-Bronze Age PDN	Early Bronze Age D	Middle Bronze Age A	Mid-Late Bronze Age C	Mid-Late Bronze Age G	Early Iron Age C	Early Iron Age G		
Flake	57	23	260	228	134	105	445	102	54	1407	
Blade	8	1	10	1	3	2	8	3	1	37	
Bladelet		2	3	2		1	4	2	4	18	
Blade-like	6	3	23	6	4	3	25	2	1	73	
Irregular waste	4	1	21	23	9	3	25	6	3	95	
Chip	16		24	92		21	4	2	16	175	
Stieved chips 10-4 mm				124	131			41	50	346	
Rejuvenation flake core face /edge			1			1	4	1	2	9	
Rejuvenation flake other								1		1	
Flake from ground implement								1		1	
Double platform blade core			1							1	
Tested nodule /bashed lump	1		6	5		1	8		2	23	
Single platform flake core			5	1	1		8			15	



Multiplatform flake core	15	3	2	1	16	2	1	40
Keeled non-discoidal flake core	3							3
Core on a flake	1	2			3	2		8
Unclassifiable / fragmentary core	1				1			1
Microolith								1
Microburin	1							1
Leaf arrowhead	1							1
Chisel arrowhead	1				1			2
Barbed and tanged arrowhead	1							1
End scraper	8	1	1	1	6	1		19
Side scraper		2			1			3
End and side scraper					1			1
Thumbnail scraper					1			1
Other scraper	1	3		1		3		6
Awl	1	1	1	1				3
Piercer	4		3	3				12
Spurred piece	1					1	1	4
Serrated flake	1							1
Denticulate	12	1			2			3
Notch	1				2	2		19
Backed knife	1							1
Plano-convex knife					1			1
Retouched flake	18	2			12		1	35
Burin	1							1
Other heavy implement	1							1
Misc. retouch	3	1	1		2			8
Other	3				1			3
Hammerstone	5	1	1	1	2			9
Grand Total	99	35	291	145	586	172	136	2390
No. of burnt flints (%) <sup>*</sup>	6 <sup>*</sup> (7.23)	0	16 <sup>*</sup> (10)	5 <sup>*</sup> (4.03)	20 <sup>*</sup> (3.44)	5 <sup>*</sup> (3.60)	19 <sup>*</sup> (27.14)	110 <sup>*</sup> (5.89)
No. of broken flints (%) <sup>*</sup>	18 <sup>*</sup> (21.69)	6 <sup>*</sup> (17.14)	17 <sup>*</sup> (10.63)	11 <sup>*</sup> (8.87)	42 <sup>*</sup> (7.22)	19 <sup>*</sup> (13.67)	7 <sup>*</sup> (10)	187 <sup>*</sup> (10)
No. of retouched flints (%) <sup>*</sup>	8 <sup>*</sup> (9.64)	4 <sup>*</sup> (11.43)	7 <sup>*</sup> (4.38)	7 <sup>*</sup> (5.65)	34 <sup>*</sup> (5.82)	7 <sup>*</sup> (5.04)	2 <sup>*</sup> (2.86)	134 <sup>*</sup> (7.17)

<sup>\*</sup> Percentage excludes chips

Table 2.6: The flint assemblage from Beaker pit 6512 by context

CATEGORY TYPE	Pit 6512			Grand total
	Middle fill 6513	Middle fill 6163/6514	Upper fill 6162/6515	
Flake	23	182	23	228
Blade		1		1
Bladelet		2		2
Blade-like		5	1	6
Irregular waste	1	20	2	23
Chip		202	14	216
Tested nodule/bashed lump	2	3		5
Single platform flake core		1		1
Multi platform flake core	1	1	1	3
Core on a flake		2		2
Core reused as Hammerstone		1		1
End scraper		1		1
Side scraper		1	1	2
Spurred piece		1		1
Notch		1		1
Retouched flake		1	1	2
Misc retouch		1		1
Grand Total	27	426	43	496
No. of burnt flints (%)*	2 (7.41)	19 (8.48)	1 (3.45)	22 (7.86)
No. of broken flints (%)*	3 (11.11)	8 (3.57)	3 (10.34)	14 (5)
No. of retouched flints (%)*	0	6 (2.68)	2 (6.9)	8 (2.86)

\*Percentage excludes chips

amounts of both broad and narrow removals and also displays by far the highest incidence of platform abrasion/preparation from all A2 sites (101/385, 26.2%), far in excess of the late Neolithic–early Bronze Age assemblage from Site D (2/257, 0.8%).

Cores include many single platform and multi-platform examples displaying flake removal scars but there are two cores that display both blade(let) and flake scars. These consist of an opposed platform core and a multi-platform core, and there are other multi-platform examples that are typical of early Neolithic cubic examples. Many of the cores have been heavily worked with over 15 removals seen on nine of them, while others are more typical of an expedient later prehistoric strategy with only a very few removals from a single unprepared platform. Just more than half the cores (15/29, 51.7%) have some evidence for platform preparation, usually along the edges of an earlier abandoned platform, and in many cases only along parts of a platform, due to subsequent removals from the prepared platform. One of the heavily-worked multi-platform cores was reused as a hammer stone (Fig. 2.32, no. 6). Despite its complexity, this piece is probably of middle–late Bronze Age date.

Table 2.7: Comparison of Beaker pit assemblages

CATEGORY TYPE	Pit 6161 Site D	Pit 1374 Beechbrook Wood	Pit 562 Beechbrook Wood
Flake	228	230	85
Blade	1	1	1
Bladelet	2	1	4
Blade-like	6	5	2
Irregular waste	23	115	16
Chip	216	272	37
Tested nodule/bashed lump	5		
Single platform flake core	1	1	
Multi platform flake core	3	3	
Core on a flake	2	2	1
Core reused as Hammerstone	1	1	
Unclassified core		6	
End scraper	1	3	
Side scraper	2	6	
Thumbnail scraper		3	
Other scraper		2	
Backed knife			1
Spurred piece	1		
Notch	1		
Leaf shaped arrowhead			
Barbed & Tanged arrowhead		1	
Retouched flake	2	19	
Misc retouch	1	5	
Grand Total	496	676	147
No. of burnt flints (%)	22* (7.86)	417 (61.7)	147 (100)
No. of broken flints (%)*	14* (5)	400 (59.17)	87 (59.18)
No. of retouched flints (%)*	8* (2.86)	39* (9.65)	1* (0.91)

\*Percentage excludes chips

Formal tools are common here as are less formal retouched flakes (18). These are often very elegant flakes, displaying platform edge abrasion in five instances and are most likely of Neolithic date. Some of the more irregular examples, made on flakes with unmodified platform edges, are more typical of Bronze Age assemblages. Notches are also common (12): nine are simple single notches, two are double and there is also a multiple notched flake. The more formal tools comprise 8 end scrapers, 1 horned scraper, 2 other scrapers, 1 possible barbed and tanged arrowhead, 1 backed knife, 4 piercers, 1 awl, 1 spurred piece, 1 micro-denticulate, 1 burin, 1 heavy implement, 2 combination tools, 3 with miscellaneous retouch and one piece which is unclassified but clearly a tool.

Some of these tools are clearly Bronze Age, such as many of the notches, retouched flake, horned scraper and piercers (4989, 4992 and 5263). The horned scraper (Fig. 2.32, no. 5; 5152) exhibits abrupt slightly concave retouch on both sides of a flake, with a simply struck concave distal notch. This is typically seen as later Bronze Age in date, and the type has a limited spatial distribution, most examples coming from the Seafood/Alfriston area of

the Sussex Downs (Butler 2001). A crude possible early Bronze Age barbed and tanged arrowhead (Fig. 2.32, no. 4; 5054) was also recorded, but despite the two notches forming a tang and slight barbs, the flake exhibits abrupt retouch along the left hand side and only erratic flake removals along the right-hand side. Another unusual artefact is a large, thick, hard hammer flake (5229) that exhibits a series of flake removals along both sides of the ventral surface. The function of this retouch is unclear as it leaves an irregular edge, but the distal left hand side exhibits heavy use-damage on the ventral and dorsal surfaces, possibly indicating the tool was used as a knife. All of these flints with concave working edges were recovered from pit 19267 at some distance from the main body of the assemblage. The lithic assemblage from this feature is late Bronze Age in date, but this feature has yielded late Iron Age pottery and an early Saxon radiocarbon date.

Several of the tools recovered here appear to be of early Neolithic date. This would include several of the retouched flakes, but more importantly, the burin (Fig. 2.32, no. 1; 5189), the micro-denticulate (Fig. 2.32, no. 2; 5174) and two very elegant end scrapers on long flakes/blade-like flakes (Fig. 2.32, no. 3; 5000 and 5025). The scrapers are near mirror images of each other and very closely resemble an end scraper (3996) recovered from a pit on Site G. The micro-denticulate is a particularly fine example, made on naturally backed blade, it has a series of finely executed tiny notches along its right hand side. The burin is a single burin on a truncation, probably formed on a blade.

The assemblage from Pond D North can be interpreted in two ways. It may contain artefacts from a range of periods, including a possible Mesolithic burin and bladelets, early and late Neolithic, middle and late Bronze Age material. Alternatively, it may comprise two specific assemblages, one dating to the early Neolithic and the other of mid-late Bronze Age date. The tools described above, the blade and blade-like flake component, the degree of platform abrasion and some of the cores recovered all point to a relatively small but significant early Neolithic component to the assemblage. The dimensions of the blanks from the assemblage and the length-width ratio most closely resemble the early Neolithic assemblage from Site G (see Table 2.8 below). Moreover, the degree of retouch within the assemblage is only matched by the Site G early Neolithic assemblage and the middle Neolithic scatter from Site B. The remaining assemblage, possibly around two-thirds or three-quarters of the total, is likely to be middle-late Bronze Age in date and mirrors much of the material recovered from Sites A, B, C, F and G.

#### *Site C middle Bronze Age features*

Ninety-one flints were recovered from ditch 5892, which yielded significant quantities of Deverel-Rimbury ceramics. Five retouched pieces were recovered consisting of three piercers (Fig. 2.33, nos

2–3; 4369, sf 584, 4415 and 4416) and two scrapers, one end (Fig. 2.33, no. 1; 4414, sf 556) and one double concave-nosed example (4403). This amounts to 6.4% of the assemblage excluding chips, and may indicate that the ditch enclosed an area of settlement activity, including perhaps hide-preparation and leather-working. Two bone points recovered from this ditch further emphasise the likely domestic nature of the enclosure. Cores were absent although one tested nodule was recovered.

A putative palisade slot (5740) yielded 54 flints, including an awl (4305), a multi-platform flake core (4284) and a large broad blade (4311) with ventral distal retouch. The majority of the remaining pieces are fairly large broad flakes struck with a hard hammer off unprepared platforms. One refit was observed between a side trimming and a distal trimming flake (4297 and 4298 respectively) indicating a single platform core worked clockwise, another piece (4296) also appears to come from this core, but has no direct relationship to the refitted flakes. Retouch here was rarer here than for the nearby ditch (5892) amounting to only two examples (4.4%).

#### *Site A middle-late Bronze Age pits*

The flints from three pits from Site A dated by pottery to the end of the middle Bronze Age were analysed in detail. Although the assemblages were small they appeared to represent material contemporary with the pits. All three pits were extensively sampled, so there is a high degree of confidence that the material that was analysed was truly representative of the assemblages.

A small but relatively fresh assemblage (65 flints) from pit 3024 contained many large hard hammer flakes with plain, unprepared platforms (Fig. 2.34, nos 3–5). There were no blades and only three blade-like flakes. Two cores were present, a single platform flake core and a multi-platform flake core reused as a hammerstone (Fig. 2.34, no. 7; 3039). There were three retouched tools (5.3%) consisting of an end scraper on a secondary flake blank (Fig. 2.34, no. 1; 3010, sf 301), an awl on a blade-like flake blank (3023) and a probable piercer on a secondary flake blank (3036). Refitting identified only one sequence, consisting of three small side and distal trimming flakes of bullhead flint (3055–7).

Pit 3030 contained 86 pieces which included more fine knapping debris, many flakes, a single blade, another multi-platform flake core (Fig. 2.34, no. 6; 3070), two piercers and a miscellaneous retouched flake. Two residual flints possibly dating from the Late Upper Palaeolithic recovered from this feature have already been considered above. The assemblage contained 4.2% retouch. Much of the assemblage appears less fresh than that from pit 3024. Two pieces (3103 and 3147) had been struck from the same core but with another removal or two (unrecovered) separating them (3124 is also probably from this core). Two piercers also look like they were struck

from the same core (Fig. 2.34, no. 2; 3073 and 3086), albeit a different one from the earlier group.

Pit 3097 contained a quite different assemblage to the other two, in that the assemblage of 140 pieces contained a mass of fine shatter from several cores, including some of Bullhead Bed flint, along with thirty flakes and a large flake core. Formal tools or indeed, retouch itself, was entirely absent.

#### *Site G middle-late Bronze Age pits*

The middle to late Bronze Age features on Site G produced some comparatively sizable assemblages. Pits 9293, 9231, 9396 and 9554 yielded 286, 116, 91 and 93 flints respectively, with several other smaller groups of 20–70 flints from various pits and ditches. Despite the significant flint assemblages, only four of the 586 pieces recovered were chips. However, with the exception of pit 9554, these features were not sampled and much of this fine shatter may have been missed. The assemblages were generally spread across a large number of contexts within any feature and whilst many of the flints were in fresh condition, no refits were identified, although two cores (3881 and 3882) may be from the same split nodule. Many of the flints may be residual, with numerous examples of blades and blade like forms were identified. Other earlier finds included an early Bronze Age thumbnail scraper, a middle Neolithic transverse arrowhead (Fig. 2.29, no. 3) and an exceptionally fine early Bronze Age plano-convex knife (Fig. 2.29, no. 5; see above); these may represent curated artefacts that were intentionally deposited rather than being accidentally redeposited. However, this seems unlikely for the Mesolithic material from pit 9293.

These pits also displayed great variety in the tools and blank assemblages they contained. Non-cortical pieces varied from 30.4% of the blank assemblage in pit 9293 to as much as 55.4% in pit 9396. Trimming flakes amounted to over half the blanks in pit 9293 (51.9%) but only made up 29.2% of the blanks from pit 9396. Initial stages of core working were also in evidence, ranging from a high of 28.2% of the blanks from pit 9231 to 13.9% in pit 9396. Core rejuvenation flakes were present in three of the four pits in small numbers but were absent from pit 923; these are likely to represent residual Mesolithic-Neolithic material.

Cores/tested nodules were frequently recovered here, 15 from pit 9293, seven in 9231, nine in 9396 and six in 9554. Despite the presence of significant quantities of residual early material, none of the cores belonged to blade-based industries though six displayed platform edge abrasion.

Tools from pit 9293 included a microlith, five end scrapers, one side scraper, one other scraper, three piercers, two notches, a denticulate, nine retouched flakes and two other examples of miscellaneous retouch. This amounted to 8.4% of the assemblage, with only one example being definitely residual. Elsewhere, the figures were far lower.

The nature of the deposits in these pits indicates

that they may have been left open for some time. The colluvial fills accumulating in the top of the dry valley immediately to the west, and extending onto parts of the site, contained a variety of struck flint of different periods, and it seems likely that occupation activity mixed this material with contemporary midden deposits associated with these pits-scoops, resulting in a very mixed flint assemblage. These midden deposits would have contained the waste from a variety of domestic activities which would have given rise to these very mixed assemblages.

#### *Site C early Iron Age pits*

Three pits at the eastern end of Site C produced large quantities of early Iron Age pottery associated with small but significant flint assemblages. These were chosen for further analysis on the grounds that they may have represented very rare, contemporary early Iron Age flint knapping.

Pit 5130 produced 36 flints including a nosed end scraper (4222), a flake of a polished flint implement, two notched flakes (4196 and 4215) and two blades and a blade-like flake. The assemblage does not appear to represent early Iron Age knapping, indeed, several of the pieces appear to be more suited to a Neolithic date, such as the flake from a polished implement (4197), a core (4205) which has blade-like scars, and a blade (4199) and regular flake (4198) which display parallel blade scars more typical of much earlier periods. Flakes 4206, 4208 and 4220 from contexts 5405, 5406 and 5428 respectively, look as if they may have been struck from the same core. As such, they may be genuine examples of early Iron Age knapping, although there is also later Bronze Age activity in the immediate vicinity from which the flints may have derived. Context 5428 is a considerable distance below 5405 and 5406, which overlie each other.

Pit 5110 produced 58 flints, mostly flakes or chips (from samples) but also included a multi-platform flake core (4270) and an end scraper (4264). The scraper in particular is unlikely to be early Iron Age in date, resembling a partially denticulated Mesolithic example. Again, this does not appear to be an *in situ* contemporary assemblage—the upper fill contains the most patinated examples, no refits were identified and very few pieces look like they came from the same core. This assemblage is a very mixed bag in terms of form, surface condition and degree of rolling and may originate from a diverse range of periods. Moreover, many of these flakes appear as if they have originated from accidental hard hammers striking the nodules present in the chalk, possibly during the cutting of the pit.

Eighty pieces were recovered from pit 5066. There are several pieces which look to be far earlier in date than the late Bronze Age-early Iron Age. These include one blade (4172), three bladelets and a probable snapped blade (4115). One bladelet (4179) strongly resembles a distal micro-burin, less typical (and more difficult to identify with certainty) than the usual proximal variety. The remaining assem-



blage contains numerous flakes and chips along with two flake cores (4117 and 4164), a spurred piece (4121) and two atypical scrapers (4171 and 4175). One of the scrapers (4175) is a convex scraper with the scraping edge on the ventral rather than distal side, and may represent a form of expedient early Iron Age tool production. A later Bronze Age or early Iron Age date is plausible for the majority of the flint, but which is impossible to say.

*Site G early Iron Age pits*

Iron Age features from Site G included 99 flints from pit 9010 and 37 from pit 9004. As with Site C these assemblages were largely residual. The pits were 70m or more east of the main area of Neolithic and Bronze Age activity and were cut into chalk rather than Thanet sands, but much of the material must have originated from colluvial horizons known from that locality and removed during the HS1 stripping operations.

Pit 9004 contained large numbers of fairly genuine looking fine knapping waste along with some narrow bladelets (3298–3301) and narrow chips. Many of the removals were struck from Bullhead Bed flint. The assemblage contained many thin pieces rather than the larger, thicker and probably squatter flakes one would expect from a residual middle–late Bronze Age or even early Iron Age assemblage and is almost certainly derived from residual Mesolithic or early Neolithic material.

Pit 9010 also contained several pieces which could be seen as being broadly early in date. These included a blade (3421), a blade-like flake (3423) and two possible crested removals/core rejuvenation flakes (3330 and 3335) which indicate a careful blade reduction strategy typical of the Mesolithic–early Neolithic. Other pieces from the assemblage indicate a much cruder and later reduction strategy focused on larger squat, thick hard

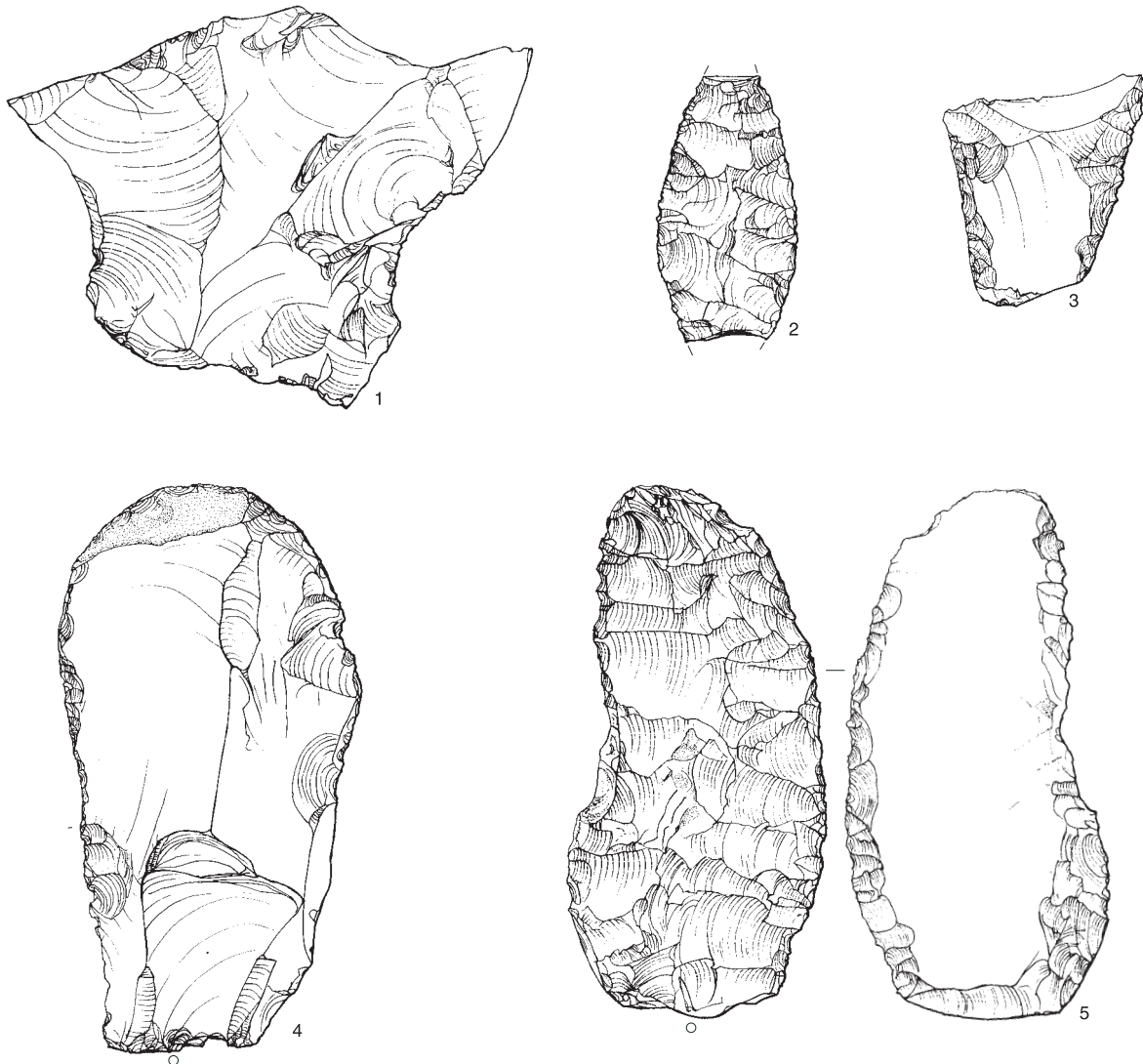


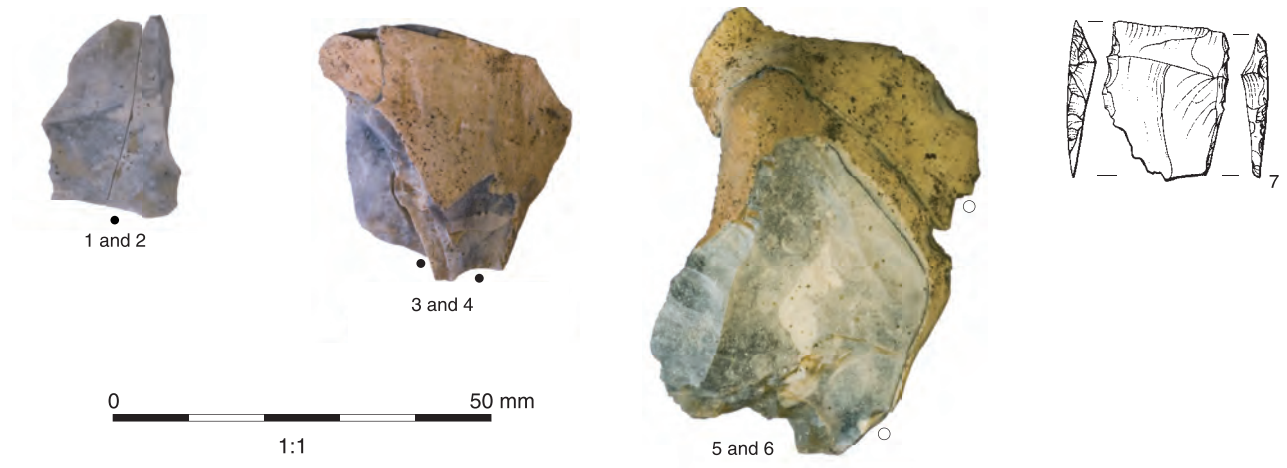
Fig. 2.29 Neolithic and early Bronze Age flints from Site G

hammer flakes and some utilised frost shattered fragments, one of which had been converted into a spurred piece (3379). A broken side scraper (3379) probably had a hollow/concave profile when complete and represented the only other retouched example present here. A core on a large flake (3368) and a tested nodule were also present (3373). There was also a high degree of burning within the assemblage which taken with the thicker cruder removals may indicate a limited early Iron Age component to the assemblage here. Three of these heavily burnt flakes formed one refit and another near refit in which the intervening flake was missing (3398–3400).

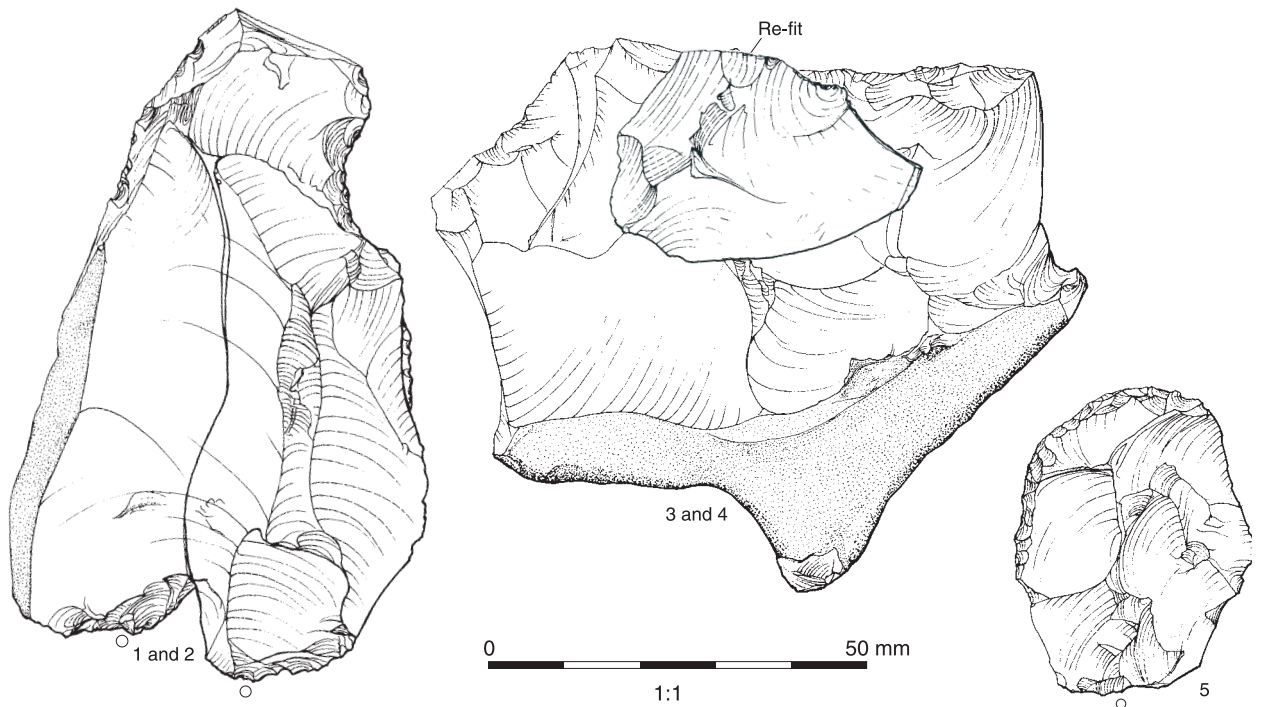
**Catalogue of illustrated flints**

*Fig. 2.29: Neolithic and early Bronze Age flints from Site G*

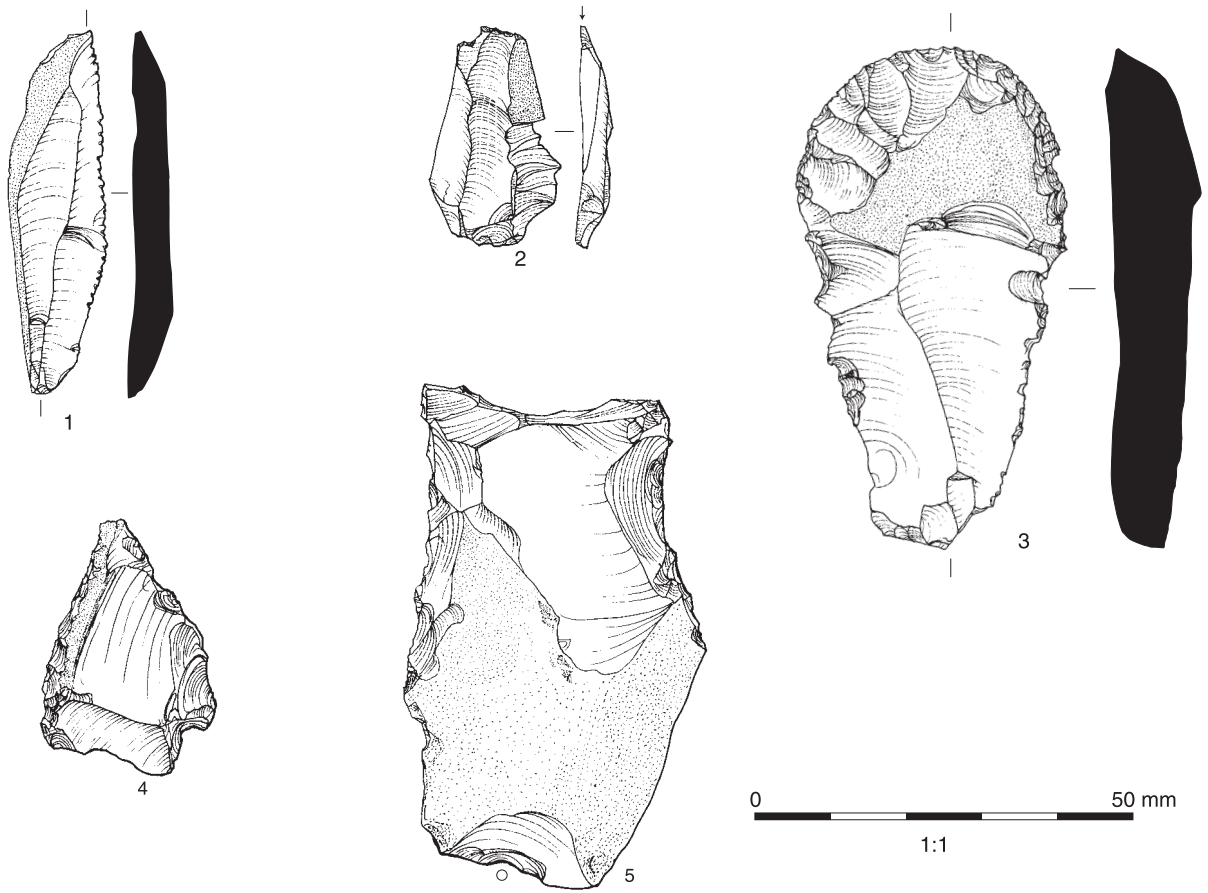
- 1 Multi platform flake core. Mid-late Bronze Age. Pit 9231 fill 9302. (cat 3525).
- 2 Leaf shaped arrowhead. Early Neolithic. Pit 9223, fill 9224 (sf 1625/cat 3995).
- 3 Transverse arrowhead. Middle Neolithic. Pit 9446, fill 9396 (sf 1623/cat 3914).
- 4 End scraper on distal trimming blade-like flake. Early Neolithic. Pit 9223, fill 9224 (sf 1627/cat 3996).
- 5 Plano convex knife. Late Neolithic-early Bronze Age. Pit 9347, fill 9396 (sf 1604/cat 3879)



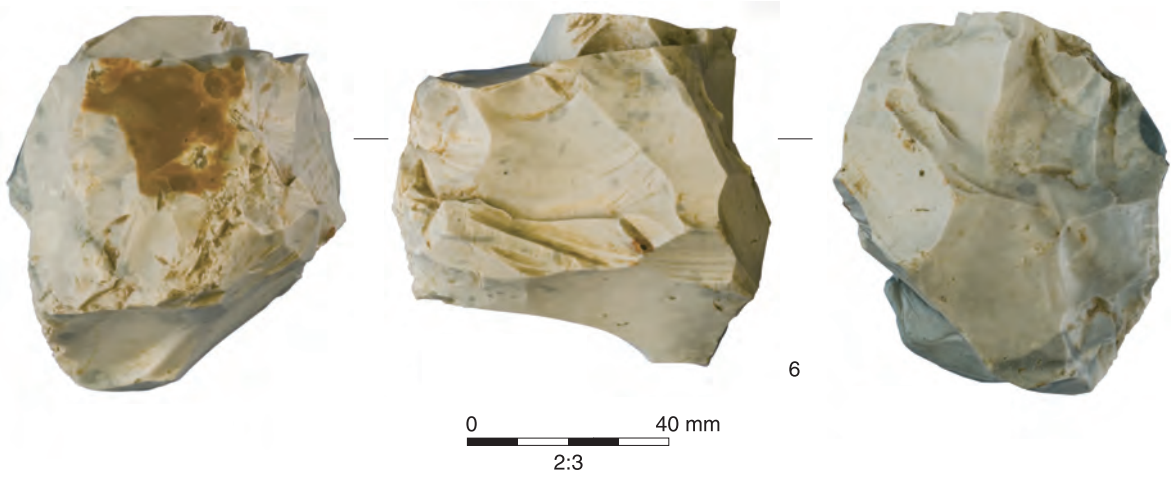
*Fig. 2.30 Middle Neolithic flint refits and arrowheads from Site B*



*Fig. 2.31 Beaker pit flint assemblage refits and tools from Site D*

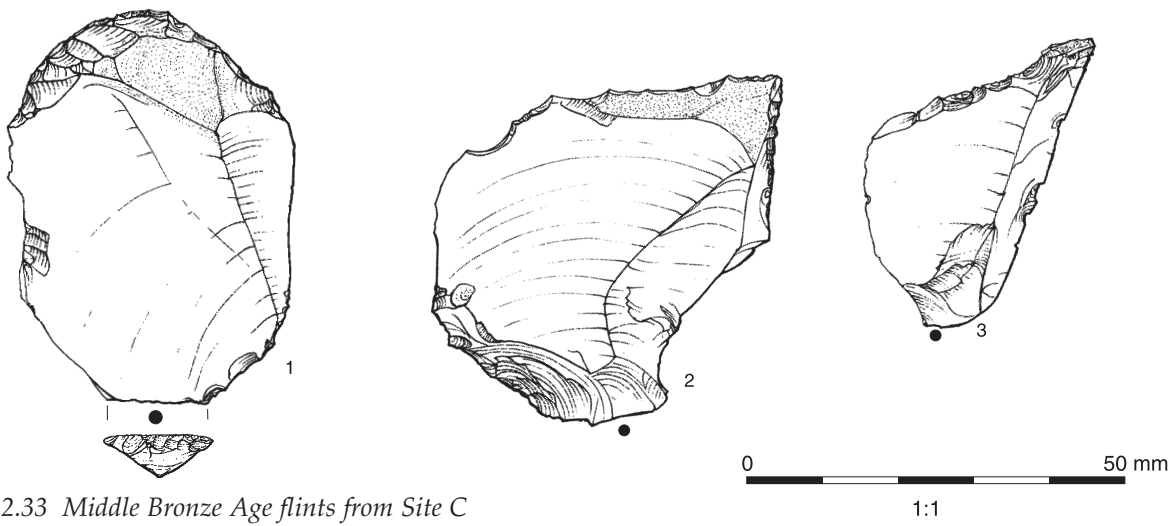


0 50 mm  
1:1



0 40 mm  
2:3

Fig. 2.32 Early Neolithic and Bronze Age flints from Site Pond D North



0 50 mm  
1:1

Fig. 2.33 Middle Bronze Age flints from Site C



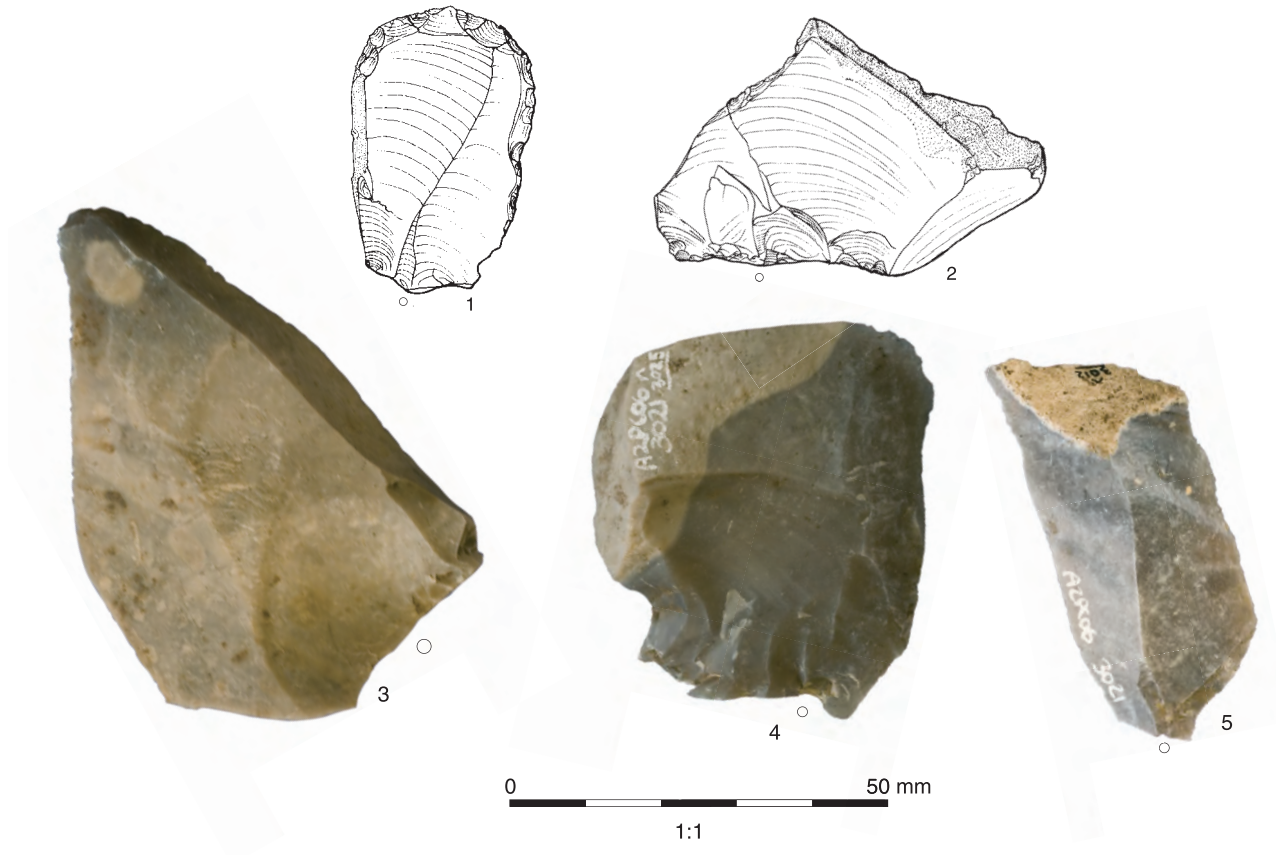


Fig. 2.34 Middle Bronze Age flints from Site A





Fig. 2.35 Palaeolithic and Mesolithic flints from the A2

*Fig. 2.30: Middle Neolithic flint refits and arrowheads from Site B*

- 1–2 Inner flake snapped laterally from inner flake. Middle Neolithic. Spread 3424 (cat 4948 & 4949).
- 3–4 Core preparation flake to distal trimming flake. Middle Neolithic. Spread 3424 (cat 4951 & 4952)
- 5–6 Core preparation flake to distal trimming flake. Middle Neolithic. Spread 3424 (cat 4953 & 4954).
- 7 Chisel arrowhead. Middle Neolithic. Spread 3424 (cat 4959).

*Fig. 2.31: Beaker pit flint assemblage refits and tools from Site D*

- 1–2 Blade-like flake onto notch. Early Bronze Age. Pit 6161, fill 6163=6514 (cat 4532 & sf 1472/4858)
- 3–4 Inner flake onto core. Early Bronze Age. Pit 6161, fill 6163 (cat 4463 & 4473).
- 5 End scraper on flake blank. Early Bronze Age. Pit 6161, fill 6163 (cat 4529).

*Fig. 2.32: Early Neolithic and Bronze Age flints from Site Pond D North*

- 1 Single burin on a truncation. Early Neolithic. Ditch 19168, fill 19167 (cat 5189).
- 2 Microdenticulate on a blade. Early Neolithic. Subsoil layer 19147 (cat 5174).
- 3 End scraper on a blade-like flake. Early Neolithic. Ditch 19039, fill 19040 (sf 1952/cat 5000).
- 4 Possible barbed and tanged arrowhead. Early Bronze Age. Spread 19110 (cat 5396).
- 5 Horned scraper on a prep flake. Late Bronze Age. Well? 19267, fill 19293 (cat 5393).
- 6 Multi-platform flake core reused as a hammerstone. Mid-late Bronze Age. Ditch 19212, fill 19213 (cat 5390).

*Fig. 2.33: Middle Bronze Age flints from Site C*

- 1 End scraper on a miscellaneous trimming flake. Middle Bronze Age. Ditch 5501, fill 5504 (sf 556/cat 4414).
- 2 Piercer on a distal trimming flake. Middle Bronze Age. Ditch 5501, fill 5504 (4415).
- 3 Piercer on a flake blank. Middle Bronze Age. Ditch 5483, fill 5485 (sf 584/cat 4369).

*Fig. 2.34: Middle Bronze Age flints from Site A*

- 1 End scraper on side trimming flake. Mid-late Bronze Age. Pit 3024, fill 3021 (sf 301/cat 3010)
- 2 Piercer naturally backed on distal trimming flake. Mid-late Bronze Age. Pit 3030, fill 3031 (cat 3073).
- 3 Hard hammer inner flake. Mid-late Bronze Age. Pit 3024, fill 3021 (cat 3026)
- 4 Hard hammer inner flake. Mid-late Bronze Age. Pit 3024, fill 3021 (cat 3025)
- 5 Hard hammer distal trimming flake. Mid-late Bronze Age. Pit 3024, fill 3021 (cat 3012).
- 6 Multi-platform flake core. Mid-late Bronze Age. Pit 3030, fill 3031 (cat 3070).
- 7 Multi-platform flake core reused as a hammerstone. Mid-late Bronze Age. Pit 3024, fill 3023 (cat 3039).

*Fig. 2.35: Palaeolithic and Mesolithic flints from the A2*

- 1 Possible bruised blade. Late Upper Palaeolithic. Site A, Pit 3030, fill 3031 (cat 3097).
- 2 Single platform blade core. Mesolithic. Site B, Ditch 4845, fill 4844.

- 3 Backed bladelet microlith. Late Mesolithic. Site G, Ditch 9510, fill 9522 (sf 1626).
- 4 Rod microlith. Late Mesolithic. Site B, Pit 4612, fill 4613 (sf 443).
- 5 Bi-truncated rhombic microlith. Early Mesolithic. Site G, Pit 9293, fill 9345 (cat 3621).
- 6 Side trimming blade. Mesolithic-early Neolithic. Site F, Tree-throw hole 8031, fill 8032.
- 7 Blade. Mesolithic-early Neolithic. Site G, Pit 9231, fill 9302. (cat 3471).
- 8 Blade-end flaked axe. Early Mesolithic. Site B, Ditch 4364, fill 4365. (sf 425).

**Late Neolithic/early Bronze Age pottery by Lisa Brown and David Mullin**

A total of 357 sherds (1360g) of late Neolithic/Bronze Age pottery was recovered from the excavations. No material of Neolithic date was identified. The assemblage includes sherds representing at least 19 decorated Beakers, three undecorated vessels and a Collared Urn.

Most of the pottery (334 sherds/1304g; 94 % by number and 96 % by weight) was recovered from a single pit (6162/6512) in Area D. The remaining 23 sherds (56g) came from a variety of deposits in Areas A, B, C and F. Carbonised residue, which does not appear to be post-depositional, was found adhering to the inner surface of a sherd from a Beaker (Fig. 2.36, no. 1), but this returned an anomalously early date of 4952±50 BP (NZA 31250).

**Fabrics**

As relatively little late Neolithic and early Bronze Age pottery has been recovered from west Kent, fabric remains a poor indicator of chronology. Typically for earlier prehistoric pottery no obviously standardised 'recipe/s' were used to create the potting clays from which the A2 vessels were manufactured, and technically speaking each vessel is made from a distinctive fabric. Nonetheless, a broad fabric classification scheme based on dominant inclusion type/s has been devised to accommodate the assemblage.

The following fabrics were identified (Table 2.8):

- F1 Rare to sparse white and grey flint inclusions <4mm in a fine micaceous sandy ware with rare to sparse orange grog. [Vessel 4, vessel 16 and body sherds from 6413, 6163, 6514 in pit 6161/6512]]
- F2 Common ill-assorted non-calcined white flint inclusions 0.5-4 mm in a fine, slightly micaceous sandy ware with rare orange grog. Oxidised.
- G1 Fine slightly micaceous sand with sparse red or grey grog and rare white flint. More sandy/micaceous than G2, less soapy. [Vessels 9, 10, 11, 15]
- G2 Moderate to common grog (mostly red, some grey) in a slightly micaceous sandy clay, with

Table 2.8: *Fabrics and forms of early prehistoric pottery*

<i>Fabric</i>	<i>No. sherds</i>	<i>Wt (g)</i>	<i>No. and type of vessel</i>
F1	37	152	1 Beaker
F2	138 (1 vessel ?)	464	1 Beaker
G1	24	118	3 Beakers; 1 undecorated Beaker
G2	76	480	5 Beakers; 1 undecorated Beaker
G3	1	4	1 Beaker
Q1	53	84	1 Beaker; 1 uncertain form
Q2	9	19	1 ?undecorated Beaker
V1	19	39	3 Beakers

rare small white flint <2 mm which is probably naturally occurring in the clay. Occasionally the odd larger calcined flint inclusion. More soapy than G1. [Vessel 2/3, 6, 7, 8, 11, 12]

- G3 Medium grade sand, slightly micaceous, with red and black grog and sparse white non-calcined flint <2mm. Distinguished from G1 and G2 by its coarser sandier texture and slightly more common flint. One sherd only [Vessel 14] Pond D South
- Q1 Fine slightly micaceous sandy ware with rare white flint < 2mm and even rarer lumps of burnt flint or rounded flint >2mm. Occasional voids. [Vessel 5] and body sherds.
- Q2 Moderate grade quartz sand with abundant glauconite pellets and rare white and grey non-calcined flint <3mm. Occasional plant voids. [Vessel 16] Site B, pit 4477.
- V1 Resembles G1. Fine micaceous sandy ware with fine red grog and rare flint mainly <2mm and with distinctive common plant voids.

Shell-tempered wares are completely lacking but 19 sherds representing three Beakers clearly combined plant matter with a fine sandy clay (fabric V1). The most common fabrics include grog only or combine grog with rare to sparse inclusions of flint. The apparent preponderance of F2, with common flint represents the fact that the 138 sherds of this fabric belong to a single Beaker. Grog tempering with some sparse flint was used in the early and middle Bronze Age at Shrubsoles on Sheppey (Raymond 2003). This fabric was used in the late Neolithic/early Bronze Age pottery recovered from Northumberland Bottom (Edwards 2006a). The use of sandy wares (Q1) without other apparent inclusions is generally rare for the late Neolithic/early Bronze Age in the region, but it is important to bear in mind that in the case of small abraded sherds (common in the A2PC assemblage) it is often the fragments between inclusions that survive, giving an impression of an inclusion-free fabric.

There is no evidence within this assemblage of imported Beakers or of long-distance procurement of potting clays. Most of the raw materials could

have been acquired either strictly locally or, in the case of the sand with flint wares, from relatively short distances away, at most 5–10km to the south where there is a major outcrop of Clay-with-Flints outcrops, although smaller deposits occur more locally. Glauconitic sandy ware Q2, represented by a single vessel (Fig. 2.37, no. 16) may have been an import or created from materials procured from approximately 15km to the south of the site on the Upper Greensand and Gault clays.

All but 11 sherds are oxidised, reinforcing the evidence that the preferred colour of Beakers was in the red-orange range (Gibson 2002, 89). The exceptions are small Beaker fragments from fill 6514 of Pit 6161/6512, which may have belonged to an irregularly fired vessel.

### *Forms and decoration*

#### *Beakers*

Sherds representing a minimum of 19 Beakers were identified, all but two of which (Vessels 14 and 15) were from pit 6161/6512. Twelve have been illustrated, the remaining seven represented by small rim tips or body sherds with indistinct decorative features. All of the pottery was fragmentary and generally abraded but one complete profile (lacking only the mid portion of the base) was reconstructed (Fig. 2.37, no. 8).

A single vessel (Fig. 2.36, no. 7) was represented by 127 sherds weighing 444g and seems likely to fall into Needham's (2005) mid-carinated class. It is fairly crudely executed, in grog-tempered ware G2. The heavy rolled rim and mid-line carination are features paralleled by two vessels from Beechbrook Wood on the line of the HS1 (Edwards 2006b, fig. 2.8, nos. 7 and 9). The hint of a cordon below the rim has an affinity with a rusticated Beaker from Saltwood Tunnel (Edwards 2006c, fig. 2.8, no. 14). The decoration is probably Barbed-Wire type (although the thread line is indistinct), imprecisely applied in meandering horizontal lines, and with crude, irregular triangle-shaped impressions between the lines on the upper part of the vessel. The carination on the vessel suggests that this is an early Beaker, although present in a highly fragmented and worn state.

The only complete profile (Fig. 2.37, no. 8) comes from a somewhat globular vessel with a pinched out base which fits within Needham's (2005) s-profile class. This vessel is the only example from the site with 'crow's foot' decoration, a paired fingernail impression motif which can be paralleled on similar, globular vessels from Hitcham, Buckinghamshire; Lion Point, Essex and Undley, Suffolk (Clarke 1970, figs 115, 909, 796). This motif is rare within Kent and fingernail impressions have only been noted before from Saltwood Tunnel on the route of the HS1.

A total of five further vessels appear to be of the s-profile class. A globular, short-rimmed Beaker (Fig. 2.36, no. 4) is finely made in fabric F1 and has



the most complex decorative pattern: incised cross-hatching within four zones across the width of the vessel, a scheme not unknown in southern and eastern England, notably at Hockwold-cum-Wilton, Norfolk (Bamford 1982, figs 13 and 14, P63.010 and P63.022), but also relatively common in southern Britain (Case 1993, fig. 16, nos. 4 and 7).

Of probably similar globular, s-profile form is Vessel 5 (Fig. 2.36, no. 5) in sandy ware Q1. This very incomplete vessel is also highly abraded and the surface encrusted with post-depositional clay and/or limescale. Nonetheless, close scrutiny suggests that the decorative motif consisted of simple slightly meandering horizontal incised lines extending the width of the vessel. This decorative technique is relatively rare but can be paralleled with a similar s-profile Beaker from Eynsham, Oxfordshire (Clarke 1970, fig. 326), whilst meandering incised horizontal decoration occurs on Beakers from Rudstone, Yorkshire, Boyton, Suffolk and Brantham Hall, Suffolk (*ibid.*, figs 386, 420, 107).

Although no complete profiles could be reconstructed, it is likely that Vessels 6, 9 and 10 (Fig 2.36, no. 6 and Fig 2.37, nos 9 and 10) also belong to Needham's (2005) s-profile group. Vessel 6, in fabric G2, is relatively crudely made, with an undulating rim circuit and faintly rusticated design of impressed fingernail marks executed in irregular lines. This decoration is difficult to parallel, but similar irregular lines are present on a vessel from Sutton, Suffolk (Clarke 1970, fig. 364). Vessel 10 was also in a grog tempered fabric and, although the sherd is very abraded and the decoration faint, this appears to be decorated with meandering 'false cord', applied by fingernail to mimic cord-impressed decoration. Although very little survives of Vessel 9, the general impression is of a globular, or s-shaped profile vessel.

Too little survived of the remaining Beakers to allow classification of form, but Vessel 1 (Fig. 2.36, no. 1) was represented by 138 small fragments, most non-joining, but sufficient to identify as a rusticated Beaker with a short rim and a fingernail-impressed decoration, which was roughly smoothed after application. The fabric is a coarse flint-tempered ware, the only example within the assemblage and somewhat unusual for the immediate region.

Vessels 12 and 13 were both represented by small, comb-impressed sherds, although too little survived of the vessels to identify an overall scheme. Vessel 11 had short diagonal lines of what may have been false cord decoration, applied by fingernail to mimic cord-impressed ware, but the sherd was very abraded and the decoration faint.

Vessels 14 and 15 were represented by single sherds and very abraded. Vessel 14 appears to be decorated by a very worn cord impression, Vessel 15 by horizontal comb and diagonal impressed lines. Both are in grog and flint fabrics.

#### *Undecorated Beakers/Food Vessel*

A corrugated low profile open vessel (Fig. 2.36, no. 2+3) was recovered from pit 6161/6512. It is grog-

tempered (G2) and the surfaces roughly smoothed. A small number of sherds (9 sherds weighing 19g) with similar surface treatment, but in a different fabric (Vessel 16; Fig 2.37, no. 16), was recovered from context 4196. Both of these vessels are difficult to classify and may fall into the Food Vessel tradition, rather than Beaker. Although coarse, thick walled vessels with plastic decoration are known from 'domestic' sites in East Anglia and elsewhere (Case 1993), the vessels from the A2 are more open in form, and have more in common with the Food Vessel tradition, which overlaps with 'post-Fission Horizon' Beakers (Needham 2005; Ann Woodward pers. comm.).

#### *Collared Urn*

The fill (8065) of an animal burrow (8055) in Site F produced a single Collared Urn rim sherd (Fig. 2.37, no. 17). The provenance precludes funerary or domestic designation of the vessel, although Woodward (2000) suggests that, prior to the middle Iron Age, most pots were made and used for the consumption of food, drink and hallucinogenic substances in the context of communal gatherings and feasting. The collar is 65mm long with vertical cord impressions 12–13mm apart. The pinched out collar base and smooth internal profile suggest that it is a late type (Burgess 1986, 345), although insufficient of the vessel survived to tell whether there was decoration below the collar.

#### *Discussion*

In 1982, Tim Champion (1982, 32) noted that most of the 36 or so substantial or near complete Beakers found in Kent were from funerary contexts. Additional funerary sites and occupation sites have since been identified (Gibson 1990, 19; 1992a, 283; 1992b, 399–400; Macpherson-Grant 1994, 262–3; Smith 1984), including an important occupation site underlying colluvium at Holywell Coombe, near Folkstone (Gibson 1998). Nonetheless, pottery from domestic sites dating to the period of the currency of Beakers were uncommon in Kent prior to the HS1 excavations. Recently, however, a large pit group of national significance was excavated at Beechbrook Wood along the line of the HS1 (Edwards 2006b, fig. 2.8, nos 1–9). This produced 173 sherds/2343g of Beaker pottery, a slightly larger assemblage than A2PC, with a minimum of 14 vessels represented. Most came from a single pit and the assemblage is dominated by Clarke's East Anglian, Barbed Wire and Southern styles, the majority of which fall within Needham's (2005) globular s-profile class.

The majority of the Beakers recovered from pit 6162/6512 on the A2PC project belong to the globular, s-profile class, which Needham (2005, fig. 13) assigns to the 'post-Fission Horizon' period in the middle period of Beaker use. A single exception to this is Vessel 7, which appears to be an earlier,



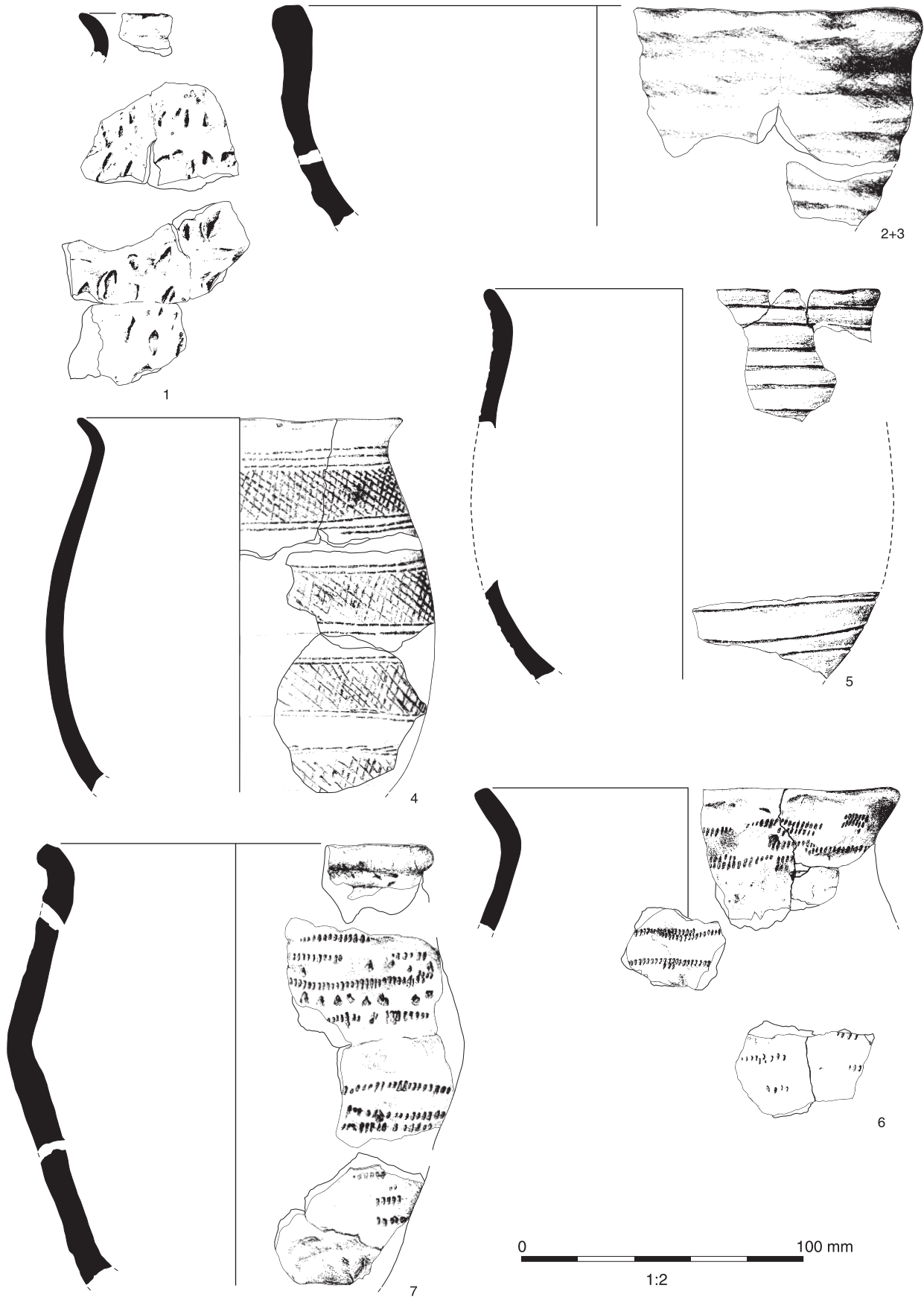


Fig. 2.36 Beaker pottery Nos 1–7



Fig. 2.37 Beaker and other early Bronze Age pottery Nos 8–16

carinated vessel. The plain vessels (Fig. 2.36, no. 2+3 and Fig 2.37, no. 16) are difficult to classify and may belong to the 'domestic' Beaker tradition, but their form suggests parallels with plain Food Vessels. A decorated Food Vessel was recovered from Saltwood Tunnel on the route of HS1 (Barclay *et al.* 2006), although this vessel had more in common with the decorative schemes used on late Beakers. The co-occurrence of Food Vessel and Beaker, as seen on the A2 scheme, is exceptionally rare, especially in south-east England where Food Vessels are uncommon.

Pit Group 6161/6512 from the A2 contained a sizeable assemblage of lithic material along with charred plant remains and fragments from 17 decorated Beakers and two undecorated vessels. Only a single base was present, whereas sherds from the rims of at least nine vessels were included, possibly indicating that the sherds were not randomly incorporated. In addition, apart from the undecorated vessels, all of the five Beakers for which profiles and rim diameters could be ascertained were of a similar, relatively small size and volume, whereas the two undecorated vessels were larger, possibly providing some indication of the way in which this group of vessels might have been used. Although the contents of pits containing Beaker ceramics have been poorly synthesised, especially in relation to non-grave assemblages (Case 1993), the material from the A2 fits within a pattern of deposition of relatively large numbers of fragmentary Beakers of mixed size, form and decoration within pits across southern Britain.

Whilst Beakers are relatively well known, early Bronze Age settlement in West Kent is poorly understood, and barrows tend to be located in west Kent and on the chalk downland between Canterbury and Dover. Settlement sites are extremely rare. It is difficult, therefore, to find parallels for the Collared Urn fragment from the A2 scheme. Longworth (1984, 216–7) lists ten Collared Urns from Kent and a further example has been recorded from Northumberland Bottom. Collared Urn/Food Vessel fragments are also known from Cobham (Barclay *et al.* 2006). Small, largely featureless grog-and-flint tempered sherds, which may be of this date, were also recovered from Shrubsoles Hill, Sheppey (Coles *et al.* 2003).

### Catalogue of illustrated sherds (Figs 2.36–7)

#### Pit 6161/6512

1. Beaker. Fabric F2. Oxidised. Fingernail impressed rusticated decoration. Sooted inner and outer surfaces. Context 6163 <618>/6515
2. Undecorated Beaker/Food Vessel, shallow bowl form. Fabric G2. Oxidised. Corrugated wall. Context 6163 <618> (part of 3?)
3. Context 6163 <618> (part of 2?)
4. Beaker. Fabric F1. Incised cross-hatched decoration contained within four incised horizontal zones. Oxidised. Context 6163 <618>
5. Beaker. Fabric Q1. Oxidised. Incised horizontal lines on surviving upper and lower body and rim. Context 6163 <618>; context 6514: SF1468, SF1478, SF1479; 6515: SF1439
6. Beaker. Fabric G2. Oxidised. Irregular horizontal rows of comb-impressed decoration. Context 6514: SF1466, SF1471, SF1495 and additional sherds from 6163 <618>
7. Beaker with slight midline carination and heavy, slightly rolled rim. Fabric G2. Oxidised. Irregular rows of comb-impressed decoration. Context 6163 <618>
8. Beaker. Fabric G2. Oxidised. Double thumbnail impressed ('crow's foot') decoration overall. Context 6513 SF1501; 6514 SF1475 SF1480 and SF1484.
9. Beaker. Fabric G1. Oxidised. Possibly decorated but surface obscured by ?root damage. Context 6163 <618>.
10. Body sherd from a relatively large vessel. Fabric G1. Oxidised. Burnished with a pebble or implement producing streaked surface. Context 6514 SF 1474
11. Beaker sherd. Fabric G1. Oxidised. Diagonal decoration faint, may be false cord type. Context 6513 SF1524
12. Beaker sherd. Fabric G2. Oxidised. Horizontal lines of comb-impressed decoration. Context 6163 <618>.
13. Beaker sherd. Fabric G2. Oxidised. Horizontal lines of comb-impressed decoration. Context 6163 <618>. May be part of Vessel 12.

#### Miscellaneous Deposits

14. Beaker sherd. Fabric G3. Oxidised. Comb-impressed decoration. Pond D South context 2085.
15. Beaker sherd. Fabric G1. Oxidised. Comb-impressed and incised lattice decoration. Site F context 8045.
16. Undecorated Beaker/Food Vessel rim. Fabric Q1. Oxidised. Site B context 4196
17. Collared Urn rim. Fabric uncertain. Oxidised. Vertical cord impressed collar. Site F, context 8065.

#### Later Bronze Age pottery by Peter Couldrey and David Mullin

An assemblage of later Bronze Age pottery comprising 1912 sherds weighing 10,837g was recovered from features from Sites A, C, G and L (Table 2.9). Features from which this material was recovered included enclosure ditches, a possible palisade slot and pits. The pottery from all of the sites was assessed by Peter Couldrey and this report utilises this assessment data.

#### Fabrics

Fabrics were identified macroscopically, with the use of a x10 hand lens and allocated codes according to the PCRG (1997) recommendations. In many instances the fabric and surface treatment provided the only indication of chronology: little prehistoric pottery has been recovered from west Kent and until more diagnostic sherds are found, supplemented by independent dates, the fabrics will remain poor indicators of chronology. In the absence of more precise evidence, dates were

allocated to sherds using the following broad criteria:

Flint, sometimes with addition of sand, was used as a tempering agent during the early to middle Neolithic in east and west Kent (Barclay and Edwards 2006; Smith 1973). Its use declined in the late Neolithic and early Bronze Age, but became common in the middle Bronze Age (Deverel-Rimbury), as at nearby Gravesend (Barclay 1994) when the use of coarse temper often receives comment. In practice, coarse tempers tend to be used for large urns or jars and smaller vessels are often found in finer fabrics, as at Dartford (Couldrey 2003). Pure Grog tempering was used in the late Neolithic/early Bronze Age, and has been recorded from middle-late Bronze Age assemblages in East Kent, such as Beechbrook Wood, but was not common (Morris 2006).

Grog tempering with added flint is used in west Kent from the middle Neolithic (Smith 1973; 1984). In the late Neolithic/early Bronze Age it is found locally at Northumberland Bottom (Barclay and Edwards 2006). This fabric also occurs in the early and middle Bronze Age at Shrubsoles, in Sheppey (Raymond 2003) and in the middle Bronze Age at Gravesend (Barclay 1995). Its use continues during the transition from middle to late Bronze Age (Couldrey 1988) into the early Iron Age (Morris 2006), though always in a minority of fabrics.

Fossil shell is a common inclusion in prehistoric pottery in West Kent. Whilst apparently absent from early Neolithic contexts, this fabric occurs in Fengate style vessels at Darenth (Smith 1984) and became popular in the late Neolithic when associated with Clacton sub-style Grooved Ware (Barclay and Edwards 2006, table 2.3). The fabric is present among the late Neolithic/early Bronze Age pottery found at Darenth (Smith 1984) and Northumberland Bottom (Edwards 2006a). However, it is notably absent from local middle Bronze Age assemblages at Gravesend (Barclay 1994) and Cobham Golf Course (McNee and Morris 2006), reappearing in the late Bronze Age/early Iron Age at Darenth (Couldrey 1984).

Fossil shell and added flint is first recorded from the late Bronze Age at Gravesend (Barclay 1994), although at Cobham this fabric is still absent early in the late Bronze Age (McNee and Morris, 2006), but appears in small quantities 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 falling out of use in the middle Iron Age, as at Darenth (Couldrey 1998).

Sandy fabrics without flint, shell or grog inclusions are relatively unknown in the early Neolithic, but were found associated with late

Table 2.9: Fabrics of later Bronze Age pottery

Site	Sherds (weight in g)	Grog	Flint/grog	Sand	Flint/sand	Flint	Flint/shell/sand	Flint/shell	Shell	Flint/sand	Quartzite/flint
Site L	165 (2774)	--	3 (9)	4 (31)	--	23 (222)	--	135 (2512)**	--	--	--
%		--	1.8 (0.3)	2.4 (1.1)	--	13.9 (8.0)	--	81.8 (90.5)	--	--	--
Site A	304 (858)	--	1 (3)	1 (6)	--	139 (311)	--	155 (521)	8 (17)	--	--
%		--	0.3 (0.3)	0.3 (0.7)	--	45.7 (36.2)	--	50.9 (60.7)	2.6 (2.0)	--	--
Site C	891 (6203)	--	--	24(16)	28 (407)	542 (2995)	20 (122)	257 (2584)	9 (28)	11 (50)	--
%		--	--	2.7 (0.2)	3.1 (6.6)	60.8 (48.3)	2.2 (2.0)	28.8 (41.7)	1.0 (0.4)	1.2 (0.8)	--
Site G	552 (1002)	4 (36)	7 (39)	--	19 (29)	511 (883)	--	2 (1)	9 (4)	--	--
%		0.7 (0.4)	1.3 (4.9)	--	3.4 (0.3)	93.0 (88.1)	--	0.4 (0.1)	1.6 (0.4)	--	--
TOTAL	1912 (10837)	4 (36)	11(61)	25 (22)	47 (436)	1215 (4411)	20 (122)	549 (5618)	26 (49)	11 (50)	--
%		0.2 (0.3)	0.6 (0.6)	1.3 (0.2)	2.5 (4.0)	63.5 (40.7)	1.0 (1.1)	28.7 (51.8)	1.4 (0.5)	0.6 (0.5)	--
Coldhabour Lane	380 (2680)	----	--	--	--	166 (1325)	--	185 (1286)*	--	--	25 (58)
%		--	--	--	--	43.7 (49.4)	--	48.7 (48.0)	--	--	6.5 (2.2)

\* This figure includes both Barclay's Flint and shell, and Flint, grog and shell fabrics. \* The figures for Site L are biased by one very large vessel in a flint and shell fabric.



Neolithic/early Bronze Age pottery at Northumberland Bottom (Edwards 2006a). This fabric occurs more frequently during the middle to late Bronze Age and into the early Iron Age, becoming more popular in the middle and late Iron Age (Couldrey 1991; 1998; 1999).

Detailed fabric records for each pot can be found in the site archive.

### *Site assemblages*

#### *Site C*

A total of 891 sherds weighing 6203g was recovered from a total of five features at Site C. The largest amount of material (408 sherds weighing 3727g) was recovered from enclosure ditch 5892, where it was associated with bone points, charred plant remains, worked flint, animal bone, a loom weight and middle Bronze Age radiocarbon dates. Possible palisade slot 5740 also contained substantial amounts of pottery (162 sherds weighing 1239g), while two pits (5022 and 5280) also contained much pottery.

Many of the sherds from L-shaped ditch 5892 (Fig. 2.38, nos 3–14) display clear Deverel-Rimbury characteristics: small pre-firing perforations in the body (Fig. 2.38, no. 11); a decorated knob (Fig. 2.38, no. 4); decorated and plain cordons (Fig. 2.38, nos 6–8, 10 and 12); plain upright and inturned rims (Fig. 2.38, nos 3 and 13) and rims decorated with fingertip impressions and diagonal grooves (Fig. 2.38, no. 11). The decoration comprising rows and columns of round-pointed tooth-comb impressions on the body and base of one sherd from 5485 (Fig. 2.38, no. 5) are unusual but can be paralleled with examples from south Essex and from Coldharbour Road, Gravesend (Mudd 1994), where they are thought to belong late within the middle Bronze Age (Brown 1995). Two radiocarbon dates were obtained from middle fill 5451 in this ditch, both giving almost identical date ranges: 1420–1210 cal. BC (NZA 30124) and 1390–1190 cal. BC (NZA-30148). These dates fall in the latter part of the middle Bronze Age, and perhaps support this interpretation.

The material from slot 5740 was predominantly flint tempered and comprised a vessel with plain upright rim and pre-firing perforation through the wall (Fig. 2.38, no. 1), another with fingertip impressed decoration on the body (Fig. 2.38, no. 2), a possible boss and a flat base with abundant flint protruding beneath. These are all characteristic Deverel-Rimbury traits and found widely on other vessels from southern England. Further sherds with raised cordons decorated with diagonal slashes (500752–4), typical of Deverel-Rimbury pottery, were residual within Iron Age pit 5066 just to the west of ditch 5892.

Two pits (5022, 5280) from a group (15079) in this same area contained pottery (see Fig. 2.23). Neither of these was radiocarbon-dated, but two dates were obtained from aceramic cremation burials immedi-

ately adjacent, 5017 (NZA-30222) and 5278 (NZA 30145). Both gave date ranges spanning the middle–late Bronze Age transition. Pit 5022 contained a substantial amount of a finely flint tempered vessel with flint temper protruding from the base, whereas pit 5280 contained smaller amounts of purely flint-tempered pottery including a coarseware vessel with inturned rim and high shoulder; fragments of a finer vessel with smooth, lightly burnished surfaces, and a short everted rim with slight internal bevel (Fig. 2.39, no. 15), all of which probably belong within the late Bronze Age. The pottery from pit 5025 comprised 35 flint-tempered body sherds and a fragment of an everted rim from a thin-walled bowl, which are also likely to be middle to late Bronze Age.

#### *Site G*

A total of 552 sherds weighing 1002g was recovered from Site G. Most of the sherds from the site are small and severely worn and average sherd weight is low. Ditches 9178, 9179, 9613 and 9614, all associated with enclosure 9178/9179, produced 190 sherds weighing just 360g (average weight 1.9g). Most of these are featureless body sherds, recovered from the upper ditch fills. A series of pits (9461, 9199, 9212, 9231, 9234, 9235, 9293, 9472 and 9559) also contained small amounts of worn flint tempered pottery which is probably of middle to late Bronze Age date.

The pottery from enclosure ditches 9178, 9179, 9613 and 9614 was predominantly flint tempered (91.6 % sherd count) and comprised body sherds recovered from the upper ditch fills. Nevertheless, a radiocarbon date of 1270–1010 cal. BC (NZA 30234) suggests a middle to late Bronze Age date for this assemblage.

Pit 9231 contained 92 flint-tempered sherds with an average weight of 2.27g. The lower fill (context 9233) contained a decorated sherd probably from a middle Bronze Age globular urn (Fig. 2.39, no. 20). A sherd with similar decoration was recovered from Coldharbour Road immediately to the north of the site (Mudd 1994). Pit 9461 contained 38 sherds of flint tempered pottery and one in a grog tempered fabric, a similar range to that found in the enclosure ditches, but all were small and worn. Pit 9293 also contained 144 flint tempered sherds weighing 224g of middle to late Bronze Age date.

#### *Site A*

A total of 304 sherds weighing 858g of middle–late Bronze Age pottery was recovered from pits 3030 and 3024. The range of fabrics from both these pits was similar: flint, shell and shell-and-flint, like that employed for late Bronze Age pottery in the region. The appearance of shell-and-flint fabric for middle Bronze Age (Deverel-Rimbury) forms in Pit 3030 may represent the earliest use of this fabric in the area.

Pit 3030 contained sherds with middle Bronze Age forms and decoration. The lowest fill (context

3094) produced a rounded shoulder with finger-tip impressions, indicative of a late rather than a middle Bronze Age date. Above that, context 3093 contained a finger-tip impression on a straight shoulder in a shell and flint tempered fabric. Higher up, in context 3036, a severely worn sherd had a fragment of an applied cordon probably from a 'horseshoe' design (Fig. 2.39, no. 17), clearly of the middle Bronze Age Deverel-Rimbury tradition, also in shell and flint tempered fabric. The upper fill (context 3031) contained a rim with a finger-tip impression on top of the rim in a flint tempered fabric (Fig. 2.39, no. 16). Many of the sherds were moderately or severely worn and it is likely that the middle Bronze Age sherds were old when buried. This, together with the presence of the rounded shoulder, which could be attributed to the late Bronze Age plainware tradition, suggests that the contents of the pit fall within the middle to late Bronze transition or the late Bronze Age itself.

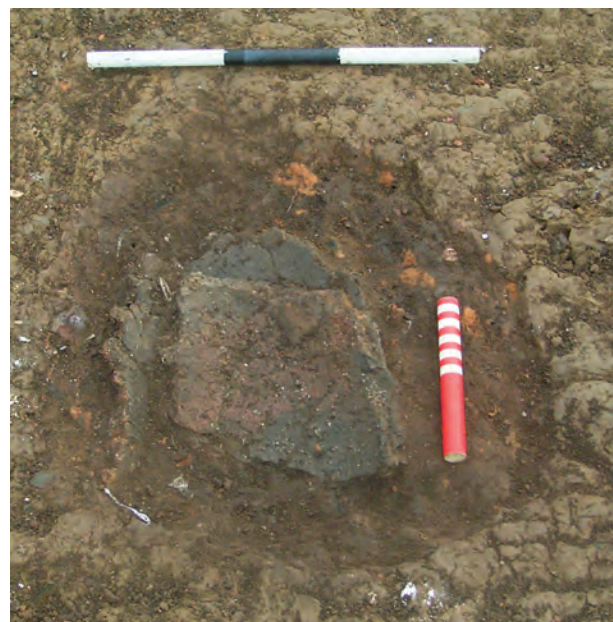
The pottery from Pit 3024 also probably belongs to the middle to late Bronze transition or to the late Bronze Age plainware tradition. The lowest fill (context 3023) contained 37 sherds weighing 110g, which included a plain upright rim in a heavily flint-tempered fabric, with traces of soot on its external surface. A second plain rim from a finer vessel, with walls just 5mm thick, was of uncertain angle but could be from a plain Deverel-Rimbury bucket jar or globular jar. The upper fill (context 3021) produced 166 sherds weighing 317g. These included plain upright rims in shell temper and flint temper; a fragment of a vertical perforated lug (Fig. 2.39, no. 19) and a base with abundant flint, probably also of middle Bronze Age date.

#### *Site L*

A total of 165 sherds of middle Bronze Age pottery weighing 2774g was recovered from cremation burial 12510 (Plate 2.10). The pottery comprised fragments of an urn and cup of Deverel-Rimbury tradition, as well as rim sherds from at least four vessels and the base of a small cup (Fig. 2.40, nos 21–7). Sherds from plain inturned and upright rims were found in the same pit and may represent late Bronze Age plainwares, although such plain rims do occur on other middle Bronze Age assemblages within Kent (Ann Woodward, pers. comm.) and this group may fall late within the middle Bronze Age. The group provides a rare sample of the forms and a range of fabrics (including flint, shell with flints, and organic inclusions in a sandy matrix) associated with the middle Bronze Age in west Kent.

#### *Discussion*

The assemblages from the four sites along the scheme are too small and fragmentary for detailed comparative analysis to be possible. A breakdown of the fabrics from the four sites along the scheme is however presented above in Table 2.9. This orders the sites geographically from W to E, all but Site G



*Plate 2.10 Site L middle Bronze Age cremation burial 12510 showing bucket urn*

lying west of the dry valley at Tollgate. The dominant fabrics at the A2 are flint and flint and shell, with only small proportions of other fabrics present. As can be seen, this is true of all of the sites, but there does appear to be a difference between the sites west of Tollgate and Site G to the east, in that flint and shell constitutes nearly half of the material to the west, but is hardly represented at all to the east. The highly fragmented state of the pottery on Site G appears if anything to strengthen this difference.

The principal fabrics from Coldharbour Road (Barclay 1994) are also included in the table, as this site lies only 200m to the north of Site C, and subsequent excavation in the A2 Activity Park has shown that they were linked by a trackway (Dawkes 2010). Although the fabric divisions used were slightly different, it is clear that the principal fabrics are the same as those used on the A2, and that the proportion of flint and flint and shell fabrics are closest to those from Site C, as might be expected. A quartzite and flint fabric was also identified at Coldharbour Road (Barclay 1994), which is not present at any of the A2 sites. Given the very low percentages of other fabrics from these sites, and the small quantities of material represented, differences between them cannot be regarded as likely to be significant.

There is still relatively little published material of middle and late Bronze Age date from West Kent. Other than Coldharbour Road, Deverel-Rimbury pottery has been found at Hayes Common (Philp 1973b), Princes Road, Dartford (Hutchings 2003) and the Cobham Golf Course (Barclay *et al.* 2006). Other assemblages from east Kent were summarised by Macpherson-Grant in 1992 and now include the largest published groups from Kent at Shrubsoles Hill, Sheppey (Raymond 2003), Iwade (Hamilton



and Seager Thomas 2005) and Kemsley (McNee 2006). Sites which span the transition between middle and late Bronze Age are uncommon.

Not surprisingly, the most similar material was recovered from Coldharbour Road, where later Bronze Age pottery including Deverel-Rimbury bucket urns, globular urns and a cup were recovered immediately to the north of the old A2 (Mudd 1994). These vessels were decorated with finger-tip impressions on or below the rim, horizontal applied cordons and, in one case, comb impressions. The range of decoration is very similar to that from the A2 excavations, as are the range and proportions of fabrics (see Table 2.9). Burnt residues on a hook rim jar from Coldharbour Road were radiocarbon dated to 1225 to 989 cal BC (OxA-4719; Mudd 1994, 389), which overlaps with dates obtained from Sites C and G on the A2. Hook rim jars occurred in the same contexts as barrel urns at Coldharbour Road, suggesting a transitional phase between Deverel-Rimbury and post-Deverel-Rimbury Plain Ware traditions. Further examples of the co-occurrence of apparently Plain Wares in the same context as Deverel-Rimbury ceramics occur on the A2 in cremation burial 12510 at Site L (see below) and pits 3030 and 3024 at Site A.

A similar tooth-comb decorated sherd to that from Site C was found at Coldharbour Road and other parallels such as Ardleigh, White Colne and North Shoebury (Brown 1995a), as well as the radiocarbon date from Site C, all suggest a transitional late middle Bronze Age date for this form of decoration. Decoration amongst the assemblage is otherwise typical of Deverel-Rimbury ceramics from southern England, although the perforated rim from 5485 is noteworthy as perforations are rare in southern England and occur more widely in the west and north of Britain (Quinnell and Blockley 1984; Longworth *et al.* 1988, figs 18 and 19). Perforated vessels are also recorded from the Thames Valley and this form of decoration is quite common among the assemblage from the Ardleigh cemetery in Essex (Brown 1999). The distinctive use of fingertip impressions at the base angle and widespread fingertip rustication found amongst the 'Ardleigh Group' (Brown 1995a) is absent from the material from the A2, however. A perforated vessel was also recovered from a round barrow at Bridge, Thanet (Macpherson-Grant 1992).

The flint fabrics from the A2 are also typical of the flint-rich areas of southern England, and elsewhere in Britain locally occurring tempering agents appear to have been exploited. At Ardleigh, Essex (Brown 1995a), the fabrics contained a high proportion of grog-tempered fabrics which contrasts to the fabrics from sites further south such as Mucking, where they are dominated by flint. Closer to the A2 excavations, the small assemblages from Princes Road, Dartford (Hutchings 2003) and Coldharbour Road, Gravesend (Barclay 1994) comprised flint tempered fabrics with small amounts of quartz sand and quartz.

The pottery recovered from cremation pit 12510 comprised fragments of an urn, a cup and sherds from plain inturned and upright rims of the Deverel-Rimbury tradition, and is worth considering in detail. Similar incurving rims occur in middle Bronze Age contexts at Reculver, where a closed form plain jar was associated with a classic middle Bronze Age bucket urn (Macpherson-Grant 1992, fig. 4). At Bridge, Thanet, the cremation urns from a round barrow have slightly closed forms (*ibid.*) and similar vessels were found at Frindsbury, Milton Regis and Littlebourne (Ann Woodward pers. comm.; Ellison 1975). The small vessel, or cup, can be paralleled by examples from Frith and Ightham (Jessup 1930, fig. 14), while at Netherhale Farm, Thanet a small ovoid cup was found in the same context as a tall jar (Ann Woodward pers. comm.). These small vessels are common in middle Bronze Age assemblages and contrast to cups from later post-Deverel-Rimbury assemblages from elsewhere in Southern Britain due to their thickness, coarser fabrics and simpler forms. The whole assemblage from the pit is probably, therefore late within the middle Bronze Age.

The association of the cup from pit 12510 with a bucket urn and sherds of other vessels is reminiscent of the ceramic sets previously recognised on late Bronze Age sites such as Broom, Warwickshire (Palmer 1999), where a clay lined pit contained burnt flint and large portions of five vessels and fragments of seven to eight others. These included a very large, thin-walled jar, a medium sized jar and a small cup and has been interpreted as a feasting set (Woodward 2000). Other such sets have been recorded from Wasperton, Warwickshire, Cadbury Castle, Somerset and Combe Hay near Bath (*ibid.*, 6). Woodward (2000) also suggests the large vessel and associated cups from Maidenhead (illustrated in Barrett 1980, fig. 5) and Knights Farm, Burghfield (Bradley *et al.* 1980, fig 31: 1–19) form similar sets. The identification of the pottery from pit 12510 as associated with feasting is further supported by the other finds from this context, which include burnt animal bone from at least three species and possible fragments of oven.

#### *Catalogue of illustrated sherds* (Figs 2.38–40)

- 1 Site C Pit 5740. Perforated rim, MBA Bucket Urn. Fabric F49.
- 2 Site C Pit 5740. Fingertip impressed rim, MBA. Fabric F50.
- 3 Site C Ditch 5892. Plain upright rim, MBA. Fabric SF18.
- 4 Site C Ditch 5892. Cordon with incised line, MBA. Fabric SF23.
- 5 Site C Ditch 5892. Base with round-tooth comb impressions on wall and bottom of base, MBA. Fabric FS55.
- 6 Site C Ditch 5892. Cordon with incised chevron decoration, MBA. Fabric SF23.
- 7 Site C Ditch 5892. Cordon with incised chevron decoration, MBA. Fabric SF42.

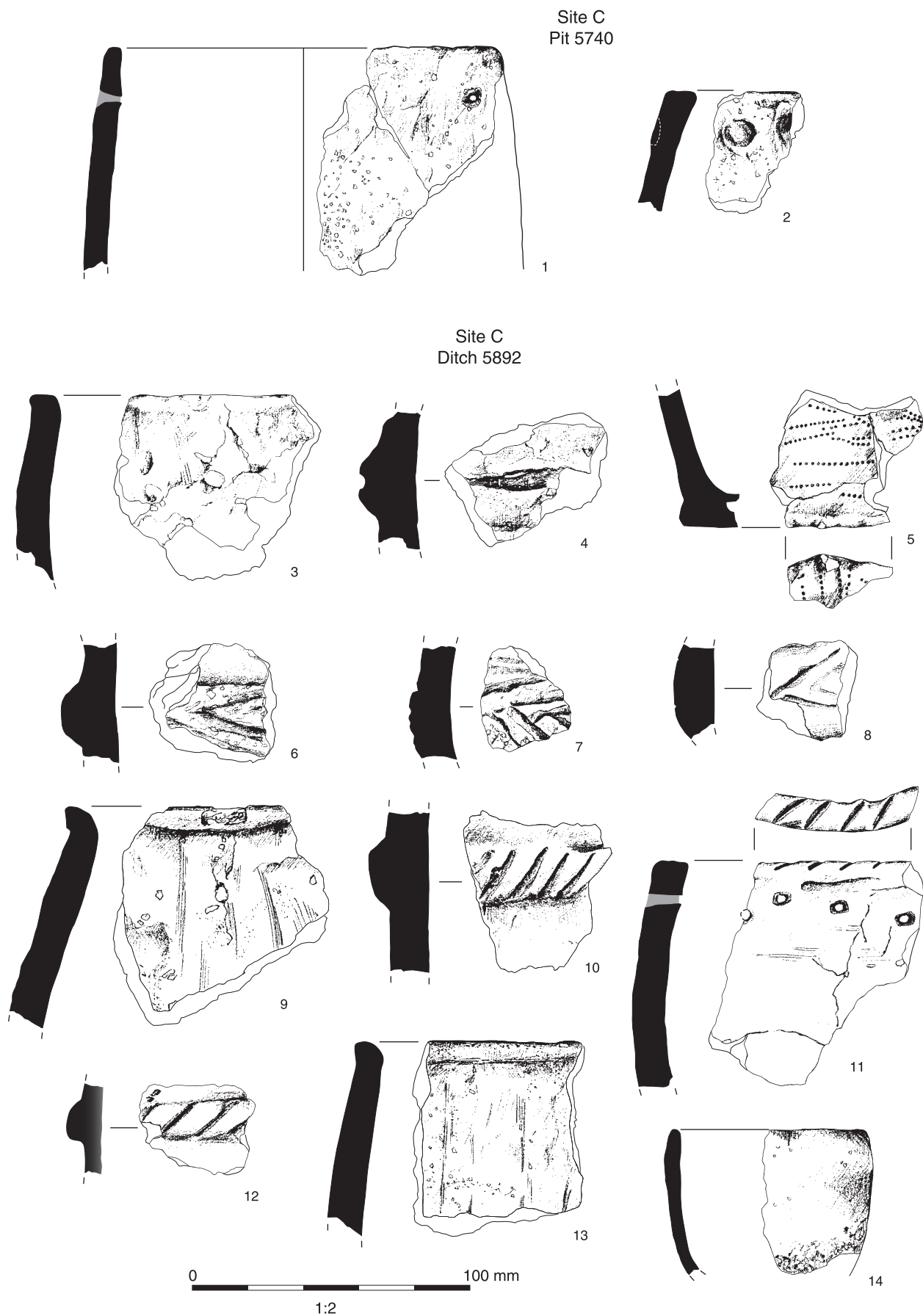
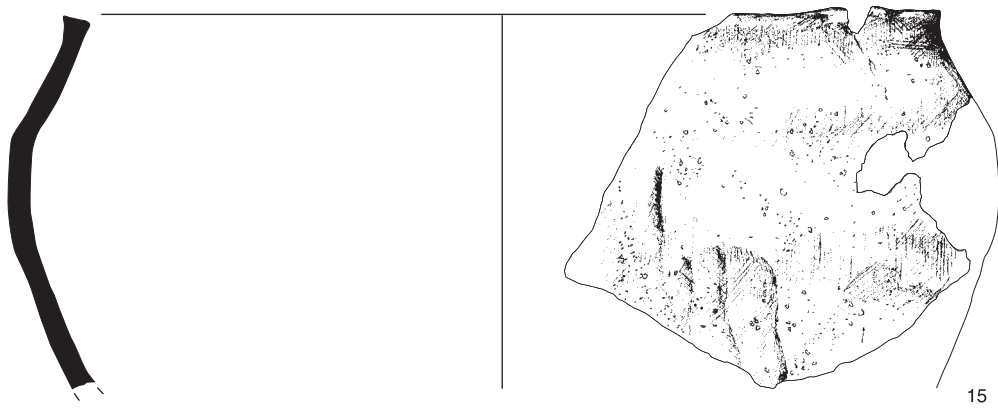


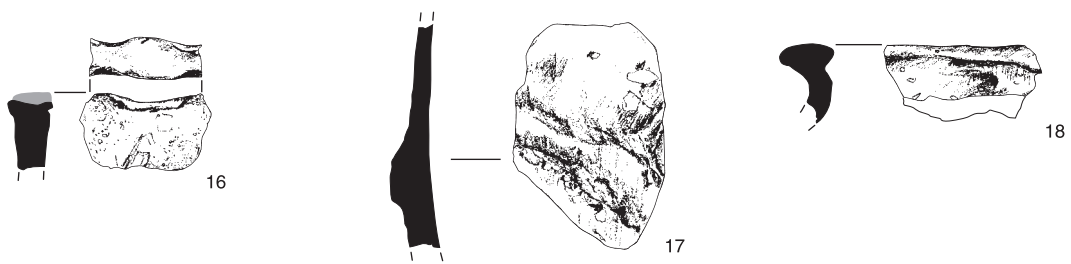
Fig. 2.38 Middle Bronze Age pottery from ditch 5892 and gully 5740 on Site C Nos 1-14



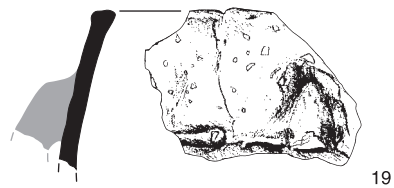
Site C  
Cremation 5280



Site A  
Pit 3030



Site A  
Pit 3024



Site G  
Pit 9231

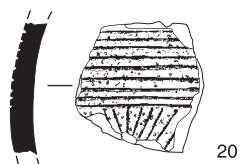
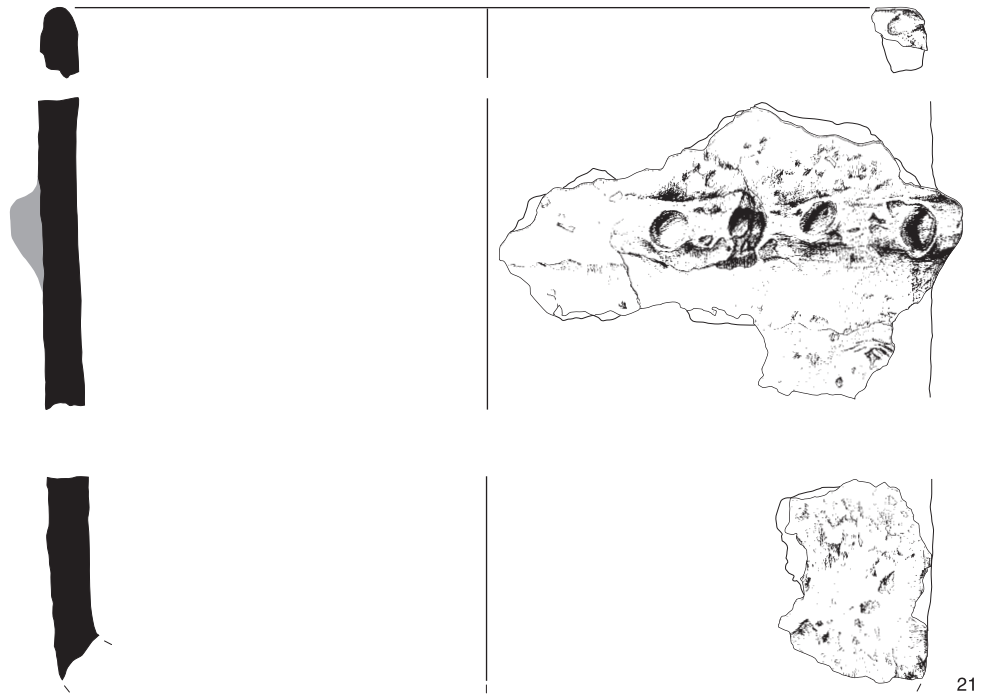


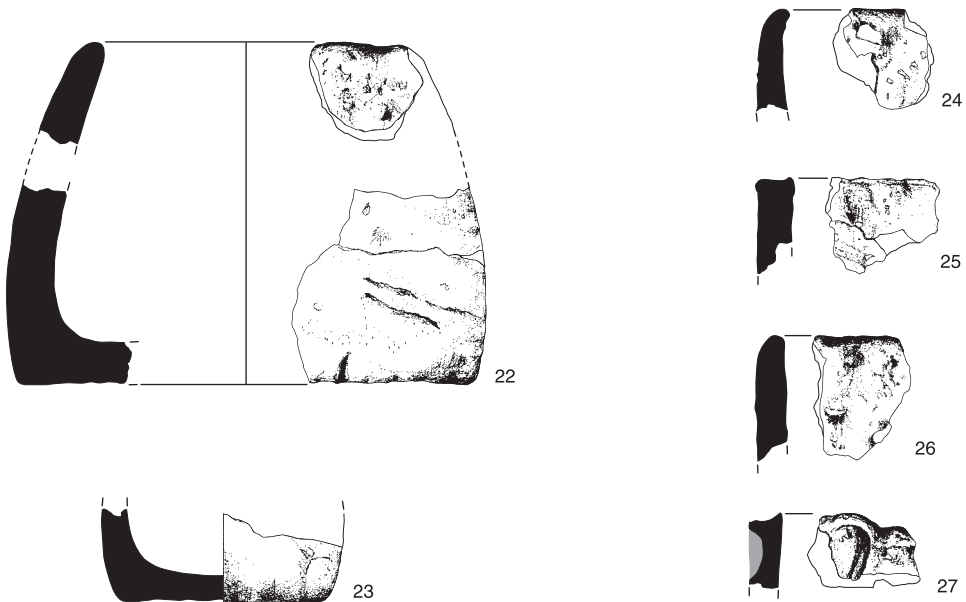
Fig. 2.39 Middle and late  
Bronze Age pottery from  
sites C, A and G Nos 15–20



Site L  
Group 12510



0 100 mm  
1:3



0 100 mm  
1:2

*Fig. 2.40 Middle Bronze Age pottery from pit 12510 on Site L Nos 21–7*

- 8 Site C Ditch 5892. Cordon with incised chevron decoration, MBA. Fabric SF42, possibly from same vessel as 7.
- 9 Site C Ditch 5892. Out-turned rim, MBA. Fabric SF20.
- 10 Site C Ditch 5892. Cordon with incised diagonal lines, MBA. Fabric FS62.
- 11 Site C Ditch 5892. Upright, flat-topped rim with perforations below the rim and incised diagonal lines on top of rim, MBA. Fabric F53.
- 12 Site C Ditch 5892. Cordon with incised diagonal lines, MBA. Fabric FS39.
- 13 Site C Ditch 5892. Slightly inturned rim with internal groove, MBA. Fabric SF37.
- 14 Site C Ditch 5892. Upright rim from small cup, MBA. Fabric SF38.
- 15 Site C Pit 5280. Globular vessel with out-turned rim with internal bevel, LBA. Fabric F36.
- 16 Site A Pit 3030. Upright rim with finger impression, MBA. Fabric FS7.
- 17 Site A Pit 3030. Applied horizontal cordon, MBA. Fabric S2.
- 18 Site A Pit 3030. Flat-topped, externally expanded rim, MBA. Fabric FS12.
- 19 Site A Pit 3024. Plain rim with applied vertical lug with horizontal perforation, MBA. Fabric F2.
- 20 Site G Pit 9231. Body sherd decorated with incised horizontal lines above radiating/triangular incised decoration, MBA. Fabric F20.
- 21 Site L Pit 12510. Rim, wall and body sherds of large Deverel-Rimbury bucket urn. Horizontal applied cordon with fingernail impressions, MBA. Fabric SF18.
- 22 Site L Pit 12510. Undecorated cup with inturned rim, MBA. Fabric SA13.
- 23 Site L Pit 12510. Base of ?small cup, MBA. Fabric F6.
- 24 Site L Pit 12510. Inturned rim, MBA. Fabric FG1.
- 25 Site L Pit 12510. Plain, upright rim, MBA. Fabric F18.
- 26 Site L Pit 12510. Inturned rim, MBA. Fabric F10.
- 27 Site L Pit 12510. Body sherd with finger-tip impression, MBA. Fabric F21.

### **Fired clay by Dan Stansbie**

A total of 8011 fragments of fired clay weighing 4777g was recovered from Bronze Age contexts (Fig. 2.41). The fired clay was rapidly scanned and assigned to one of seven fabric types previously defined by Cynthia Poole and based on North Kentish samples (Poole 2011). Objects were assigned to a type where identifiable and object thickness (mm) was recorded. All other material was assigned to one of two categories: structural, deriving from oven superstructures or wall daub and unidentified. Preservation was relatively good, with several objects being completely preserved.

The condition of the fired clay assemblage is highly variable, as might be expected for an assemblage recovered from what is effectively a large transect across a wide swathe of the landscape.

### **Fabrics**

The fabrics are divided into seven categories described below:

Fabric A has a fine silty clay matrix. It contains medium-coarse quartz sand in variable densities, moderate silver mica, rare red clay pellets and a low density of chert or other very fine grained rock pebbles up to 15mm in size and flint up to 20mm.

Fabric A2 is identical to fabric A but has a high density of chaff or straw temper.

Fabric B: Contains a high density of coarse quartz sand and grits, with 0.5–5mm of burnt flint.

Fabric C: has a clayey slightly silty matrix with no inclusions.

Fabric D: has a matrix of fine sandy-silty, smooth, laminated, micaceous clay. It contains common to abundant fine and medium coarse sand and grit, between 0.5–2mm, rare to occasional chert/flint grits, between 2–3mm and occasional burnt flint grits between 3–15mm.

Fabric E: has a matrix of fine silty calcareous clay and contains coarse rounded to sub-angular chalk grit, up to 22mm.

Fabric F is as fabric A, but contains frequent inclusions of platy fossiliferous shell between 2–3mm in size.

The fired clay fabrics were similar in character and likely to be derived from the locally available clay sources. Fabrics A and A2 appear to be similar to the silty or fine sand briquetage fabric group (see Morris below), which is described as deriving from 'Holocene era deposits of Head containing silt, sand and clay with variable gravel.' Fabric E is likely to have derived from subsoils overlying local deposits of chalk, or marls lying within periglacial features in the chalk. Fabric B contains flint added as temper and is likely to derive from the same source as the flint-tempered pottery fabrics, possibly in the London area (Cynthia Poole pers. comm.). Fabrics C and D are likely to derive from the same source as fabric A or a similar source. Fabric F is from an unknown source.

### **Site assemblages**

The breakdown of fired clay site by site is presented below.

#### *Site D*

A total of three fragments of structural fired clay in fabric A weighing 7g was recovered from early Bronze Age pit 6161.

#### *Site F*

An assemblage of 50 fragments of structural fired clay in fabric A weighing 168g came from two contexts phased to the early Bronze Age. In addition another 109g of fired clay of the same type and fabric came from two unphased contexts.

#### *Site L*

A total of 513 fragments of fired clay weighing



*Fig. 2.41 Middle Bronze Age fired clay from Sites C and G*



3236g came from a single middle Bronze Age pit 12510. This consisted almost entirely of structural material in fabric A, with some in fabrics A2 and E. There is also one fragment of possible oven plate in fabric A from pit 12510.

#### Site A

A very small quantity of structural fired clay (37 fragments weighing 37g) in fabrics A, D and E came from pits 3024 and 3030.

#### Site B

Although found as residual material in Iron Age contexts, two fragments of perforated slabs or oven plates of late Bronze Age character were found, one (SF 441) in context 4602 in pit 4606, the other in context 4584 in ditch 4583.

#### Site C

Late Neolithic to early Bronze Age fired clay comprises three fragments of structural material weighing seven grams. A small quantity of fired clay from the middle Bronze Age phase (128 fragments weighing 426g) largely comprises structural material in fabrics A and E, although there is a small amount of unidentified material and a possible fragment of cylindrical oven brick/loomweight (SF 553) from cut 5483 in ditch 5981. There is also part of a cylindrical oven brick/loomweight (SF 576) in fabric A (weighing 388g) from a small pit or posthole 5552.

#### Site G

The late Neolithic to early Bronze Age material (10 fragments, weighing 11g) came from the single fill of pit 9466, and was very fragmentary. The later Bronze Age material (44 fragments weighing 404g) is largely structural, and was mostly made in fabric A, with small quantities of fabrics B and E. It also included part of a cylindrical oven brick/loomweight in fabric A (SF 1613) from pit 9293.

### Discussion

The fired clay is limited in quantity, and none of the structural material was *in situ*. Nevertheless the quantity of material in Site L suggests that there was a built oven, and therefore a focus of domestic activity, close by. Two types of clay object were found—perforated oven plates and cylindrical oven brick/loomweights.

#### Perforated oven plates

Only two fragments of perforated oven plate of the type generally recognised as late Bronze Age in date were recovered from the road scheme, both in Site B. The perforated slabs suggest ovens in the vicinity, perhaps to the east, where a late Bronze Age cremation and undated burnt features were found.

Two examples of fragments of perforated oven plates came from Kingsmead Park, on the Hoo peninsula (Macpherson-Grant 2005, 77). Both of

these objects are described as scrappy sherds (*ibid.*), with one being made in a flint-tempered fabric possibly paralleling the perforated plates from the A2 and the other being made in an organic-tempered fabric. However, 16 fragments of perforated plate were found at Highstead (Macpherson-Grant 2007, 267–8) and at least three of these were made in a flint-tempered fabric. With regard to perforated oven plates of late Bronze Age date, Cynthia Poole (*pers. comm.*) has suggested that the similarity of the fabrics across sites and to pottery fabrics of the period may indicate that the plates were made at centralised pottery production sites and distributed with the pottery, rather than each community producing its own clay plates.

#### Cylindrical loomweights/oven bricks

Typologies of loomweights from Essex suggest a chronological division between three different forms, with cylindrical objects dating to the middle Bronze Age, pyramidal objects dating to late Bronze Age and triangular varieties dating to the early Iron Age (Barford and Major 1992, 118–9).

Cylindrical loomweights/oven bricks are relatively rare in Kent. Cylindrical loomweights of middle Bronze Age date were found at Hayes (Philp 1973b, 51–2), and at White Horse Stone, on the route of the HS1 (Hayden 2006). Champion (2007b, 102) reports examples from a growing number of other unspecified sites in Kent. The several cylindrical loomweight fragments may indicate that the settlements on sites C and G were engaged in textile production.

#### Catalogue of illustrated material (Fig. 2.41)

- 1 SF 441 perforated oven plate; fabric B; context 4602
- 2 Fragment of oven plate; fabric B; context 4584
- 3 SF 553 fragment of cylindrical loomweight; fabric A; context 5485
- 4 SF 1613 fragment of cylindrical loomweight; fabric A; context 9387
- 5 SF 576 fragment of cylindrical loomweight; fabric E; context 5553

#### Worked stone by Ruth Shaffrey

All the worked stone recovered from the earlier prehistoric contexts is concerned with food processing in the form of querns and rubbers. Site C produced a single saddle quern, carefully shaped but making use of a boulder, from layer 5735 in cut 5714 in middle Bronze Age gully 5740 (SF 565 Fig 2.42, no. 2). Site A produced a complete saddle quern along with single fragments of another quern and a probable rubber, all from separate fills (3078, 3077, 3038) within the same late Bronze Age or early Iron Age pit 3039. The complete saddle quern has a shaped base and neatly finished grinding surface that slopes up steeply on one side (SF 302, Fig 2.42, no. 1). Site G produced another two quern fragments and a likely quern fragment but these were all more fragmentary. All seven

items are of distinctive mainly purple ferruginous sandstone.

This ferruginous sandstone is commonly known as carstone (Gallois 1965, 34) and is found within the Folkestone Beds of the Lower Greensand. The ferruginous beds show very little geographic variation (Dines *et al.* 1969, 54) so that samples collected

at Folkestone or more locally cannot through visual comparison help in identifying the source of the examples identified on the A2. The same stone occurs on other Bronze Age sites in the local vicinity including Coldharbour Road (Roe 1994, 399), Beechbrook wood (Diez *et al.* 2006) and Hayes Common. The latter produced over 100 fragments



*Fig. 2.42 Possibly late Bronze Age saddle querns*

from the Bronze Age site, of which 24 retained evidence of their grinding surface; the examples from the A2 are more carefully shaped than those from Hayes Common, which are of 'unformed' type (Philp 1973, 44–5).

The nearest outcrop of Folkestone Beds was approximately 10km from the site just south of Snodland, where the Folkestone Beds reaches its most northerly point before extending in westerly and south-easterly directions. Despite the relatively frequent occurrence of carstone saddle querns in north-west Kent, however, one must be careful to avoid assumptions that only local stone was used for quern manufacture during the later Prehistoric period. Querns of various types of Lower Greensand from Kent, including ferruginous sandstone, have been found at Shoebury and other sites in Essex, and these testify to movement across the Thames (Buckley and Major 1995, 72). They indicate that the production of saddle querns of Lower Greensand in north-west Kent was more than a sporadic use of a local resource and that the A2 examples are part of a much wider picture of exploitation and distribution.

**Worked bone** by Ian R Scott

Just two objects of worked bone were recovered from earlier prehistoric contexts, both of which are points or pins made from small bones, found in ditch 5489 in Area C (Fig. 2.43, nos 1 and 2). The bones both came from fill 5451 in cut 5450, a middle fill of the ditch, and were accompanied by middle

Bronze Age pottery. A fragment of sf 501 was submitted for radiocarbon dating, and gave a date range of 1390–1190 cal. BC (NZA-30148).

Points similar to these are known from other middle Bronze Age sites such as Brean Down in Somerset (Foster in Bell 1990, 161–2). The complete examples found there were made on metapodiae or tibiae, usually of sheep, and the bones were not split longitudinally, but share the tapered and smoothed ends of the A2 examples. The Brean Down examples came to a distinct point, and were described as awls. They may have been used in leather-working, but it was also suggested that they may have been tools to decorate pottery.

The longitudinal splitting of the A2 examples was probably carried out to create two usable tools from a single bone. These may also have been awls, but as they were halved longitudinally would not have been as strong as those from Brean Down, and may instead have had other uses. If they did not have such distinct points, they may alternatively have been used as dress pins, or (as suggested at Brean Down) as tools for decorating pottery

**Catalogue** (all dimensions are in mm; Fig. 2.43)

- 1 Pin, or point, complete, fashioned from a Roe deer or sheep metatarsal. Made by splitting the bone longitudinally and cutting and polishing the proximal end to a flat point. The distal end is unworked. Complete. Similar to Sf 551. L: 102, W: 13, Area C, Context 5451, Ditch 5450, Sf 550
- 2 Pin, or point, made in a similar manner to Sf 550, but with the point snapped-off. Fashioned from a

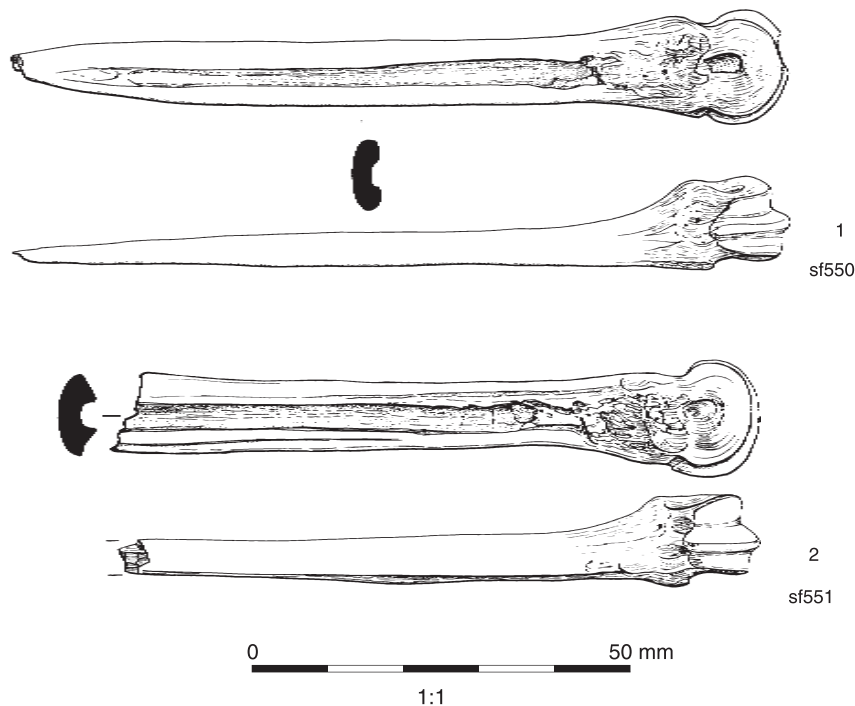


Fig. 2.43 Middle Bronze Age worked bone points from enclosure 5892 on Site C



Roe deer metatarsal. Originally probably longer than sf 550, since at the point at which it is broken the stem is still widening. L: 87, W: 14, Area C, Context 5451, Ditch 5450, Sf 551

## EARLY PREHISTORIC OSTEOLOGICAL AND ENVIRONMENTAL EVIDENCE

**Cremation and inhumation deposits** by Mark Gibson, Ceridwen Boston, Sharon Clough and Nicholas Marquez-Grant

A total of five cremation deposits and one group of disarticulated bone were recovered from Bronze Age contexts. For methodology see Chapter 3, Iron Age human remains report.

### Bronze Age cremation burial in Site B

An unaccompanied cremation burial (7759) was recovered within a small pit (7758) on Site B (see Fig. 2.25). Radiocarbon dating confirmed a middle-late Bronze Age date for this burial, 1210–1010 cal BC (NZA 30151). The deposit weighed 194.9g and appeared to comprise the partial remains of one individual, which was probably adult on the basis of skull fragment dimensions. Sex could not be estimated and no pathological lesions were identified. The cranial vault was most readily identified, comprising 30.8g (60.1%) of the deposit, and included tooth roots and fragments of parietal bone identified from meningeal vessel indentations on the endocranial surface. The remainder were fragments of the axial skeleton (3.9g; 2%), including vertebral pedicles, and upper limb bones (0.4g; 0.2%), including a partial humeral head. No lower limb bone fragments were identified. The cremated bone was predominantly white or predominantly white with very occasional flecks of light grey or blue indicating near complete cremation.

The low bone weight of deposit 7759 suggested that only a small proportion of the total cremated skeleton had been selected for deposition within the feature. The bone was sooty and mixed evenly throughout the pit fill from which it was recovered. There was no indication of *in situ* burning within the pit, and the deposit contained only a few burnt flints, indicating placement of the already burnt material within the feature. The deposit may have constituted an unurned burial that had not undergone thorough sorting from pyre debris by processes such as winnowing or washing (McKinley 1993), but equally may have been a small spread of redeposited pyre debris or a cremation-related deposit.

### Bronze Age cremation deposits in Site C

Three deposits of cremated human bone (5017, 5276 and 5278) were recovered from a cluster of three

small pits (5016, 5275 and 5277) on Site C (see Fig. 2.21). The pits were roughly circular, varying from 0.34m to 0.67m across. They appeared to have been heavily truncated, given that the deepest (5275) was only 0.16m. The cremated bone was distributed throughout the charcoal-rich pit fills. No animal bone or pottery was recovered with the deposits, but burnt fragments of animal bone were found within deposit 5276.

Radiocarbon dating undertaken on deposits 5016 and 5277 indicated a middle-late Bronze Age date of this cluster, 1320–1080 cal BC (NZA-30222), and 1290–1050 cal BC (NZA 30145) respectively.

### Weight and skeletal part representation

The deposits ranged in weight from 100.3g to 233.8g (Table 2.10). Experimental work in modern crematoria has revealed that the total weight of bone of an adult cremation ranges from about 1000g to 3600g (McKinley 2000b, 404). Therefore none of these three contexts can be considered as fully recovered or presenting most of the individual.

The most represented identifiable body parts by weight were lower limb bones followed by skull fragments. The majority of the sample, however, was unidentifiable (77%), due largely to considerable bone fragmentation.

Skull fragments were mainly of the cranial vault with very few landmarks, although parts of the mandible and petrous bone, the crown of a canine and a partial molar fragment were found in context 5016. Vertebrae and ribs were very fragmented and poorly represented, only 1.1g recovered from the three cremations in total. Most were pedicles, transverse processes and bodies of vertebrae. One rib fragment was identified. The upper limb was also poorly represented. The only identified fragments were humeral head, found in all three deposits. Given the large quantity of unidentified long bone fragments, it is likely that upper limb bones were present but were not identified. Lower limb long bones were well repre-

Table 2.10: Summary of human bone weight by body part in Site C cremated bone deposits (g)

	Context number		
	5016	5275	5277
Skull	4.9 2.1%	9.5 9.5%	12.4 11.0%
Axial	1.0 0.4%	0	0.1 0.01%
Upper limbs	0.4 0.2%	0.9 0.9%	3.1 2.8%
Lower limbs	20.8 8.9%	0.8 0.8%	7.5 6.7%
TOTAL (g)	233.8	100.3	112.5



sented in deposit 5277, including tibial and femoral shaft fragments, with all femoral fragments displaying a portion of the *linea aspera*. The other two deposits contained far fewer lower limb bone fragments, but 5275 did contain part of a femoral head.

#### *Palaeodemography*

None of the deposits included the remains of more than one individual. All were adult, judging from dimensions of the skull and long bones fragments. Unfortunately, no epiphyses or third molars were preserved to confirm this age estimation. Sex could not be attributed to the adult skeletons due to the absence of diagnostic traits.

#### *Fragmentation*

Fragment sizes between 5mm and 10mm were most common in cremation deposits 5275 and 5277, whilst those measuring less than 5mm comprised more than half of deposit 5016. It should be noted that there was very little difference in the weight of the two fragment sizes in the first two contexts. Thus, all three were highly fragmented. In all three deposits, bone fragments were small with 39.4% — 51.1% comprising fragments measuring less than 5mm. Such marked fragmentation is usually the result of drying and cracking of the bone during burning, collection and burial, deliberate fragmentation by the mourners or grave diggers, taphonomic factors (such as soil type and ploughing), and the much later process of archaeological excavation and post-excavation processing (McKinley 1994).

Fissuring of some of the larger bone fragments and transverse and longitudinal cracking and splitting of many elements indicated that the bone had been 'green' or covered with flesh when cremated (Reverte 1986; Ubelaker 1989).

#### *Colour*

The cremated bone from all three deposits was white or predominantly white with hues of blue and grey comprising approximately 30% of the samples. There were no fragments of a darker colour. Colouration suggested that oxidation of the bone was not complete but nevertheless, prolonged, and high temperatures in the pyre had been attained.

#### *Discussion*

Low bone weights of all three deposits indicated that none represented the entire cremated skeleton. Due to severe truncation, it was not possible to establish whether these low weights were the result of deliberate selection or due to taphonomy.

The high degree of truncation and the small sample size limited the osteological potential and interpretation of funerary rites. The bone was distributed throughout the charcoal rich deposits with no concentrations of bone. There was no *in situ* burning or truncation by other archaeological features and all three deposits appeared to only

represent one individual. The sooty appearance of the bones, the presence of charcoal in all three deposits, and the wide distribution of bone throughout the pit fills suggested that they were not formal unurned burials, but represented small quantities of redeposited pyre debris or cremation-related deposits. The latter deposits are not uncommon in the Bronze Age of Southern Britain (McKinley pers. comm.).

#### *Late Bronze Age cremation burial in Site D*

An isolated cremation burial (6010) lay within a small pit on the north side of Site D, some 110m east of the L-shaped ditch in Site C (see Fig. 2.28). There were no finds within the pit, but cremated bone was radiocarbon dated to 1260–1020 cal BC (NZA-31264).

The weight of cremated bone recovered was just over 400g, representing less than half of the cremated bone produced by modern cremations. This burial was, however, truncated, so it is not clear whether the bone represents partial collection of the bone, or loss after deposition. Nearly 90% of the bone was unidentifiable, the majority of the identifiable bone being unspecified long bone fragments, together with small fragment of skull (1.2g), portions of proximal and intermediate hand phalanges (shaft and head portions) and a distal phalange from the foot. The individual was probably an adult, based on the dimensions of the long bone fragments. The cremated bone was predominantly white, with hues of blue-grey amounting to 5%.

#### *Disarticulated human remains from late Bronze Age ditch in Site C*

In addition to the cremation burials, two fragments of femoral shaft, one the distal third of a left femur and the other of the mid-shaft, probably also of the left, were recovered from the uppermost fill (5298) of ditch 5912 on Site C (see Fig. 2.23). A radiocarbon determination of 1130–990 cal BC (NZA-32400) was obtained from animal bone in the same deposit. Dimensions would suggest that they were fragments of the same bone. Bone preservation was fair, with little leaching of the bone mineral apparent. However, the cortical bone had been damaged by root action. Breaks on the mid-femoral fragment and on distal end of the distal femoral shaft fragment were recent, and inflicted on dry bone (possibly during archaeological excavation). The proximal end had been broken previously, however, and the cross-section of the bone showing smoothing of the surface. This smoothing was irregular, and was probably the result of taphonomic processes rather than deliberate human modification. Breakage patterns would suggest that this had occurred on dry bone.

Bone dimensions suggested an adult femur, although no epiphyses were present to confirm this.

The linea aspera was not marked, suggesting relatively little strenuous muscle use of the Biceps femoris (one of the hamstring muscles).

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

In total, 31,689 animal bone fragments, or number of individual specimens (NISP), were recovered from 10 sites, and of these, 5206 (16%) were identified to a species level and have been included within the analysis. A total of 321 fragments of identified bone came from contexts dated to the early prehistoric period. A full methodology and analysis can be found in the site digital report.

**Neolithic and early Bronze Age**

In total, four features from Site G and D contained bone fragments of these periods (9206, 9212, 9223, 6910). Most of this material was not identifiable, being very small fragments recovered from soil samples, with the exception of seven red deer antler fragments from pit 6910. All of the material from Site G was burnt. It should be noted that posthole 9206 was attributed to the early Neolithic due to its association with the other two features, as opposed to any direct dating evidence.

**Bronze Age**

Relatively small quantities of material were identified from four sites (Table 2.11). Sites A and L share some of the same ditches and gullies and were within 800m of Site C. Site G was a further 1km from its nearest counterpart, Site C.

Table 2.11: Animal bone from Bronze Age contexts by species and site, bone of the same individual counted as 1 NISP. Number in brackets = bone collected from soil samples

Species	Site			Total
	A & L MBA-LBA	C MBA-LBA	G MBA-LBA	
Cattle	10	76	2	88
Sheep/goat	19 (6)	82 (10)		101 (16)
Sheep	1	3		4
Pig	11 (3)	6 (1)		17 (4)
Equid sp		1		1
Red deer	3	22 (1)		25 (1)
Cat	5 (1)			5 (1)
Common shrew		(2)		(2)
Bank vole		(1)		(1)
Toad	11 (4)		(2)	11 (6)
Frog	1 (2)			1 (2)
Lizard		(2)		(2)
Mole	1			1
Total	62 (16)	190 (17)	2 (2)	254 (35)

The vast majority of animal bones were collected by hand, with predominantly small mammal bones recovered from 44 sieved soil samples. The number of principal stock animals from soil samples was low, although notably those that were recovered were of sheep/goat as opposed to larger cattle, suggesting some bias in the hand-collected material towards larger mammals.

The distribution of species per context is low, typically less than five NISP of one species per context. Some differences in the distribution of cattle and sheep/goat by feature type are apparent, with few cattle bones excavated from pits. The low numbers on bone prevent much analysis of the correlation of the deposition of species within feature types, although it is clear that larger numbers of both cattle and sheep/goat occur from two deposits of ditch group 5892. Pig bones were relatively rare in excavated Bronze Age deposits, although a number of pig bones forming associated bone from four individual animals were recovered from pit 3030.

Of the biometric data from cattle, two astralagi gave a range of 59.9–61.6 for the GLI (greatest lateral length), within the expected range for cattle of this period.

*Associated or Articulated Bone Groups (ABGs)*

Middle Bronze Age Ditch Group 5892, Site C

Ditch group 5892 comprised the L-shaped ditch in Site C. Ditch interventions 5450 and 5483 and to a lesser extent 5501, produced significant numbers of both cattle, sheep/goat and deer bone and antler, specifically from the upper deposits. Species from these upper deposits are more abundant in bones identified as sheep/goat or sheep. Although some bones were evidently from the same individual, including two instances of articulating cattle radii and ulnas, and one pair of red deer mandibles, the majority would appear to represent a collection from different individuals. The Minimum Number of Elements (MNE) of cattle and sheep/goat demonstrate that a range of limb and the mandible are present. The MNE method does not represent the skull particularly well, but a number of skull fragments are present. From the unidentified categories, a further seven medium-sized mammal rib fragments were recovered, although no vertebra fragments. A minimum number of four cattle, seven sheep/goat and two pigs were calculated.

Middle to Late Bronze Age Pit 3030, Site A

Four Bronze Age pits from Sites A and L, features 3030, 3097 and 3024 in Site A and feature 12502 in Site L, produced animal bone. The deposits in these pits typically contained less than five NISP of a single species, the exception to this being deposit 3094 at the base of pit 3030, a beehive-shaped storage pit measuring 1.4m in depth and 2.24m in diameter. This middle to late Bronze Age pit contained the remains of piglets thought to be from

four individual animals, one juvenile, one neonate/ juvenile and two foetal/neonate. None of these skeletons were complete. In addition, a complete mandible and a humerus fragment of a cat were recovered from the same deposit. The size overlap of domestic and wild cat precludes differentiating between the two, but these bones are presumably of wild cat, as the domestic variety was not introduced until the 1st century AD (Davis 1995, 177). Further cat remains were recovered from this pit, including fragments of a humerus from its second fill, deposit 3037, and fragments of a femur, mandible and a maxillary premolar from its third fill, deposit 3036.

#### *Pathology*

A middle Bronze Age sheep/goat metatarsal had evidently been broken, the healed fracture resulting in a very slight misalignment of the bone, and additional new bone growth (exostosis) along the length of the shaft of the bone. There was also an instance of osteochondrosis dissecans on the proximal articular facet of a Bronze Age cow metatarsal. Osteochondrosis dissecans is defined as the focal 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).

#### *Wild species*

A small number of deer bones and red deer antler or antler fragments were recovered from Bronze Age deposits. One of the red deer antler fragments had been sawn, showing working. Bones of wild cat were also recovered from two pits on Site A, one definitely of middle to late Bronze Age date, the other not securely dated but probably of late Bronze Age or early Iron Age date. These presumably represent wildcats, as domesticated cats are believed to have been a Roman introduction (Davis 1995, 177). Two bones from a pippit-sized bird were also recovered.

A single mole scapula was recovered from the basal deposit of the middle to late Bronze Age pit, 3030, which measured 1.4m deep. Moles may burrow to over 1m in depth, and it is quite feasible that the bone is intrusive or an incidental inclusion as opposed to associated with human activity. Alternatively, historically moles are trapped as a pest to agriculture and horticulture (Carnegie 1910, 212–6). Similarly, they may be caught for their silky fur.

#### *Amphibians and reptiles*

A small collection of frog and toad bones was present. Frogs may have been consumed, but most came from pits that could have acted as pit fall traps. There was a single example of a burnt toad bone, from deposit 3031 of the middle to late Bronze Age pit 3030. Bones of slow worm or probable slow worm were also recovered from Bronze Age contexts. It would be tempting to

associate slow worms with midden deposits, modern-day compost heaps being an attractive habitat for the species.

#### **Charred plant remains** by Wendy Smith

Although a number of samples of Neolithic–Bronze Age date were collected during the A2 excavations none of these produced rich assemblages of charred plant remains (see Smith 2009). Typically the most promising early prehistoric sample only produced a few charred plant remains; certainly none produced more than 50 identifiable remains and most produced <10 (ibid., table 1). Such small assemblages are generally considered uninterpretable, and in those cases where charred plant remains were observed in assessment, their secure identification will not alter present knowledge of Neolithic or Bronze Age collected foodstuffs and/or cultivars.

While a few tree fruits and nuts were present in some of the cremation deposits, they are as likely to have arrived with the wood fuel rather than representing any deliberate offering. This could apply to the hazel nutshell fragments and a possible hawthorn (cf. *Crataegus* sp.) haw from sample 1250 in middle Bronze Age cremation pit 12520. Hazel nutshells were also present in the enclosure ditches on Sites C and G, and again could represent foodstuffs or fuel. In terms of cultivated cereals, several spelt wheat (*Triticum spelta*) grains were recovered from pit 5023 on Site C, and a single spelt grain was recovered from enclosure ditch 9236 on Site G. A number of barley grains were found in ditch 5451 on Site C, and a single barley grain in mid to late Bronze Age pit 3024 on Site A. The recovery of small quantities of grain from such contexts is, however, unexceptional both because we know these cereals were cultivated in the period (Tomlinson and Hall 1996; Zohary and Hopf 2000) and because such small quantities are likely to be ‘background noise’.

The limited recovery of early prehistoric CPR at A2 is mirrored by the results from excavations at Northumberland Bottom and Tollgate West along the adjacent route of the High Speed 1 (Davis 2006a; 2006b). A similar paucity of early prehistoric evidence is apparent in recent work in the Ebbsfleet Valley, Kent (Andrews et al. 2011).

#### **Wood charcoal** by Dana Challinor

The assessment of the processed samples was undertaken by Wendy Smith, who identified a range of samples with high potential for further charcoal analysis. A selection of these was made which reflected the range of feature types and phases represented in the dataset. The majority of the identifications at full analysis were undertaken by Denise Druce of Oxford Archaeology North, and her assistance in the production of the dataset is gratefully acknowledged. The aims of the charcoal analysis were to characterise the wood utilised for



Table 2.12: Results of the charcoal analysis from Bronze Age contexts

	Phase	early Bronze Age		middle Bronze Age	late Bronze Age	
	Site	F	G	C	C	
	Feature type	pit	pit	ditch	cremation	
	Feature	8038	9223	5450	5017	5278
	Context	8040	9224	5451	5016	5277
	Sample	803	1812	1518	500	1533
	% identified			12.5	12.5	12.5
<i>Quercus</i> sp.	oak	+++	++	51r	247	
<i>Corylus avellana</i> L.	hazel			6r		
<i>Alnus/Corylus/Carpinus</i>	alder/hazel/hornbeam	+	++			1
<i>Prunus spinosa</i> L.	blackthorn			9		
<i>Prunus</i> sp.	cherry type		+	5r		
Maloideae	hawthorn group		++	43r		112r
<i>Acer campestre</i> L.	field maple			4		
<i>Fraxinus excelsior</i> L.	ash		+			
Indeterminate				4	6	4
Total		+++	++++	122	253	117

r= roundwood; h=heartwood; + = <5; ++ = 5-25; +++ = 25-100; ++++ = >100

fuel and to examine any changes in the exploitation of woodland resources.

A total of five samples were examined from Bronze Age contexts. A full methodology is presented in the site archive. The results by fragment count are given in Table 2.12. The main focus of the Bronze Age samples were two cremation deposits from pits 5017 and 5278 in Site C (see Fig. 2.21). According to the human bone analysis (see above), the remains in these pits were not formal unurned burials, but small quantities of redeposited pyre debris or cremation-related deposits. The remains of a single adult appeared to be represented in both pits. In common with other cremation related deposits of comparable date, both assemblages were dominated by a single taxon. Pit 5017 was clearly dominated by oak, which is typical of late Bronze Age cremations, both regionally (Aldritt 2006c; Druce 2011) and nationally (Challinor 2009a; Campbell 2007) and pit 5278 was dominated by a member of the hawthorn group which, although rarer, is also attested at other sites, including a cremation-related deposit near Margate (Challinor 2009b; Challinor forthcoming; Gale 1992). A possible link between the dominance of a single species in pyre wood assemblages and the maturity of the deceased (adult) proposed at Raunds (Campbell 2007) seems to be supported by the evidence from the A2.

Although no other late Bronze Age contexts provided directly comparable data to the cremation deposits, mid-late Bronze Age ditch (5450), which was adjacent to the cremations, produced likely domestic debris (pot sherds, bone artefacts and oyster shells). The charcoal assemblage was notably more diverse with oak, hawthorn group, hazel, blackthorn and field maple. The gathering of mixed types of wood, particularly with increased

hedgerow-type species, is consistent with the general picture of Bronze Age domestic fuel practices (Challinor 2010a). Two early Bronze Age pits (8038 and 9223) from Sites F and G further east also contained similar assemblages.

#### Pollen and phytoliths by Adrian G Parker

Four samples were prepared for pollen and phytolith evaluation from the main Bronze Age enclosure ditch on Site G (9105), section 925, columns 944 and 945 (see Fig. 2.11). A full methodology can be found in the digital report. It is also assumed that column 944 was stratigraphically above 945. Samples 5 and 6 were taken from column 944 at 20cm (?context 9111) and 40cm (context 9113) respectively and samples 7 and 8 from column 945 at 20cm (context 9114) and 40cm (context 9117).

Four samples were also taken from a large Bronze Age pit or hollow (9293) section 2269 columns 990 and 991 in Site G (see Fig. 2.10). This was thought possibly to have been a pond. Two samples from column 990 were taken at 20cm and 40cm (both contexts 9345) and in column 991 one sample was taken from context 9386 (20cm) and one from context 9387 at 40cm.

#### Results and discussion

The pollen and phytolith results show large variations in preservation ranging from poor/nil preservation to relatively good preservation. The results of the pollen counts are shown in Tables 2.13–14 and phytoliths in Table 2.15.

Within the all of samples analysed for pollen the grains showed signs of deterioration and selective preservation was evident amongst the observed assemblages. Resistant taxa such as Compositae



Table 2.13: A2 pollen results from Bronze Age Ditch 9105

Pollen from Site G Ditch 9105, section 925, columns 944 and 945								
	944 9111		944 9113		945 9116		945 9117	
	20cm	%	40cm	%	20cm	%	40cm	%
<b>Trees</b>								
<i>Betula</i>	0	0.00	0	0.00	6	1.61	2	0.72
<i>Pinus</i>	8	9.30	2	1.75	8	2.15	11	3.97
<i>Quercus</i>	1	1.16	4	3.51	16	4.30	19	6.86
<i>Tilia</i>	0	0.00	0	0.00	19	5.11	21	7.58
<i>Ulmus</i>	0	0.00	0	0.00	1	0.27	2	0.72
<i>Ilex</i>	0	0.00	0	0.00	1	0.27	0	0.00
<b>Shrubs</b>								
<i>Corylus</i>	2	2.33	3	2.63	24	6.45	11	3.97
<i>Hedera</i>	0	0.00	0	0.00	2	0.54	0	0.00
<i>Crataegus</i> t.	0	0.00	0	0.00	2	0.54	1	0.36
<i>Rubus</i> t.	0	0.00	0	0.00	2	0.54	0	0.00
<i>Calluna</i>	0	0.00	1	0.88	2	0.54	2	0.72
<b>Herbs</b>								
Cereal t.	1	1.16	1	0.88	9	2.42	6	2.17
Gramineae	5	5.81	35	30.70	97	26.08	45	16.25
Cyperaceae	0	0.00	0	0.00	4	1.08	8	2.89
Ranunculaceae	0	0.00	0	0.00	14	3.76	5	1.81
Chenopodiaceae	4	4.65	8	7.02	5	1.34	7	2.53
Caryophyllaceae	0	0.00	0	0.00	5	1.34	11	3.97
Fabaceae	0	0.00	0	0.00	2	0.54	2	0.72
<i>Filipendula</i>	0	0.00	0	0.00	0	0.00	1	0.36
<i>Plantago lanceolata</i>	0	0.00	2	1.75	34	9.14	21	7.58
<i>Plantago major/media</i>	0	0.00	0	0.00	9	2.42	3	1.08
<i>Rumex</i> spp.	0	0.00	2	1.75	14	3.76	5	1.81
<i>Urtica</i>	0	0.00	0	0.00	0	0.00	1	0.36
<i>Galium</i> t.	0	0.00	0	0.00	1	0.27	2	0.72
<i>Polygonum</i> spp.	0	0.00	0	0.00	1	0.27	4	1.44
Compositae Liguliflorae	45	52.33	28	24.56	45	12.10	33	11.91
Compositae Tubuliflorae	5	5.81	9	7.89	14	3.76	12	4.33
<i>Cirsium/Carduus</i> t.	0	0.00	0	0.00	5	1.34	1	0.36
Umbelliferae	0	0.00	1	0.88	2	0.54	2	0.72
<i>Mentha aquatica</i>	0	0.00	0	0.00	0	0.00	0	0.00
<b>Spores</b>								
Polypodiaceae	1	1.16	0	0.00	0	0.00	0	0.00
Filicales	14	16.28	17	14.91	24	6.45	33	11.91
<i>Pteridium</i>	0	0.00	1	0.88	4	1.08	6	2.17
<b>n</b>	86	100.00	114	100.00	372	100.00	277	100.00
<b>Trees</b>	9	10.47	6	5.26	33	8.87	35	12.64
<b>Shrubs</b>	2	2.33	3	2.63	30	8.06	12	4.33
<b>Herbs</b>	60	69.77	86	75.44	259	69.62	167	60.29
<b>Spores</b>	15	17.44	18	15.79	28	7.53	39	14.08

Liguliflorae and Chenopodiaceae were strongly represented within a number of samples. However, other less resistant taxa including Gramineae and *Urtica* were also identified. These samples do provide some important information but the pollen data should be viewed with some caution owing to selective preservation.

Likewise phytolith preservation varied across the site. The samples from the basal contexts of Site L had undergone dissolution will almost nil preservation. Given the proximity of these samples to the chalk bedrock this was not surprising. Pitting and etching of phytoliths was noted from most contexts but a number of samples contained relatively high

Table 2.14: A2 pollen results from Bronze Age pit/hollow 9293

Pollen from Site G Pond Feature 9293, section 2269, columns 990 and 991								
	990 9345		990 9345		991 9386		991 9387	
	20cm	%	40cm	%	20cm	%	0cm	%
<b>Trees</b>								
<i>Betula</i>	0	0.00	1	0.00	2	0.65	1	0.55
<i>Pinus</i>	2	0.00	3	0.00	4	1.31	2	1.09
<i>Quercus</i>	0	0.00	1	0.00	5	1.63	6	3.28
<i>Tilia</i>	0	0.00	0	0.00	10	3.27	9	4.92
<i>Ulmus</i>	0	0.00	0	0.00	1	0.33	1	0.55
<i>Ilex</i>	0	0.00	0	0.00	0	0.00	1	0.55
<b>Shrubs</b>								
<i>Corylus</i>	1	0.00	0	0.00	24	7.84	14	7.65
<i>Hedera</i>	0	0.00	0	0.00	0	0.00	0	0.00
<i>Crataegus</i> t.	0	0.00	0	0.00	2	0.65	0	0.00
<i>Rubus</i> t.	0	0.00	0	0.00	1	0.33	1	0.55
<i>Calluna</i>	0	0.00	0	0.00	6	1.96	5	2.73
<b>Herbs</b>								
Cereal t.	0	0.00	1	0.00	22	7.19	2	1.09
Gramineae	2	0.00	4	0.00	116	37.91	55	30.05
Cyperaceae	0	0.00	0	0.00	2	0.65	2	1.09
Ranunculaceae	0	0.00	0	0.00	4	1.31	2	1.09
Chenopodiaceae	10	0.00	2	0.00	3	0.98	2	1.09
Caryophyllaceae	0	0.00	0	0.00	3	0.98	1	0.55
Fabaceae	0	0.00	0	0.00	3	0.98	2	1.09
<i>Filipendula</i>	0	0.00	0	0.00	0	0.00	0	0.00
<i>Plantago lanceolata</i>	0	0.00	1	0.00	22	7.19	7	3.83
<i>Plantago major/media</i>	0	0.00	2	0.00	4	1.31	1	0.55
<i>Rumex</i> spp.	0	0.00		0.00	8	2.61	1	0.55
<i>Galium</i> t.	0	0.00	0	0.00	2	0.65	0	0.00
<i>Polygonum</i> spp.	0	0.00	0	0.00	2	0.65	0	0.00
Compositae Liguliflorae	15	0.00	9	0.00	31	10.13	17	9.29
Compositae Tubuliflorae	5	0.00	2	0.00	11	3.59	5	2.73
<i>Cirsium/Carduus</i> t.	0	0.00	1	0.00	2	0.65	0	0.00
Umbelliferae	0	0.00	0	0.00	5	1.63	0	0.00
<b>Spores</b>								
Polypodiaceae	0	0.00	0	0.00	1	0.33	0	0.00
Filicales	3	0.00	2	0.00	9	2.94	25	13.66
<i>Pteridium</i>	0	0.00	1	0.00	1	0.33	21	11.48
<b>n</b>	38	0	30	0	306	100.00	183	100.00
<b>Trees</b>	2	0.00	5	0.00	21	6.86	18	9.84
<b>Shrubs</b>	1	0.00	0	0.00	27	8.82	15	8.20
<b>Herbs</b>	32	0.00	22	0.00	240	78.43	97	53.01
<b>Spores</b>	3	0.00	3	0.00	11	3.59	46	25.14

number of identifiable morphotypes. The successful application of phytolith analysis has been undertaken by the author at hilltop enclosures and hillforts at Taplow, Buckinghamshire, and Castle Hill, Little Wittenham, Oxfordshire (Parker in Allen *et al.* 2009, 155–9; Parker in Allen *et al.* 2010, 96–7).

The pollen data suggests a relatively open landscape in the vicinity of the site. Tree and shrub pollen does, however, suggest a backdrop of

regional woodland with *Quercus*, *Tilia* and *Corylus* being the dominant. The geology exposed during the excavation showed Chalk overlain by Lower Greensand and Clay. Regional pollen work from site on similar geology across Sussex, Surrey, Hampshire and Berkshire has shown that the pre-clearance woodland was dominated by *Tilia*, *Quercus*, *Ulmus*, *Fraxinus* and *Corylus*. None of the samples examined came from pre-clearance contexts.

Table 2.15: A2 phytolith counts from Bronze Age features 9105 and 9293

Sample	Context		Panicoid	Other grasses		Cyperaceae	Grass long cells		Other long cells		Number			
	Column			Chloridoid	Lig dicots		Corklike	Dendriform	Hairs					
Site G														
9105														
5	944	9111	22	9	2	45	2	1	4	67	12	23	7	194
6	944	9113	45	11	2	55	3	1	7	88	21	16	11	260
7	945	9116	33	3	4	24	4	1	5	45	11	14	5	149
8	945	9117	24	6	1	23	1	5	2	34	9	21	6	132
Site G														
9293														
9	990	9345	4	4	1	0	1	0	1	0	0	3	0	11
10	990	9345	3	2	0	11	1	0	1	7	1	4	0	30
11	991	9386	44	14	1	22	15	2	4	101	84	88	12	387
12	991	9387	2	5	0	14	2	0	1	21	2	6	2	55

However, in Area G the oldest samples span the Bronze Age and give insight into change in the landscape.

Pollen data from the main ditch in Site G and pit 9293 show that during the early to mid Bronze Age trees and shrubs comprised 18% of the pollen sum with *Quercus*, *Tilia* and *Corylus* the major components. The lowermost samples in both sites show a relatively strong presence of *Tilia* (up to 7.5%). *Tilia* is often under-represented in pollen diagrams due to its poor pollen dispersal, rather than low pollen productivity. Although dates for the decline across England range from the late Neolithic to the late Bronze Age there appears to be a marked decline during the late Bronze Age from across southern England (Scaife 1987; Parker 1999). The cause of the decline may include climate change inhibiting the growth of thermophilous taxa such as *Tilia*, paludification due to deteriorating soil conditions and human clearance of regional woodland. The decline in *Tilia* and associated increases in Poaceae, disturbed ground taxa including *Plantago lanceolata* and or cereals has been noted from many sites across southern England (eg Scaife 1987; Waton 1982; Thorley 1981; Parker 1999). Scaife (1987) suggested that woodland clearance in the later Bronze Age largely took place in areas between already cleared fertile soils on downland and the less tractable soils on heavy clay soils.

Despite the backdrop of woodland non-arboreal pollen dominates the samples, accounting for 53–78% of the total pollen sum. The presence of both grass short and long cell morphotypes supports the predominance of grasses in the local area. Poaceae is the largest component (16–38%) of the pollen spectra with a strong presence of Ranunculaceae, *Plantago lanceolata*, Compositae Liguliflorae and Compositae Tubuliflorae. These taxa indicate disturbed ground perhaps due to grazing. The presence of some cattle bone from the site supports this notion. Cereal type pollen is found in all the Bronze Age samples suggesting the

growing of some arable crops (although some wild grasses can produce large Poaceae grains). The large pit 9293 in Site G (context 9386) contained a significant number (88) of dendriform long cell Poaceae phytolith morphotypes. These are derived from the inflorescence bract of cereals, implying that this context contains the residue of threshed cereals or the incorporation of ashed cereals from hearth materials.

The small presence of *Calluna* pollen suggests the presence of heather in the landscape, perhaps derived from the development of regional heathland. During the late Holocene heathland tended to develop on cleared ground, especially in areas with sandy substrates (Scaife 1987).

Although tentatively interpreted as a possible pond, pit 9293 showed little/no evidence for being a pond based on the pollen evidence. No aquatic or semi-aquatic pollen types were found. This interpretation is therefore unlikely, unless perhaps it was used as a seasonal dew pond.

Overall, the pollen and phytolith analysis has provided some insight into the local and regional vegetation in the Bronze Age. The results suggest an open landscape with a regional background with *Quercus*, *Tilia* and *Corylus*. Pollen and phytolith evidence both suggest some cereal cultivation in the local area. In addition, disturbed ground—perhaps related to grazing—is suggested by the presence of *Plantago lanceolata*, *Rumex*, Ranunculaceae and Compositae Liguliflorae.

#### Land snails by Elizabeth Stafford

A total of 271 samples were collected from 45 feature profiles from sites A, B, C, D, G and L for the recovery of land snail assemblages. An initial rapid assessment of 203 mollusc samples as well as a 17 spot bulk samples concluded that preservation of shell was highly variable, both within and between the sites. The assessment identified six well-dated representative profiles where shell preservation was

Table 2.16: Molluscan data from middle Bronze Age ditch 5892

Sample	878A	878B	878C	878D	878E	878F	878G	878H	878I	878J
Context	5484	5484	5485	5485	5486	5486	5521	5521	5524	5525
Depth (m)	0.12-	0.20-	0.30-	0.34-	0.40-	0.46-	0.57-	0.64-	0.78-	1.00-
	0.20	0.28	0.34	0.40	0.46	0.53	0.54	0.71	0.84	1.08
Sediment processed (kg)	2.7	2.7	2.7	1.8	1.9	2.8	3.3	2.7	2.7	4.1
Taxa	Habitat									
<i>Pomatias elegans</i> (Müller)	S-D	14	28	11	21	289	10		1	
<i>Carychium tridentatum</i> (Risso)	S-D	4	69	35	277	893	61	5	7	1
<i>Cochlicopa</i> sp.	C		18	17	8	102	3	4		
<i>Truncatellina cylindrica</i> (Ferussac)	O-C		1	1	5	7	1	1	2	
<i>Vertigo pygmaea</i> (Draparnaud)	O-C		2		4	2	4		1	
<i>Pupilla muscorum</i> (Linné)	O-C		1	2	5	15	14	18	6	3
<i>Lauria cylindrica</i> (da Costa)	S-D			1	2	46	13		1	1
<i>Vallonia costata</i> (Müller)	O-C	59	323	87	55	371	347	43	9	3
<i>Vallonia excentrica</i> (Sterki)	O-C	19	86	22	14	30	43	26	10	3
<i>Acanthinula aculeata</i> (Müller)	S-D	1	12	1	19	188	7	1	1	2
<i>Ena obscura</i> (Müller)	S-D					14	4		1	
<i>Punctum pygmaea</i> (Draparnaud)	C		11	4	21	129	82	7	6	1
<i>Discus rotundatus</i> (Müller)	S-D	7	22	122	124	150	20	2	1	1
<i>Vitrea pellucida</i> (Müller)	C			2	3		3	1	1	
<i>Vitrea</i> sp.	S-D	3	9	16	30	171	53	7	9	1
<i>Nesovitrea hammonis</i> (Ström)	C			1		8	2	1	2	1
<i>Aegopinella pura</i> (Alder)	S-D		7	10	27	333	34	7	6	2
<i>Aegopinella nitidula</i> (Draparnaud)	S-D	16	75	64	55	343	20	2	3	1
<i>Oxychilus cellarius</i> (Müller)	S-D		3	13	7	17	11	1		2
<i>Cochlodina laminata</i> (Montagu)	S-D	3		5	11	10	1		1	
<i>Clausilia bidentata</i> (Ström)	S-D	10	10	14	28	132	30	1	1	
<i>Candidula</i> sp.	O-C				2			2		
<i>Helicella itala</i> (Linné)	O-C	5	6	2	3	18	4		3	2
<i>Trichia hispida</i> (Linné)	C	3	55	72	24	52	10	1		
<i>Helicigona lapicida</i> (Linné)	S-D			1	2	21			1	
<i>Cepaea/Arianta</i> sp.	C	8	2	10	8		3	1		
<i>Cepaea</i> sp.	C		1			18				
<i>Cepaea nemoralis</i> (Linné)	C				2					
% Shade-demanding	38.16	31.71	57.12	79.66	77.61	33.85	19.85	45.21		
% Catholic	7.24	11.74	20.66	8.72	9.20	13.21	11.45	12.33		
% Open-country	54.61	56.55	22.22	11.62	13.19	52.95	68.70	42.47		
No. individuals/sample	152	741	513	757	3359	780	131	73	15	14
No. individuals/kg	56	274	190	421	1768	279	40	27	6	3
Shannon Wiener Index (H')	2.033	1.98	2.35	2.28	2.46	2.12	2.15	2.68		
Brillouin Index (HB)	1.893	1.93	2.27	2.22	2.44	2.06	1.96	2.32		
H'-HB Index	0.14	0.05	0.08	0.06	0.02	0.06	0.19	0.36		

considered adequate for detailed analysis to further characterise the assemblages. Two of these profiles were from middle Bronze Age ditch 5892 and late Bronze Age ditch 5912 on Site C (see Fig. 2.21), and the results of the detailed analysis are presented here (Tables 2.16–17). A methodology can be found in the digital report.

### Middle Bronze Age ditch 5892

Group 5892 comprised a large L-shaped enclosure ditch cut through natural weathered chalk bedrock. The ditch, although constructed in the middle Bronze Age was probably visible and perhaps still

partially open during the late Bronze Age and into the Iron Age.

A total of 49 samples from five profiles were rapidly assessed for the preservation of land snails. All five profiles provided broadly similar environmental signals. Of the five sequences, intervention 5483 was selected for full analysis based on shell abundance, composition, and the level of sampling. This profile also contained the artefact rich occupation horizon 5485 which provides some chronological control. The mollusc count from this sequence is presented in Table 2.16 and the histograms in Figure 2.44. Four molluscan assemblage zones (A–D) have been identified in this sequence.



Table 2.17: Molluscan data from late Bronze Age ditch 5912

Sample	826	827	829	831	833	
Context	5298	5299	5300	5702	5703	
Spit	2	3	5	7	9	
Depth (m)	0.10-0.22	0.22-0.30	0.30-0.40	0.40-0.55	0.78-1.14	
Sediment processed (kg)	2	2	2	2	2	
Taxa	Habitat					
<i>Pomatias elegans</i> (Müller)	S-D	1	14	44	98	24
<i>Carychium tridentatum</i> (Risso)	S-D	16	15	702	413	119
<i>Cochlicopa</i> sp.	C			36	9	12
<i>Truncatellina cylindrica</i> (Ferussac)	O-C					3
<i>Vertigo pygmaea</i> (Draparnaud)	O-C		1			2
<i>Pupilla muscorum</i> (Linné)	O-C				1	10
<i>Lauria cylindrica</i> (da Costa)	S-D				1	
<i>Vallonia costata</i> (Müller)	O-C	1	27	9	2	4
<i>Vallonia excentrica</i> (Sterki)	O-C		15	2		1
<i>Vallonia</i> sp.	O-C	1	21			
<i>Acanthinula aculeata</i> (Müller)	S-D			16	8	
<i>Ena obscura</i> (Müller)	S-D			1	5	
<i>Punctum pygmaea</i> (Draparnaud)	C	2	2	9	5	24
<i>Discus rotundatus</i> (Müller)	S-D	5	5	59	124	43
<i>Vitrina pellucida</i> (Müller)	C			2	1	1
<i>Vitrea</i> sp.	S-D	1	2	70	58	6
<i>Nesovitrea hammonis</i> (Ström)	C		1	6	9	1
<i>Aegopinella pura</i> (Alder)	S-D	2	2	64	61	13
<i>Aegopinella nitidula</i> (Draparnaud)	S-D	4	2	89	95	24
<i>Oxychilus cellarius</i> (Müller)	S-D	2	2	43	20	5
<i>Clausilia bidentata</i> (Ström)	S-D		1	6	7	8
<i>Helicella itala</i> (Linné)	O-C		1	1	1	1
<i>Trichia hispida</i> (Linné)	C		3	28	12	3
<i>Cepaea/Arianta</i> sp.	C		2		2	
<i>Cepaea</i> sp.	C	1		6		1
Limicidae			2			
% Shade-demanding	86.1	38.1	91.7	95.5	79.3	
% Catholic	8.3	6.8	7.3	4.1	13.8	
% Open-country	5.6	55.1	1.0	0.4	6.9	
No. individuals/sample	36	118	1193	932	305	
No. individuals/kg	18	59	597	466	153	
Shannon Wiener Index (H')	1.86	2.25	1.66	1.87	2.13	
Brillouin Index (HB)	1.53	2.04	1.63	1.83	2.03	
H'-HB Index	0.33	0.2	0.03	0.04	0.11	

In Zone A (0.53–1.10m) the basal two samples from primary fills 5525 and 5524, contained very low numbers of shells of mixed ecological preferences. The low shell abundance indicates uncondusive conditions and rapid sedimentation, probably as a result of the initial physical weathering of the feature edges and bank immediately after the feature was cut.

Up-profile, in fill 5521, shell was more abundant suggesting a reduced rate of sedimentation as the feature edges began to stabilise. Open-country species are numerous; reaching *c* 70% at the top of this zone. Shade-demanding molluscs are, however, by no means absent with quite a diverse range of species throughout, comprising between 45% and 20% of the assemblages. Catholic species account for *c* 12% of the totals, predominantly the *Punctum* group.

It is likely at this level in the ditch the mollusc shell derives from several sources such as shells from the contemporary topsoil eroding into the ditch as well as molluscs colonising the base of the feature from adjacent environments. This mixing of assemblages appears to be reflected in the high values of the H-HB index. The environment in the base of the ditch itself is initially likely to have comprised bare earth and chalk rubble, and as the rate of sedimentation reduced, a light cover of grasses and herbs. Experimental work on sites such as Overton Down (Bell *et al.* 1996) have demonstrated that this process can occur quite rapidly in chalk cut ditches, that is within the initial 10–15 years of infilling. Often such primary fills are colonised by species capable of living on bare scree-like surfaces such as *Discus rotundatus*, *Vitrea*

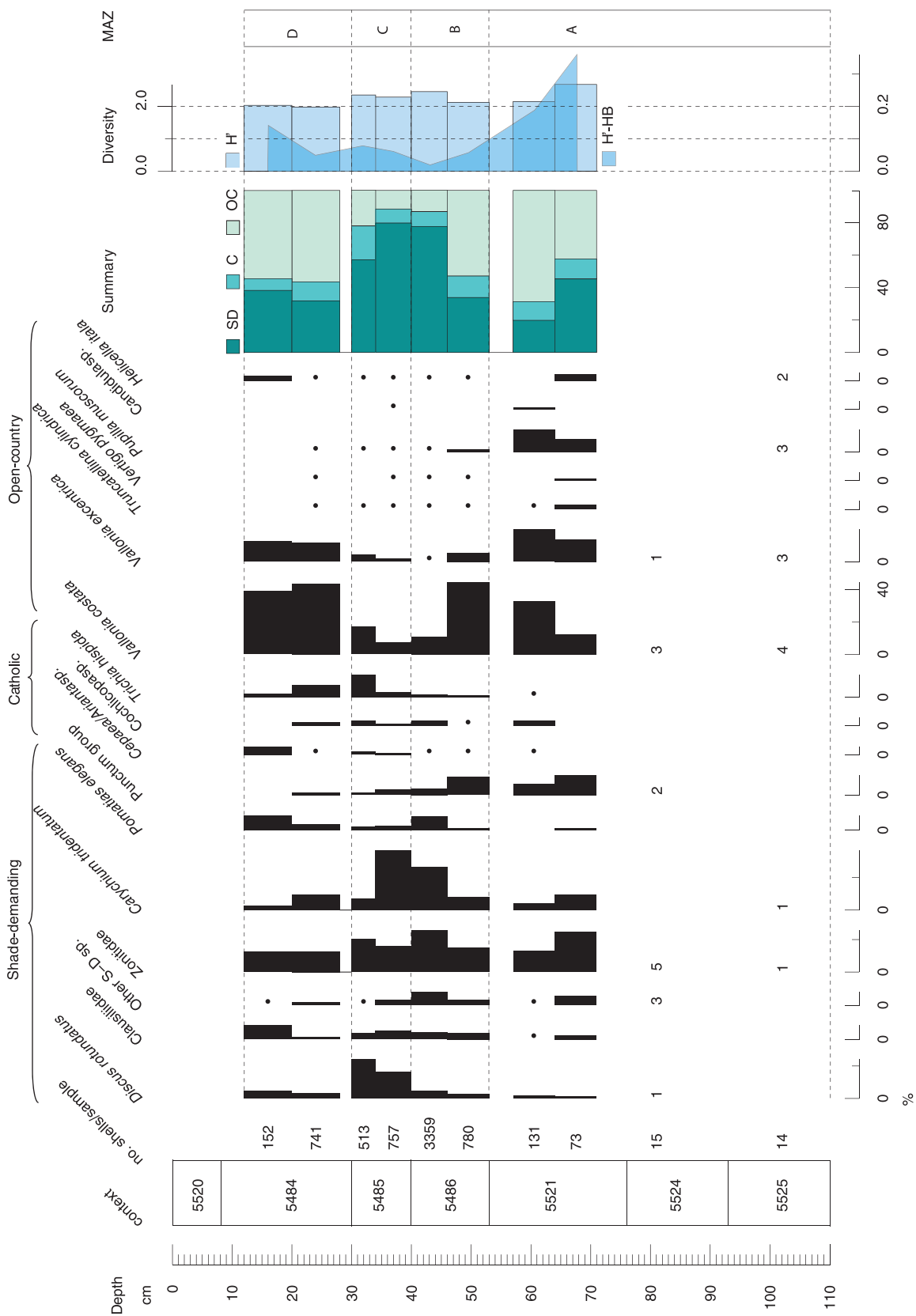


Fig. 2.44 Percentage molluscan diagram for middle Bronze Age ditch 5892, cut 5483, Site C

*contracta* and *Oxychilus cellarius* (the troglaphiles of Evans and Jones 1973), often classed as shade-lovers, as well as the open-country species *Vallonia costata* and the catholic Punctum group.

The diversity of the shade-demanding fauna, however, which includes *Cochlodina laminata*, *Acanthinula aculeata*, *Helicigona lapicida* and *Ena obscura*, also suggests an environment of shady deciduous woodland with much leaf litter. It may be some of the shade-demanding component represents a residual component from a previous environment. However, overall these shells did not appear very worn and many were of the more fragile shelled species that do not reside in active soils for long periods of time. In contrast the open-country component, particularly dominating at the top of this zone, are consistent with a relatively open environment. Numerical significant species include the grass snails *Vallonia excentrica* and *V. costata*, the latter dominating slightly, and *Pupilla muscorum*. *Truncatellina cylindrica*, *Vertigo pygmaea* and *Hellicella itala* are also present. The species composition which includes many obligate xerophiles suggests an area of established grassland rather than ground very recently cleared of woodland. It is quite possible these mixed assemblages reflect the existence of a boundary zone between two different quite established environments. One would expect some clearance of vegetation would be required prior to the cutting of the ditch and the open environment around and within the feature this may be reflected in the predominance of the open country species at the top of this zone.

Zone B falls at 0.40–0.53m. Between 0.76m and 0.53m shell abundance increases dramatically suggesting a significant reduction in the rate of sedimentation and soil formation at the top of this zone. Stability is reflected in the much lower values of the H'-HB index.

Initially changes in molluscan composition comprise increases in the proportions colonizing species *V. costata* and the Punctum group. The proportions of some of the obligate xerophiles such as *P. muscorum*, and *V. excentrica* are reduced although in terms of absolute values they maintain a consistent low level. Shade-demanding species increase significantly between 0.57m and 0.64m to 78%, and open country species are reduced to 14%. Overall this suggests the rapid growth of vegetation; long grass and then scrub within or encroaching into the feature. The assemblages are characterised by the predominance of *Carychium tridentatum*. This species, along with *Acanthinula aculeata* and some of the zonitids, *Vitrea* sp. and *Aegopinella pura*, although classed as a shade-lovers due to their small size, often occur in areas of long grassland. However, the presence of other species such as *Aegopinella nitidula*, *Discus rotundatus*, Clausiliidae and *Ena obscura* indicate some arboreal cover with abundant leaf litter.

Although the snail faunas may to some extent be reflecting microenvironments prevailing within the

ditch, the predominance of a diverse range of shade-demanding species suggests substantial refugia persisted in the vicinity from which these snails could colonise. Of note is a small peak (7%) in the burrowing snail *P. elegans* at the top of the zone which may indicate some loose soil and disturbance in the vicinity.

Zone C (0.30–0.40m) is marked by a notable reduction in shell abundance and slight increases in values of the H-HB index. Initially shade-demanding species maintain high proportions at 80% with open country at 12%. Towards the top of this zone, however, shade-demanding species are reduced to 57%, catholic species increase to 21% (predominantly *Trichia hispida*), and open-country species to 20% (mainly *V. costata* and to a lesser extent *V. excentrica*). The changes in this zone appear to reflect continued disturbance within the feature and equates with the artefact rich context 5485. The increase in the proportion of open country fauna at the top of the zone suggests some clearance or trampling of vegetation within the ditch may have occurred.

Zone D (0.00–0.30m) is characterised by a large increase in the proportion of open-country species to c 55%, predominantly the grass snail *V. costata* but also *V. excentrica*, with a slight increase in *Helicella itala* at the top of the zone. Shade-demanding elements are significantly reduced to c 30%. This suggests substantial clearance of vegetation in the area. The significant reduction in shell abundance towards the top of this zone suggests a big increase in the rate of sedimentation possibly as a result of ploughing. Although shade-demanding species appear to persist in the upper levels of the ditch it is clear a proportion of these, such as the Clausiliidae, are residual elements comprising very worn shells. It may be that some areas of woodland or scrub persisted in the vicinity.

#### Late Bronze Age ditch 5912

Group 5912 comprised a large ditch dated to the later Bronze Age. A single profile of snail samples was retrieved from the northernmost section where the ditch cuts through weathered chalk bedrock. Rapid assessment concluded shell preservation was moderate to good and five samples were selected for detailed analysis. The mollusc count is presented in Table 2.17 and the histogram in Figure 2.45. Three molluscan assemblage zones have been identified in this sequence.

Zone A (0.60–1.26m) encompasses the primary fill 5703. Shell was surprisingly abundant in this context (305 individuals). Shade-demanding taxa were present at 80%. *C. tridentatum* predominates, although the zonitids and *D. rotundatus* are also significant. *P. elegans* at 8% may reflect the loose nature of the substrate. The proportion of open-country taxa was very low at 7%. Overall this suggests the ditch was either constructed in very close proximity to woodland or in an area only very

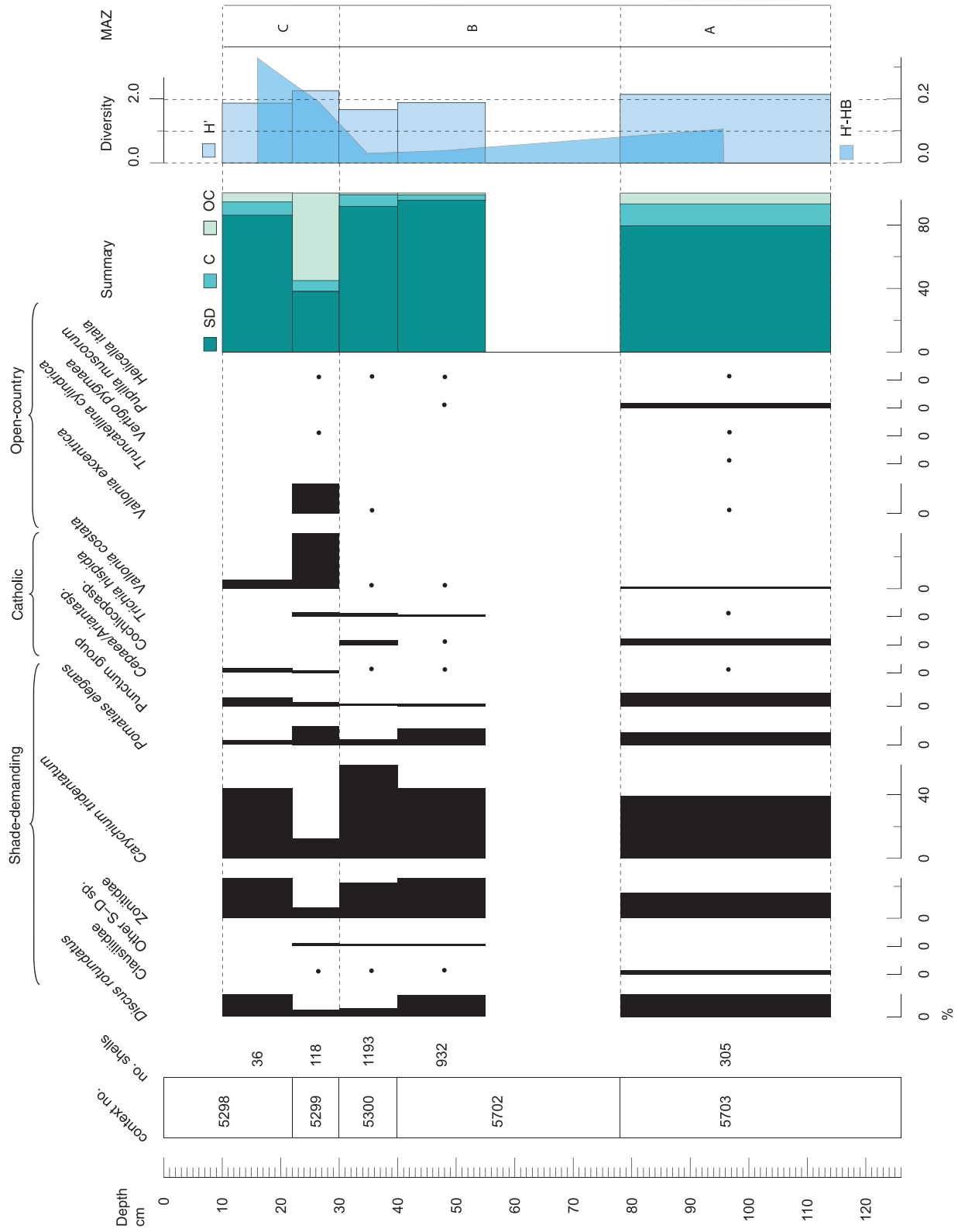


Fig. 2.45 Percentage molluscan diagram for Late Bronze Age ditch 5912, Site C



recently cleared where open-country species had not had the opportunity to colonise.

Zone B (0.80–0.30m) is characterised by a significant increase in shell numbers and a drop in the H'-HB index suggesting the feature edges were stabilising and soil formation ensued. The assemblages are overwhelmingly dominated by shade-demanding taxa at *c* 95%. Additional species include *A. aculeata* and *Ena obscura*. Catholic and open-country species are negligible. The environment in the vicinity of the feature at this point appears to have been rather enclosed, with arboreal cover and abundant leaf litter. Although the snail faunas may to some extent be reflecting microenvironments prevailing within the ditch the continued predominance and rapid colonisation of shade-demanding species suggests substantial refugia persisted in the vicinity from which these snails could colonise. Any clearance associated with the cutting of the ditch may have been quite short-lived

Zone C spans 0.00–0.30m. A very significant change occurs in the profile at 0.30m. Shell abundance drops dramatically to only 118 individuals and a marked increase in the H'-HB index is noted suggesting instability and disturbance. Open-country species increase to 55%, mainly *V. costata* and *V. excentrica*. A corresponding drop in the shade-demanding component occurs to 38%. This is similar to Zone D in ditch 5483 and suggests substantial clearance of vegetation in the area. The uppermost sample from fill 5298 contained too few shells for interpretation suggesting a rapid increase in the rate of sedimentation possibly as a result of ploughing levelling.

### Discussion

The samples provide local environmental data for many of the periods represented by the archaeological remains. However, since features from different phases are not distributed uniformly along the route it is impossible to provide a comprehensive characterisation of the development of the whole area. In addition, molluscan evidence from archaeological features to some extent reflects very local conditions associated with these features, unlike the evidence from sequences of extensive soils and sediments that more often contain snails from a wider catchment. There are obvious taphonomic problems related to the function of features, processes of infilling, sedimentation, erosion, reworking of older sediments, and post depositional disturbance. It is important to determine wherever possible if a feature has been deliberately backfilled, leading to the mixing of assemblages, and/or if the feature has been left open for any period, allowing sufficient time for *in situ* soil formation to occur. These issues, however, are inherent in molluscan analysis and will be considered in the interpretation of the assemblages.

Although human activity is recorded during the Neolithic and early Bronze Age along the route of the A2, the earliest snail-bearing deposits date to the middle Bronze Age. This is better than the situation at Northumberland Bottom, where the earliest snail bearing deposits from the HS1 section 1 dated to the middle Iron Age. There is however a corpus of regional environmental data available from previous investigations that can provide a general landscape context. Although pollen data for the early to mid Holocene in Kent is rather limited, evidence from Holywell Coombe (Preece and Bridgland 1998; Kerney *et al.* 1980) and Wateringbury (*ibid.*) suggests locally forested conditions during the pre-boreal and boreal (*c* 9000–5500 BC), initially birch (*Betula* sp.) and pine, followed by hazel and then hazel and elm (*Ulmus* sp.) woodland. Probably more pertinent to the A2 scheme is recent work undertaken as part of the HS1 Section 2 at Springhead and the Ebbsfleet Valley. Here, pollen data suggests in the late Mesolithic and early Neolithic a predominantly wooded habitat prevailed dominated by lime, oak and hazel on drier areas with alder carr and reed swamp on and along the fringes of the floodplain. Clearance was slight at this time, with only small open areas in the woodland indicated in the local area (Barnett *et al.* 2011). Further to the west, early Neolithic mollusc data from A2-A282 Dartford Road Improvement Scheme (Stafford 2011) indicated an environment of open woodland.

Overall the extent and duration of woodland clearance in Kent is not clear. Current research suggests that clearance on the chalklands of the south and south-east was predominantly a late Bronze Age phenomenon (Wilkinson 2003, 730). Locally, however, there may have been much variation with some areas subject to extensive and permanent clearance, and other areas where cycles of clearance and woodland/scrub regeneration occurred (Thomas 1982; Preece and Bridgland 1998; Kerney *et al.* 1964; Wilkinson 2003). Molluscan and pollen work at Springhead has demonstrated clearance of substantial areas for grassland and arable had begun by the middle Bronze Age, and at Dartford areas of grazed grassland had been established by the late Bronze Age.

Data for the middle and late Bronze Age on the A2 scheme is restricted to two ditches from Site C in the central part of the route and here there is strong evidence for wooded conditions. The lower fills of the middle Bronze Age enclosure ditch hint at relatively open conditions, possibly grazed grassland, in the vicinity of the feature immediately prior to and following construction. However, the character of the predominant shade-demanding component in this ditch suggests this may have been at the boundary of an area of woodland which appears to have encroached into this feature during its infilling. Some disturbance of the vegetation is indicated coinciding with the artefact-rich horizon 5485. Samples from the late

Bronze ditch 5912 (cut 5297), a little to the west, are also dominated by shade-demanding taxa almost from the very base of the feature suggesting it was constructed very close to woodland or in an area very recently cleared of woodland. The rapidity with which the shade-demanding taxa colonised this ditch, to the exclusion of open-country taxa, suggests that any clearance in the locality was temporary.

**Radiocarbon dating** by Rebecca Nicholson and Tim Allen

A series of 14 radiocarbon determinations were obtained from Neolithic and Bronze Age material, as part of a programme to establish an overall chronological framework for the excavated archaeological remains (Table 2.18 and Fig. 2.46). The calibration of the results, relating the radiocarbon measurements directly to calendar dates, have been calculated for this report using the computer programme OxCal (v3.10) (Bronk Ramsey 1995, 1998, 2001) and are cited at 95.4% confidence unless otherwise stated. A full account of the laboratory

procedures and methodology is presented in the digital report.

The main objectives for the early prehistoric dates were to clarify potential Neolithic activity and to date and sequence the Bronze Age enclosures. The resulting dates ranged from the early Neolithic to the middle-late Bronze Age.

There were no certainly Neolithic features on the scheme prior to the radiocarbon dating programme. There was, however, a concentration of Neolithic flintwork including both earlier and later Neolithic material on Site G, making it likely that this slight elevation was occupied more than once prior to the presumed middle Bronze Age enclosure. Two features in particular stood out: a pit outside the enclosure that contained several dumps of hearth debris, and a single very large ramped posthole (9539) containing the base of a charred post. Large ramped postholes of this type are characteristic of wooden monuments of the late Neolithic and early Bronze Age and as only scraps of indeterminate pottery were recovered from this feature a sample was submitted for AMS radiocarbon dating.

Table 2.18: Neolithic and Bronze Age radiocarbon dates

Laboratory number	Result BP	Error	Site	Sample/small find no.	Context No.	Feature No.	Material	$\delta^{13}C$ (‰)	Calendrical date cal. BC/AD (95.4% unless stated) Calibrated using Oxcal 3.10
NZA 32313	2828	35	E	Sample 720	7048	7047 (Group 7099)	Charred grain (indeterminate species)	-23.9	1120-900 cal. BC
NZA 32400	2884	20	C		5298	5912	Mammal bone – cattle left metatarsal	-21.8	1130-990 cal. BC
NZA 30151	2915	25	B	Sample 1455	7759	7758	Cremated human bone	-19.2	1210-1010 cal. BC
NZA 31264	2934	30	D	Sample 600	6010	6010	Cremated human bone	-19.5	1260-1020 cal. BC
NZA 30234	2939	40	G		9159	9178	Mammal bone - large mammal shaft fragment	-23.5	1270-1010 cal. BC
NZA 30145	2955	30	C	Sample 1533	5278	5278 (Group 15079)	Cremated human bone	-21.3	1290-1050 cal. BC
NZA 30222	2979	35	C	Sample 500	5017	5017 (Group 15079)	Cremated human bone	-23	1380-1340 BC (3.4%); 1320-1080 cal. BC (92%)
NZA 30148	3018	30	C	SF 551	5451	5892	Mammal bone - worked	-21.7	1390 - 1190 cal. BC 91.8%); 1180-1160 BC (1.6%); 1150-1130 (2%)
NZA 30124	3044	35	C	Sample 1518	5451	5892	Charred barley grain ( <i>Hordeum</i> sp.)	-22.8	1420 - 1210 cal. BC
NZA 30115	3405	35	G	Sample 1814	9477	9223	Charcoal (Maloideae)	-25.3	1870-1840 BC (3.7%); 1780 - 1610 cal. BC (91.7%)
NZA 32282	3877	35	D	Sample 618	6163	6161/ 6512	Charred hazel ( <i>Corylus avellana</i> ) nutshell	-22.8	2470-2270 cal. BC (90.0%); 2250-2210 cal. BC (5.4%)
NZA 32317	4699	35	G	Sample 1825	9540	9539	Charcoal - oak ( <i>Quercus</i> sp.)	-25.1	3630-3570 cal. BC (18.1%); 3540-3370 cal. BC (77.3%)
NZA 30123	4758	35	G	Sample 1826	9540	9539	Charcoal - hazel ( <i>Corylus avellana</i> )	-24.4	3640-3500 cal. BC (83.1%); 3430-3380 cal. BC (12.3%)
NZA 31250	4952	50	D	SF 1485	6514	6161/ 6512	Charred residue on pot	-29.6	3940-3870 cal. BC (8.3%); 3810-3640 cal. BC (87.1%)

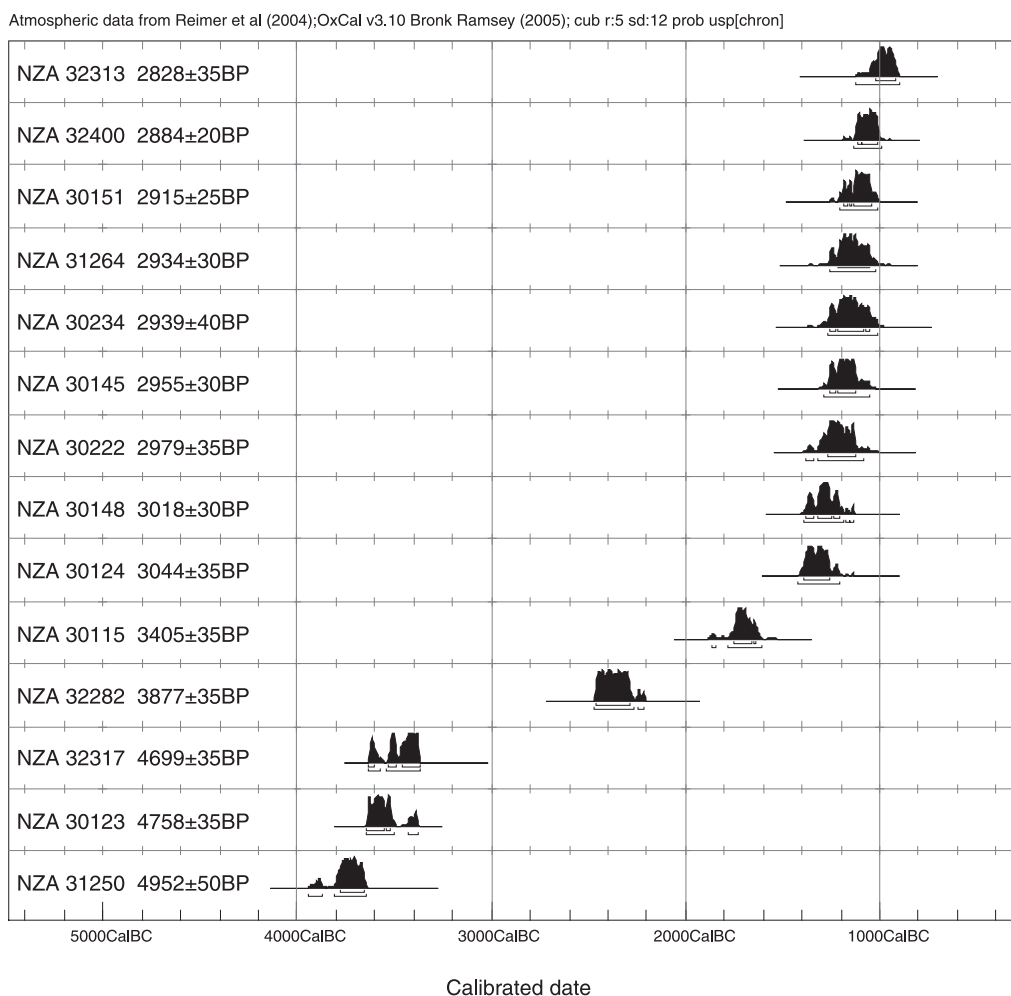


Fig. 2.46 Radiocarbon distributions for the Neolithic and Bronze Age features

## Results

### *Charcoal (sample 1826) from charred post within posthole 9539 in Site G*

The majority of charcoal, representing the remains of a burnt post within posthole 9539, was identified by Dana Challinor as oak heartwood. Because of the long-lived nature of oak, this material was not originally selected for dating; instead a sample of hazel (*Corylus avellana*) charcoal from within the posthole fill was submitted, since hazel is a much shorter-lived tree. It was hoped that the radiocarbon date would assist in establishing whether the enclosure was dug around an already existing monument, or was a contemporary part of the middle Bronze Age site. The resulting date of 3640–3380 cal BC (NZA 30123) is early Neolithic, which would imply either a much earlier monument, or that the selected charcoal was residual. A second date from the same posthole in Site G, this time from the probable remains of the charred post itself, was later submitted and also gave an early Neolithic date (NZA 32317:

3630–3370 cal BC). It therefore appears that the post is genuinely of this date, and the flintwork found within 20m presumably relates to it. The feature is therefore of similar date to pits 136 and 175 identified at Saltwood tunnel (Allen 2006).

### *Charcoal (sample 1814) from pit 9223 in Site G*

Pit 9223, just south-east of the middle Bronze Age enclosure in Site G, contained an early Neolithic leaf-shaped arrowhead and a flint knife. A fragment of *Maloideae* (apple/pear/hawthorn family) charcoal was submitted for dating, from a significant concentration of charcoal and burnt flint within this feature. The resulting date of 1780–1610 cal BC (NZA 30115) is later than anticipated, suggesting that the flintwork was residual, and is likely to indicate early Bronze Age activity beyond the confines of the enclosure.

### *Dating the regionally important Beaker pit 6161 on Site D*

Pit 6161 was the only Beaker pit found on the scheme; it lay at the edge of the chalk plateau above the dry valley at Tollgate Junction. It was, however,

only 150m from a double Beaker burial found during the HS1 excavations, located close to the highest point on the plateau. The pit is only the second from Kent to contain a diverse assemblage of pottery and struck flint, and given the continuing uncertainties about chronology within the Beaker period, clearly merited scientific dating.

Two samples were dated: charred residue from the interior of one of the Beaker sherds (sf. 1485 from context 6514) and a charred hazelnut shell from fill context 6163. The first of these gave a date which was far too early (NZA 31250: 3940–3640 cal BC), while the date from the hazelnut shell (NZA 32282: 2470–2210 cal BC) is very early in the Beaker period, but within the right general time frame. Regarding the first date, erroneous radiocarbon dates are known from about 10% of dated samples and probably result from contamination unrelated to individual laboratories or pre-treatment procedures (A Bayliss pers. comm.). In this case it seems likely that some older carbon may have become incorporated in the sample, possibly from the pot itself.

Since the decoration on the finest of the Beakers within the pit is likely to indicate a middle Beaker period date (S Needham, pers. comm.), the early Beaker date indicated by NZA 32282 may indicate repeated activity at this spot or episodic dumping within the feature over several centuries.

#### *Dating and sequencing the Bronze Age enclosures*

Two probable later Bronze Age enclosures were found, one on Site G and another on Site C. Such enclosures are still very rare in Kent, so one of the aims of the dating programme was to confirm their date and thereby to clarify the chronological relationship between them. Additionally it was hoped to establish the chronological relationship between the enclosures and the neighbouring cremations on Site C, and between Site C and the Bronze Age site at Coldharbour Road to the north.

The enclosure in Site G contained very few finds: three OSL dates indicated that the feature was infilled in the middle Bronze Age. A large mammal (cattle-sized) long bone fragment from a concentration of such bone was dated by AMS to the mid-late Bronze Age (1270–1010 cal BC: NZA 30234). This date fits into the 'gap' in radiocarbon determinations from Kent identified by Allen (2006). Late Bronze Age pits, for example at Saltwood Tunnel, Tollgate and White Horse Stone date to the period *c* 1100–800 cal BC, while others date to the middle Bronze Age *c* 1525–1250 cal. BC (ibid.). Since the bone came from a middle fill of the enclosure, the enclosure itself is likely to be a little earlier, possibly being dug towards the end of the middle Bronze Age.

There was a dark occupation soil within the fill of enclosure ditch 5892 in Site C, which also contained a substantial assemblage of Bronze Age pottery. The later Bronze Age, however, covers a long period and there are very few radiocarbon dates to calibrate the pottery dating more closely. Hence a grain of barley

(*Hordeum vulgare*) was submitted for AMS dating (sample 1518) to help tie down the pottery chronology as well as to provide a *terminus post quem* for the infilling of the enclosure ditch. The resulting date was 1420–1210 cal. BC (NZA 30124).

Worked bone point SF 551 was one of two well-preserved and very similar objects found within a middle fill (5451) of enclosure ditch 5892 in Site C, and was sent for radiocarbon dating to provide a second date for this context. It was dated to 1390–1190 cal BC (NZA 30148).

Viewed together, the two dates from this enclosure ditch suggest that the activity dates to the latter half of the middle Bronze Age, or very early in the mid-late Bronze Age. This is consistent with the Deverel-Rimbury traits evident on some of the pottery. Since the dates were obtained from a middle-upper fill of the enclosure ditch, the cutting of the enclosure is somewhat earlier, and likely to have occurred in the latter half of the middle Bronze Age.

#### *Cremations 5278 and 5017, adjacent to the Bronze Age enclosure in Site C*

Cremations 5278 and 5017 are two unaccompanied cremations lying north of a later Bronze Age palisade trench, some 35m west of enclosure ditch 5892 (see Fig. 2.21), and it was hypothesised that they might be of similar date. Cremated bone was submitted for AMS dating and the results indicate a middle-late Bronze Age date of 1290–1050 cal BC (NZA 30145) for cremation 5278 and 1320–1080 cal BC (NZA 30222) for cremation 5017, dates which overlap with those from the adjacent enclosure.

#### *Cremation 6010 in Site D*

An unaccompanied cremation (6010) in pit 6008 in Site D, approximately 150m east of enclosure 5892 (see Fig. 2.28), gave a late 2nd millennium BC date (1260–1020 cal BC: NZA 31264), which is consistent with the other cremations at the eastern end of Site C. This cremation is therefore an outlier from the occupation of this phase.

#### *Cremation deposit 7759 in Site B*

This cremation deposit with pit 7758 (see Fig. 2.25) lies not far from two high status late Iron Age burials, and establishing whether it was of similar date was important for understanding the extent and character of the late Iron Age burial group. Cremated human bone provided a later Bronze Age date of 1210–1010 cal. BC (NZA 30151) suggesting this burial was also of similar date to those from Site C.

#### *Animal bone from boundary ditch 5912 in Site C*

A disarticulated cattle metatarsal from layer 5298, the final fill of cut 5297 (ditch 5912) west of the middle Bronze Age enclosure in Site C (see Fig. 2.23), yielded a date of 1130–990 cal BC (NZA 32400) suggesting that a middle-late Bronze Age date is appropriate for this boundary.



*Four-post structures on Site E east of Tollgate Junction*

The postholes from this group of four-post structures contained only a few sherds of undiagnostic pottery, but a number of them contained a few charred cereal grains. Seeds from two postholes were dated, but one produced a modern date and was clearly intrusive (NZA 32283:  $-1697 \pm 25$  BP), while an indeterminate cereal grain from posthole 7047 (group 7099) gave a late Bronze Age date (NZA 32313: 1120–900 cal BC), which gives a *terminus post-quem* for the use of the four-post structures.

**DISCUSSION** by Tim Allen and Chris Hayden**The Palaeolithic and Mesolithic**

The only Palaeolithic finds—a pair of blade-like removals from Site A—were residual in a middle Bronze Age pit. Whilst the occurrence of such material is unusual, it is obviously of limited significance.

The quantities of flint which can be confidently assigned to the Mesolithic were also small. The only positively identified early Mesolithic piece was a bi-truncated rhombic point from the boundary of Sites F and G. The late Mesolithic was represented by a rod microlith from Site B and probably late Mesolithic backed bladelets from Sites F and G. The other material which can be confidently assigned to the Mesolithic comprises just two burins from Sites F and G and an axe, a micro-burin and a single-platform blade core from Site B. There was, however, a larger quantity of less diagnostic material, distributed much more widely, which can be assigned only to the Mesolithic or early Neolithic.

All of the Mesolithic and possibly Mesolithic material found along the A2 was residual. Given the lack of integrity of these assemblages and the chronological uncertainties associated with most of it, this material can only provide limited information about the distribution of activity across the landscape. It is, however, perhaps worth noting that the scarcity of material along the A2 is consistent with the results obtained along the HS1. There too it was noted that Mesolithic flint was scarce on the North Downs Chalk (Harding 2006, 16). Although the overall distribution of Mesolithic flint across Kent is clearly the product of many factors, and probably does not accurately reflect the distribution of Mesolithic activity (*ibid.*, 15–16), the fact that work along both the HS1 and the A2 have failed to reveal more evidence of Mesolithic activity could be taken to support the view that this area was little exploited in that period. It is nevertheless also worth noting that whilst the A2 runs predominantly over the Chalk, it does lie close to the Thanet Sand, and the few finds along the A2 could be seen as forming the northern end of a group of sites situated along the northern edge of the Downs, close to the boundary between these two geological units (*ibid.*, 22, fig. 6).

**The earlier Neolithic**

Evidence for early Neolithic activity was also sparse, but does include the earliest features identified along the route. The most intriguing is certainly the large ramped posthole found on Site G.

*The ramped posthole on Site G*

This feature (9539) was 1.6m long, 0.8m wide and 1.2m deep, and, to judge from the band of charcoal within it, contained a charred post with a diameter of up to 0.55m (see Fig. 2.3). A pair of radiocarbon dates were obtained from this feature, one on oak which may derive from the charring of the post; the other on hazel charcoal (see above). The dates pass a  $\chi^2$  test, indicating that they could have been from material of the same age. The two dates suggest that the post was erected in the period *c* 3640–3360 cal BC. Very little artefactual material was associated with this feature, just four small sherds, one of which, with a grog-tempered fabric, was probably intrusive, and a few pieces of flint.

No similar features were found on the site, nor were there any obviously structurally related features. The feature lies within a middle–late Bronze Age L-shaped enclosure, and whilst the evidence for the date of the remaining features in the area is sometimes slight, it seems likely that most of them were related to this much later enclosure. The posthole was found only when excavating a shallow hollow, the removal of which revealed its full extent. The whole area was lowered by machine at the conclusion of the excavation to ensure that no further features existed, and it is clear that the posthole did not form part of a larger structure.

Some 40m to the south-east of the ramped posthole, early Neolithic flint was also recovered from a number of features (pit 9223, postholes 9184, 9206 and 9212 and irregular feature 9199). A radiocarbon date from the pit (9223), however, gave a 2nd millennium cal BC date (1870–1610 cal BC; NZA 30115), and it is possible that all three features date from the early Bronze Age and that the flint was residual. The residual struck flint in these features was probably part of a larger surface scatter of flint, much of which appears to date from the early Neolithic, which was recovered from a natural hollow that ran north-west across the site and formed the upper end of a largely silted dry valley. Only a few m<sup>2</sup> of this surface could be excavated at the level of impact of the road at this point, but further Mesolithic and early Neolithic flint was recovered by limited machine excavation from its uppermost fills. The early Neolithic posthole lay at the very edge of this natural feature, where the ground began to level out. The ramped posthole therefore appears to represent the only dug feature, although there is evidence for further early Neolithic activity in the immediately surrounding area.

It is not easy to find convincing parallels for such an isolated feature. One possible parallel is offered by single standing stones—the ramped posthole

representing the remains of a wooden analogue. Although sites and monuments records contain numerous examples of such isolated monoliths (eg EH pastscapes), most are undated, and in the absence of other excavated remains they do not provide a very enlightening comparison. A tradition of single large monoliths derives ultimately from Brittany, where such features were important in the 5th millennium BC, and there are a few examples in Britain that are likely to date to the early Neolithic, such as the Rudston monolith. The fact that it is surrounded by four Neolithic cursus monuments suggests that in this case the monolith is also likely to be early Neolithic.

Large postholes associated with various kinds of monuments are a common enough feature in the Neolithic, though during the early Neolithic this is more apparent in Scotland (eg Balbridie) than further south, where close parallels in both form and size generally belong in late Neolithic monuments such as the Arminghall timber circle and henge or the Sanctuary (Cleal *et al.* 1995).

Similar features that are closer in date have been found associated with a number of early Neolithic mortuary structures and long barrows. In many cases, these large postholes form arrangements at the front of the barrow (eg a single large post at Badshot (Keiller and Piggott 1939) or more elaborate arrangements at Thickthorn (Drew and Piggott 1936) and Nutbane (Morgan 1959)) but they also occur in other locations (eg Giant's Hills; Phillips 1936). At Wayland's Smithy I (Whittle 1991), the wooden mortuary structure was constructed using two large D-shaped postholes. Large postholes were also found at the unusual early Neolithic enclosure at Godmanchester (McAvoy 2000). Evidence for the charring of posts was found at a number of these sites (eg Giant's Hills and Godmanchester).

These parallels, however, show only that similarly large posts were widely used in early Neolithic structures, and given the differences in their contexts, they do not shed much light on the significance of the Site G example. In the case of the large Mesolithic postholes in the Stonehenge Car Park, an analogy with totem poles was suggested (Cleal *et al.* 1995). In this context, however, the term 'totem pole' signifies little more than a post with ritual or religious associations, since the more particular significance of totem poles are not likely to have been paralleled in either Mesolithic or early Neolithic southern England. The totem poles of the Pacific North-west coast were produced by semi-sedentary hunter-fishers societies and had very specific social and cosmological associations. They were, in any case, usually associated with settlements, rather than having been isolated structures (Hawthorn 1979). Other historical parallels, such as the use of poles by the Maori (Sahlins 1985), reveal equally specific cosmological and social associations, and the limitations of any specific ethnographic analogy.

The importance of this ramped posthole lies partly in the recognition that single timber posts

were erected in the British early Neolithic, since by their very isolation they are often likely to pass unnoticed. It is possible that the post was intended as a marker to those emerging from the dry valley onto the level plateau, perhaps signifying a change from wooded to more open landscape, or a territorial marker, but more of these postholes will need to be recognised before any pattern in their locations or associations can be recognised.

The early Neolithic activity on the A2 is merely one facet of a varied picture of exploitation of the local landscape at this time. Apart from the house at White Horse Stone (Hayden 2006), there are no large early Neolithic 'houses' known in Kent, and current evidence suggests a lifestyle that was still semi-mobile, so that a single Neolithic community might occupy a considerable territory. The early Neolithic activity shown by struck flint at Pond D North, some 1.7km to the east of Site G, probably represents another short-lived occupation site within such a territory. Only 800m to the west of Site G was the Tollgate rectangular enclosure, probably a mortuary enclosure. Limited investigation (Bull 2006a) did not establish its date with certainty, but such monuments are known very early in the Neolithic, for instance at Dorchester-on-Thames (Whittle *et al.* 1992) and Radley (Bradley 1992) in Oxfordshire. Earliest and early Neolithic pits were found to the west at the A2/A282 junction in the Darent Valley, and others at the Darent Gravel Pit site (Simmonds *et al.* 2011, 64–5 and 185–8), while the eponymous site of Neolithic Ebbsfleet Ware lies less than 3km to the north-west down the Ebbsfleet Valley. Recent radiocarbon dates (eg Cotton and Field 2004) have shown that early Ebbsfleet Ware overlaps with Plain Bowl pottery, and can be dated between 3500 and 3300 cal BC, and so may also be contemporary with the activity on the A2.

While it was found as a curated item in an Iron Age pit, the Cornish granite axe from Site C is likely to have been rediscovered locally, and so is important evidence of the wide-ranging contacts of the Neolithic community in this area.

### **The late Neolithic/early Bronze Age**

The late Neolithic/early Bronze was again not extensively represented along the route of the A2, but, alongside residual flint, a number of deposits in small pits were found on Sites D, F and G (see Figs 2.1–2). The chronology of these pits probably varied. The only well-dated pits of this period on Site D (6161–6512 and 6910) were associated with a rich assemblage of Beaker pottery, and may have been earlier in date than a single well-dated pit of this period on Site F (8038), which contained the rim and collar of a Collared Urn as well as abraded Beaker sherds. The pits on Site G have been dated on the basis of associated flint and can only be generally assigned to the late Neolithic/early Bronze Age.

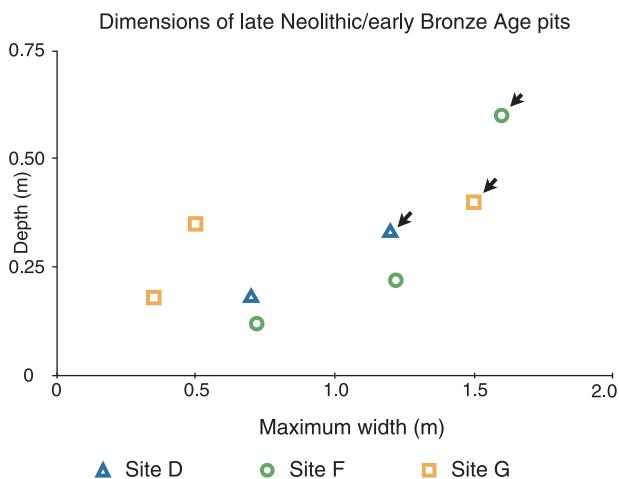


Fig. 2.47 Dimensions of late Neolithic/early Bronze Age pits

Although they were all quite shallow, the width of the pits varied considerably. The most securely dated of the pits (6161, 8038 and 9223) were the largest (Fig. 2.47), all consisting of quite wide (1.2–1.6m) but not very deep (0.3–0.6m) features, sizes which Garwood (2011) suggests are typical of rich late Neolithic/early Bronze Age pits elsewhere. The remaining smaller features shown in Fig. 2.47 are not securely dated, although pit 9407 did contain probably late Neolithic/early Bronze Age flint.

There were very marked differences in the assemblages associated with these pits. Most of them contained quite small groups of finds without any pottery (the primary reason why these pits are poorly dated), and with just a few pieces of flint and minimal animal bone. Pit 6910 stands out as the only pit with a large quantity of animal bone, but unfortunately it is not securely dated. The assemblage recovered from pit 6161 is also unusual in that it included 221 sherds (960g) of pottery, from at least 17 decorated Beaker vessels and two undecorated vessels, as well as 496 flints, consisting mostly of flakes but including a few blades, cores, side and end scrapers, a spurred piece, a notch and a large number of chips. In addition, a few fragments of animal bone (none of which could be identified) a grain of cereal (unidentified), some vetch or vetchling, hazelnut shells, and some charcoal were recovered.

A contrast similar to that between pit 6161 and the other late Neolithic/early Bronze Age pits on the A2 was also noticed amongst the pits of similar date along the HS1 (Garwood 2011), and in particular the rich assemblage recovered from a pit (1374) at Beechbrook Wood (Brady 2006a). This pit was a large shallow feature similar in size to pit 6161, and contained 111 sherds (1616g) from at least 14 Beaker vessels, 1370 pieces of worked flint (including nearly 1000 chips), a few fragments of cremated human bone, fired clay, a pestle, and a rich assemblage of charred plant remains. A

number of wider parallels for such rich late Neolithic/early Bronze Age deposits are noted by Garwood (2011).

The interpretation of such deposits is problematic. On the one hand they are undeniably rich compared to other, contemporaneous pit deposits, and yet they still contain only the partial remains of broken vessels—albeit sometimes finely decorated—as well as a range of other material which suggests a mixture of domestic debris rather than specially selected material. Garwood (2011) suggests that such material derives from middens. He goes on to argue that such rich deposits were used to mark key boundaries in the landscape, material from middens having been selected because of their symbolic associations with various aspects of domestic life.

The radiocarbon date from pit 6161, which is a couple of centuries earlier than the date range attributed to the majority of the decorated vessels, could be seen as strengthening the suggestion that it came from a long-lived midden. There are, however, also indications that it did not contain a random selection of material. All of the decorated Beakers of which the form and size could be determined were quite small, whereas the two undecorated vessels were larger. The pottery could therefore have been the remains of a set of vessels used to serve and consume some kind of drink. Even if the vessels were not all contemporary, they might still represent particular acts of consumption repeated on successive visits. From the excavations to date there is no evidence of a significant boundary to which pit 6161 was related, although if the radiocarbon date on a charred hazelnut is residual, then the date indicated by the pottery vessels is broadly contemporary with the double Beaker burial on the HS1 just to the south. The burial was placed close to the highest point on the plateau, and may well have become the focus for repeated visits. Alternatively it is possible that the 'boundary' was not marked in an archaeologically visible way, relating instead to a natural feature such as the Tollgate dry valley itself, which the pit's location overlooks. One final possibility, relating both to the double burial and pit 6161, is that the position of these features was intended to reference the Tollgate mortuary enclosure immediately opposite on the east side of the dry valley. This monument would almost certainly still have been visible at this time. Only limited investigation of this monument has been carried out (Bull 2006a), and so, while there were clearly no late Neolithic and early Bronze Age deposits to the north and south (on the lines of the A2 and HS1 respectively), it remains possible that such deposits were made close to the monument itself. On current evidence, however, the positioning of these Beaker deposits might indicate a deliberate opposition to this relic of the past.

There are, then, very marked differences in the way in which such deposits could be interpreted,



and the different possible interpretations have very different consequences for our understanding of late Neolithic/early Bronze Age society. A proper treatment of this issue would require a more detailed and wide ranging analysis of the contents of late Neolithic/early Bronze Age pit deposits than is possible here (but see Thomas 1999).

One way of accounting for such deposits, and for the contrasts with other contemporaneous pit deposits, would be to suggest that rubbish deriving from different kinds of activities was classified and treated differently. Ethnography provides numerous examples, from very different contexts, of such classifications and of the widespread idea that the mixing of different categories may cause pollution (eg Moore 1986; Dumont 1970; Valeri 1985; Hanson and Hanson 1983; including examples which relate specifically to pottery: Miller 1985, 24, 155). Such classifications are invariably culturally specific and often of great complexity, and it is unlikely that archaeological evidence will ever provide much insight into the details of such systems in prehistory. The suggestion here is that a classification of this general sort may provide an explanation of why apparently exceptional assemblages were deposited in pits. The purpose of the burial in this case would be to prevent further contact with the material (rather than to mark a particular location), and it would have been the special status of the material which made such burial necessary.

### **The middle and late Bronze Age**

A wide range of evidence for middle and late Bronze Age activity, both domestic and funerary, was found along the A2. Perhaps the most significant consists of a pair of probably middle Bronze Age L-shaped enclosures on Sites G and C, both of which were associated with metallised lengths of probable trackway (see Figs 2.10 and 2.21). The enclosure on Site G was associated with evidence of domestic activity, including a roundhouse and a variety of pits and hollows (see artist's reconstruction in Fig. 2.50), while the interior of that on Site C was not. On Site C, however, there were other gullies or palisade slots adjacent, and the area became a focus for cremation burials. Smaller groups of features—pits and postholes—found on Sites A and D, are more difficult to interpret but may also have been related to domestic activity. The pits on Site A probably date from the transition from the middle to the late Bronze Age. The postholes and pits on Site D are very poorly dated, but may date from the middle Bronze Age.

The funerary evidence consists of three small deposits of cremated human remains in small pits. Two such deposits (5017 and 5278), found amongst a small group of pits on Site C, date from the 13th or 12th centuries cal BC, and another on Site D (6010) probably to the 12th century cal BC. A similar but isolated deposit found on Site B (7758) probably dates from the 11th century cal BC.



*Plate 2.11 Site L middle Bronze Age cremation burial 12510 showing fired clay at base*

A more unusual middle Bronze Age deposit (12510) was found in an isolated pit on Site L (see Fig. 2.26). The deposit consisted of a Deverel-Rimbury urn, and the remains of two cups and other vessels, lying upon a large deposit of fired clay (Plate 2.11). The urn may have contained a deposit of cremated animal remains.

### **Chronology and ceramics**

As the brief summary of the middle and late Bronze Age remains found along the A2 given above indicates, the chronology of some of the features assigned to this period is uncertain. The most securely dated features are the pits containing cremated human remains for which radiocarbon dates have been obtained. These dates indicate that they date from the end of the middle Bronze Age and the beginning of the late Bronze Age (the 13th to the 11th centuries cal BC).

Radiocarbon dates were obtained from the ditches associated with the enclosures on Sites G and C and with a boundary ditch (5912) on Site C. Unfortunately the only material available for dating was found in the upper or middle fills of these ditches, and the results therefore only provide *termini ante quem* for the dates at which the ditches were cut. A sequence of OSL dates was also obtained from the enclosure ditch on Site G, but the errors associated with them are too broad to give a very useful indication of the chronology of the ditch. Pottery has, therefore, also been used to define the chronology of these sites. Much of the pottery recovered from the ditches was, however, also recovered from upper levels of fill, and in addition, was highly



fragmented so that few diagnostic pieces were found. It is, nonetheless, possible to make some useful observations on the basis of the pottery.

Pottery with typical Deverel-Rimbury characteristics was recovered from the enclosure and associated features on Site G, the enclosure ditch (5891), a pit (5280) and a gully (5740) near the cremation deposits on Site C, the pits on Site A, and the pit associated with the cremated animal remains in Site L. The range of fabrics from which this pottery was made varied. In the case of Site G almost all of the pottery was in flint-tempered fabrics, which Morris has suggested (on the basis of the ceramics recovered along the HS1) is typical of middle Bronze Age assemblages in Kent (Morris 2006). This material was very fragmented, however, and virtually no diagnostic forms were recognised. At some of the other sites a wider range of fabrics was recovered, and the pottery report suggested that some of these were more appropriate to the late Bronze Age (or even later). In the case of the ditches (most of the pottery from which was in the upper fills) this might be argued to be due to mixing of ceramics of different dates, but the pottery forms, and the associated radiocarbon dates, indicate otherwise. The diagnostic forms recovered from the Site C enclosure ditch were without exception Deverel-Rimbury forms (Couldrey and Mullin this vol.).

Both the Site L pit and the two pits on Site A also contained pottery that could belong to the late Bronze Age Plain Ware tradition: a rounded shoulder in the case of the Site A pits and plain inturned and upright rims in the case of the Site L pit. It therefore seems likely that these two assemblages date from the transitional period between the middle and late Bronze Age to which Morris, in particular, has drawn attention (Morris in Brossler *et al.* 2004, 58–90; Morris 2006). Cremation pit 5278 on Site C also yielded a transitional middle/late Bronze Age radiocarbon date, supporting the view that much of the activity could belong late in the middle Bronze Age. Also on Site C, the pottery from pit 5280 was entirely in flint-tempered fabrics, but, alongside the Deverel-Rimbury pottery, the assemblage included a fine burnished vessel with a short everted rim and a slight internal bevel that could belong to the Plain Ware tradition. This suggests a transitional date, and that the adoption of new forms was not necessarily paralleled by the adoption of new fabrics.

Rather than being chronological, it is also possible that the variation in fabrics was related to differences in geography. Mullin and Brown (this vol.) note that it is the assemblage from Site G that stands out from the more mixed groups found further west along the A2. All of the other sites lie on the chalk plateau west of the dry valley at Tollgate; Site G is the only site to the east.

In conclusion, the evidence suggests that much of the later Bronze Age activity found along the A2 may have taken place within a limited period of time. There is no clear evidence for activity prior to

the 14th century cal BC. Similarly, although there are a number of ceramic assemblages that contain both Deverel-Rimbury and Plain Ware pottery, and which may date from the transition between the middle Bronze Age and the late Bronze Age, no purely Plain Ware assemblages were recovered. Apart from the isolated cremation deposit on Site B, no clear evidence was recovered for activity in the 11th and 10th centuries cal BC, although the mixed assemblages from the boundary ditch (5912) on Site C or from the pits on Site A (if the Deverel-Rimbury pottery was residual) might also belong to this period.

In the vicinity of the A2, the site at Coldharbour Road provides well-dated remains (Mudd 1994). The driveway and ditches there were associated with pottery that may date from the middle to late Bronze Age transition, while a number of radiocarbon dates obtained from the site provide dates that span the period from about 1500 to 900 cal BC, extending the range from adjacent Site C. Although middle and late Bronze Age remains were not extensive along the HS1, they have revealed material from a wider date range than those found in the A2 excavations. At Cobham Golf Course, for example, a ditch marking the line of a hedgerow and a small scatter of pits and postholes were associated with Deverel-Rimbury pottery (Davis 2006). A radiocarbon date on charred residue from one of the Deverel-Rimbury sherds gave a date 1530–1390 cal BC (NZA-23006), earlier than the A2 evidence. Two scatters of pits and postholes associated with Plain Ware pottery, as well as a linear spread of flint, charcoal and gravel pebbles, were also found. A second radiocarbon date on charred residue from this pottery gave a date of 980–820 cal BC (NZA-21143). The remaining sites in the area provide much more fragmentary and uncertain indications of late Bronze Age activity. At Springhead, for example, late Bronze Age finds were recovered from a probably secondary context in a colluvial layer. At the West of Church Road site, two pits associated with late Bronze Age pottery were found, and it was suggested that a ditch might also belong to the same phase of activity (Bull 2006). It is worth noting, also, that a deposit of burnt flint found in the evaluation at Springhead might have been the remains of a burnt mound. Although not dated, such features are typical of the middle and late Bronze Age.

#### *The L-shaped enclosure and settlement on Site G*

The Site G enclosure consisted of a substantial ditch on the west and south sides, with much slighter gullies along the south-east, flanking, and partly overlain by, a metalled trackway (see Fig. 2.10). The ditch had steep sides and a narrow V-profiled bottom, and at its deepest (1.5m on the west) was almost of defensive proportions. The barrier created by the ditch may also have been enhanced by an internal or external bank. The ditch fills show no clear or consistent indications of bank slip from one

side or the other. There were no features immediately outside the ditch on the west side, and there was a band devoid of archaeological features inside the enclosure, interrupted only by gully 9539 and fence line 9612. There was however a gap 7–8m wide on the west, presumably for an entrance, but there were no traces of gate postholes suggesting that the ditch and bank were not intended for defence. Running along the south-east side of the enclosure was a metalled trackway, flanked by a much smaller gully; several large pits or hollows lay close to this ditch, making a substantial bank unlikely along this side. The area enclosed by the ditches is uncertain, but is likely to have been at least 55m by 65m, ie upwards of 0.35ha. The enclosure contained a small post-built roundhouse, a fence line and a collection of large and small pits or hollows.

Largely as a result of the work of Ellison (1978; 1981; 1987) on sites in Sussex and the south-west, an image of the typical form of middle Bronze Age settlement in southern England has developed. The standard domestic unit in these settlements 'comprised one large circular living hut, one or two subsidiary huts, and storage structures, either in the form of small pits or four- and six-post structures' (Ellison 1978). She suggested that it was 'probable that each such unit was occupied by a small kin group practising mixed agriculture in the area around the settlement site, and owing to the lack of evidence for the replacement of posts in most cases, that each unit was occupied for a fairly short length of time' (*ibid.*). This image has proved durable, being cited recently by, for example, Bradley (2007), Brück (1999a, 145), Woodward (2008), and Fitzpatrick *et al.* (2007).

Reviewing the middle Bronze Age settlement evidence from Kent, in the context of his discussion of finds along the HS1, Champion has, however, recently noted that the HS1 provided little evidence of this type of settlement in Kent (Champion 2011). Along the HS1, he notes that 'occupation typically covered an unenclosed area about 20–40m across, with a low density of postholes and shallow pits, though individual structures were difficult to discern' (*ibid.*).

Although the evidence from the enclosure on Site G is less complete, there are sufficient similarities with sites from the same period in Sussex and other areas of southern England (and perhaps Northern France; Desfossés *et al.* 1992) to suggest that it was a small domestic site.

#### *Features within the enclosure*

Before examining the character of the features within the enclosure, it is worth noting that it is impossible to demonstrate that the internal features were contemporary with the enclosure ditch. Although the distribution of the features, almost all of which lie within the Site G enclosure, might be taken to imply that they were related to it, it has been suggested (eg for Down Farm: Barrett *et al.* 1991; Mile Oak: Rudling 2002) that the settlement features (such as roundhouses) at a

number of similar sites elsewhere predated or postdated the enclosure. At Site G, almost no finds were recovered from the postholes, and, even in the case of the larger features that did contain pottery similar to that recovered from the enclosure ditch, strict contemporaneity is impossible to establish. It nonetheless seems likely that these features were contemporary with some stage of the life of the enclosure.

The features found within the Site G enclosure consist of a roundhouse, a short posthole alignment, other postholes amongst which no structures could be discerned, and a range of pits and hollows. This range of structures and features is sufficient to suggest the existence of a small farmstead. Due to the recovery of only part of the enclosure, however, it is not possible to undertake any meaningful detailed analysis of the arrangement of these structures to compare with those carried out of sites in Sussex by Ellison (1978; 1981; 1987) and others (eg Drewett 1982). A few observations can, however, be made.

The roundhouse, represented by a single ring of posts with a diameter of 4.0–4.5m, is comparable to the smaller examples analysed by Ellison (1981, fig. 15.1), even if, as indicated by the plan of the roundhouse from East Valley Farm near Dover (Parfitt and Corke 2003), these posts formed an inner ring with the wall a metre or so further out. It was smaller than any of her 'major residential structures' (all of which have a maximum width of at least 6m; Ellison 1981, fig. 15.1, 419). She interpreted most of the buildings similar in size to the Site G roundhouse as ancillary structures—structures with a high proportion of features associated with food storage and preparation (Ellison 1981, 419). Brück's analysis of the finds from 48 middle Bronze Age roundhouses has, however, already called into question the distinction, in terms of artefacts, between Ellison's major residential and ancillary structures (Brück 1999a, 151, fig. 3). Ellison's third category of building was animal shelters, which were characterised by the absence of domestic finds (but also by extensive wear to the floor). The roundhouse on Site G lacked a surviving floor; it was not associated with any pits and two flint flakes were the only artefacts recovered from the postholes. The absence of evidence associated with the Site G roundhouse may simply be an artefact of truncation, but makes it impossible to characterise further. It is, however, worth noting that although quite large assemblages of artefacts were recovered from the roundhouses in Sussex analysed by Ellison, it is not unusual for roundhouses elsewhere to have few associated artefacts.

The other features found within the enclosures can also be paralleled elsewhere. On Site G a short alignment of postholes (9612) might have been the partial remains of a fence. The alignment on Site G lies close to the edge of the excavation and it is, therefore, impossible to see what role it might have played in organising space within the enclosure. One possibility, for example, is that it defined a small pen behind the roundhouse. The presence of a

short stretch of gully that roughly follows the line of the postholes suggests that a boundary in this location may have been renewed.

Further postholes were also found amongst which no structures have been recognised. Their presence nonetheless implies the existence of other structures, even if they were no more than isolated tethering posts.

A variety of pits and hollows were also found within the enclosure. None of the pits (all but one of which were less than 0.4m deep) were deep enough, or had a sufficient depth to surface area ratio, to have been used as grain storage pits. None of them contained large quantities of artefacts and it does not, therefore, appear that they were used as rubbish pits (at least for materials that have survived). The large circular features are similar to those elsewhere interpreted as ponds, but analysis of the soils from the largest (9293) has shown no evidence of water-lain deposits, and phytoliths suggest instead the processing of cereals. This example may therefore have been something akin to a threshing floor, and may justify the use of the term 'working hollow', denoting a large open feature used for any of a variety of agricultural functions. The function of the linear hollows is also unclear, although it is possible that they were quarry pits cut to provide material for a bank along the SE side of the enclosure (see also below). Such hollows may have been used as pig wallows at certain times of the year.

No comparable sites were found during the HS1 investigations, or in previous work in Kent. A middle Bronze Age roundhouse was found at East Valley Farm near Dover (Parfitt and Corke 2003), but it does not appear to have been associated with any form of enclosure. The remains of an enclosure were found at South Dumpton Down (Perkins 1995, 468–70), but in this case the enclosure does not appear to have been associated with domestic features. More recently a horseshoe-shaped enclosure some 45m across, consisting of several lengths of ditch of probable middle Bronze Age date, was found at the A2/A282 junction (Simmonds *et al.* 2011, 68–9), and was radiocarbon-dated to 1610–1410 cal BC. Like South Dumpton Down, however, this was not associated with any surviving internal features.

#### *Spatial structure within the enclosure*

Despite the only partial excavation of the enclosure, there are some indications of ordering within it. The pits and hollows are clustered in the south-eastern part of the enclosure, whilst the roundhouse and fence lie in the north-western part. The distribution of artefacts, however, provides few clues. The quantities of pottery and flint—the most frequently occurring finds—seem to be related to the size of the features rather than the distribution of activities. Fired clay was recovered only in small quantities, but this again seems to follow a similar pattern, most having been recovered from the large circular hollows. The range of finds, which included pottery,

fired clay including a loomweight/oven brick, flint, querns, as well as a small fragment of copper-alloy from an unidentified object, is consistent with the interpretation of the site as a small agricultural homestead.

The distribution of charred plant remains provides a tentative indication of the location of some activities. Charcoal occurred across the whole site in a wide range of features, but charred plant remains were recovered only from the south-eastern part of the site (although in minuscule quantities). The small quantities suggest that they consist of stray fragments (rather than deliberate dumps), and their distribution may, therefore, relate directly to the distribution of activity within the enclosure. This suggests that grain storage, processing or cooking may have taken place in this part of the site. The charred plant remains include chaff as well as grain, perhaps suggesting that grain was threshed within the enclosure. This very tentative interpretation is strengthened by the phytolith evidence from hollow 9293, which suggested that the threshing of cereals was taking place there. Most of the fragments of quern were also found in this part of the site (in large circular hollows 9293 and 9231 and medium-sized linear hollow 9235), although a further fragment was also recovered from the northern-most enclosure ditch (9178).

Although the quantities recovered were again small, the animal bone also had a striking distribution. Almost all of what was recovered was found in the enclosure ditch, and in particular in their termini (from cut 9177 at the southern end of ditch 9178; and cut 9489 at the southern end of ditch 9179). There were also small amounts in a small pit outside the enclosure (9212) and in two shallow gullies, one (9462) again outside the enclosure, the other (9613) in the gap between the enclosure ditches in the southern corner of the enclosure.

The distribution of the animal bone can be interpreted in different ways. Brück (1999a, 152), for example, has noted that 'odd' deposits in middle Bronze Age settlements (which include deposits of animal bone) are often found in the ends of ditches and suggests that they were 'ritual' deposits which reflect Bronze Age rationalities (Brück 1999b). The concentration of animal bone at the end of the enclosure ditches at Site G could be one of these. More prosaic explanations are, of course, also possible. The overall pattern of deposition of animal bone on Site G is concentrated at the periphery of the site, a pattern similar to that noted by Wilson (1996) at a number of Iron Age and Saxon sites. He suggests that this reflects the way in which animal remains were disposed of, rather than the location of any associated activity. It is, however, noticeable that (with the exception of the deposit in the northern-most enclosure ditch (9178)) most of the animal bone was recovered from the area around the southern corner of the enclosure. This may reflect the fact that butchery occurred in this corner of the site or that this part of the site was associated with waste. The animal bones



in the enclosure ditches mostly came from middle and upper fills, and need not, therefore, have been related to the primary use of the enclosure.

The small quantities of animal bone and charred plant remains do not allow any detailed inferences concerning the site's subsistence economy, beyond the fact that the evidence suggests a mixed agropastoral economy including some hunting of wild animals.

Outside the enclosure, struck flints of later Bronze Age character have been found both west of the dry valley in Site F and in Iron Age storage pit 9010 some 70m to the east. While it is possible that the latter in fact represents early Iron Age flint-working, it is at least as likely that the flints are residual in these pits, and that the material to east and west represents Bronze Age activity in the hinterland of the later Bronze Age enclosure.

#### *The duration of the settlement*

The limited quantities of artefacts and numbers of structures associated with the Site G enclosure could be taken to indicate that the site was only occupied for a short period. This would be consistent with Ellison's (1978) characterisation of middle Bronze Age settlement as lasting for 'only a fairly short length of time', citing the lack of evidence for the replacement of structures in support. This conclusion is also borne out by Brück's analysis of middle Bronze Age settlements, in which she found that 75% of buildings in her sample had been neither renovated or rebuilt (1999a, 146), and that only one phase of occupation was represented on most sites. She relates the relatively short occupation of middle Bronze Age settlements (compared to late Bronze Age settlements such as Reading Business Park: Moore and Jennings 1992; Brossler *et al.* 2004) to the life cycle of their residents and to a neo-local pattern of residence (a pattern of residence in which, after marriage, residence is established in a new location separate from that of the parents of both the husband and wife; Keesing 1975). Another significant factor governing the replacement of structures is the nature of occupation, whether permanent, seasonal or repeated on a longer time cycle. Brück (1999a, 149) also notes certain complexities in establishing a more precise estimate of what 'short-lived' implies, notably the fact that there is no reliable way of estimating how long wooden structures such as roundhouses could have survived. The publication of the results of excavations along the Brighton Bypass (Rudling 2002), has however highlighted the variation in the longevity of middle Bronze Age settlements. Radiocarbon dates from the site at Downsview, where the remains of 13 roundhouses were found, suggest that the site was occupied for between 580 and 860 years in the middle and late Bronze Age.

The small quantities of artefacts recovered from Site G do not necessarily provide a good indication of the longevity of occupation. It is clear from the overall distribution of middle Bronze Age finds

along the A2 that much material was dispersed and deposited in features elsewhere. There are a number of cases where assemblages of artefacts were recovered from features that do not seem to have been directly associated with settlement, and which suggest either that material was removed from settlements for deposition elsewhere, or that activities themselves occurred away from settlements. For example, the large boundary ditch (5912) found on Site C, which does not appear to have been closely associated with any domestic features, nonetheless contained quantities of pottery and animal bone, as well as some fired clay. This phenomenon is not confined to the A2; for example, a similar deposit was found in a middle Bronze Age ditch at some distance from other features at White Horse Stone (Hayden 2006, 107–8, 113–14).

Most of the finds from the Site G enclosure consist of small fragments, which perhaps escaped any attempts to manage rubbish on the site. In the ditches the only large groups of finds occur in the middle and upper fills, and it is possible that this material became incorporated in the ditches only when, or after, the occupation of the site came to an end. The absence of material from the lower fills of the ditch could then be interpreted as evidence that waste was more carefully managed while the enclosure was in use. In her review of ethnographic evidence for the way in which material was discarded in a wide range of contexts, Murray (1980) found that on sites that were occupied for longer than a season, waste was not left *in situ*. Because of variation in the way in which material is discarded, the quantities of finds on a site do not, therefore, necessarily tell us anything about the duration of occupation.

The density of features associated with a settlement are the product of a range of factors, including the longevity of occupation, the frequency with which structures were replaced, the number of occupants, and cultural norms concerning living space. All of these attributes may have varied social and cultural correlates; for example, old structures may be abandoned following a death, and new ones put up for each generation, or old structures may be inherited. A settlement may expand as the size of a family increases, or children may leave to establish new settlements. It is, as a result, impossible to make simple inferences from the number and density of features to the size and length of occupation. There were, nonetheless, a few indications of renewal or renovation on Site G: the possible renewal of the boundary marked by posthole alignment 9162 and gully 9359, and the stratigraphic sequences of hollows, gullies, pits and the enclosure ditch along the south-eastern side of the enclosure. There is no indication that the roundhouse was rebuilt or that the porch posts were replaced (Reynolds 1995; although note that Brück (1999a, 158) suggests that rather than reflecting maintenance of porches, the larger size of porch postholes may reflect architectural elaboration of the entrances).



Overall, it appears likely that Site G was occupied for a relatively short period of time, perhaps as little as a single generation of occupation. On the A2 scheme the middle-late Bronze Age transition was the period of greatest activity within the later Bronze Age, and there is a relative paucity of late Bronze Age activity following this. The picture is similar at Coldharbour Road and along the adjacent part of the HS1, although on other sites in the area, such as at Darenth and at the A2/A282, late Bronze Age cremations and settlement features have been found (Simmonds *et al.* 2011, 69–71). Some degree of settlement shift or dislocation may therefore have occurred, although given the large areas still unexplored, it would be ill-advised to suggest a reduction in population in this area in the late Bronze Age.

### *The enclosure on Site C*

The L-shaped enclosure ditch on Site C provides interesting similarities and contrasts to the partial enclosure on Site G (see Fig. 2.22). The ditch was of similar proportions and profile to that on Site G, particularly in view of the location of the Site C enclosure on the highest part of the plateau, where erosion is likely to have been most severe. The enclosure was obliterated by a post-medieval dene hole at the north end of the site, but did not reappear in the A2 Activity Park some 20m further north, so either terminated or turned in between the two. No return was seen on the east, indicating that this was open. Just as on Site G, the large ditch enclosed the west and a little of the south side, but the latter arm of the ditch was much shorter than the western arm, and east of this there was no boundary ditch. Two groups of postholes on the outer (west) side of the ditch may also have been Bronze Age, and their proximity perhaps makes it unlikely that the ditch had an outer bank. On the inside, however, there was a band devoid of features, so an internal bank may have existed. Unlike the Site G enclosure there was only one gap or entrance in the ditch, some 4m wide, but in common with Site G there was no trace of any postholes for a gate.

The area enclosed by the ditch on Site C was considerably smaller than that on Site G, only some 17m east-west and perhaps 40–55m north-south, or a total of around 0.1ha. A band of cobbles ran parallel to the ditch and passed through the gap in the southern side, and this now appears to have been man-made, a continuation of the metalled holloway identified in the A2 Activity Park excavations (Dawkes 2010). Their investigations suggest that the metalling is unlikely to be as early as the enclosure ditch (ie middle Bronze Age), but indicate the probable line of an earlier route contemporary with the ditch.

Although no internal features have been positively identified as relating to the ditch on Site C, the ditch itself contained a large assemblage of

finds, and of as great a variety, as the enclosure and settlement in Site G. As on the enclosure in Site G, almost all of the finds in the Site C enclosure came from middle or upper fills, perhaps indicating the maintenance of these enclosure ditches, and the avoidance of deposition within them, until a late stage in the occupation. The material found in the Site C enclosure ditch comprised pottery, fired clay including a loomweight/oven brick fragment, animal bone including bone tools, charred plant remains and struck flint. This material suggests that a similar range of activities was carried out in the vicinity, even though no traces of structures have survived.

It is possible that the absence of relatively shallowly-founded structures such as the roundhouse at Site G is simply due to destruction by ploughing. The fact that two four-post structures were found adjacent shows that truncation had not removed all postholes, but these were more substantial than those of the house. Some of the large hollows on Site G (eg 9537) were also very shallow, and might have been removed by truncation, although others such as 9239 and 9558 should have survived in part. Alternatively, the activities that generated these finds and environmental deposits may have been carried out without the need for below-ground features, perhaps indicating varied practices within the local Bronze Age communities of this area.

### *The nature and function of the enclosures*

At both Sites G and C, although only part of the enclosure lay within the area of the excavation, it appears that the enclosures were only partial, or at least that the character of the boundary of the enclosure was marked in different ways in different places. This is not unusual. While some middle Bronze Age settlements such as Corporation Farm, Abingdon, appear to have been substantially enclosed (Shand *et al.* in Barclay *et al.* 2003, 37–40), others, as at Site G, were only partly enclosed, or unenclosed, eg Cotswold Community, on the Gloucestershire–Wiltshire boundary (Powell *et al.* 2010). Even Corporation Farm had large gaps in the ditches on the south-east side. In some cases it is apparent that whilst the ditches and banks of such apparently partial enclosures extended only part of the way around the settlement, other forms of boundaries marked the other sides. At Site G, while there was no indication of a deep ditch along much of the south-east side of the enclosure, shallow gullies and linear hollows did demarcate a boundary, which may have existed above ground as a hedge. At Plumpton Plain Site A, in Sussex, the banks were apparently created by scraping sediment from the interior of the enclosure rather than by digging ditches (Holleyman and Curwen 1935, 16, figs 8 and 9). It is possible that some of the linear hollows at Site G, especially those which lie parallel to the south-eastern side of the enclosure, could be

explained as quarries which were used to provide material for a small bank. There may perhaps have been a fence erected along such a bank, or a hedge established upon it, all trace of which has now been removed by ploughing.

Even accepting that the sides of the enclosure without substantial ditches could have been marked in some other way does not remove the very marked differences in the boundaries on different sides of the enclosure at Site G. The ditches that defined the boundary of the enclosure to the south- and north-west were quite substantial, measuring between 1 and 1.5m deep. Furthermore, it appears that their original profile was quite narrow, perhaps just over 1m, and that they had quite steep sides. The reasons for this asymmetry are unclear. It could, perhaps, be explained in quite prosaic terms. It is possible, for example, that animals were grazed to the north and west of the enclosure, and that a more substantial boundary was required to keep the animals away from the houses on this side. The presence of a wide gap on the west, however, without evidence of a gate, perhaps indicates otherwise. The boundaries may perhaps have been intended to structure space to create a relatively open front to the settlement and a more closed, protected back, as appears to be the case at Itford Hill in Sussex, where the house entrances lie on the south-east (Ellison 1978). Brück, however (1999a, 160, note 3), suggests that 'monumental' boundaries were placed only on the sides of the settlement which would have been seen as an outsider approached. In her view, then, the ditched boundary would form the 'front' of the settlement, rather than the back. For example, on Cranborne Chase at Down Farm, the ditched boundary lies to the east (and the houses are also oriented to the south-east; Barrett *et al.* 1991). Whatever the case, it is possible that the differences in the character of the boundary played some role in orienting the settlement, and creating either a monumental front space to impress outsiders or a protected, closed back space. In the case of Site G, the space most directly enclosed by the ditch appears to have been associated with the roundhouse and perhaps a pen, whilst most of the evidence for processing grain and for butchery—or perhaps more significantly, for discarded waste—comes from the more open eastern side of the enclosure.

The site could thus be seen as having been structured along an axis which progressed from the outside through a boundary associated with certain kinds of waste, to an activity area associated with processing food, to perhaps the most private part of the settlement associated with roundhouses. The ditch could, then, be seen as marking a clear boundary between the deepest and most private part of the site and the outside.

The partial enclosures do not appear to form effective enclosures for livestock. The junction between the chalk and the Thanet Sands lies just to the east of the ditches on Site C, and might have

coincided with a change in landuse, perhaps from open grassland to woodland. This is, however, speculative, and there is no such change on Site G. Lambrick has recently identified a category of middle Bronze Age two-armed ditches forming angles in the Thames Valley, and has suggested that they were used for stock control (Lambrick with Robinson 2009, 70–72 and fig. 3.11). The ditches at Sites C and G, however, both have one arm of substantial ditch much shorter than the other, and there are entrances at, or very close to, the junction of the ditches. The 'interior' of the Site G example was also occupied by a variety of features that would have rendered use for livestock capture impractical. These are therefore unlikely to have had the same function as these L-shaped ditches.

One factor that appears to have been common to both was the presence of a trackway passing through or alongside. In both cases, the substantial lengths of ditch were on the west, with only short lengths of ditch to the east. The side with the substantial ditches is, however, the direction from which the prevailing wind comes, and the main purpose of the ditches may have been to provide substantial banks that would provide protection from the weather. The same interpretation has been proposed for a similar arrangement of middle Bronze Age ditches just south-west of Stonehenge (McOmish pers. comm.). These partial enclosures may therefore have owed their existence to the trackways, and have provided a protected area on one side for temporary occupation. In the case of Site G this appears to have been more formally organised than on Site C.

### *The context of the enclosures*

In order to put the later Bronze Age 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 on 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.

The scale of activity of the middle Bronze Age along the western part of the scheme and its vicinity, and of the following transitional middle-late Bronze Age down to 1000 cal BC, is now considerable. Partial enclosures occur within 1km of one another at Sites C and G, and that on Site C is

accompanied by a palisade and (somewhat later) by cremations to the west, with another cremation on Site D (6010) to the east. Others are also known at Coldharbour Road (Mudd 1994), and more recent excavation in the A2 Activity Park has shown that the middle Bronze Age trackway ditches found at Coldharbour Road extend south almost as far as Site C. This routeway was evidently long-lived, as it was succeeded by a holloway and eventually by a metalled trackway. Five cremations, one in an urn dated to the post-Deverel-Rimbury Plain Ware phase of the Bronze Age, were found alongside the trackway. One further cremation came from the HS1 to the south (urned cremation 2013). A small ring-ditch of probable middle Bronze Age date has also been found in the Activity Park, some 200m north-west of Site C.

Pits of middle Bronze Age or transitional middle-late Bronze Age date were found on Sites L and A, and a cremation on Site B. Although no middle Bronze Age features were found on the HS1 south of sites K–D, around 30 residual sherds were found in middle Iron Age features. These extend the spread of middle Bronze Age activity further south. A middle Bronze Age barrow was found during evaluation below alluvium further along the HS1 to the west (see Askew 2006). Added together, this shows widespread if low-level activity across a significant area. Despite the presence of later Bronze Age boundary ditch 5912 on Site C, and of a probable continuation turning north-east within the Activity Park, there is no evidence for large-scale enclosure of the landscape (*pace* Dawkes 2010). The assessment report from the Activity Park suggested that the ditches they revealed constituted a field system of sorts, but these are on very varied alignments, unlike the rectilinear systems that are characteristic of middle Bronze Age systems in the Thames Valley (eg Lambrick with Robinson 2009), and are besides poorly dated. Several are on the same line as Iron Age, Roman and medieval ditches found in the A2 widening scheme, and most likely represent continuations of these. There is no clear evidence that the enclosure on Site G was associated with, or formed part of, a field system, as the enclosures at some of the middle Bronze Age sites in Sussex appear to have been.

Yates (2007) cites four other sites in the area of the A2 excavations as providing evidence for Bronze Age field systems, but further work at these sites has since revealed that the evidence is also slight (Champion 2011). Bradley (2007) has noted that elsewhere there seems to be a lack of correspondence between middle Bronze Age settlements and field systems in two respects: firstly between the large scale of the field systems compared to the small scale of the settlements, and secondly in the positioning of the settlements in relation to field systems.

These discrepancies could be explained by a system, such as that cited by Gingell (1992), in

which rights to the use of land are distributed by a central authority to lower status social groups. It is worth noting that a system of this kind operated in Hawaii, in which land was redistributed when a new chief was invested (Handy and Pukui 1958). The Hawaiian system, although set in a very different ecological setting, is interesting in two respects: firstly, it was not associated with villages—settlement remained scattered, as they do in the middle Bronze Age—and secondly, its outcomes were variable, reflecting varying relationships with the social hierarchy, with certain households retaining the same plots over a number of generations and others moving more often. This suggests a pattern of settlement of varied duration which is similar to that found elsewhere in southern England.

### *The character of activity at other sites*

Alongside the enclosures on Sites C and G, and the ditches discussed above, two small clusters of features that may date from the Bronze Age were found. These consist of a small cluster of post- and stakeholes on Site D, whose date is rather uncertain, and a group of pits on Site A, which can be dated more confidently to the middle or late Bronze Age, and perhaps to the transition between these two periods.

These small groups of features are similar to the low density scatters of postholes and shallow pits covering areas 20–40m across described by Champion (2011) as typical of occupation evidence along the HS1. The shallow pits and post- and stakeholes are also similar to those found in the enclosure in Site G. Site A, however, also includes one large pit (3030: 2.2m wide by 1.4m deep) that is certainly dated to this period, and others (3039 and 3097) potentially of this date. These features thus provide evidence suggesting different elements of occupation in the Bronze Age landscape, possibly including below-ground storage, in a more dispersed pattern through the landscape. The possible association between deep pits and storage may be enhanced by the discovery of a complete saddle quern at the base of pit 3039, and parts of several others in the fills.

The suggestion that these small groups of features represent a set of activities carried out away from the main centres of domestic occupation is supported by some contrasts in the quantities and kinds of artefacts associated with them.

The quantities of the most frequently occurring categories of finds—pottery, flint and animal bone—are shown in Fig. 2.48. The quantities of finds clearly in part reflect the proportion of the features that were excavated. The features associated with the enclosure on Site G were the most thoroughly sampled, and the quantities of artefacts from this site are probably over-represented in relation to those from the other sites. This further accentuates the relatively small quantities of



material recovered from Site G. It should also be noted that the differing materials have been quantified in different ways, and it is not possible to make direct comparisons between the different categories of material. There is no quick and straightforward way of quantifying broken objects (cf. Orton and Tyers 1992) that is entirely satisfactory. Here, the pottery has been quantified by weight, the flint by number of pieces, and the animal bone by total number of identified specimens (NISP).

The first striking feature is the contrast in the quantities of finds associated with the differing sites. It might have been expected that most waste would have been generated by activities associated with the domestic activity associated with the roundhouse in the Site G enclosure. In fact, however, the quantities of artefacts associated with the Site A pits (almost all of which came from just two pits) are, overall, much larger than those associated with the Site G features. Furthermore, the quantities of finds found on Site C also contain quantities of finds greater than those found in Site G.

There are also striking contrasts in the kinds of finds recovered, but these have to be interpreted with care. For the animal bone, the contrast is largely due to the geology of the different sites, as Sites A and C have chalk at shallow depth, while most features on Site G were within the acidic Thanet Sands. The largest groups of flint were recovered from the hollows and pits in Site G, and from the enclosure ditch. Very little flint was recovered from the Site C ditch and, although some was recovered from the Site A pits, it formed a much smaller proportion of the finds than was the case for the Site G hollows and pits. It is possible that the numbers of flints on Site G includes some earlier material, as early Neolithic, late Neolithic and early

Bronze Age features are all present on this site. Nevertheless the scale of variation is likely to indicate a genuine difference.

The significance of these patterns is unclear. It might be thought that one of the uses of the worked flint was in butchering animals, and the concentration of animal bone at the edge of the Site G enclosure, especially in features not associated with domestic occupation, merely reflects the deposition of unpleasant waste away from the main foci of domestic activity. Analyses by Wilson (1996) in a range of different contexts suggests that this kind of distribution of animal bone, in particular being concentrated towards the edges of sites, is widespread. It is also possible, however, that the groups of animal bones in the Site A pits and in the Site C boundary ditch might reflect the consumption of meat away from the main domestic foci. In both cases the animal bone is associated with relatively large assemblages of pottery. Unfortunately, the material from along the A2 is too fragmentary for this analysis to be pursued in more detail. Whatever the case, the small groups of features do provide evidence for the distribution of activities—or at least of deposition—at a range of locations away from obvious centres of settlement.

#### Cremation burials

The five deposits of cremated human remains which were found along the A2—three on Site C, one on Site D and one on Site B—were all contained within small, shallow pits, and, given that the full weight of the cremated remains of an adult is estimated to range from 1000g to 3600g (McKinley 2000b), they all represent partial deposits, with weights ranging from 100g to 402g. The cremation deposits on Sites B and D appeared to be isolated features; no other middle or late Bronze Age features were identified in the immediately surrounding area. The deposits on Site C lay close to each other, not far away from the field boundaries discussed above. The deposits on Site C date from the 13th or 12th centuries cal BC; the Site D example probably from the 12th century, and the Site B example from the 11th century.

A number of cremation burials probably dating from the middle or late Bronze Age have recently been found in the A2 Activity Park immediately to the north of Site C (see Fig. 2.49 for radiocarbon dates). These burials all appear to lie close to, and in one case within, trackway ditches and a subsequent holloway running south from Coldharbour Road to Site C. A possibly middle Bronze Age ring-ditch, this time associated with inhumation burials, was also found some 200m north-west of Site C. These excavations, combined with those along the A2, now provide a significant sample of Bronze Age cremation deposits and other burials which, because of the extent of the excavations, can be related to the wider Bronze Age landscape. It

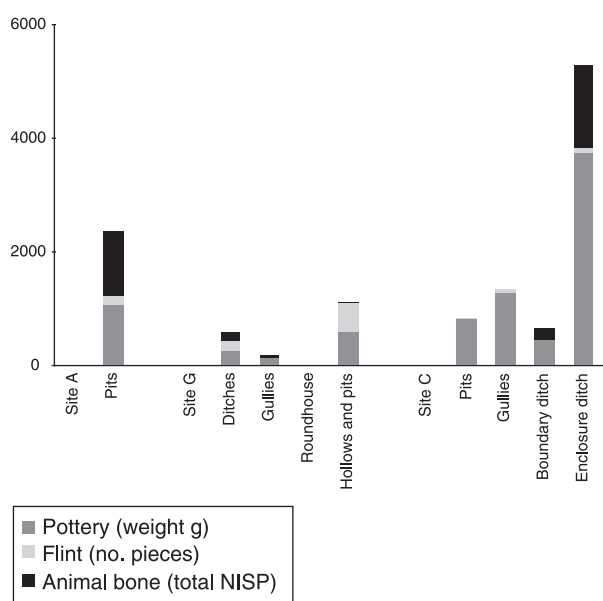


Fig. 2.48 Quantities of pottery, flint and animal bone on Sites A, G and C



must be stressed, however, that whilst it is impossible to ignore the evidence from the adjacent site, until the analysis of the burials in that area is undertaken, and in particular, their chronology more precisely defined, the discussion of them can only be provisional.

Middle and late Bronze Age burials are also increasingly well evidenced in Kent more widely. This evidence has recently been reviewed by Champion (2011) in the context of the HS1. Middle Bronze Age cremation burials associated with ring-ditches are known at Monkton (Bennett *et al.* 2008, 99) and at Bridge (MacPherson-Grant 1980) and along the HS1 at Tutt Hill (Brady 2006b). There are, however, also a number of examples of middle Bronze Age cremation burials, like those along the A2, which do not seem to have been closely associated with ring-ditches or with settlements. These include burials at West of Northumberland Bottom (Askew 2006, 16) and East of Newlands Road. A further example at Saltwood Tunnel (Riddler and Trevarthen 2006) lay 75m south of a ring ditch at a distance which, like the deposits on the site to the north of Site G, makes it difficult to argue that the burial was associated with the ring-ditch.

Excavations along the HS1 also revealed a number of late Bronze Age cremation burials, which, at Beechbrook Wood (Brady 2006a, 24), for example, lay close to a field boundary. There were other examples, such as at Pilgrim's Way, which appear to have been isolated features, with very little other evidence for late Bronze Age activity having been found on the site. A further small group of probably late Bronze Age cremation burials, not associated with any other late Bronze Age features, has recently been found at Pinden Quarry (Brady *et al.* 2011). Webley has recently reviewed the evidence elsewhere in south-eastern England, and cites examples of late Bronze Age cremation burials in Essex, Hertfordshire, Surrey, Berkshire, Buckinghamshire and Bedfordshire (Webley and Timby 2007).

Although cremation burial remains common, overall these sites indicate a movement away from burials associated with ring-ditches in the middle Bronze Age towards burial associated with trackways and field boundaries, or in apparently isolated locations, in the late Bronze Age. The burials found along the A2 and on the adjacent site to the north are consistent with this pattern.

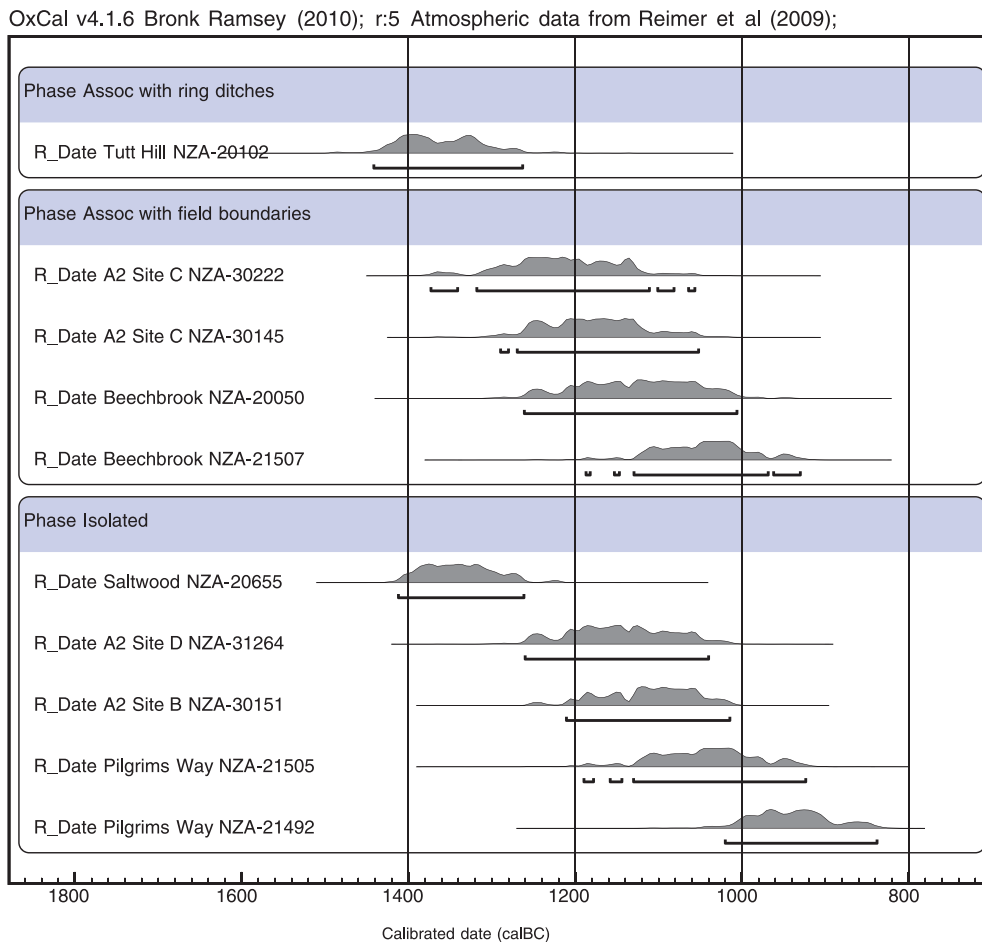


Fig. 2.49 Calibrated radiocarbon dates from middle and late Bronze Age cremation burials from the A2 and HS1 excavations



Fig. 2.50 Artist's reconstruction of middle Bronze Age settlement in Site G looking west



Although there are too few dates from Kent alone to confirm the chronological pattern, the shift in the location of cremation burials appears to have begun in the later part of the middle Bronze Age, after c 1300 cal BC. It is possible that isolated burials, not associated with field boundaries, are characteristic of a slightly later phase, beginning c 1200 cal BC, although clearly in the case of the cremation burial at Saltwood Tunnel, which lay 75m from the ring-ditch, there may be exceptions.

The shift away from burial associated with ring-ditches is not the only change. Although the A2 burials were clustered on and around Site C, they were quite widely dispersed, rather than occurring in a clearly defined location (ie a cemetery). This pattern again seems to be typical more widely. The burials associated with field boundaries and in isolated locations at other sites almost all occur as single deposits or in small numbers; the group of 20 cremation deposits at Pinden Quarry appears to be exceptional (Brady *et al.* 2011). At Pilgrim's Way (Hayden 2006), for example, a dispersed scatter of five late Bronze Age cremation deposits was found (although there were also a number of undated cremation deposits that could belong to this period) and at Beechbrook Wood (Brady 2006a) there were just two such deposits.

None of these burials is obviously related to centres of settlement, but there is a sense in which the distribution of burials parallels that of settlement. Just as the centres of settlements seem to have been relocated, following Brück's (1999a) neo-local pattern of residence, so too it seems that places of rest for the dead were neo-local.

It is important to note at this stage that our knowledge of the distribution of burials is incomplete. The burials along the A2, like many others of the middle and late Bronze Age contain only small quantities of cremated human remains, and how the remainder of the cremated remains were treated, and the location of pyre sites, are unknown. Furthermore, it is also clear that other forms of burial were practised at the same time. Along the A2 this is evidenced by the fragment of human femur found in ditch 5912 on Site C, as well as by more extensive remains on other sites (eg Cliffs End Farm, Ramsgate (Wessex Archaeology nd)).

The dispersed pattern of burial could, however, be seen as one further aspect of a dispersed middle and late Bronze Age taskscape—a pattern in which, despite the clear foci of settlement such as the Site G enclosure, tasks were also carried out at locations scattered across the landscape.

There are well known case studies from very different contexts which illustrate the fact that marked changes in burial do not necessarily correspond, at least in any obvious way, with social change (eg Morris 1990; Morris 1992). In the middle and late Bronze Age of southern England, however, the movement away from burial associated with ring-ditches, and the parallels between the dispersed neo-local patterns of burial and settle-

ment, over the period in which field systems were established, suggests that the change in burial practices may have been related to changes in social structure, perhaps involving a decline in the importance of ties of descent, expressed in burials associated with ring-ditches, and the rise of new forms of power, related to the division of the landscape.

#### *The deposit of cremated animal bone, fired clay and pottery on Site L*

A further, more exceptional example of the distribution of activities around the landscape is provided by the unusual contents of a pit (12510) on Site L (see Fig. 2.26). This disturbed pit contained a Deverel-Rimbury urn, the remains of several other vessels, including at least two cups, and many fragments fired clay, some bearing impressions of wattles, which clearly derive from a structure of some kind. The fill of the pit was rich in charcoal, and contained a deposit of cremated bone that may have been contained within the urn. Although originally taken to be a further human cremation deposit, examination of the cremated remains did not identify any human bone, and suggests instead, that it was animal bone. A possible parallel for this deposit was found at North Shoebury, Essex (Wymer and Brown 1995) where, 120m to the north of the middle Bronze Age enclosures a small pit containing pottery, fired clay and charcoal was found.

The significance of the practices related to the deposits in this pit are obscure, but several elements may provide some indications. The presence of the burnt animal remains suggests immolation and thus sacrifice, a type of ritual with a very wide distribution. The presence of the urn and the similarity of the deposit with middle Bronze Age cremation burials could also be taken to indicate a symbolic relationship with human burials. The association of these elements with the fired clay—which clearly derives from a structure which has been destroyed—could be taken to indicate that the deposit was related to the 'death' of the structure. It is, of course, impossible to exclude the possibility that the structural remains were included for quite different reasons. Whatever the case, it is striking that the deposit was not associated with any other below-ground indications of activity, and thus appears to provide another example of the widespread distribution of activities, away from the foci of settlement, in the middle and late Bronze Age.

A further reminder of this is the later Bronze Age struck flint found on Sites B, F and Site G east, none clearly associated with below-ground features. Despite the increasing archaeological visibility of this period in terms of ditched field systems, water-holes and settlement and burial enclosures, it is clear from sites where ground surfaces are preserved, such as the Eton Rowing Course (Allen *et al.* forthcoming(a)), that much offsite activity leaves only surface deposits such as flint clusters and spreads or hearths. The residual material found

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along the line of the A2 is too heavily reworked to provide much insight into the particular activities carried out in these locations, but serves to remind

us that the spaces between these settlements or burials may also have been significant to those inhabiting this landscape in the past.