

Chapter 9: Prehistoric occupation at the terrace edge

The location, date, and nature of the evidence
(Fig 9.1)

Introduction

Direct evidence of human activity was identified at three of the five sites investigated: Prince Regent Lane/Freemasons Road, Woolwich Manor Way and Movers Lane. All three of these sites are located at the edge of the gravel terrace and Thames floodplain, although close to the confluences of the Rivers Lea and Roding. Reconstruction of the prehistoric topography and environment has demonstrated the presence of shifting wetland and palaeochannel zones as well as areas of higher drier ground, which would have influenced the location, date and nature of activities carried out at the sites (see Chapter 8).

Figure 9.1 is a summary of the distribution of archaeological remains, the periods represented and some indication of the associated topography and environments of deposition. The periods represented by the archaeology span the Mesolithic through to the post medieval period, although the most substantial evidence for occupation dates to the 2nd millennium BC and includes several important timber structures and trackways identified at all three sites. Aside from the timber structures, however, only a relatively small number of associated features and deposits recorded on the sites were of undoubted anthropogenic origin and a significant proportion of the artefact assemblages, particularly those dated to the earlier periods, showed signs of abrasion and redeposition by later human agency and alluvial processes.

The prehistoric artefact assemblages are dominated by items of worked wood, pottery, worked and burnt flint (Table 9.1, Plate 25 and Appendix 2) and are considered relatively large for the London region when compared with similar recently investigated sites in the Thames floodplain (see for example Holder 1998). Generally faunal remains were poorly preserved at Woolwich Manor Way and Movers Lane, although a modest assemblage was recovered from Bronze Age deposits at Prince Regent Lane/Freemasons Road. No metalwork or glass was recovered from any of the sites apart from occasional recent items such as iron nails. Seven pieces of fuel ash slag were recovered from Bronze Age features at Movers Lane, although

Table 9.1 Summary of route-wide artefact assemblages

<i>Material</i>	<i>Prince Regent Lane</i>	<i>Woolwich Manor Way</i>	<i>Movers Lane</i>	<i>Total</i>
Prehistoric pottery (no.)	147	264	408	819
Roman pottery (no.)	1	604	1	606
Fired clay (no.)	2		18	20
Unfired clay (no.)	53			
Worked stone (no.)			3	3
Worked flint (no.)	595	233	820	1648
Burnt flint (kg.)	47.5	6.7	>93	
Animal bone (no.)	36	-	473	
Human bone (no.)	-	-	4	4
Human bone cremated (kg)	-	-	0.189	0.189
Jet (no.)			1	1

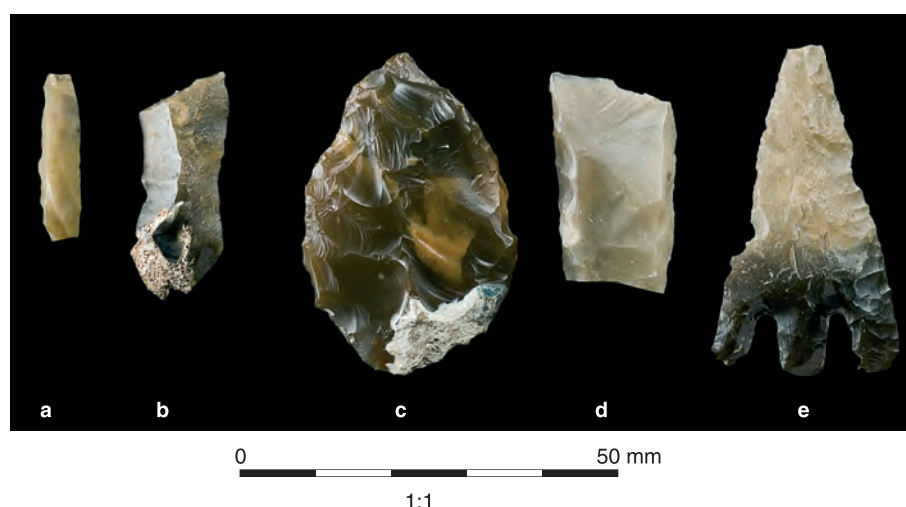


Plate 25 A series of flint points from the A13 sites

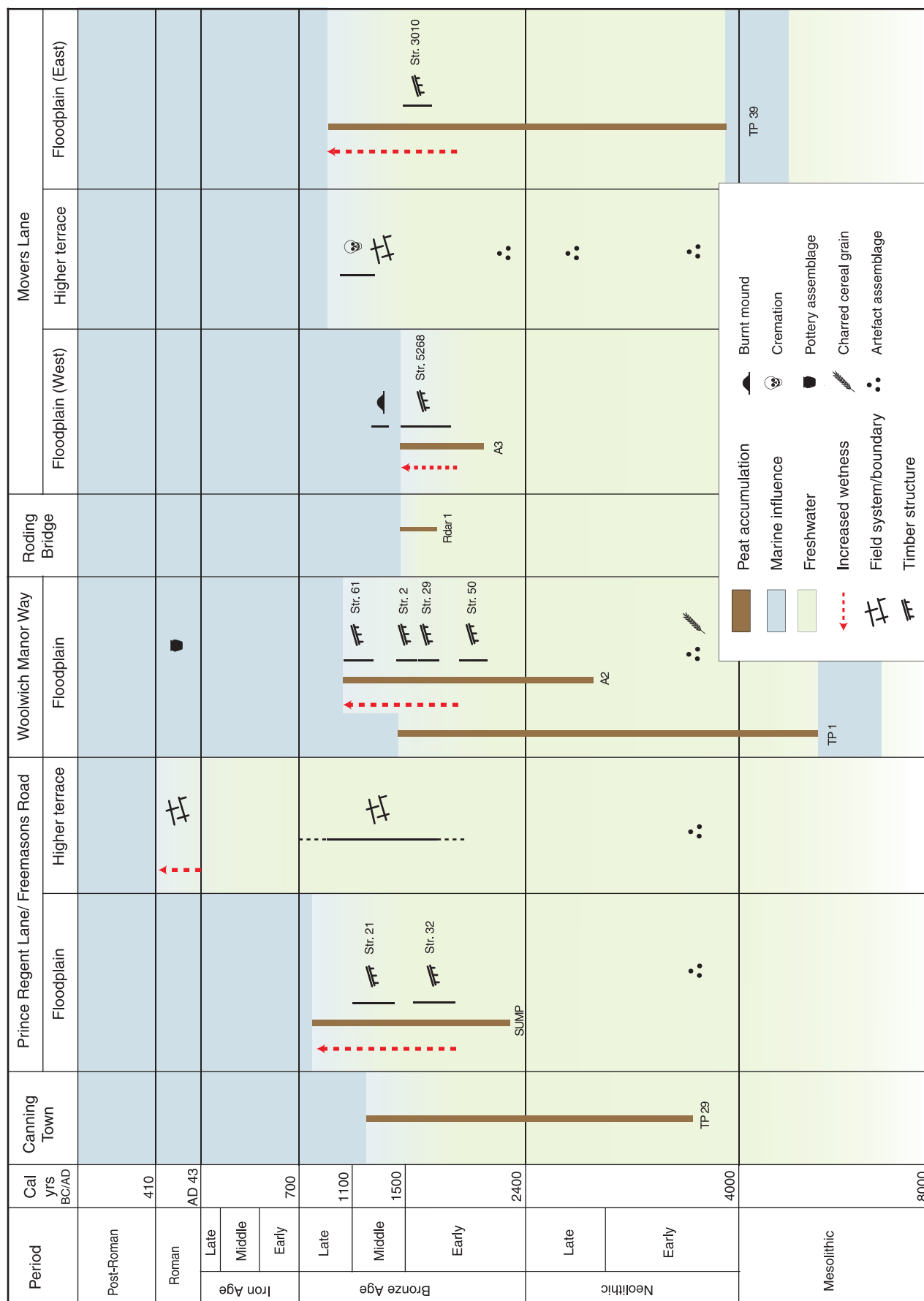


Fig. 9.1 Summary of route-wide archaeology

none clearly derives from metalworking. A very small quantity of fired clay was also recovered from the same site and although none of these fragments were diagnostic, a few had traces of surfaces and could be structural in origin. Significantly, a fragment of jet from Movers Lane is thought to be part of a belt slider dated to the earlier part of the Neolithic (Sheridan in Appendix 2).

Flint points (Plate 25)

- Mesolithic rod-shaped microlith** from Movers Lane (MOE00, unstratified) (Fig. A2.3, 13),
- Mesolithic/early Neolithic obliquely truncated blade** from Woolwich Manor Way (WMW00, 2005, SF8) (Fig. A2.3, 6),
- Early Neolithic leaf-shaped arrowhead** (unfinished?) from Woolwich Manor Way (WMW00, 2001) (Fig. A2.3, 5),
- Late Neolithic petit tranchet arrowhead** from Movers Lane (MOE00, 60) (Fig. A2.3, 15),
- Early Bronze Age barbed and tanged arrowhead** from Movers Lane (RIR01, 1033) (Fig. A2.3, 16)

Analysis of the distribution and date of the prehistoric pottery assemblages along the route demonstrates that the majority belongs to either early Neolithic plain bowl and decorated styles or middle to late Bronze Age Deverel-Rimbury/PDR styles with much smaller quantities from other

periods (Fig. 9.2; Barclay and Rayner in Appendix 2). The largest overall assemblage was retrieved from Movers Lane (408 sherds), followed by Prince Regent Lane (264 sherds) and Woolwich Manor Way (147 sherds). Although the differences may well be a reflection of the scale of the excavations carried out at Movers Lane compared to the other sites, there are clearly differences in date between the sites. Neolithic pottery, which also included smaller quantities of Peterborough Ware and Grooved Ware, was most abundant at Movers Lane and to a lesser extent at Woolwich Manor Way, whereas assemblages were sparse at Prince Regent Lane. Pottery of late Neolithic to early Bronze Age date was generally very sparse at all three sites and the larger number of Beaker sherds at Woolwich Manor Way are attributed to a single vessel (Plate 26, Fig. A2.1, 17). Conversely, middle to late Bronze Age pottery was most abundant at Prince Regent Lane, followed by Movers Lane and was very sparse at Woolwich Manor Way.

Evidence of activity for the later periods, from the 1st millennium BC onwards, was relatively sparse at all sites. Some activity appears to have continued into the Iron Age at Freemasons Road and on the higher ground at Prince Regent Lane a series of possible Roman linear features may represent the remains of boundary or drainage ditches. At Woolwich Manor Way Roman activity is presented by spreads of occupation material containing signif-

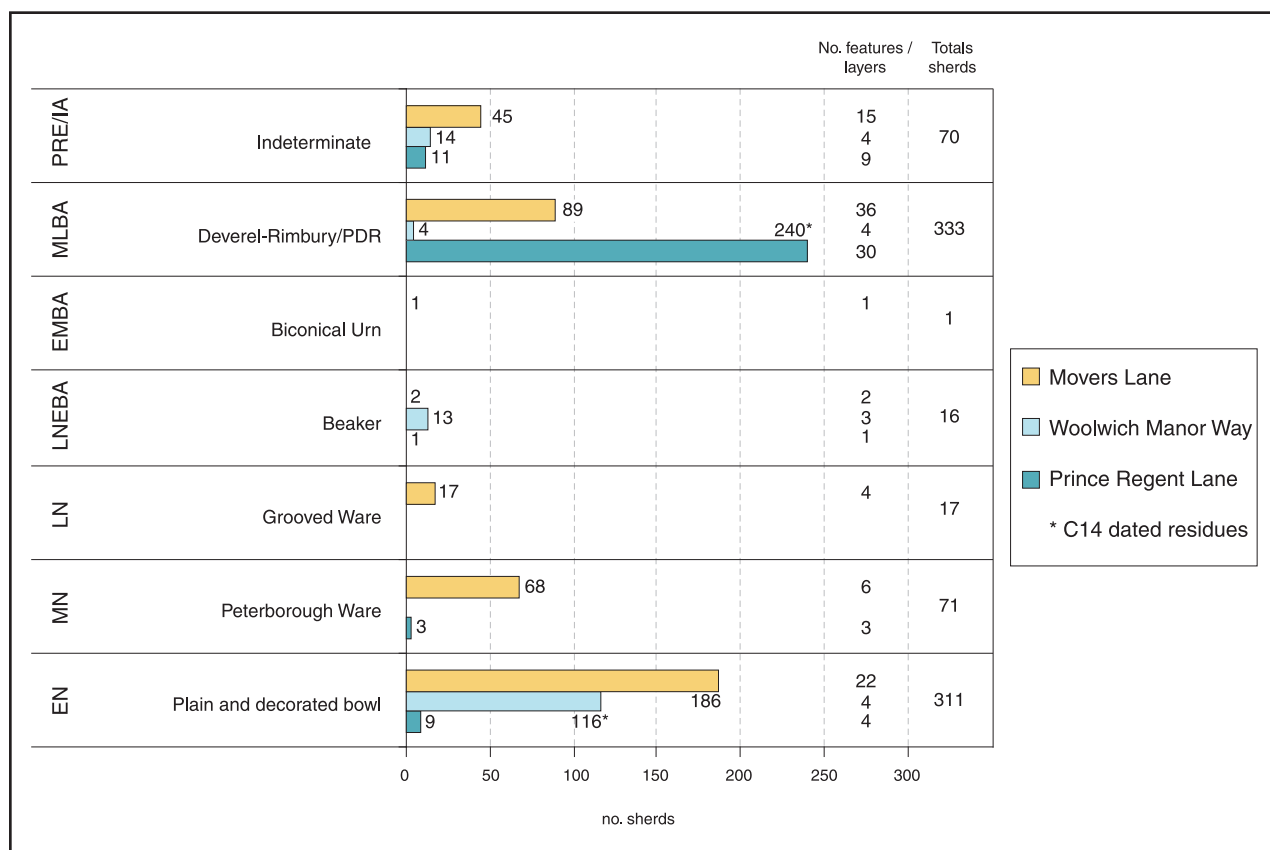


Fig. 9.2 Distribution of prehistoric pottery assemblages



Plate 26 Beaker pottery, Woolwich Manor Way (Area 2), context 28

icant amounts of pottery, perhaps laid down in an attempt to consolidate the wet marshland surface. Apart from very occasional sherds of medieval pottery evidence of activity following the Roman period was largely absent.

Mesolithic (8500-4000 BC)

The majority of evidence dated to the earlier periods along the A13 route is represented by artefact scatters, much as reworked material in later deposits and features. The Mesolithic assemblage comprised occasional items of worked flint perhaps indicating only transient activity associated with the maintenance of hunting equipment (Bishop in Appendix 2). Diagnostic items include a microlith from Movers Lane and a micro-burin from Prince Regent Lane. No other certain Mesolithic material was identified although a significant proportion of the overall assemblage was characteristic of the blade-based industries of Mesolithic or early Neolithic date.

The sparseness of material is not atypical and occasional Mesolithic flintwork has been recorded at other sites in the vicinity attesting to persistent activity along the river margins (see Lacaille 1961; MoLAS 2000). The importance of tributary valleys during this period has been highlighted by work in the Colne Valley at Uxbridge to the west of the City (Lewis with Rackham 2011) and this is reiterated by the findings of recent excavations in the valley of the River Beam, Dagenham, which produced *in situ* scatters of early and late Mesolithic date, sealed beneath alluvium (OA 2011). Evidence of activity is also emerging in the Lower Lea, for example at Stratford Market (Hiller and Wilkinson 2005, 36-8) and Carpenters Road (Corcoran *et al.* 2011, 172). In general much of the material from the larger assemblages in the Lower Thames area is early in date. However, dense scatters of later Mesolithic worked flint suggest more intense areas of occupation down stream of the City; for example the scatters from the

Erith Spine Road on the south bank of the Thames may represent a late Mesolithic production site manufacturing microliths and tranche axes (Bennell 1998) as does the site at Tankhill Road at Purfleet (Leivers *et al.* 2007).

It is possible that further *in situ* evidence of activity associated with former dry land surfaces is preserved further into the floodplain towards the main Thames channel, beneath the thick alluvium and peat deposits (see Fig. 8.4, CLM Stage 2). During the later Mesolithic period, however, estuarine inundation (evident at Woolwich Manor Way and Movers Lane) and an increasingly unstable surface would probably have affected the nature and intensity of activities carried out on the floodplain, which probably focused on ecotonal zones at the wetland margins and drier floodplain islands (see Fig. 8.4, CLM Stage 3). The latter is demonstrated by the evidence recovered from the Royal Docks Community School site, some 500m to the south of the A13/Prince Regent Lane junction. Here Mesolithic activity, which included three microburins and a microlith (along with Neolithic and Bronze Age evidence, see below) was recorded on the dry land surface of two small sandy islands within the floodplain (Holder 1998; Corcoran *et al.* 2011, 57 and 172).

Early Neolithic (4000-3000BC)

The wetland zone appears to have migrated sufficiently inland to impinge on the terrace edge area occupied by the A13 route by the beginning of the 4th millennium BC, which may go some way to explaining the more abundant evidence for activity during this period. This activity is largely reflected in the artefact assemblages; the pottery and flintwork, as opposed to structural remains. Although a number of potential features contained Neolithic artefacts, the often irregular shape would suggest that the majority are of natural origin with the artefacts probably being reworked from contempo-

rary ground surfaces close by. A series of features recorded at the base of the excavated sequence at Freemasons Road were initially thought to be of Neolithic date on the basis of occasional pieces of worked flint. This included a possible rectilinear enclosure and a series of postholes. Subsequent radiocarbon dating and stratigraphic analysis, however, suggests these features are more likely to be Bronze Age. The residual aspect of much of the artefact assemblages clearly limits detailed discussion of the nature of the activities carried out during the Neolithic. Extensive although not particularly dense spreads of early Neolithic pottery and lithic material were identified from the weathered sands at all three sites (Bishop, Barclay and Rayner in Appendix 2) although only at Woolwich Manor Way did these remain relatively undisturbed by later alluviation and human activity (see below).

The earliest Neolithic pottery assemblage from the A13 sites comprises 311 sherds which collectively could be accommodated within the Mildenhall style of the decorated bowl tradition of the mid 4th millennium BC (c 3650-3350 cal BC) which is generally distributed across eastern England but also occurs in north Kent (Barclay and Rayner in Appendix 2 and see also Gibson and Leivers 2008; Barclay and Stafford 2008). This pottery would be broadly contemporaneous with the assemblages recovered from the causewayed enclosures at Orsett and Staines (Kinnes 1978; Robertson Mackay 1987). Small assemblages of early Neolithic pottery have also been recorded at the Royal Docks Community School, Prince Regent Lane (Rayner 1997) and at Brookway, Rainham (Holder 1998, 10), while the pottery from Yabsley Street, Blackwell (Raymond 2008), Erith Spine Road (Bennell 1998) and Clapham (Densem and Seeley 1982, fig 5) belongs to the earlier Carinated Bowl tradition (4000-3650 cal BC: Herne 1988; Barclay 2008). In addition 71 sherds, representing a minimum of six vessels, were also assigned to the developed Peterborough Ware style (Mortlake), although most of the material (59 sherds) was recovered from a single deposit (5074, Movers Lane). Mortlake Ware belongs to the period 3350-2850 cal BC (Barclay 2008; Peter Marshall pers comm; Gibson and Kinnes 1997) and is considered to have developed out of the Ebbsfleet and decorated bowl styles of the mid-4th millennium cal BC. Comparisons can be made with the pottery recovered from the ring ditch at Staines Road, Shepperton (Jones 2008) noted as mostly Mortlake Ware and from the outer ditch of the Staines causewayed enclosure, classified as Ebbsfleet Ware (Whittle in Robertson-Mackay 1987, 90 and fig 52, 175-185). There are a considerable number of occurrences (75 sites) of Peterborough Ware from, in particular, the west London area (Cotton 2004, fig. 15.5), although finds from the east side of Greater London are by contrast relatively sparse. River finds of Mortlake Ware are well known and include the bowls from Mortlake, Hammersmith and Putney, while other finds are known from foreshore and eyot contexts

(Holgate 1988; Cotton and Johnson 2004; Cotton 2004).

With reference to the lithic assemblage (Plate 27; Bishop in Appendix 2), core reduction is represented at all three sites but high proportions of retouched implements and useable flakes indicate that tool use was an important element of the activities conducted. The proportion of retouched tools and utilized blades compared to knapping waste was high, even for a 'domestic' assemblage (Wainwright 1972, 66) perhaps suggesting these items were manufactured elsewhere. This is also supported by a large number of flakes and blades whose raw materials were not matched by any of the cores present. The raw materials used appear to have been collected from a number of locations as well as from the immediate vicinity. It also appears that, as well as some cores being brought to the site, others were being taken away for use elsewhere. A number of activities appear to be indicated and the retouched and utilized implements suggest a degree of specialisation. Simple edge-trimmed flakes and serrated pieces, some exhibiting polish, suggest an emphasis on cutting tasks that probably included the processing of silica-rich plant materials such as cereals and perhaps rushes from the wetland zone. Scrapers were also present in numbers; these may indicate hide processing (Bradley 1978). Hunting is indicated by an almost finished arrowhead from Woolwich Manor Way (Fig. A2.3, 5), and other possible arrowhead blanks at Prince Regent Lane indicate manufacture (eg Fig. A2.3, 1).

Early Neolithic worked flint (Plate 27)

- a. **Bifacially worked flake** (arrowhead blank?) from Freemasons Road (FRU01, 106, SF167) (Fig. A2.3, 1)
- b. **Denticulated scraper** from Woolwich Manor Way (WMW00, 1517, SF3) (Fig. A2.3, 2)
- c. **Worn serrated blade** from Woolwich Manor Way (WMW00, 2008, SF138) (Fig. A2.3, 3)
- d. **Serrated blade-like flake** from Woolwich Manor Way (WMW00, 2008, SF216) (Fig. A2.3, 4)
- e. **Exhausted blade core** from Woolwich Manor Way (WMW00, 2005) (Fig. A2.3, 7)
- f. **Utilised flake** from Woolwich Manor Way (WMW00, 2008, SF78). (not drawn)
- g. **Utilised blade** from Woolwich Manor Way (WMW00, 2008, SF109) (Fig. A2.3, 10)
- h. **Utilised flake (piercing)** from Woolwich Manor Way (WMW00, 2008, SF91) (not drawn)

The remains recovered in T15 at Woolwich Manor Way included a substantial assemblage of early Neolithic charred cereal grain and chaff, mainly from emmer wheat (Plate 28; Pelling in Appendix 3). This was associated with charred hazelnut shell, charcoal (Barnett in Appendix 3), pottery (Barclay and Rayner in Appendix 2) and worked and burnt flint (Bishop in Appendix 2), located on a buried land surface sealed by peat.

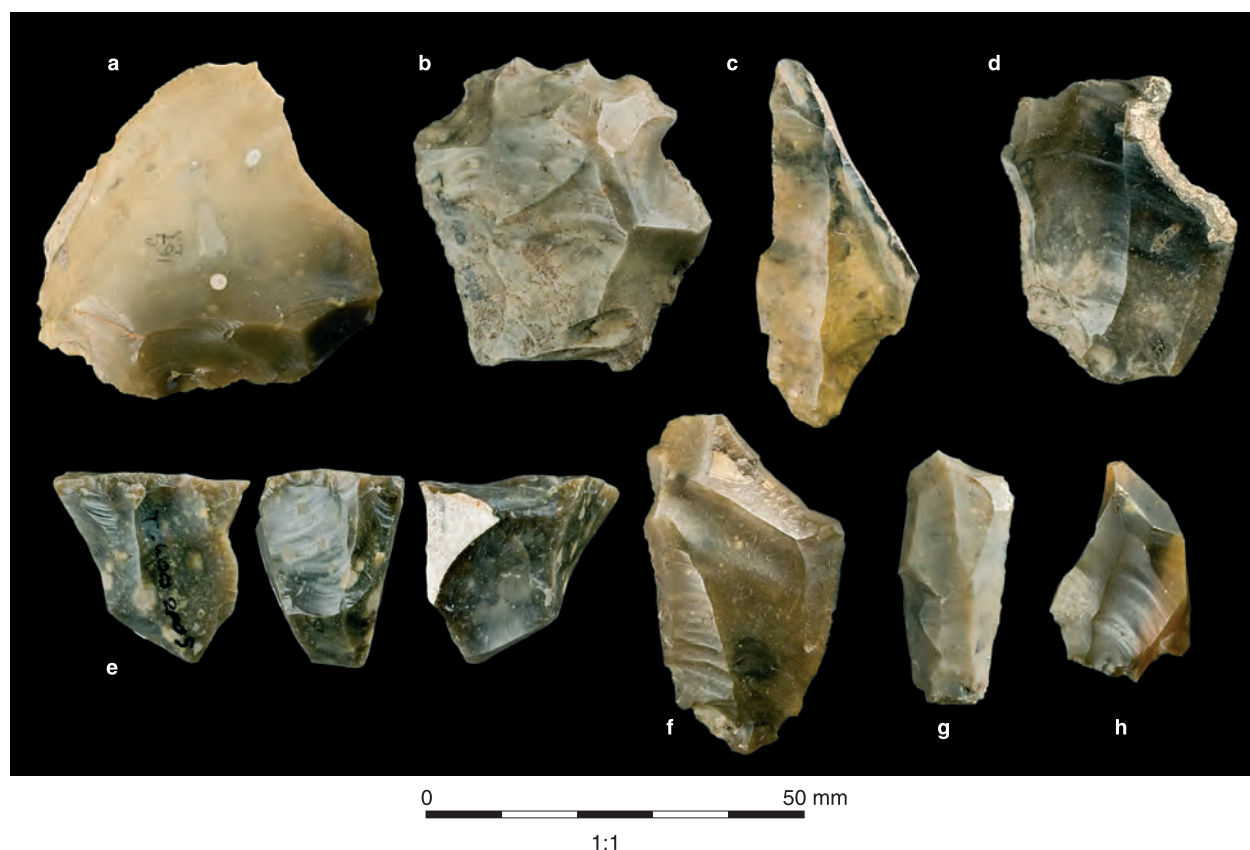


Plate 27 Early Neolithic worked flint from the A13 sites

Further much smaller scatters of material were identified in equivalent deposits in adjacent trenches (TP13 and T16) and T17 produced a small concentration of burnt flint. This area was latterly preserved *in situ* so was not the subject of further more extensive excavation. The remains in T15 were concentrated in a sondage cut into the base of the north-east end of the trench in an area measuring *c* 1.8 x 2.4m. A further sondage in the south-western end of the trench of similar size produced fewer artefacts. Overall, the landsurface produced 67 sherds of pottery assigned to the early Neolithic and 102 worked flints. Micromorphological analysis suggests the surface was significantly disturbed by trampling and/or cultivation (Macphail, Appendix 3). In certain respects the evidence is reminiscent of the early Neolithic midden deposits excavated at Great Arnold's Field, Rainham (Howell *et al.* 2011, 24-35), at Eton Rowing Lake in the Middle Thames Valley (Allen *et al.* 2004, 91 and forthcoming) and perhaps the Stumble on the Blackwater Estuary in Essex (Heppell 2006; Murphy 1989; Wilkinson *et al.* submitted), although with such a small sample area at Woolwich Manor Way it is difficult to speculate further. At the Great Arnold's Field site Mildenhall type pottery appeared to have been incorporated into a charcoal-rich midden deposit pushed into the fill of the ring ditch (Howell *et al.* 2011, 24-35). At 3770-3630 cal BC (SUERC-24597: 4890±35 BP) and 3630-3360 cal BC (SUERC-24830: 4685±45 BP)

respectively, the radiocarbon dates for the cereal grain at Woolwich Manor Way and the charred residue adhering to a pottery sherd perhaps suggest that the activity represents a series of visits to the same spot, perhaps a favoured point in the landscape, by communities who were presumably also utilising areas of the adjacent gravel terrace (J. Cotton pers. comm.).

Overall, the quantity of material recovered along the A13 route suggests a substantial level of activity during the early Neolithic along floodplain and river margins. The fact that that material appears to have formed small spreads or scatters may reflect a series of short-lived episodes, with the emphasis on mobility and temporality comparable with the wider regional evidence. Substantial activity in a similar topographic position, occupying the ecotonal zone between terrace and floodplain, was located further downstream at the site of Brookway, Rainham (Meddens 1996). Here, the evidence comprised flint knapping debris, pits, a possible post built structure, a gravel surface and a hearth, associated with Mildenhall type pottery. To the west the riverside site at Runnymede provides some of the best evidence for more permanent occupation, dated to about 4000-3500 BC and includes one or more rectangular stake built structures with midden deposits (Needham 1991). On the floodplain, some of the earliest evidence for Neolithic occupation, several centuries earlier than that at Woolwich

Manor Way and other sites, derives from the excavations at Yabsley Street, Blackwall, on the Isle of Dogs, a little to the west of the A13 route (Coles *et al.* 2008). Here a grave and other evidence of occupation was located on a sand and gravel bar beneath alluvium. The grave contained a crouched female inhumation, a fragment of Carinated Bowl pottery and worked flint, including a knife. An oak retaining plank within the grave was dated to 4220-3970 cal BC (KIA-20157: 5252 \pm 28 BP) and the charred plant assemblage, similar to that recovered from Woolwich Manor Way, indicates that both cereal cultivation and collection of wild plant remains took place (see below).

Unfortunately apart from a couple of stray axe finds, little is known for the early Neolithic period from the block of higher terrace gravels between Plaistow and Barking which has largely been lost to modern development. Evidence from the wider

area predominantly comprises dispersed pits and small artefact scatters often associated with tree throw holes. More substantial evidence derives from monument sites that may have served as communal meeting places for ceremonial, funerary and perhaps more 'domestic' activities. Approximately 10km downstream, at Rainham, these include the ring ditch at Great Arnold's field, a possible length of causewayed ditch at Southall Farm, and a ditched avenue that may represent a long mortuary enclosure at South Ockenden (Howell *et al.* 2011, 35). Similar clusters of monuments are known further east, including the causewayed enclosure at Orsett, Thurrock (Hedges and Buckley 1978; Brown 1996). Both sites at Great Arnold's Field and Orsett appear to have been in use from around the middle of the 4th millennium BC, contemporary with the activity recorded on the A13. On the western fringes of Greater London, a

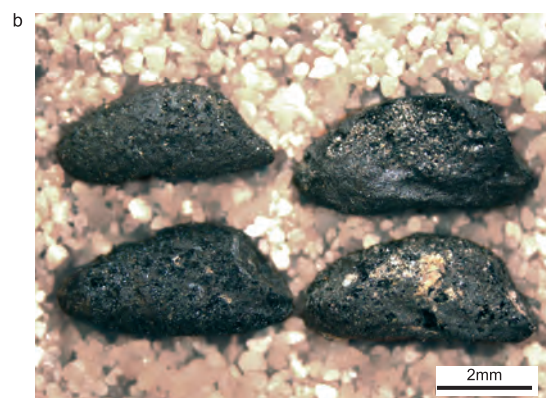
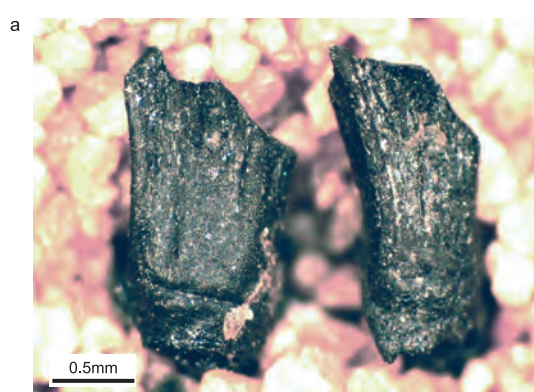


Plate 28 Charred emmer wheat from Trench 15, Woolwich Manor Way a - rachis-internode, b - grain, c - spiklet fork, d - modern ear of emmer (photo by Wendy Smith)

large cluster of monuments constructed on the higher ground overlooking the floodplains of the Thames and Colne points to this area as being a major ceremonial centre during this period. These monuments include the causewayed enclosure at Yeoveney Lodge, Staines (Robertson-Mackay 1987) and the segmented ring ditch at Staines Road Farm, Shepperton, along with the series of cursus and other monuments excavated around Heathrow Airport (Framework 2010).

Late Neolithic to early Bronze Age (3000-2000BC)

In general, evidence of later Neolithic and early Bronze Age activity is sparse in East London although struck flints and pottery have been identified on the floodplain at the Royal Docks Community School and elsewhere in the area (eg Coles *et al.* 2008; Bishop forthcoming; MoLA in prep). At Fort Street, Silvertown, a wooden trackway over marshy ground was dated to 3340-2910 cal BC (GU-4407: 4410 \pm 60) (Crockett *et al.* 2002, Fig. 1.5, 2). More extensive activity dating to this period has, however, been recorded upstream in north Southwark (Ridgeway 1999; Proctor and Bishop 2002; Sidell *et al.* 2002). On the gravel terrace some activity continued at Great Arnold's Field, Rainham, with the deposition of Peterborough Ware in one of the fills of the ring ditch and later Beaker pottery in the central pit (Howell *et al.* 2011, 36). This reuse of earlier monuments is a pattern mirrored at

several other sites including Orsett (*ibid*). In west London activity is represented by pits, sited away from monuments, containing Peterborough and Grooved Ware pottery, transverse arrowheads and scrapers and charred remains of wild plants such as hazelnuts, crab apples and sloes (Cotton 2000, 19).

In terms of artefactual material, activity during the 3rd millennium BC is attested along the A13 by the recovery of a transverse arrowhead and a barbed and tanged arrowhead from Movers Lane (Bishop in Appendix 2; Fig. A2.3, 15 and 16; Plate 29). A small scatter of knapping debris of possible early Bronze Age date was also identified at Movers Lane, along with a number of small and invasively retouched scrapers, suggesting some form of occupation, but there was little further evidence of intensive flint use during these periods at the other sites. Many of the scrapers from Movers Lane were broadly comparable to the 'thumbnail' types, typically of later Neolithic or early Bronze Age date and frequently associated with Beaker period settlements (Edmonds 1995, 140-141).

Late Neolithic to early Bronze Age worked flint (Plate 29)

- Semi-invasively retouched blade** from Movers Lane (MOE00, 121)(Fig. A2.3, 14)
- Extensively reduced multiplatform core** from Movers Lane (RIR01, 3005)(Fig. A2.3, 17)
- Thumbnail scraper** from Movers Lane (RIR01, 3005) (Fig. A2.3, 19)

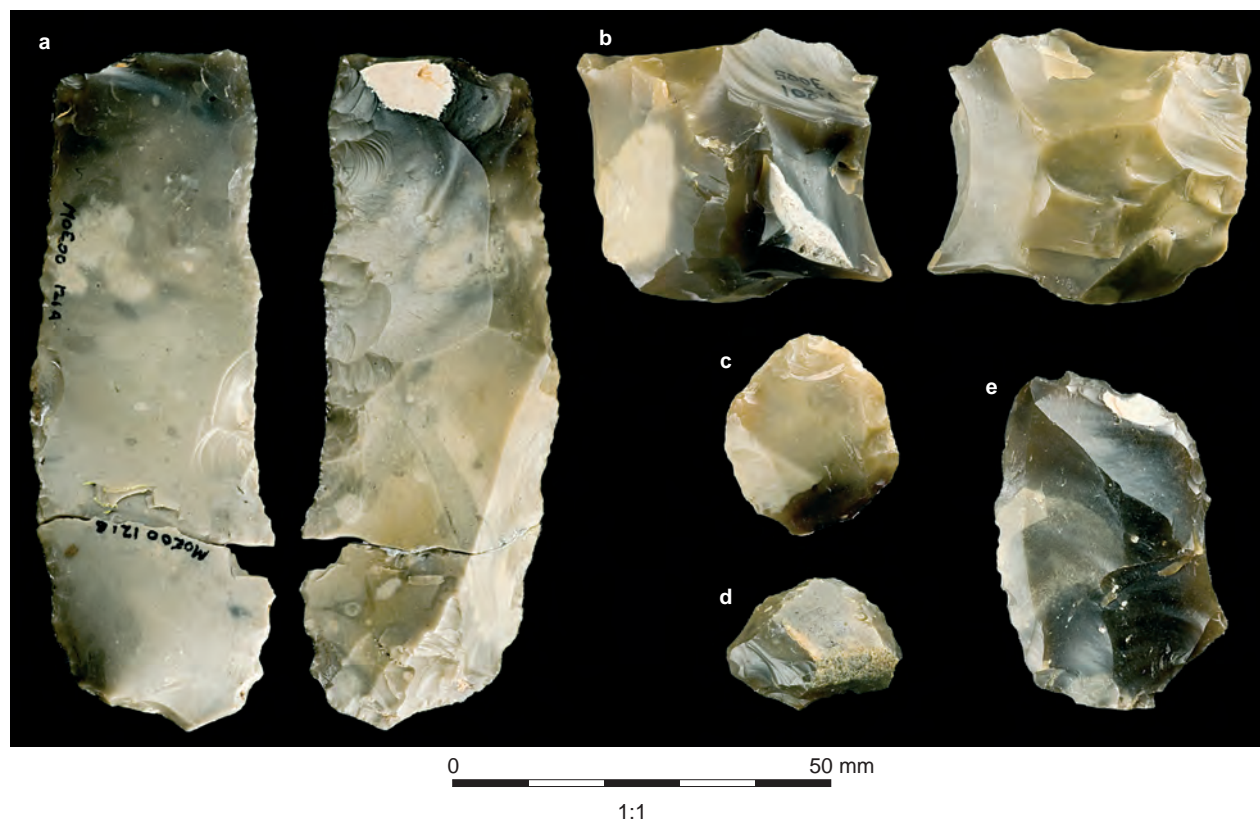


Plate 29 Late Neolithic-early Bronze Age worked flint from the A13 sites

- d. **Thumbnail scraper** from Movers Lane (RIR01, 3005) (Fig. A2.3, 18)
- e. **Edge trimmed flake** from Movers Lane (RIR01, 3005) (Fig. A2.3, 20)

The pottery assemblage included 17 sherds of Grooved Ware from Movers Lane, some of which closely resembled other Durrington Walls style pottery from the Middle and Upper Thames Valley (Barclay and Rayner in Appendix 2). Grooved Ware from southern England has a date range of 2900-2400/2200 cal BC (Garwood 1999). Fifteen Beaker sherds and one fragmentary vessel were also recovered from the excavations. The vessel, which probably represents a placed deposit, had been inverted in the peat alongside Trackway 29 at Woolwich Manor Way and belongs within Clarke's East Anglian group (1970) which is generally distributed around the Lower Thames and across the adjacent counties of Essex, Kent, Norfolk and Suffolk. As with Grooved Ware, Beaker pottery was, until recently, rare within the Greater London area (Clarke 1970, maps 1-10), however, it is now better represented especially in East London (J. Cotton pers. comm.). Small assemblages of Beaker pottery have been recorded at the Royal Docks Community School (Rayner 1997) and in the Rainham area, at Great Arnold's Field (Smith 1964; Howell *et al.* 2011, 36-7) and Rainham Football Ground (Costello 1997).

Bronze Age (2000-800BC)

A change in the abundance and nature of activity along the A13 route appears to occur towards the end of the early Bronze Age period, during the second quarter of the 2nd millennium BC, consistent with the regional evidence for a period of agricultural intensification (Yates 2007). This is particularly apparent on the West London gravels around Heathrow where parts of the landscape were divided into field systems with droveways and waterholes, forming 'identifiable' farmsteads (Framework 2010). In Southwark and Bermondsey dense patchworks of marks in the subsoil have been interpreted as ard marks (Sidell *et al.* 2002, 35-7). Few settlement sites have so far been located in east London, isolated pits and artefact assemblages have been found in the Lower Lea and Roding Valleys. At Rainham, a late Bronze Age ring work associated with buildings, field systems and cremation burials was excavated at Scott and Albyn's Farm, on the terrace overlooking the Ingrebourne River (Guttmann and Last 2000). Nearby, and on lower lying ground on the floodplain, evidence for animal husbandry was found in the form of a wattle enclosure fence (Meddens 1996). Further evidence of field systems has also been identified further up the Ingrebourne Valley at Hornchurch Aerodrome and Hacton Lane, Upminster (MoLAS 2000; Howell *et al.* 2011).

Three trackways and a platform structure, invariably occurring towards the top of the peat

sequences, were recorded at Woolwich Manor Way (Chapter 5, Figs 5.6 and 5.8) and two trackways were recorded at Movers Lane, along with a number of smaller stake built structures (Chapter 7, Figs. 7.9, 7.11 and 7.13). At Freemasons Road a double row of substantial oak piles may represent the remains of a wooden footbridge or jetty (Chapter 4, Figs 4.7 and 4.8 and Chapter 10, Fig. 10.5). The timber structures are discussed in more detail in Chapter 10; suffice to say the earliest was Trackway 50 at Woolwich Manor Way dated to the latter half of the 3rd millennium BC (Fig. 10.1). The 'bridge' structure at Freemasons Road, Trackway 29 at Woolwich Manor Way, and both trackways at Movers Lane date to the early to mid 2nd millennium BC. The overlap in the radiocarbon dating suggests that some of these structures may have been contemporary. Trackway 2/14 and platform structure 61 at Woolwich Manor Way are a little later dating to the latter part of the 2nd millennium BC. The trackways were fairly simple structures, invariably comprising concentrations of roundwood laid across the marshland surface. They were probably quite short-lived and, given the light construction, were probably only used for human foot traffic. However, some variation did occur; one of the trackways at Movers Lane incorporated wattle hurdles and at Woolwich Manor Way a trackway was constructed of a heterogeneous mix of wood suggesting a number of repairs, and included a possible fragment of a log boat or perhaps a large trough. A number of similar trackway structures have been recorded in the immediate vicinity, most notably those from the Beckton 3D, Beckton Nursery and Golf Driving Range sites adjacent to Woolwich Manor Way (Fig. 1.5; 4, 5 and 6; Fig 5.5, Fig. 10.3, BEC). The sediment and environmental evidence indicate that the structures found along the A13 were constructed during a period of increased wetness. This was a prelude to a major period of marine incursion and is consistent with the evidence from the other sites in the area (see Chapter 8). The broadly north-south orientation, at right angles to the gravel terrace, would suggest the structures may have been built to maintain access to the floodplain which during this period could have included drier floodplain islands as well as saltmarsh areas that may have been present towards the main Thames channel (Chapter 8, Fig. 8.6, CLM Stage 4). This may have been to exploit a range of natural resources; plant collection, hunting, fishing and waterfowling and/or the herding of animals to seasonal pasture (Plate 30 and see Chapter 10 for more detailed discussion).

The timber piled structure at Freemasons Road, located at the confluence of the Thames and Lea (Fig. 10.3), is amongst the most substantial known in the region. In comparative terms the piles are very similar to those from the late Bronze Age palisade alignments found on the Runnymede Bridge site bordering the Middle Thames, west of London (Needham 1991; 1992), although the Free-



Plate 30 Cattle grazing modern saltmarsh (photo by Jim Champion)

masons Road piles are generally a little larger in diameter. It is only at the Vauxhall Thames foreshore site that larger dated Bronze Age piles have been found in the region (Haughey 1999; Sidell *et al.* 2002, 29-30; Webber 1999), although a structure of similar arrangement has been excavated in the Ebbsfleet Valley further downstream (Wenban-Smith *et al.* in prep; Figs 10.2 and 10.6.). It is perhaps noteworthy that, in contrast to the trackways structures excavated at the other sites; the 'bridge' structure at Freemasons Road is orientated on an east-west alignment. Recent topographic modelling work in the Lea Valley suggests that during the early Bronze Age a large floodplain island may have existed immediately to the east of Freemasons Road and it is possible the structure linked the drier ground of the terrace to this island (Fig. 4.8b; Corcoran *et al.* 2011, 56 and fig. 108).

Based on radiocarbon dating, the piled structure at Freemasons Road may have been associated with a series of features located on a slight rise in the marsh surface immediately to the north. The features, comprising a series of gullies and postholes, may represent some form of enclosure perhaps associated with the corralling of animals (Chapter 4, Fig. 4.7, EMBA). However, apart from the enclosure at Freemasons Road, none of the timber structures can be directly related to features

recorded on the higher drier ground. At Movers Lane a 'burnt mound' deposit and associated pits located on the edge of the western palaeochannel appear to post-date trackway construction dating to the latter half of the 2nd millennium BC (Chapter 7, Figs. 7.14 and 7.15), as does the cremation deposit and series of linear features that may define a boundary or form part of a drainage or field system (Chapter 7, Fig 4.7, MLBA). A later phase of activity is also evident at Freemasons Road where a dense series of stakeholes were located (Chapter 4, Fig. 4.12). The pattern of stakes is difficult to interpret, probably as a result of repairs or modifications, but could represent the remains of animal pens or drying racks (see Chapter 10). Linear features recorded on the higher terrace at Prince Regent Lane may represent the remains of a field system (Chapter 4, Fig. 4.5).

In terms of the pottery assemblage only a single sherd from Movers Lane could be assigned an early or middle Bronze Age date (Barclay and Rayner in Appendix 2). A total of 333 sherds, however, were assigned a middle to late Bronze Age date (1500-900 cal BC). Both Deverel-Rimbury (1500-1150 cal BC) and post-Deverel-Rimbury (PDR) plain ware (1150-900 cal BC) forms were present. The Deverel-Rimbury pottery is mostly represented by relatively thick-walled sherds that are typical of Bucket Urn

forms and, more rarely, by thinner walled sherds more characteristic of Globular Urns. Several vessels are thought to belong to the later 2nd millennium BC and may be considered as either transitional between the Deverel-Rimbury and post-Deverel-Rimbury (PDR) traditions (1200-1100 cal BC) and/or belong to the initial PDR 'plain ware' phase (1150-950 cal BC) (Barclay 2001, 138-9; Barclay 2008, 96; Needham 1996, 2007). These assemblages tend to be characterised by simple straight, slightly splayed or ovoid-sided jars with simple flattened or rounded rims. Well-developed shouldered forms such as cups, bowls and jars (see Barrett 1980, fig 5:1-5, 12 and 14) are generally absent at this stage, being introduced and becoming more common from the late 11th and early 10th centuries BC onwards. Comparable assemblages include material recovered from Stanwell (O'Connell 1990, fig 28 and 53) to the west of the City, from Gravesend, Kent (Barclay 1994) and further afield at Weston Wood, Surrey (Russell 1989 fig 11, 25), Pingewood Berks (Bradley 1983-5) and Eynsham, Oxon (Barclay 2001).

The quantities of struck flint, largely recovered from Prince Regent Lane and Movers Lane, demonstrates that flintworking continued to play an important role in activities during the Bronze Age, complementing the use of metal tools (Plate 31; Bishop in Appendix 2; Fig.A2.3). The material was

present in quantity in the fills of palaeochannels and alluvial deposits where it may have been eroded in or dumped as refuse from adjacent drier areas. Flintworking was associated with the burnt mound feature at Movers Lane and other accumulations of struck flint may suggest that a degree of middening was occurring. The range of activities to which the struck flints were put is not easily discerned, but comparable assemblages were recovered during the excavations at the Royal Docks Community School (MoLA in prep.). There, a similar range of implements is present and micro-wear analysis suggests that these were predominantly used to scrape, cut and pierce hides. Features interpreted as hide drying racks were also recorded and it was suggested that the site might represent a specialist hide-processing location, taking advantage of the abundance of water and possibly the peat, which can act as a tanning agent. Features that contained significant quantities of burnt flint were interpreted as cooking pits, and it may be that these too were associated with hide preparation. Much of the burnt flint found during the A13 excavations was widely dispersed, probably reflecting background waste from hearths. However, substantial quantities were recovered from the burnt mound feature at Movers Lane and significant concentrations were also present within peat deposits at all of the A13 sites,



Plate 31 Middle to late Bronze Age worked flint from the A13 sites

suggesting that activities resulting in the systematic burning of flint were more widespread (see below and Bishop in Appendix 2).

Middle to late Bronze Age worked flint (Plate 31)

- a. **Late Bronze Age core tool (piercer?)** from Freemasons Road (FRU01, 32) (Fig. A2.3, 23)
- b. **Late Bronze Age denticulated flake** from Movers Lane (RIR01, 5083) (Fig. A2.3, 26)
- c. **Late Bronze Age edge trimmed flake** from Movers Lane (RIR01, 5189) (not drawn)
- d. **Late Bronze Age retouched wedge-shaped flake (chopping tool?)** from Movers Lane (MOE00, 516) (not drawn)
- e. **Scraper** from Freemasons Road (FRU01, 102) (not drawn)
- f. **Scraper** made on a bulbar end from Movers Lane (RIR01, 5189) (not drawn)

Later periods

Evidence of occupation along the A13 from the beginning of the first millennium BC onwards was relatively sparse and overall suggests low-level activity perhaps occurring on a seasonal basis. At Freemasons Road a small assemblage of burnt flint and animal bone was found associated with the upper alluvial sequence, in addition to a possible area of burning and a small pit containing late Bronze Age to early Iron Age pottery. These remains were sealed by a further layer of alluvium, the surface of which displayed evidence of possible poaching by cattle hooves (Chapter 4, Fig. 4.15). A series of linear features may represent drainage ditches or modification of a series of natural channels. This scarcity of evidence is probably a reflection of the increasingly tidal nature of the floodplain (see Chapter 8, Fig. 8.6, CLM Stage 5), which is also evident in quantity of late Bronze Age and Iron Age metalwork deposited in riverine contexts, possibly as votive offerings (see below). Evidence from sites in the vicinity, however, suggests the drier ground of the terraces were heavily utilised (J. Cotton pers. comm.). Late Bronze Age to early Iron Age ring works are known at Leyton and South Hornchurch, with another large sub-rectangular enclosure at Heathway, Dagenham. Aggregated Iron Age settlements have been located in some numbers east, west and south of the city (see Framework 2010; Howell 2005; Howell *et al.* 2011), culminating in the construction of major enclosures at Uphall Camp on the River Roding (Greenwood 2001) and the possible oppidum at Woolwich Arsenal across the Thames to the south.

Evidence of Roman activity was largely restricted to the Woolwich Manor Way site. Here, a relatively large assemblage of late Roman pottery was recovered from the upper alluvial sequence. The assemblage was associated with a series of disturbed alluvial layers and gravelly deposits that may represent an attempt to consolidate the wet marsh surface (Chapter 5, Fig. 5.11) in close proximity to a

putative Roman Road. A series of linear features of probable Roman date, perhaps the remnants of a field system or boundary marker, were also recorded on the higher terrace at Prince Regent Lane (Chapter 4, Fig. 4.5). It is possible this may reflect the expansion of field systems off the terrace immediately to the north, which may in turn reflect a wider series of re-alignments and expansions of field systems in the region, visible at places like Heathrow and elsewhere (J. Cotton pers. comm.).

Subsistence and economy

Cereal cultivation

With one notable exception there was very little direct evidence for cereal cultivation from the sites along the A13 during the prehistoric period. There was some evidence in the pollen record of cereal from the early Neolithic onwards (see Chapter 8 and Druce, Haggart, Peglar in Appendix 3). However, as stated previously, the similarity of cereal pollen with some wild grasses, particularly barley-type, means that the evidence remains equivocal. At Woolwich Manor Way an important assemblage of charred emmer wheat grains and chaff dated to the early Neolithic period was recovered from T15 (Plate 28; Pelling in Appendix 3). Micromorphological analysis also indicated that the buried soil which was associated with the assemblage had been subject to disturbance that may be attributed to either trampling and/or ploughing/cultivation (Macphail in Appendix 3). The retouched implements in the early Neolithic flint assemblages also suggest an emphasis on cutting tasks that probably included the processing of silica-rich plant materials such as cereals (Bishop in Appendix 2).

Apart from the assemblage recovered from Woolwich Manor Way, the scarcity of evidence of Neolithic cultivation is not unusual for the Thames Valley, even at sites like Runnymede where there is abundant evidence for more permanent settlement. Although ard marks have been recorded in the soils beneath Neolithic monuments further afield (Morigi 2011), the examples recorded on the south bank of the Thames in Southwark tend to be later in date (see below). With reference to charred assemblages, the earliest remains in the vicinity of the A13 sites are an indeterminate cereal grain and a glume of emmer wheat (*Triticum dicoccum*) from the Yabsley Street grave (Robinson in Coles *et al.* 2008). A possible sherd of Carinated Bowl from the MI6 site near Vauxhall also bears an indeterminate cereal impression (Milne *et al.* 2011, 288), as does an impression on a sherd of Mildenhall pottery (possibly of 'naked barley') from the midden deposit at Great Arnold's Field (Howell *et al.* 2011, 34). Some carbonised cereals were recovered from the Runnymede site and single grains have been recovered from Neolithic pits on the West London gravel terraces and further upstream (MoLAS 2000).

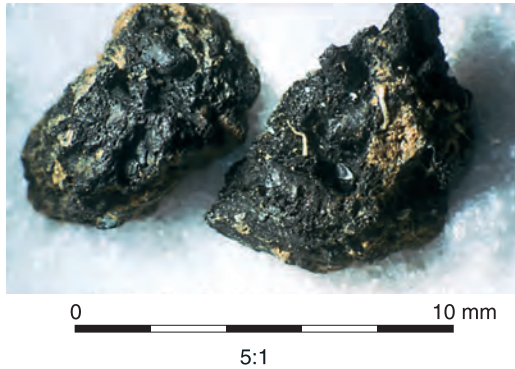


Plate 32 Early Neolithic charred bread, made from barley, from Yarnton, Oxfordshire

Assemblages include hulled barley (*Hordeum* sp.), emmer wheat and free-threshing wheat, the latter probably a bread wheat (*Triticum aestivum*). At Eton, however, in the Middle Thames, a notably rich assemblage of early Neolithic grain was recovered from midden material (Allen *et al.* 2004, 91 and forthcoming). We may assume that the cereal was used for a number of foodstuffs, such as bread, porridge and perhaps beer. Of note are the charred remains of barley bread recovered from a pit at Yarnton in the Upper Thames Valley (Plate 32; Morigi 2011, 247).

The significance of cereals in the diet of Neolithic people, particularly in relation to the importance of collected woodland resources, is still a topic of debate (see Moffett *et al.* 1989; Robinson 2000; Jones 2000; Jones and Rowley-Conwy 2007). It is notable that the charred plant remains from the Yabsley Street grave also included seeds of hawthorn, mallow and fragments of hazelnut shell (Robinson in Coles *et al.* 2008) and charred hazelnut shell was also recovered from the assemblage in T15 at Woolwich Manor Way (see discussion below). Rich deposits of cereal grain, while rare, do demonstrate that cereals were probably more widespread than the archaeology tends to suggest, but that for some reason they survive in good numbers only occasionally. This might include the scale of agricultural production, processing methods and erosion of archaeological features (Pelling in Appendix 3).

Although there is good evidence for increasing agricultural intensification from the middle Bronze Age period in the Thames Valley (Lambrick 2009; MoLAS 2000, Yates 2007), direct evidence specifically of cereal cultivation from the A13 sites was again sparse and restricted to occasional indeterminate fragments of charred grain. A small charred assemblage from the middle to late Bronze Age peat at Prince Regent Lane (layer 43, T23) included grains of wheat (*Triticum* sp) and a spikelet fork of spelt wheat (*T. spelta*). Cereal-type pollen, wheat and possibly barley, however, were recorded with increased frequency in middle to late Bronze Age deposits at several sites. This included the main period of peat formation at Freemasons Road, as

well as the peat associated with the trackways in Area 2 at Woolwich Manor Way and Area 3 at Movers Lane. Only a small portion of the linear features was exposed on the higher ground at Prince Regent Lane and Movers Lane. These could represent field boundaries, though they could equally have been used for stock control as for cultivation. The absence of evidence for cultivation may be partly related to the position of the A13 sites immediately adjacent to the floodplain where activities are likely to have been seasonal or at least semi-permanent and focused on the exploitation of natural resources provided by the wetland zone, with the marshland edge probably used for grazing of livestock. Increasingly wet conditions during this period means it would have been highly likely any crop cultivation and processing would have taken place on the higher, drier, ground.

In the wider region, cultivation of cereals is evident in the pollen spectra at a number of sites dated to this period along with remains of co-axial or 'Celtic' field systems identified through excavation and aerial photography. There is now good evidence that the higher islands within the floodplain in Southwark and Bermondsey were cultivated in the mid second millennium, with possible ard marks recorded at sites such as Phoenix Wharf, Lafone Street and Wolsey Street (Sidell *et al.* 2002, 35-7). However, the usually crisp definition of these marks suggests that the episodes of cultivation were likely to have been short-lived.

Animal husbandry

Unfortunately the faunal assemblages recovered from the A13 sites were comparatively small (Strid and Nicholson in Appendix 3). Furthermore, since much of the diagnostic artefactual material from the earlier periods was found within later contexts it is difficult to ascertain the importance of the accompanying fauna. More can be said of the animal remains recovered from more securely dated Bronze Age contexts. The assemblage of domesticated species recovered from Freemasons Road, for example, included cattle, sheep and/or goat and pig (Fig 9.3).

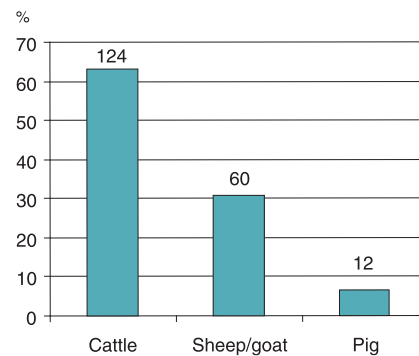


Fig. 9.3 Quantification of bones of cattle, sheep and pig from Bronze Age contexts at Freemasons Road, by number of identified fragments

Cattle were the most numerous taxa and certainly wetland pastures suit cattle far better than sheep. Most of animals appear to have been sub-adult or adult at the time of death. While not all skeletal elements were represented, bones from meat-rich body parts as well as meat-poor body parts were present which may suggest that domesticates were butchered on or close to the site. Butchery marks were recorded on a number of bones from all of the domesticates present in the assemblage. Most of these were cut marks deriving from disarticulation and marrow extraction, but chop marks on the basal part of one cattle and one goat horn core suggest utilisation of horn for horn-working. As stated above, the Bronze Age flintwork from the A13 sites is very comparable to that recorded at the Royal Docks Community School where activities involving specialised hide processing were indicated. This could point to a thriving hide working industry located along the edges of the marshes, possibly associated with the widespread agricultural reorganisation in the region during this period, much of it appearing to focus on animal husbandry (see discussion in Bishop, Appendix 2).

Exploitation of natural resources

The only real direct evidence for the collection of wild foodstuffs on the A13 during the Neolithic derives from the occupation horizon at Woolwich Manor Way where a number of charred hazel nut shells were found in association with the cereal grain. As previously stated, the route-wide flint assemblages included high proportions of retouched implements that included many simple edge-trimmed flakes and serrated pieces, some exhibiting polish, suggesting an emphasis on cutting tasks that probably included the processing of silica-rich plant materials (Avery 1982, 38; Grace 1992; Bradley 1993; Donahue 2002). As well as cereals these may have included rushes that would no doubt have been abundant in this riverine area. Hunting maintenance activities are indicated by an almost finished arrowhead from Woolwich Manor Way, whilst other possible arrowhead blanks are present at Prince Regent Lane (Figs. A2.3.5 and A2.3.1) indicating their manufacture and recalling similar activities recorded at Tank Hill Road and further upstream of the Thames at Dorney (Lamdin-Whymark 2001; Leivers *et al.* 2007, 26 and fig 20). With reference to exploitation of the local woodlands, the small charcoal assemblage from the early Neolithic occupation surface at Woolwich Manor Way attests to the collection of a range of local woody material probably for domestic hearth fuel (Barnett in Appendix 3). Identified taxa included hazel, pomaceous fruit wood (Pomoideae), cherry-type (*Prunus* sp., a group including wild cherry and blackthorn) and also the only charred representation of elm.

Evidence for the collection of wild plants or indeed the exploitation of fish, game or wildfowl in

the Bronze Age faunal assemblages is notably absent. The only wild fauna tended to be rodents and amphibians. Whether this is a true absence or a reflection of the small size of the assemblages or, in the case of fish remains, issues of preservation, recovery and even taboo/cultural choice, is unclear. It seems unlikely that local communities would not have taken some advantage of the range of plants and animals that are likely to have been present in the wetlands. However, the evidence suggests that activities such as the hunting of game and fishing had become rare within the Thames Valley during the later prehistoric period: very few faunal assemblages include wild species. Flint arrowheads do not appear to have been produced into the middle Bronze Age and metal spears appear to have functioned either as status symbols or as weaponry (Lambrick 2009, 155). Collection of wild plant foods does not appear to have contributed significantly to the diet, with the evidence restricted to occasional charred hazelnut shells and edible tubers (*ibid.*).

For the later periods there is substantial evidence from both the waterlogged wood and the charcoal assemblages to indicate that a moderate range of woody types were selected and used on the A13 sites (Barnett in Appendix 3). The concentrations of alder and hazel are likely to reflect both their local availability and their increased productivity due to coppicing. These species indicate the use and management of both the wetland alder carr in the immediate area and of the slightly drier mixed open woodland beyond the floodplain edges. At Movers Lane the charcoal assemblages indicate that both alder and hazel were important, the latter accounting for around 80-95% of the pieces recovered from the burnt mound and associated pit. Fragments of pomaceous fruit wood, oak, willow/poplar, elder, cherry-type and alder were also found in these contexts. This mix of wood types is likely to reflect local gathering of fuel wood but with stands of (potentially managed) hazel particularly targeted. The importance of hazel in the wood charcoal is not reflected in the waterlogged wood assemblages from contemporary contexts, suggesting there was deliberate selection of hazel for fuel and a preference for alder to use in structures likely to be periodically submerged. Alder wood is indeed known for its durability under water (Edlin 1949, 23; Gale and Cutler 2000, 34). At Freemasons Road layer 49, an organic deposit that accumulated around the base of the early to middle Bronze Age piled structure, produced a charcoal assemblage dominated by alder but also oak, with smaller quantities of hazel. Ash, pomaceous fruit wood and six pieces of lime/linden (*Tilia* sp.) were also recovered, the latter the only representation of the taxon in this analysis.

Species identification of the waterlogged wood from the timber structures demonstrated primarily the use of alder but also a range of other tree and shrub types. The dominance of alder and importance of willow/poplar points to use and manage-

ment of wetland alder carr and the use of slightly drier marginal mixed open woodland is indicated by the presence of oak, hazel, holly, elm and ash. While management of stands is clearly shown by the presence of coppiced pieces (see Chapter 10) the range of taxa utilised may also suggest some casual opportunistic exploitation. The use of alder, hazel and willow for structural components of Neolithic and Bronze Age wetland trackways is commonly reported in the UK, in the Somerset Levels for example, with the use of larger tree types such as ash and oak for planks and large stakes (see discussion in Barnett, Appendix 3). More unusual is the use of yew and holly in the trackways at Woolwich Manor Way, the former also found within worked wood spreads at Freemasons Road. As previously stated (Chapter 8) yew appears to have been an important component of the Bronze Age wetland margins in the region, while the Bronze Age flora at West Heath showed an increase in holly within the existing mix of oak, lime and hazel.

Waterways as routeways and boundaries

During the prehistoric period the waterways would have existed as corridors through areas of dense woodland and inhospitable territory, providing access both to inland areas of southern England, as well as the North Sea. Major north-south tributary valleys, such as the Lea, may have also acted as corridors linking the Thames with the East Anglian zone (Needham and Burgess 1980, 453). Excluding the River Medway, the River Thames and its tributaries drain a catchment area of approximately 4,995 square miles (12935.77 km²). The Thames rises in the Cotswolds and flows within a broad valley for about 338km (210 miles) across Gloucestershire, Oxfordshire and Berkshire, before entering Greater London. Currently the lowest 105km (65 miles) from Teddington Lock in West London are tidal, although during the Bronze Age the tidal head was located further downstream in the vicinity of Westminster (Sidell *et al.* 2000; 2004). It is clear the River Thames played a central role in the lives of past local communities, as it does today. As well as providing a diverse range of natural resources, the river would have also facilitated movement through the landscape, communication between different groups, the opportunity for trade and exchange and a conduit for the spread of ideas, technology and innovations.

Evidence of exchange networks during the Neolithic and Bronze Age in Britain, particularly of exotic items, is well attested; large numbers of stone axes recovered from the Thames originate from Cornwall, Westmorland, Wales, Ireland and Europe. The fragmentary Neolithic belt slider recovered from the A13 investigations at Movers Lane represents a prestigious item made from jet that probably originated from Whitby on the north-east coast (Sheridan in Appendix 2). By the middle Bronze Age the Lower Thames appears to have developed

as a centre for bronze production and consumption. Items recovered from the region commonly include weaponry: narrow blade rapiers, spearheads and shields. The metalwork demonstrates a marked European influence and some items may have been directly imported from the continent. This includes broad-bladed swords of Rosn en type and leaf shaped flange-hilted swords of Hermigkofen and Erbenheim types (MoLAS 2000, 87).

Inland waters were probably navigated using hide covered coracles and canoes as well as dugout logboats. An example of a logboat, discovered in the 19th century in peat deposits on the Erith marshes, also contained a Neolithic polished flint axe (MoLAS 2000). On the A13 at Woolwich Manor Way it has been suggested a fragment of worked wood incorporated into the structure of 'platform' 61, dated to the middle to late Bronze Age at 1270-1040 cal BC (SUERC-24504: 2945±30 BP), may derive from a dugout logboat (Chapter 5, Fig 5.10c). Wooden paddles have also been recovered, including the late Bronze Age example from Canewdon in the Crouch estuary, Essex dated to 1225-998 cal BC (Wilkinson and Murphy 1986; 1995, 152-7). The basic logboat would probably have required modification for sea travel, such as the fitting of outriggers or the pairing of two boats, to give them the extra transverse stability and freeboard, although no evidence of this has ever been recovered on British sites (McGrail 1990, 32). However, evidence for an advance in the technology of water transport, unique to Britain, is exemplified by Bronze Age sewn plank boats such as those found at Dover, Kent (Clarke 2004) and in the Humber estuary (Wright and Wright 1939; Wright 1990; Wright *et al.* 2001; Van de Noort *et al.* 1999). It is widely accepted that this type of craft was probably used for seafaring (Clark 2004 in van de Noort 2006; McGrail 2001; van de Noort *et al.* 1999). Experimental studies have shown that these craft would have the potential to cross the North Sea and could possibly have been propelled by sail as well as by paddling (Crumlin Pedersen and Trakadas 2003; Gifford and Gifford 2004; Kaul 2004). As well as a routeway, the River Thames is likely to have represented a formidable natural east-west barrier, particularly in its lower reaches and estuary where it was not easy to bridge or ford. The Bronze Age piled bridge structure recorded at Nine Elms, Vauxhall is situated at the point at which the river first becomes fordable, as well as being close to the furthest point upstream at which the river was tidal (Haughey 1999; Sidell *et al.* 2002, 29).

With the growth of the port at *Londinium* the River Thames, and indeed the River Lea, remained important trade and communication routes, alongside the developing network of roads that included the main routes to Lincoln (Ermine Street) and Colchester. The Roman crossing point, which was essential for both commercial and military reasons, was situated in the vicinity of the modern London Bridge. Crossing points also existed where the

Colchester Road crossed the River Lea at Old Ford and Stratford (Corcoran *et al.* 2011, 184). Where it was not easy to bridge or ford the Thames, it is possible a number of ferry points were in use during this period (Fig. 9.4). The alignment of East Ham High Street and Woolwich Manor Way reputedly marks the line of a Roman road leading from the higher ground to the north, perhaps to a ferry crossing at North Woolwich, which is of at least medieval origin. The alignment of Green Street, Boundary Road and Stansfeld Road, slightly to the west may indicate the position of another routeway towards Ham Creek (the Blackwall Basin), a natural harbour which silted up during the 19th century. Finds of black samian ware pottery, roof tile of 3rd century date and a dugout canoe, recorded by Whitaker and Spurrell in 1890 during construction of the Royal Albert Dock, may indicate the presence of a Roman harbour here (Arch. Journal, vol. xlvii p.170 cited in Hanson 1996). Further downstream, at Higham, Kent, a Roman causeway running north to the Thames, opposite East Tilbury, also suggests a ferry point, and further out into the estuary a ferry crossing may have existed between the Kentish flats at Whitstable and the Maplin Sands to the north (Cracknell 2005, fig. 62). That the river served as a political and defensive boundary between different tribal groups is very evident during the later periods through the distribution of late Iron Age coinage and accounts of the Roman campaigns of

the late 2nd century BC. Major tributaries would also have been significant landscape features dissecting territories north-south. The course of the River Lea marks the historical boundary of the counties of Middlesex and Essex, but as early as the 9th century AD a treaty between King Alfred of Wessex and the Dane, Guthrum, established it as the boundary between the kingdom of Mercia and the Danish territories to the east (Corcoran *et al.* 2011, 10).

Burial and ritual activities

There was relatively little evidence for funerary activities on the A13 sites. A late Neolithic to early Bronze Age barbed and tanged arrowhead and the semi-invasively flaked knife, both from Movers Lane, are finely made and this may hint at their use as prestigious implements, these types sometimes being associated with funerary practices (Bishop in Appendix 2; Plate 25, e; Plate 29, a; Fig. A.2.3, 14 and 16). The recovery of two Beaker sherds (Plate 26) and the jet belt slider at this site, although not associated, may conceivably have originated from disturbed burials in the vicinity, for which there is slight evidence in the form of scraps of human bone. The human remains recovered from the A13 sites were restricted to Movers Lane. They included five tiny fragments of redeposited disarticulated human bone; all comprised fragments of long bone shafts

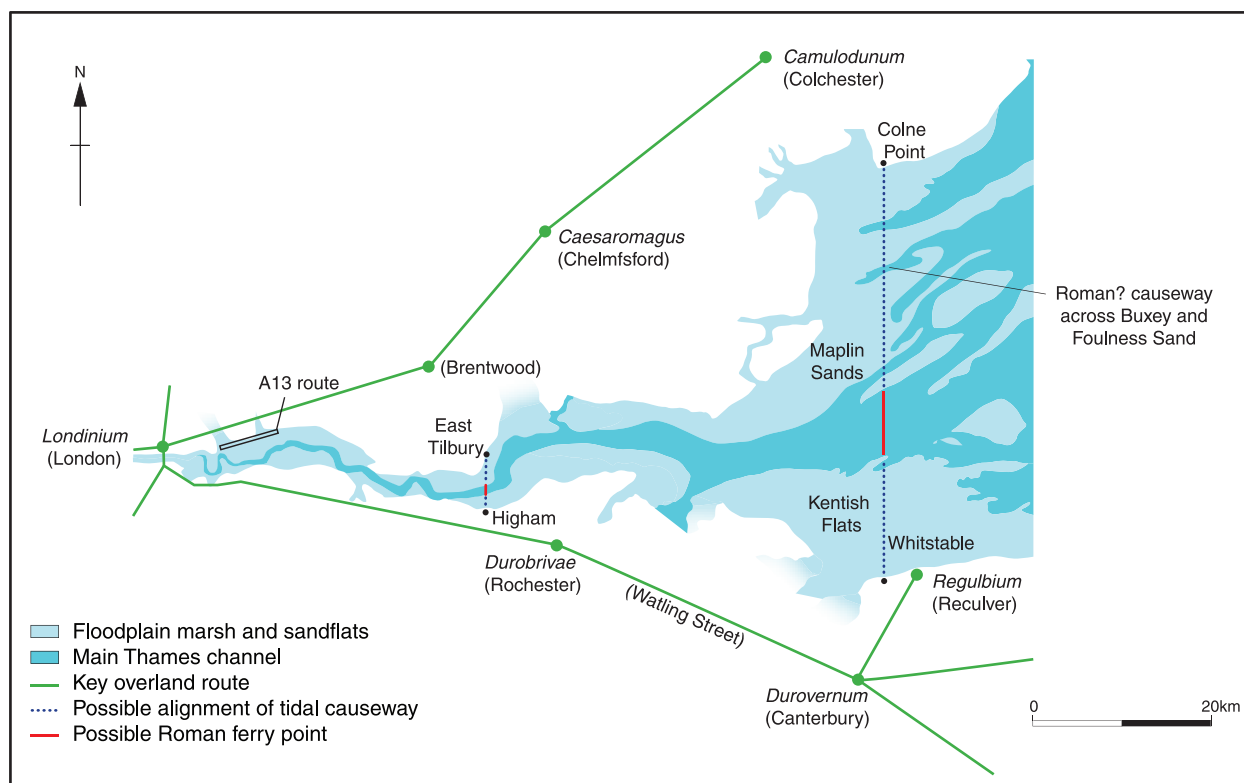


Fig. 9.4 Key routeways along the Thames estuary during the Roman period and postulated crossing points (after Cracknell 2005).

recovered from Bronze Age layers, together with a Bronze Age cremation (1207) of an adult, probably male (McKinley in Appendix 3; Fig. 7.8 Area 2). Since the cremation comprised only around 33% of what would be expected if all the remains were present, and charcoal was absent from the deposit, it is likely that the cremation comprised redeposited pyre debris rather than a complete cremation burial. The cremated bone has been dated to 1260-1010 cal BC (SUERC-24290: 2920±30 BP). Little further can be said of these remains other than the cremation clearly demonstrates that burial was taking place at the site during the late Bronze Age.

The jet belt slider recovered from Bronze Age alluvial deposits at Movers Lane (Sheridan in Appendix 2, Fig. A2.4) constitutes an exotic artefact that formed part of a set of prestige objects during the second half of the fourth millennium BC, although it is also possible it was a curated/'heirloom' object and its electrostatic properties may have afforded it special significance (J. Cotton pers comm). Its watery association is clear, but whether it represents a votive deposit, originally placed in or beside the river, or else the last traces of an eroded funerary deposit is uncertain. Votive deposition would accord with the practice attested further upriver at Basildon (Fig. A2.5 no. 24, Table A2.19).

The Thames is well-known for the large number of later prehistoric votive river finds, particularly metalwork. Of note are the two side-looped copper alloy spearheads associated with the piles of the 'bridge' structure on the foreshore at Vauxhall (Cotton and Wood 1996, 14-16 and fig. 7, nos. 22a and b; Haughey 1999; Sidell *et al.* 2002). Ritual deposition is known from alongside other prehistoric causeways and trackways across wetlands, but more frequently later in the Bronze Age, such as at Flag Fen (Pryor 1991). The inverted Beaker found within the peat deposits alongside trackway 2/14 at Woolwich Manor Way probably represents a 'placed' deposit (Chapter 5, Fig 5.8; Barclay and Rayner Appendix 2, Fig. A2.1, 17). As previously stated the vessel belongs within Clarke's East Anglian group (1970) and is unlikely to be early within the sequence of Beaker pottery (2450-1700 cal BC), although it could belong to the final centuries of the third millennium BC (after 2250 BC; see Needham 2005, fig 13). Two radiocarbon dates were obtained from trackway 2/14; the first from evaluation TP9 at 1880-1520 cal BC (Beta-153984: 3390±60 BP) and the second from the Area 2 excavation at 1610-1430 cal BC (SUERC-24292: 3230±30 BP). These dates suggest the pottery could be contemporary with the trackway. The second date range is perhaps a little late in the Beaker sequence although it is possible the vessel could represent a curated item.

With reference to the piled structure at Freemasons Road, the artefact scatters from organic layer 49 that accumulated around the piles during the construction and use of the structure (Chapter 4, Fig 4.8) appeared, on initial examination, to be of a wholly domestic character: wood working debris,

pottery and animal bones. The animal bones included cattle, sheep and/or goat, pig and dog and, with the exception of two dog mandibles and probably a skull and atlas vertebra, no bones were articulated. The bones were relatively few in number and no specific body parts were over-represented. Butchery marks on cattle and sheep/goat bones indicate food waste, although it is difficult to tell whether this would be from ordinary meals or from feasting (Strid and Nicholson in Appendix 2). The presence of a dog atlas, skull and two articulating mandible halves suggests that these may have been part of a single dog's head, the bones becoming disarticulated by water movements. It is conceivable that the head had ritual connotations: at Flag Fen, articulated and semi-articulated skeletons of dogs and disarticulated human remains suggest ritual depositions, possibly related to funerary rites (Halstead *et al.* 2001, 348-350). However, dog bones with butchery marks have been found on some Iron Age sites, suggesting that in this later period dogs were occasionally exploited for their meat (Maltby 1996, 23-24) and eating of dogs may have been practiced in the Bronze Age as well, for dietary, ritual or medicinal purposes (*cf.* Pasda 2004, 44-45). Dog remains in later Bronze Age flood deposits at Freemasons Road included a single, disarticulated atlas with transverse chop marks on the ventral side of the neural arch, indicating an attempt at decapitation, although for what purpose is unclear.

The occurrence of yew (*Taxus baccata*) in the pollen, plant and waterlogged wood assemblages has been discussed in Chapter 8. Yew was utilised in some of the Bronze Age timber trackways at Woolwich Manor Way as well as the platform structure at the adjacent Golf Driving Range site (Carew *et al.* 2010; Goodburn 2003b). A small scatter of yew wood chips was recovered from Bronze Age deposits at Movers Lane and an axe trimmed section of yew at Freemasons Road (see Chapter 10). Yew is an evergreen wood and it is possible it may have had special, perhaps spiritual, significance for local communities (see Coles 1998). An example of the use of evergreen wood in a non-utilitarian context is the case of the Dagenham idol, found in floodplain deposits during the construction of the Ford Motor Works in 1922. Originally identified as Scots Pine (*Pinus sylvestris*) radiocarbon dating places it in the late Neolithic to early Bronze Age period at 2351-2139 cal BC (Coles 1990) which is broadly contemporary with Trackway 50 at Woolwich Manor Way.

With reference to the Bronze Age timber structures generally, one feature that has been observed, from around 1500 BC, is the apparent reuse of sewn-plank boat fragments in trackway and bridge structures associated with votive deposits. These offerings include a rapier at Testwood Lakes near the Solent (Fitzpatrick *et al.* 1996), an amber bead at Caldicot and human skulls at Goldcliff, in the Welsh Severn estuary (Nayling and Caseldine 1997) and bronzes at Brigg (McGrail 1981; 1997; 2000). Van de

Noort (2006) discusses the evidence in terms of 'rituals of travel', suggesting that from the middle Bronze Age reuse of boat fragments in structured deposits, within or near river crossings, reflects the idioms of transformation and regeneration which are well established for this period (see Brück 2001). No deposits indicative of ritual activity were recovered in direct association with the possible logboat or trough fragment incorporated into Platform 61 at Woolwich Manor Way (Fig 5.10c), although the structure was only partially excavated as it extended beyond the limit of construction impact.

Concentrations of burnt flint are a feature of prehistoric settlement sites and provide evidence for the use of heated stones for various activities such as cooking (Lambrick 2009, 179-180). However, some sites produce much larger quantities of burnt flint and include the much debated and enigmatic class of monuments commonly referred to as burnt mounds. Burnt mounds are more generally dated to the middle and later Bronze Age and they are often found adjacent to water courses. In the classic form they appear as a crescent-like or circular mound of burnt stone often associated with a central trough, probably used to boil water with heated stones (Raymond 1987). The variety of activities that have been suggested for these features include cooking,

possibly for communal feasting (O'Kelly 1954; Barber 1990), the processing of fleeces (Jeffery 1991), salt production (Barfield 1991), brewing (Wilkins 2011, 29-30) or the generation of steam for sweat lodges and purification rituals (Barfield and Hodder 1987). A few examples have been found in the Greater London area. The example from Phoenix Wharf, Bermondsey also included a 'boiling pit' and a series of stakeholes, possibly representing a revetment or windbreak, and was interpreted as a possible cooking site (Bowsher 1991; Sidell *et al.* 2002). In common with many other sites, the feature identified at Movers Lane did not really produce the quantity of faunal remains one would perhaps expect of 'domestic' settlement activity. It was, however, associated with a number of pits also filled with burnt flint and the close proximity of the western palaeochannel at Movers Lane clearly provided a ready source of water. The micromorphological analysis detected remnants of burnt bone that could indicate activities associated with food preparation, however there was also evidence for mixing by trampling of an often muddy substrate and evidence for alluvial inwash. This could suggest the material was simply deposited at this location in an effort to stabilize the river bank.