

Mesolithic and Late Bronze Age activity at London Road, Beddington

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Excavations at London Road, Beddington revealed evidence of prehistoric activity dating from the Mesolithic through to the Late Bronze Age. The earliest activity took the form of three amorphous pits, apparently utilized for the extraction of knappable flint nodules during the Mesolithic period. Also identified were a Late Neolithic–Early Bronze Age flint scatter and at least two phases of Late Bronze Age activity comprising three post-built structures and an associated cluster of rubbish pits, enclosed within an area defined by a boundary ditch. A subsequent phase of Late Bronze Age activity apparently saw the abandonment of this location for settlement and the utilization of the area, again possibly for the extraction of workable flint. The prehistoric features were sealed by agricultural ploughsoil, from which further prehistoric finds were recovered. The archaeological evidence recovered from the site adds significantly to the large body of evidence for Late Bronze Age settlement and agricultural practice in the Beddington area, while the recovery of struck flint assemblages from the Mesolithic and Late Bronze Age allows for the comparison and contrast of two distinct technological styles.

Introduction

An archaeological evaluation and subsequent excavation were undertaken at London Road, Beddington, in the London Borough of Sutton (TQ 2835 6643; fig 1) during January and April 1999 by Pre-Construct Archaeology Ltd, following specifications prepared by the archaeological consultant, Duncan Hawkins of CgMs Ltd. The work was in advance of the development of the site for housing by the Peabody Trust, which generously funded the investigations.

The site is located within an Archaeological Priority Zone as defined within the London Borough of Sutton's Unitary Development Plan. The borough has special regard to the Beddington/Waddon Area of Archaeological Interest. As well as the Scheduled Ancient Monument of Beddington Roman villa, there is evidence for prehistoric occupation throughout the area.

The ten evaluation trenches revealed a struck and burnt flint scatter of Mesolithic and Bronze Age date (Bagwell 1999). The subsequent excavation comprised two c 20 x 20m areas (Areas A and B), located at the south of the site where the ploughsoil had produced the greatest number of finds (fig 1). The topsoil was removed by a mechanical excavator and the surface divided into 1m squares and cleaned by hand. Although no features could be identified from this horizon, concentrations of flint and pottery reflected the locations of disturbed underlying Late Bronze Age features. Once identified, further machining of the relict ploughsoil followed to a level at which features could be observed in plan. These were then fully excavated and recorded. The ploughsoil and many of the prehistoric features were truncated by a 19th century field drainage system, which ran across both areas. Prior to redevelopment, the site was used as open pasture.

Geology and topography

The solid geology of the area is London Clay which, in the vicinity of the site, is overlain by the Quaternary Second Gravel Terrace. Upper Chalk lies c 1.5km to the south, rising towards the North Downs (BGS 1998). The ground in the vicinity of the site is relatively

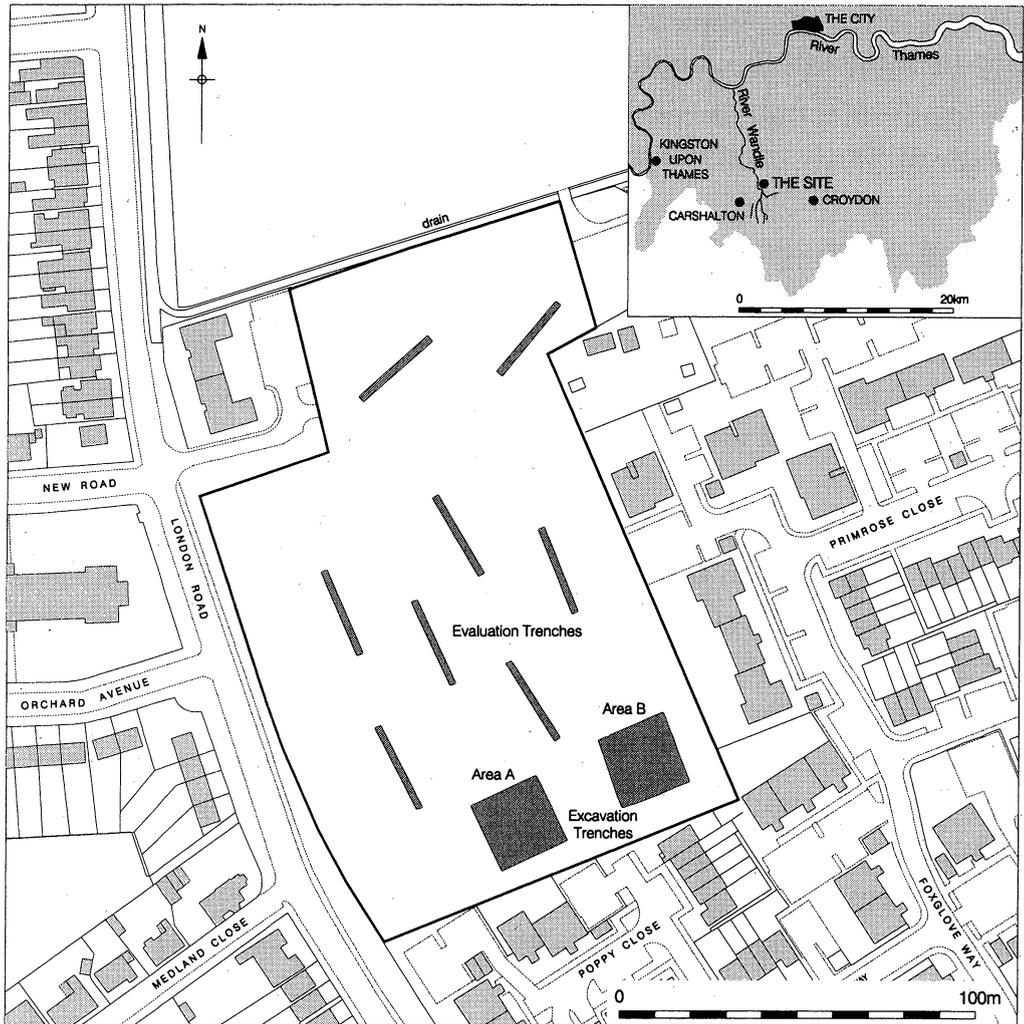


Fig 1 London Road, Beddington: site and trench location. (Reproduced by kind permission of the Ordnance Survey, © Crown Copyright NC/01/24321)

flat, gently sloping down towards the river Wandle, which lies approximately 600m to the west.

In the excavated areas of the site natural deposits consisted of very mixed, fairly silty, patchy sands and pebbles. Significantly, and particularly in the more pebbly patches, large, relatively unweathered flint nodules weighing up to 1.5kg and suitable for knapping were found.

The results of the excavation

NATURAL FEATURES

Seven of the excavated features consisted of oval shaped pits up to 3.7m long by 1.75m wide and 0.63m deep (table 1, M54). They were filled with a dark blackish brown, humic clayey silt, with frequent mineralized inclusions throughout. Only two produced any finds, consisting of a few struck and burnt flints limited to the upper fills and assumed to have

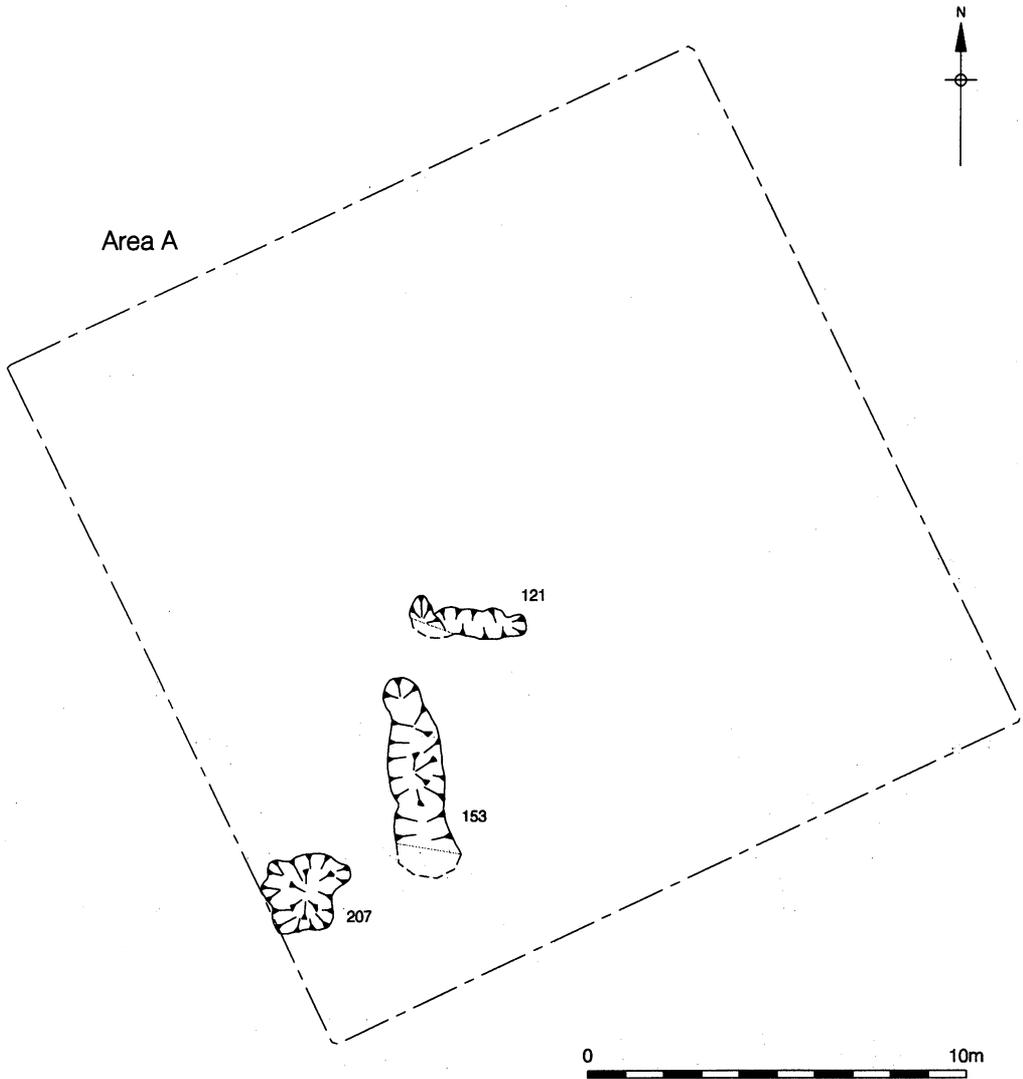


Fig 2 London Road, Beddington: Mesolithic features

been introduced residually, such as through ploughing activity. The pits were interpreted as probable natural peri-glacial ice wedges, on the grounds of the nature of the fills and shape of the cuts. In addition, ten shallow circular or sub-round features filled with grey clayey sand were also excavated; as they contained no artefacts, and in the absence of any indications to the contrary, they have been interpreted as natural features, caused by agencies such as animal or tree disturbance.

MESOLITHIC ACTIVITY (fig 2)

Three irregularly shaped pits in the south-west corner of Area A contained quantities of flintwork which, on metrical, technological and typological grounds, were considered to be characteristic of Mesolithic industries (tables 2-4, M55-M56). Varying in size and depth, these pits were all filled with loosely compacted light-brown silty sand containing

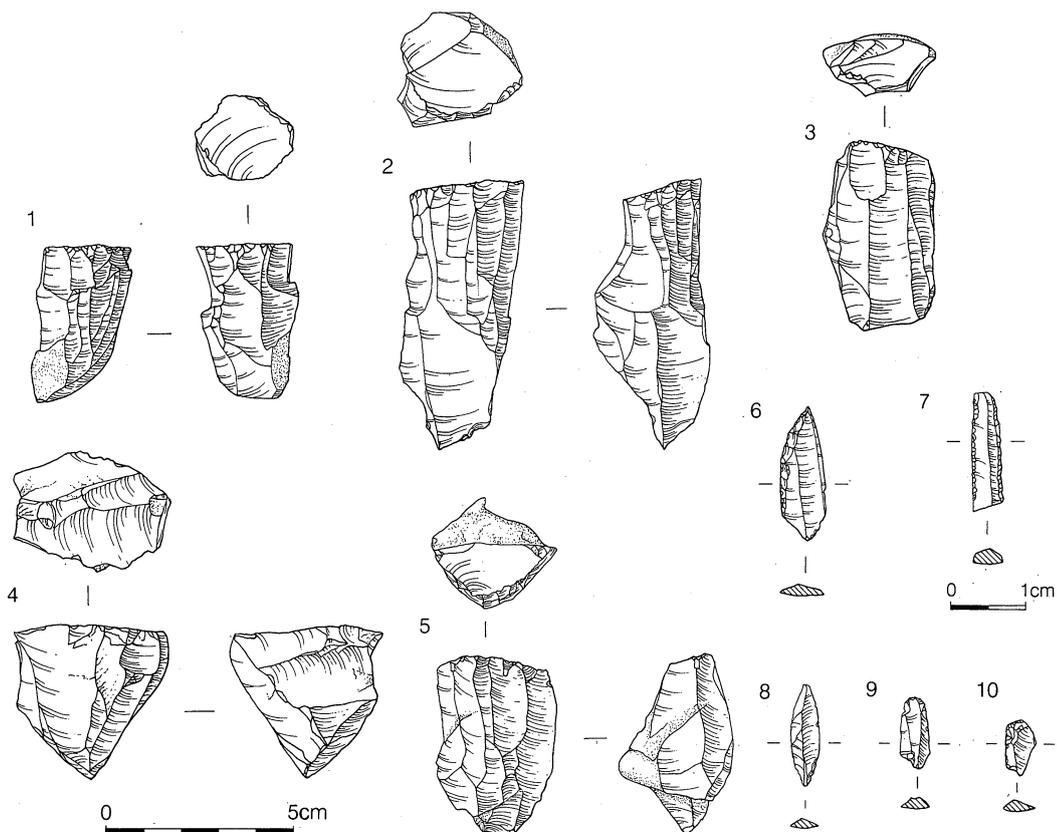


Fig 3 London Road, Beddington: Mesolithic cores (1-5); microliths (6-8) and microburins (9-10)

struck flint, burnt flint, small rounded pebbles and occasional larger angular flint nodules, which were concentrated towards their sides and bases. The struck flint was found throughout the pit fills, indicating that the flintworking activity was not just occurring in open pits but also in their vicinity and had been gradually washed in. Pits 121 and 153 were both roughly linear, measuring 3.1m long x 0.85m wide and 0.41m deep, and 5m long x 1.7m wide and 0.35m deep respectively, both having gently sloping sides and undulating bases. Pit 207 was roughly circular, measured 2.4m long x 2.2m wide and 0.6m deep and had irregular steep sides and an undulating base (table 5, M57). All three pits were cut directly into patches of natural pebbles, their bases terminating at the level of the underlying natural sand. It is possible that they were purposely excavated to extract knappable flint, although their irregular shape may suggest tree-throw hollows, exposing raw material that was subsequently exploited.

The Mesolithic lithics assemblage

In total, 378 pieces of struck flint were recovered from these features. No significant differences were apparent between the contents of each pit and the assemblage has therefore been treated as one. Details of the raw material, technological, metrical and typological characteristics of the assemblage are given in tables 2-4 (M55-M56). The material consisted of a mottled brown, orange and yellow coloured flint with a thin, weathered, chalky cortex. The colour of the flint appeared to be largely a product of mineral staining as the colour of fresh breaks was translucent black or grey. No refitting

was attempted but similarities in colour and cortex type suggested that at least some flakes could have originated from the same nodules. The condition of the assemblage was good, indicating minimal post-depositional movement.

The assemblage represented most stages in the core reduction sequence, from nodule testing to tool manufacture. However, finished tools and cores were relatively few in number, and others may have been removed for use elsewhere. Cores were systematically reduced, mostly prismatic and with a single platform. A few had opposed platforms, possibly a device to keep the core face perpendicular. Most had been exhausted, and as they were made by quartering the original nodule and were small in size (fig 3, nos 1–5). Rejuvenated core platforms and the presence of core rejuvenation flakes evidenced core maintenance. Unmodified flakes were characterized by thin, complex striking platforms, diffuse bulbs of percussion, feathered distal terminations and frequent parallel dorsal scars. A third of the assemblage consisted of blades or broken blades. Only 2% of the assemblage was retouched, including three microliths (fig 3, nos 6–8), a scraper, a notched flake, a piercer and a miscellaneous retouched flake. Two micro-burins were also recovered (fig 3, nos 9–10).

The assemblage was the product of a careful and systematic reduction strategy based on the creation, preparation and maintenance of standardized cores and striking platforms designed to produce regular thin and narrow flakes and blades. This technique of flint working is usually considered to pre-date the later Neolithic, the microliths recovered confirming a date in the later Mesolithic (Switsur & Jacobi 1979).

LATE BRONZE AGE: PHASE I — SETTLEMENT ACTIVITY (figs 4–5; tables 6–7, M57)

In the south-west corner of Area B, and continuing beyond the limits of excavation, was a north-west to south-east aligned linear feature (fig 4, 117), with gently sloping sides and a concave base filled with silty sand. All the other Late Bronze Age features identified on site were located to the north-east of it, suggesting that the linear feature represented part of a boundary ditch defining an area of occupation, possibly extending beyond the limits of excavation north and eastwards.

A partially complete pottery vessel sitting upright and identified as a firing waster appeared to have been placed in the bottom of a small pit (139), located immediately to the east of the ditch. This may merely indicate refuse disposal, although the possibility remains that it may have been a deliberately placed deposit, its location near to the ditch tentatively suggesting a preparatory or boundary offering.

In the north of Area B was a group of seven circular or sub-circular pits set between 1m and 2m apart and with gradually sloping sides and concave bases (135, 136, 183, 200, 230 and 236). They varied in diameter between 0.7m and 1.1m and were up to 0.4m deep. All were filled with loosely compacted silty pebbly sand. Unlike the pits located to the south (see below), they did not cut each other and as their fills contained a paucity of artefacts they may have represented postholes. Although their diameters appear large for later prehistoric postholes, they may have originally been smaller, with their sloping sides resulting from the slumping of the loose sands and pebbles that they were cut into during construction, and/or from the extraction of the posts after the structure had become redundant. In plan they suggest a rectilinear or oval shaped structure (fig 4, structure 1), aligned south-east to north-west and at least 9m long by 6m wide, possibly continuing to the north-west. Nineteenth-century field drains may have removed other postholes. There was no evidence of surviving occupation horizons; any that may have existed were likely to have been truncated by later ploughing.

Four postholes (140, 211, 213 and 242) to the south-east of structure 1 were interpreted as forming an 8m long north-west to south-east aligned portion of a fence line (fig 4, structure 2). A further three postholes (226, 228 and 238) in the southwest corner of Area B just to the north of the ditch, may represent another post-built structure (fig 4, structure

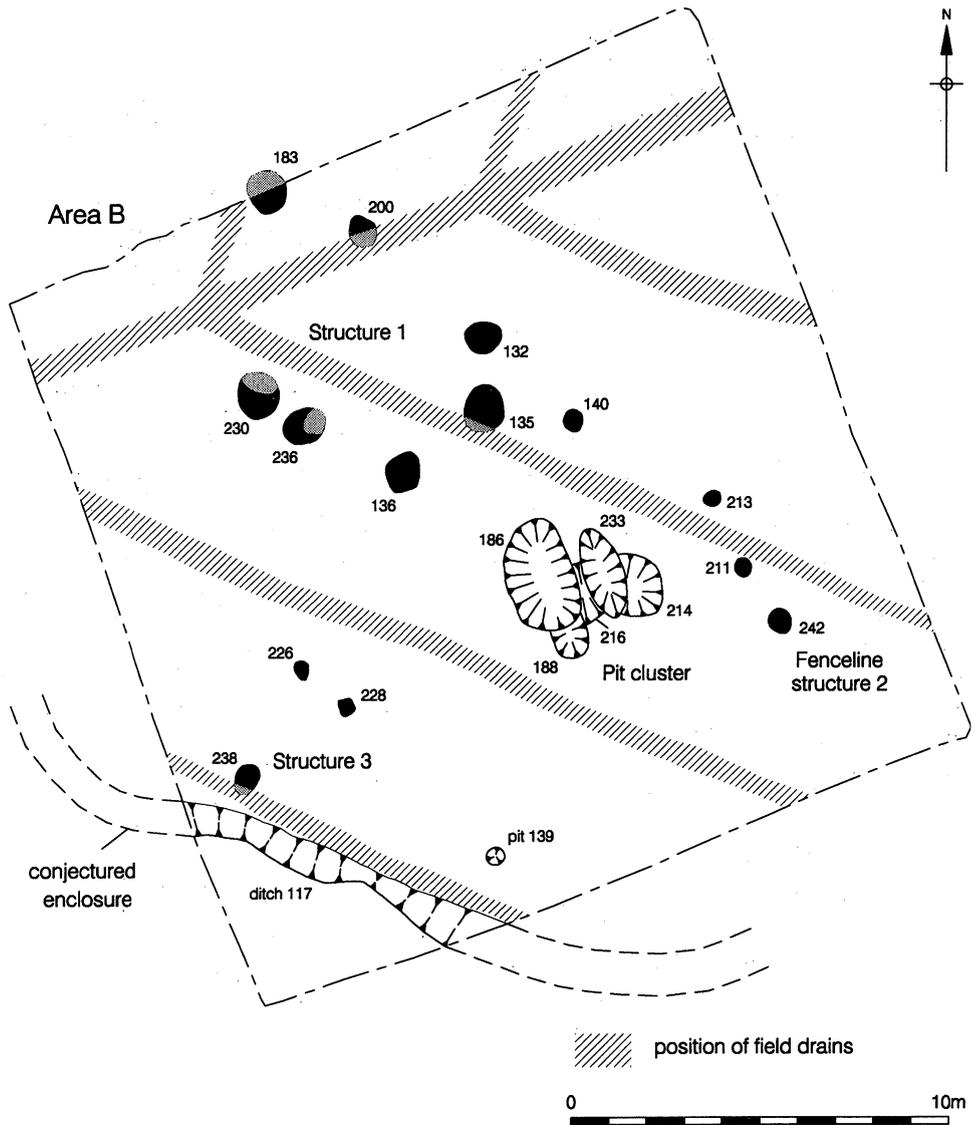


Fig 4 London Road, Beddington: Late Bronze Age structures

3). It is possible that a fourth posthole had been present but was later truncated by the 19th century field drain, thereby suggesting a four-post structure, trapezoidal in plan and measuring approximately 4m north-east to south-west by 2m north-west to south-east.

Between structures 1 and 2 was a cluster of five intercutting pits, measuring between 1m and 3m across and up to 0.62m deep, representing at least three episodes of pitting activity (fig 4; table 7, M57). The earliest was a sub-circular pit (216), truncated by two further sub-circular pits (188 and 214), which in turn were truncated by two oval shaped pits (186 and 233). All had gradually sloping sides with flat bases and were filled with silty pebbly sand. This cluster of pits is quite distinctive from those interpreted as representing postholes in that they were intensively intercut and contained a significantly higher concentration of finds. They all contained pottery, struck and burnt flint in noticeably greater quantities than observed elsewhere, although no animal bones were recovered, probably due to poor

conditions of preservation. For these reasons they have been interpreted as rubbish pits, possibly associated with the settlement activity on the site.

Most of the features within this phase contained post-Deverel-Rimbury pottery, datable to c 1000–800 BC, and worked flint consistent with that date, although, as is often the case where only sub-soil features survive and precise dating unavailable, contemporaneity between the features and the functions of those features must remain somewhat conjectural. This group of features has been interpreted as an enclosed smallholding or farmstead, comprising a fairly substantial building (structure 1) with associated fencelines (structure 2), ancillary structures (structure 3) and an area utilized for refuse disposal.

LATE BRONZE AGE: PHASE 2 (figs 5–6; table 8, M57)

Twelve oval or sub-circular features spread across Area B represented Late Bronze Age pitting activity (fig 6). Two of the pits (179 and 221), truncated postholes (236 and 230) of structure 1. Due to their close proximity it would seem unlikely that pits 123, 127 and 148 were contemporary with structure 1 either, and were more likely to have been contemporary with 179 and 221, with which they share similar morphologies and fills. The shape and size of these pits varied considerably, from circular to irregularly linear in shape and ranging from less than 1m to over 5m across, and all had irregular sides and bases. All were filled with weathered and slumped pebbly sand, indicating that they may have been open for some time, and relatively few finds were recovered. They were concentrated within patches of natural pebbles rather than sand, with their bases terminating at the level of the natural sand. This suggested that the pits might have been intended for extraction rather than deposition, possibly for the pebbles or for the larger flint nodules occurring naturally amongst the pebbles.

The Late Bronze Age pottery assemblage

Approximately 4kg of pottery comprising some 186 sherds plus one partially reconstructed vessel were recovered from the Late Bronze Age features. These were examined macroscopically and catalogued. Several instances of conjoining sherds were noted as were 'new' breaks amongst some of the sherds; however, no attempt was made at reconstruction since the numbers involved were generally small. While some possible cross-context associations were noted, no serious attempt was made to identify vessels occurring in a number of different contexts since the homogeneity of the fabric would have made this task very time consuming.

Fabric

Four fabrics were identified but it must be stated at the outset that there was considerable overlap between the fabric groups, identified as they were on the subjective quantification of the fineness and density of the inclusions. The fabrics were generally all opened with coarse calcined flint inclusions but despite the abundance of these inclusions in some cases, the fabrics were all well-fired and the surfaces were often smooth and well-finished. The fabric groups identified were as follows:

- 1 Hard, well-fired pink/brown fabric with abundant large (>5mm) calcined flint inclusions. Many of these break both surfaces giving the fabric a gritty texture.
- 2 Fabric similar to 1, however in this case the flint inclusions are more finely crushed (>2mm). 2a is similar but with fewer inclusions.
- 3 Thin-walled fabric, also hard and well-fired, tending towards black. Also contains calcined flint inclusions but in this case they are sparse and usually less than 1mm across.
- 4 Soft soapy textured fabric with finely crushed grog inclusions.



Fig 5 London Road, Beddington: photograph of Area B under excavation, looking north-east. (Photograph by Tudor Morgan-Owen, PCA)

Technology

The assemblage appeared to have been coil built and join voids were clearly visible in sherds from almost all contexts. The thinness of the walls suggested that the coils were first flattened into straps and joined obliquely to each other. Evidence for coiling could also be seen on some body sherds, the surfaces of which were slightly rippled resulting from the individual coil joins. Surfaces were occasionally very smooth although evidence for slips and burnishing appeared to be absent.

The partially reconstructable shouldered vessel from pit 139 was a firing waster, with large circular scars on the outer surface representing classic firing spalls (fig 7, no 1). These result from water within the clay rapidly turning to steam during firing and escaping in a violent explosion. If water is trapped, the explosion will result in scars of clay being blown out of the vessel wall resulting in either holes piercing through the wall or a scarred inner or outer surface (Gibson & Woods 1990, 151 & figs 111–12). In the latter case, the vessel may still have been usable though obviously it would have been weakened. A small spall in the base angle of the pot, however, does completely perforate the surface and if this were original then the pot would not have been capable of holding liquid. It is possible, however, that this spall was originally less severe and has been aggravated by use or post-depositional processes.

Many of the sherds have dark cores indicating rapid firing, almost certainly in a bonfire. This method of firing was characterized by its short duration and rapid temperature rise. As a result, the organic material in the clay is rarely completely burnt out, leaving a black core in the majority of sherds.

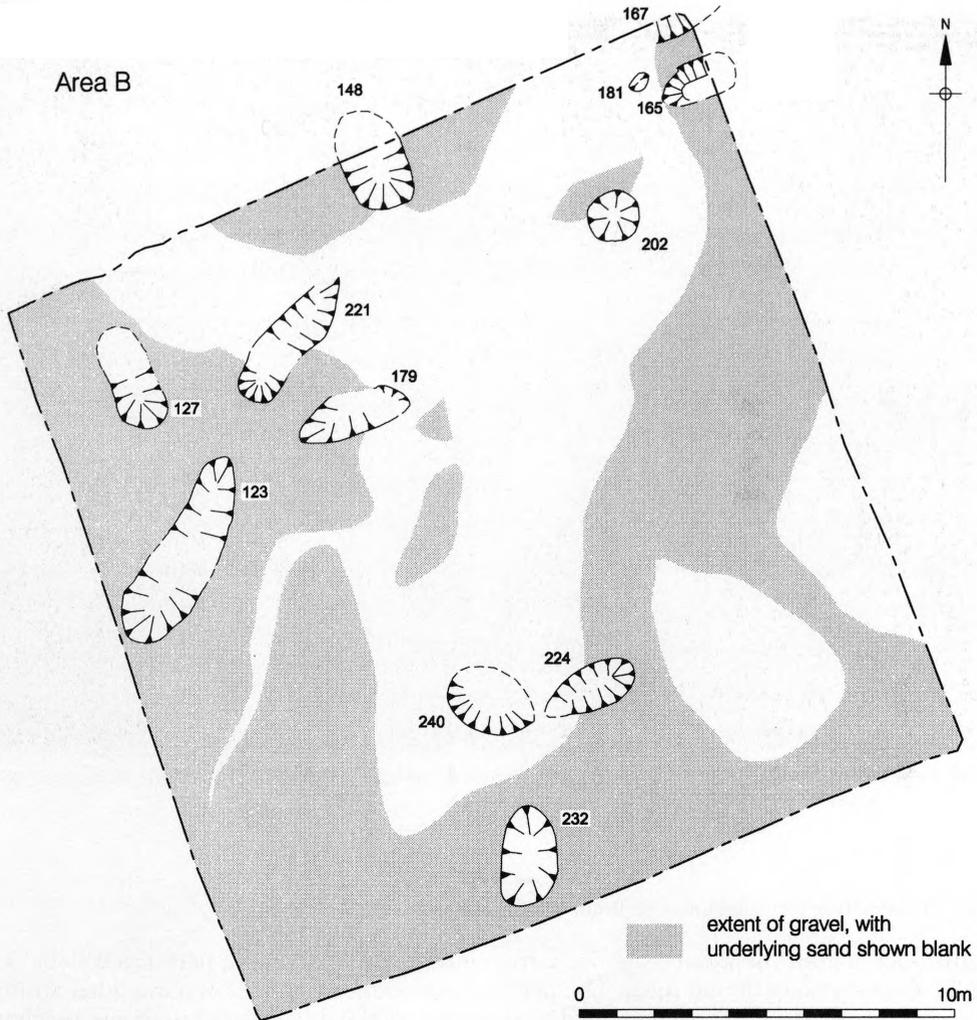


Fig 6 London Road, Beddington: Late Bronze Age pitting activity

Description

While few vessels were capable of reconstruction, the rim sherds in particular, as well as some of the featured body sherds, suggest generally thin-walled vessels with bulbous and S-shaped profiles. The firing waster clearly had a sharp carination and similar shoulders have been identified on other wall sherds (eg fig 7, no 2).

The rim forms were generally simple, but some have been everted or flaring (eg fig 7 nos 3–8). Occasionally the rim top may have been flattened (eg fig 7, nos 9–10) and there were occasional traces of fingertip decoration on the rim (fig 7, nos 7, 11). This decoration may be internal and/or external.

Decoration on the walls of the vessels was rare. One example, from context 129, had traces of slight fingernail impressions or small incisions but these may have been accidental (fig 7, no 12). Two wall sherds, possibly from the same vessel, had what appeared to have been a row of fingertip impressions (fig 7, nos 13–14) and two sherds had fingertip decorated cordons, one applied (fig 7, no 6) and one raised (fig 7, no 15).

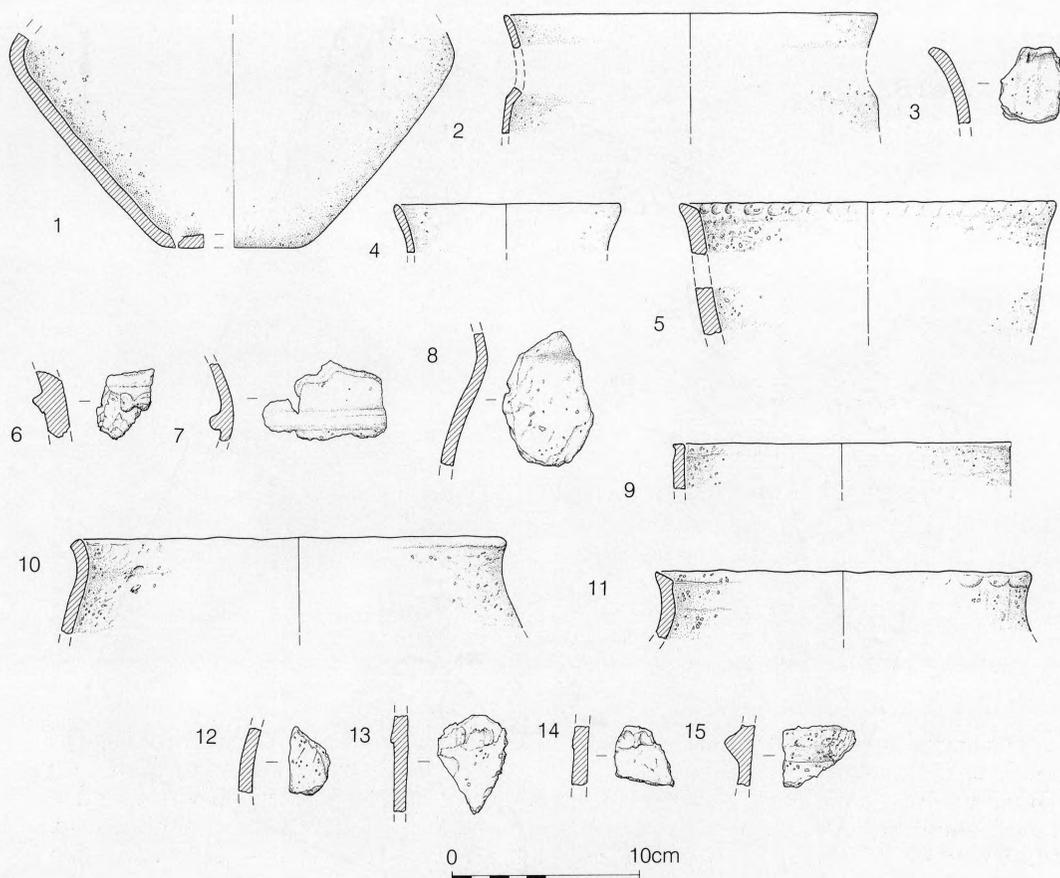


Fig 7 London Road, Beddington: Late Bronze Age pot

Included within the assemblage were fragments from four or five perforated slabs (see fig 8), all in excess of 20mm thick. The perforations seemed to have been moulded around a core rather than having been pierced through the solid slab; all were broad and reach up to 20mm in diameter. Some of the slabs appeared to have been built up in layers (eg fig 8, no 1), and this vessel also had a moulded edge.

Discussion

The shouldered and bulbous vessels in good quality flint-filled fabric represent a style of pottery that is common in the Late Bronze Age around the Thames estuary and south-east England. In particular, the presence of sharply carinated vessels such as that represented by the firing waster (fig 7, no 1) can be paralleled at Mucking, Essex (Jones & Bond 1980), Runnymede, West London (Needham & Longley 1980), Deal, Kent (Champion 1980), Lofts Farm, Essex (Brown 1988) and Orsett, Essex (Hedges & Buckley 1978). Fingertip-decorated jars are also present in these assemblages, on the rim (Mucking), on the shoulder (Orsett) or on cordons (Deal). The fine fingernail incisions illustrated in figure 7, no 12, can be matched on vessels from Lofts Farm (Brown 1988, fig 17) where they form a narrow zone accentuating the shoulder of the vessels.

The small fineware vessels noted in the assemblage, most notably in fabric 3, can also be paralleled at Deal though the linear incised decoration visible on the Kentish material appears absent from this assemblage.

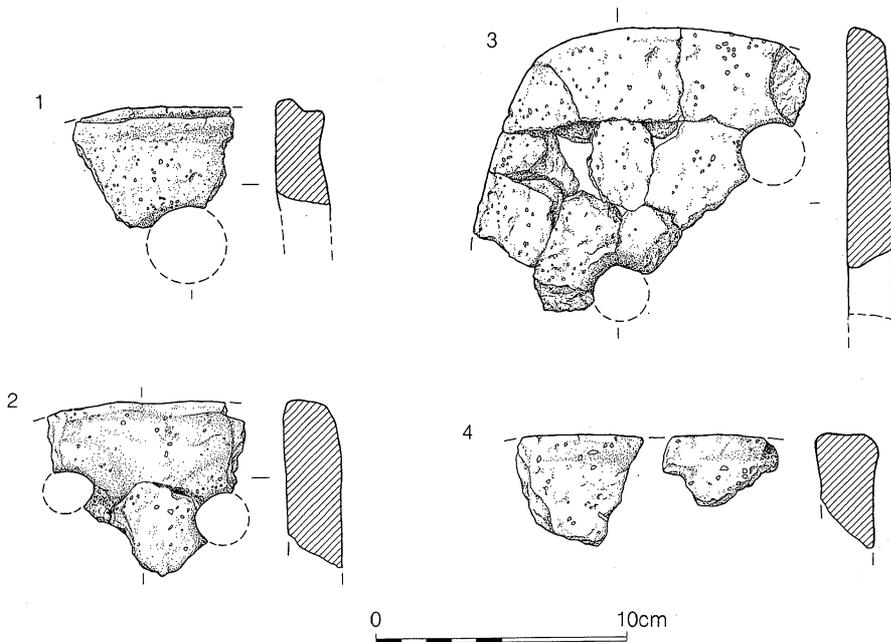


Fig 8 London Road, Beddington: perforated clay slabs

The perforated slabs are a characteristic component of Late Bronze Age assemblages in south-east England. They occur at Lofts Farm, where one fragment has a moulded edge similar to one of the examples from Beddington (fig 8, no 1). They have also been found in Late Bronze Age assemblages at North Shoebury and Springfield Lyons, both in Essex (Brown 1988). Champion (1980) discusses these finds and records their association with cooking areas and hearths, though admitting that their function(s) are unknown. The examples illustrated by Champion, however, are thinner than the examples from Beddington and Lofts Farm. Clay slabs have also been located in the later Bronze Age levels at Caesar's Camp, Heathrow in Middlesex (Grimes & Close-Brooks 1993). The slab fragment from hut A closely resembles the Beddington examples; it is made from the same fabric as the larger coarser vessels and is also moulded at one end like the one in the present assemblage. Close to Beddington, perforated clay slabs, including some near-complete examples, were recovered from the Late Bronze Age enclosure at Queen Mary's Hospital, Carshalton (Adkins & Needham 1985, 33–8).

The Beddington pottery comprises a small assemblage typical in vessel range and size of the Late Bronze Age in south-east England. It contains jars and bowls in a flint-tempered fabric with the inclusions crushed more finely in relation to the fineness of the vessels. Decorated vessels are few save for some fingertip-decorated shoulders, rims and cordons but even these are rare in the assemblage as a whole. The perforated slabs have a restricted distribution and chronology spanning a period of some 200 years between the post-Deverel-Rimbury phase of the Bronze Age and the Iron Age (Barrett 1980). A date of *c* 1000–800 Cal BC may, by analogy, be ascribed to this material.

The Late Bronze Age lithics assemblage

In total, 100 pieces of worked flint were recovered from the Late Bronze Age features (tables 2–4, M55–M56). No observable differences existed between the material from the two separate phases identified above, and the assemblage is therefore discussed as one. It

was generally in good condition, although more edge damage was observable than on the material from the earlier pits. This would suggest that although there was no evidence for extensive post-depositional damage, the material had been redeposited, perhaps by being swept up and dumped.

The assemblage was evidently mixed, with at least two distinctive techniques present. Flakes, blades and cores that had been systematically worked and which were mostly similar to the material recovered from the Mesolithic pits were considered to be residual. These pieces tended also to have been mineral stained in a similar fashion to the material from the Mesolithic pits.

The rest of the assemblage was, however, characterized by haphazardly reduced cores and irregularly shaped, generally squat and chunky flakes, typical of flint working towards the end of the Bronze Age and consistent with the date of the associated pottery (Ford *et al* 1984; Edmonds 1995). The raw material utilized was similar to that exploited during the Mesolithic although it had rarely become mineral stained. Thermal flaws were also far more evident, and it would appear that there was less concern with the quality of the raw material selected for reduction. The full range of the reduction sequence was present. Cores frequently consisted of irregularly shaped, thermally flawed chunks, and there was little evidence for the creation of ideal core shapes or for platform preparation or maintenance (fig 9, nos 1–4). Some of these were likely to have been primarily reduced for use as heavy-duty tools, most apparently with a cutting, scraping or pounding function, and are comparable to the Middle Bronze Age material from Grimes Graves (fig 9, nos 5–7; Herne 1991). More formal tools included two edge-trimmed implements, both cortically backed, one broken with abrupt marginal retouch along its left ventral, the other burnt and with similar retouch along its right dorsal. A knife was also present, similar to the edge-trimmed implements, but with steep scalar retouch combined with cortex forming a sound backing, and with a very use-damaged cutting edge (fig 9, no 8). Three scrapers were recovered, including a roughly circular one made on a thick flake (fig 9, no 9) and another, reusing an earlier transverse core rejuvenation flake, with steep scalar retouch along its left dorsal margin, which had become polished through use (fig 9, no 10). The third had steep, slightly invasive retouch along its left dorsal margin but had fragmented after manufacture owing to thermal flaws (fig 9, no 11).

Ploughsoil

An undifferentiated soil horizon, 0.2–0.5m thick, sealed all the cut features previously discussed. It consisted of loosely compacted, light brown, silty, pebbly sand with occasional charcoal inclusions.

Also contained within the ploughsoil, especially in Area B, were quantities of pottery datable to the Late Bronze Age and a large quantity of struck flint, of a mixed nature and comprising pieces characteristic of industries datable from the Mesolithic to the Late Bronze Age. A variety of core types were present, ranging from small systematically reduced blade cores to large thermally flawed chunks with a few flakes randomly removed. As with the cores from the stratified Late Bronze Age assemblage, many may also have functioned primarily as tools (fig 10, nos 1–4). Systematically reduced blades were recovered alongside much more crudely and opportunistically reduced material.

A Mesolithic component was attested by the recovery of a micro-burin (fig 10, no 5) and a truncated blade, and probably also includes many of the unretouched but systematically produced blades. A piercer made by abruptly retouching the margins of a blade (fig 10, no 6), and a serrated blade (fig 10, no 7) may also be Mesolithic in origin, although similar types continued to be manufactured into the Neolithic/Early Bronze Age.

However, much of the retouched component was more likely to be attributable to the Late Bronze Age phases, including scraping, piercing and chopping tools made on thermal blanks (complementing the possible core-tools) and irregularly shaped and crudely

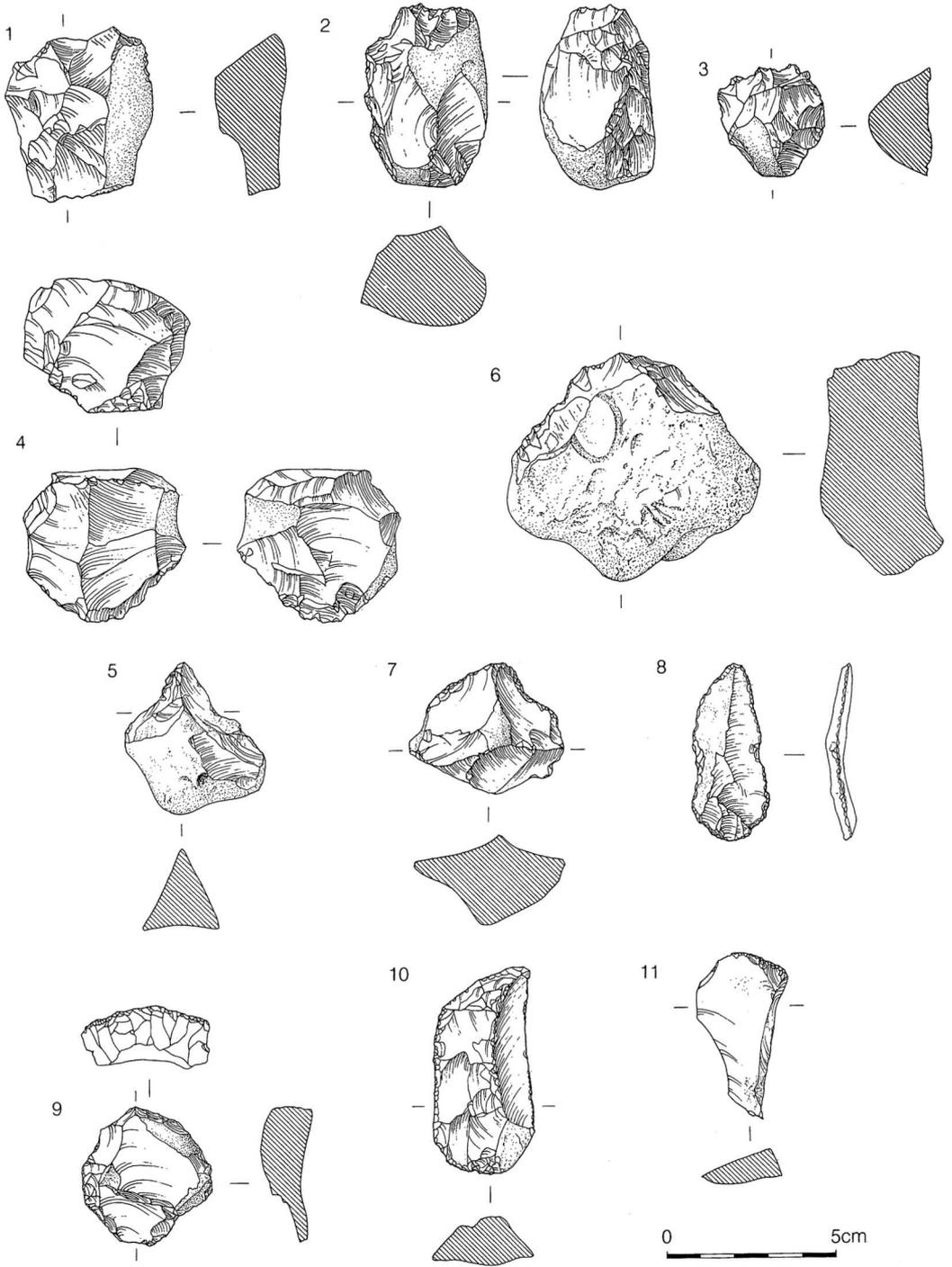


Fig 9 London Road, Beddington. Lithics : cores (1-4); core tools (5-7); knife (8); scraper (9); scraper on re-used core rejuvenation flake (10); scraper fragment (11).

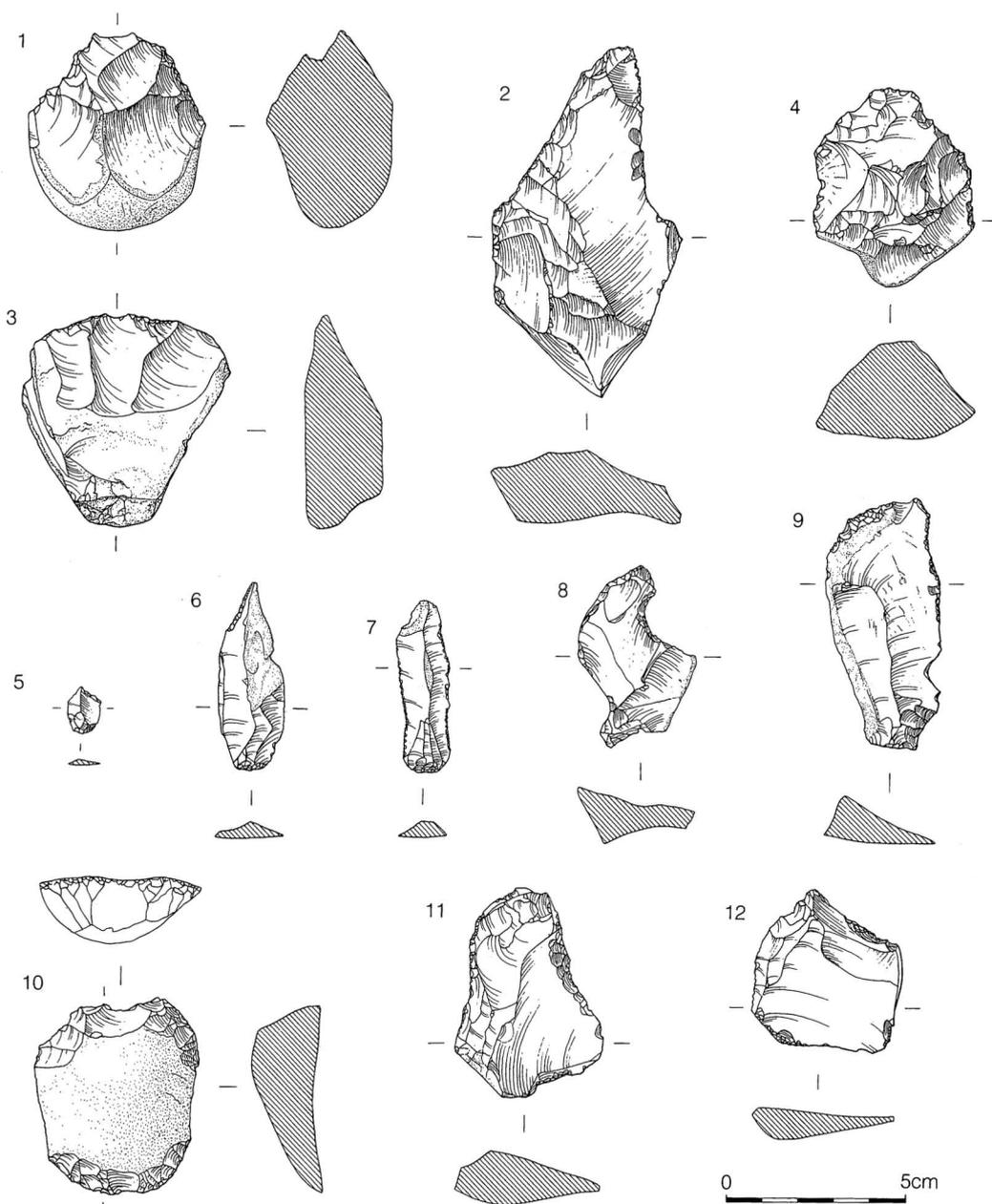


Fig 10 London Road, Beddington. Lithics: core tools: choppers (1–3); scraper (4); microburin (5); piercer (6); serrated blade (7); notch/concave scraper (8); miscellaneous retouch on earlier flake (9); double-ended scraper (10); side scraper (11); crude piercer (12)

produced piercers, scrapers and notched implements made from thick flakes (fig 10, nos 8–12). A heavy-duty chopping tool made from a mineral stained flake evidenced re-use of earlier material (fig 11, no 1).

Some of the material was not easily accommodated within either the Mesolithic or the Late Bronze Age assemblages. This includes 37 pieces of struck flint recovered from the

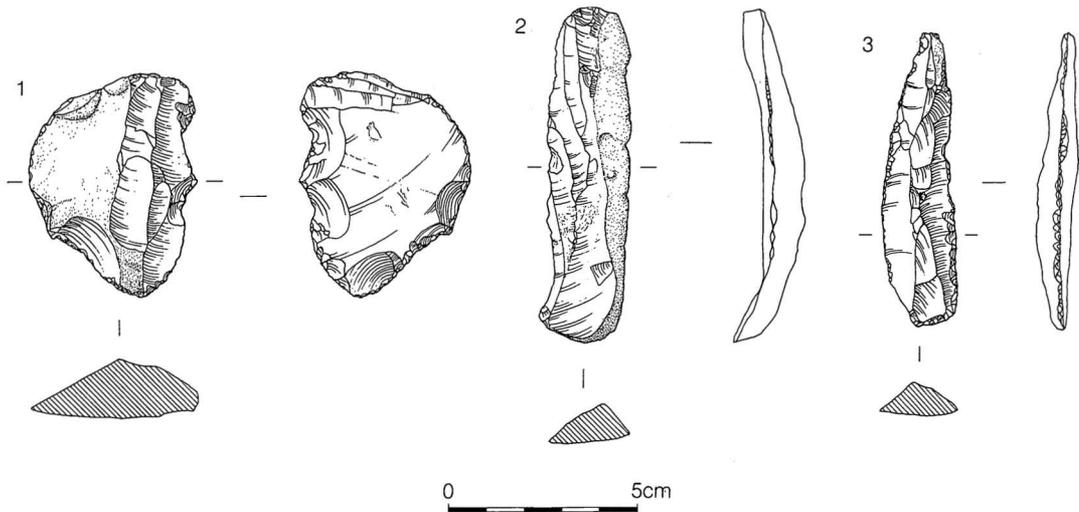


Fig 11 London Road, Beddington. Lithics: crude chopping tool made on an earlier patinated flake (1); blade (2); serrated blade (3)

central northern area of Area B, all recovered from within an area of only one or two square metres near the interface between the soil and the natural deposits. The condition of these would suggest that they had been protected from plough disturbance, and were perhaps contained within a shallow pit or hollow, although no such feature could be identified during the excavation. Similarities in colour, cortex, size, technology, and the evident conjoinability of some flakes suggests a single knapping episode (although systematic refitting was not attempted). Most of the flakes retained cortex and demonstrated a systematic reduction strategy. There was a high incidence of blades and core rejuvenation and striking platform preparation was evidenced. The technological characteristics of this assemblage were not dissimilar to those from the Mesolithic pits although the flakes were significantly larger. Confident dating of such undiagnostic pieces was problematic, although a Neolithic or Early Bronze Age origin would appear most likely. No cores or retouched items were present, suggesting that the assemblage represented initial core reduction activities with prepared cores being removed for use elsewhere. Other pieces from the ploughsoil that were not easily accommodated within the Mesolithic or Late Bronze Age assemblages included a few blades, significantly larger than those seen from the Mesolithic pits, one being a cortically-backed serrated implement (fig 11, nos 2–3). It seems likely that these items represent intermittent activity in and around the site, possibly over a long duration, the knapping scatter suggesting the site was a focus for its easily obtainable and reasonably high quality raw material.

Discussion and interpretation

Two major periods of prehistoric activity were discernible. The earliest period, consisting of three pits, was datable to the Later Mesolithic by associated flintwork. The latest, datable from pottery and lithic technology to the Late Bronze Age, consisted of two phases: the first represented occupation and the second, pitting activity. In addition, a series of natural peri-glacial features were observed and evidence for probable intermittent visiting of the site during the Neolithic/Early Bronze Age was discerned amongst the unstratified lithic assemblage.

The low number of retouched flints in the three pits dated to the Mesolithic suggests that the pits were probably not associated with domestic activity. The pits cut through

gravels containing good knapping quality nodules and they contained quantities of knapping waste but few end products, which may have been removed for use elsewhere. The pits may have been purposely excavated or naturally formed; but subsequently appeared to have served as quarries. Pits with similar morphologies and containing a far more extensive but otherwise similar lithic industry were recorded at Farnham, which, although originally interpreted as 'pit dwellings', also almost certainly provided raw materials utilized for flint knapping (Clarke & Rankine 1939). It has been suggested (Evans *et al* 1999) that fallen trees may have served as settlement foci and landscape markers in the thickly wooded environments of the Early Neolithic, and this, with their possible additional role as sources of raw materials, could equally apply to the Mesolithic. Although raw material procurement and preparation appeared the dominant activity, some of the unstratified and residual retouched pieces from Area B may also belong to the same Mesolithic phase, possibly indicating activity of a more domestic nature in the immediate locality. Extensive Mesolithic activity, usually identified in the form of flint scatters, is well represented along the tributaries of the Thames and throughout Surrey (Oakley *et al* 1939; Ellaby 1987). Although few detailed reports on Mesolithic activity in the immediate locality have been published to date, struck flints of Mesolithic date were found at Beddington Park (Richardson 1979, 264; Bird *et al* 1980, 249) and on the Purley Way at Croydon (Potter 1995). Mesolithic flints were also found in the upper silts of a post-glacial stream channel at Beddington Farm Road (Bird *et al* 1994, 218).

The assemblage of struck flint interpreted as a knapping scatter, as well as some other unstratified pieces, were, on technological and typological grounds, more consistent with a Neolithic/Early Bronze Age date. The scatter has been interpreted as a knapping episode comprising flakes deriving from initial core reduction, with cores and any finished items removed elsewhere. This material is probably associated with intermittent visiting of the site, which may have involved procurement of raw material. Neolithic flintwork and pottery have been found in the vicinity of the site and in scattered locations around the Beddington area (Richardson 1982; Filer 1991, 806; Potter 1995; Tucker 1996; Freke 1998).

The first evidence for more settled activity occurs during the Late Bronze Age. This coincides with broad changes in the agricultural landscape which, from the Middle Bronze Age onwards, becomes more formally laid out (Bradley 1978; Needham 1987; Parker Pearson 1993) and settlements appear as more archaeologically visible features (Drewett *et al* 1988). The earliest Late Bronze Age activity recorded at the site consisted of a ditch (117) that possibly delineated the boundary of a settlement. Within the excavated area this comprised three structures, associated rubbish pits and a waster vessel placed in a small pit. The settlement may have extended to the north beyond the limits of excavation.

Structure 1 was represented by seven postholes, appearing to form a substantial structure at least 9 x 6m in size and possibly continuing to the north-west. Owing to the lack of associated surfaces or finds, the function and plan of this structure is problematic; its plan would suggest an elongated oval or a rectilinear structure, or a more rounded oval if the most northerly posthole was not associated. Although it is not an obvious and typical domestic building, few alternative parallels are available for the Late Bronze Age. Oval and rectilinear dwellings are recorded from the Late Neolithic and Early Bronze Age periods (McInnes 1971; Simpson 1971), but dwellings from the Late Bronze Age are usually considered to have been circular, although individual building plans are often difficult to identify confidently amongst the masses of postholes frequently encountered on settlement sites. As true circular buildings of a similar date range have been found close to the site at the Beddington Sewage Works site (Adkins *et al* 1987), it would seem unlikely that this structure represents a regional style of house construction. Many dwellings recorded for the Middle and Late Bronze Age are slightly ovoid, such as at Cock Hill (Ratcliffe-Densham & Ratcliffe-Densham 1961) and Black Patch (Drewett 1982), although all much nearer true circles than that recorded here. A more comparable oval post-built

structure was recorded at the Mucking North Ring, which was interpreted as probably being an animal pen or fold, although a roofed structure could not be ruled out (Bond 1988). It is possible that the structure recorded here was rectilinear. Such layouts have long been identified on the Continent (Coles & Harding 1979), and although not common, are increasingly being recognized from southern Britain (Barrett *et al* 1991). A rectilinear post-built structure at Lofts Farm was interpreted as a longhouse for both people and animals (Brown 1988). Three substantial rectilinear structures have been recorded at Runnymede (Needham 1993), one consisted of a concentration of postholes within an area of at least 5 x 7m, although it was uncertain whether this was roofed or represented a platform, possibly associated with feasting (Needham 1991). The structures at Lofts Farm and Runnymede were all associated with fairly high-status settlements, not a situation suggested for Beddington, and the original plan and function of this structure must remain speculative.

Structure 2 comprising a group of four north-west to south-east aligned postholes was interpreted as a fence line. Similar, though more extensive, structures have been noted at other sites such as Black Patch (Drewett 1982) and Aldermaston (Bradley *et al* 1980) and have often been interpreted as forming elements of livestock enclosures.

Structure 3, comprising three postholes, is also difficult to interpret. If a fourth posthole originally existed, but was truncated by the later drain run, it could have represented elements of a four-post structure. These have often been interpreted as granaries (Gent 1983), although ethnographic evidence suggests other uses including storage of other foodstuffs, clothes, weapons or tools; fighting platforms; watch towers; shrines; places for sleeping, or platforms for laying out the dead, as 'scaffold burials' (Ellison & Drewett 1971).

Placed in a small pit (139) near the boundary ditch was a partially complete waster pot. This could represent casual discard of rubbish, and other practical interpretations are possible. Intriguingly, however, its proximity to the boundary ditch may tentatively suggest more considered disposal, such as a preparatory offering or a marker associated with the boundary. During the Late Bronze Age, concerns with the marking of foundations, boundaries and entrances of settlements seem to have been important (Needham 1993; Bruck 1995), and include the deliberate placement of food, animals and humans, as well as 'rubbish' and everyday material items (Needham & Spence 1997; Proctor 1999).

The pit cluster, comprising five intercutting pits, was assumed to be associated with the Late Bronze Age phase 1 structures, as the pits appeared to incorporate domestic waste. The unabraded quality and size of the pottery sherds recovered leads to the assumption that they were derived from discarded vessels used for cooking and other domestic activities nearby. Pits were a common component of other Late Bronze Age settlements. Many were found at Black Patch, Aldermaston Wharf and Knight's Farm (Drewett 1982; Bradley *et al* 1980). Some have been found to contain grain residues and/or clay linings, which have led to their interpretation as grain storage pits and ponds (Harding 1964, 14; Bradley *et al* 1980). As no evidence of linings was apparent at London Road, a grain storage function seems unlikely, and as the pits contained significant quantities of artefacts, they most probably functioned as rubbish pits.

A further twelve pits appeared to belong to a later phase, some truncating structure 1. As with the Mesolithic pits, these were concentrated within patches of pebbles where knappable flint nodules, similar to the raw material exploited for the lithics industry, were common, and the pits may have been purposely excavated to obtain this resource.

Conclusion

The earliest evidence of human activity at the site was datable to the later Mesolithic, when the area appears to have been exploited for its raw materials in the form of knappable flint nodules and possibly for more 'domestic' activity. Low-level exploitation of the site for its raw materials may have occurred sporadically throughout the Neolithic and into the Bronze Age.

The end of the Bronze Age attested more permanent settlement. The Late Bronze Age ditch in the south-west corner of Area B may be a boundary for a settlement (probably continuing to the north and east beyond limits of excavation), which consisted of a substantial structure and two other post-built structures together with a pit cluster. The settlement would have been located in a zone of cultivable light soil on the Wandle floodplain, close to the settlement excavated at the Beddington Sewage Works; other ditches recorded in the vicinity, may represent a system of small farming units within an extensive organized agrarian landscape. The pottery finds date the site to a period of some two hundred years between the post-Deverel-Rimbury phase of the Late Bronze Age and the Iron Age: *c* 1000–800 BC. For some time after the buildings were abandoned the area continued in use, possibly as a resource for raw material such as knappable flint nodules, and subsequently as agricultural land, resulting in the development of a ploughsoil.

Microfiche

Details of the basic data are appended in microfiche (tables 1–8, M54–M57). This includes the raw material, metrical, typological and technological characteristics of the lithic assemblage as recovered from the four main contextual units identified on the site (tables 2–4, M55–M56). This allows specific comparisons to be made between the assemblages as recovered and acts as an aid in comparing and contrasting assemblages recovered from other sites. The breadth divided by length ratios of the complete flakes and blades for the four main context types (ie flint scatters, Mesolithic pits, Late Bronze Age features and ploughsoil) are also shown in microfiche (fig 12, M58).

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BIBLIOGRAPHY

- Adkins, L, & Needham, S, 1985 New research on a Late Bronze Age enclosure at Queen Mary's Hospital, Carshalton, *SyAC*, **76**, 11–50
- , Adkins, R, & Perry, J G, 1987 Excavations at Beddington 1984–87: the final interim report, *London Archaeol*, **5.13**, 349–52
- Bagwell, M, 1999 *An archaeological evaluation at London Road, Hackbridge (Beddington ZED)*, London Borough of Sutton, unpublished PCA report
- Barrett, J, 1980 The pottery of the Later Bronze Age in lowland England, *Proc Prehist Soc*, **46**, 279–320
- , & Bradley, R (eds) 1980 *Settlement and society in the British Later Bronze Age*, Brit Archaeol Rep Brit Ser, **83**
- , Bradley, R, & Green, M, 1991 *Landscape, monuments and society*
- Bird, D G, Crocker, A G, Crocker, G, & McCracken, J S, 1980 Archaeology in Surrey 1976–78, *SyAC*, **72**, 231–58
- , Crocker, A G, Crocker, G, & McCracken, J S, & Saich, D, 1994 Archaeology in Surrey 1991, *SyAC*, **82**, 203–19
- Bird, J, & Bird, D G (eds), 1987 *The archaeology of Surrey to 1540*
- Bond, D, 1988 Excavation at the North Ring, Mucking, Essex: a Late Bronze Age enclosure, *East Anglian Archaeol*, **43**
- Bradley, R, 1978 *The prehistoric settlement of Britain*
- , 1984 *The social foundations of prehistoric Britain*
- , Lobb, S, Richards, J, & Robinson, M, 1980 Two Late Bronze Age settlements on the Kennet gravels: excavations at Aldermaston Wharf and Knight's Farm, Burghfield, Berkshire, *Proc Prehist Soc*, **46**, 217–95

- BGS 1998 *South London. England and Wales sheet 270. Solid and drift geology. 1:50 000*, British Geological Survey
- Brown, N, 1988 A Late Bronze Age enclosure at Lofts Farm, Essex, *Proc Prehist Soc*, **54**, 249–302
- Bruck, J, 1995 A place for the dead: the role of human remains in Late Bronze Age Britain, *Proc Prehist Soc*, **61**, 245–77
- Champion, T, 1980 Settlement and environment in later Bronze Age Kent, in Barrett & Bradley 1980
- Clark, J G D, & Rankine, W F, 1939 Excavations at Farnham, Surrey (1937–38): the Horsham culture and the question of Mesolithic dwellings, *Proc Prehist Soc*, **5**, 61–117
- Coles, J M, & Harding, A F, 1979 *The Bronze Age in Europe*
- Drewett, P, 1982 Later Bronze Age downland economy and excavations at Black Patch, East Sussex, *Proc Prehist Soc*, **48**, 321–400
- , Rudling, D, & Gardiner, M, 1988 *The south east to AD 1000*
- Edmonds, M, 1995 *Stone tools and society: working stone in Neolithic and Bronze Age Britain*
- Evans, C, Pollard, J, & Knight, M, 1999 Life in woods: tree-throws, ‘settlement’ and forest cognition, *Oxford J Archaeol*, **18**(3)
- Ellaby, R, 1987 Upper Palaeolithic and Mesolithic, in Bird & Bird 1987, 53–69
- Ellison, A, & Drewett, P, 1971 Pits and post-holes in the British Early Iron Age: some alternative explanations, *Proc Prehist Soc*, **37**(1), 183–94
- Filer, J, 1991 Excavation round-up 1990: part 2, Greater London, *London Archaeol*, **6.11**, 301–8
- Ford, S, Bradley, R, Hawkes, J, & Fisher, P, 1984 Flint-working in the metal age, *Oxford J Archaeol*, **3**, 157–73
- Freke, D, 1998 *Beddington Cross: an archaeological watching brief*, RPS Clouston unpublished report
- Gent, H, 1983 Centralized storage in later prehistoric Britain, *Proc Prehist Soc*, **49**, 243–67
- Grimes, W F, & Close-Brooks, J, 1993 The excavation of Caesar’s Camp, Heathrow, Middlesex, 1944, *Proc Prehist Soc*, **59**, 303–60
- Harding, J M, 1964 Interim report on the excavation of a Late Bronze Age homestead in Weston Wood, Albury, Surrey, *SyAC*, **61**, 10–17
- Hedges, J, & Buckley, D, 1978 Excavations at a Neolithic causewayed enclosure, Orsett, Essex, 1975, *Proc Prehist Soc*, **44**, 219–308
- Herne, A, 1991 The flint assemblage, in I Longworth, A Herne, G Varndell, & S Needham, *Excavations at Grimes Graves Norfolk 1972–1976. Fascicule 3. Shaft X: Bronze Age flint, chalk and metal working*, 21–93
- Jones, M U, & Bond, D, 1980 Later Bronze Age settlement at Mucking, Essex, in Barrett & Bradley 1980, 471–82
- McInnes, I J, 1971 Settlements in later Neolithic Britain, in Simpson (ed) 1971, 113–30
- Needham, S, 1987 The Bronze Age, in Bird & Bird 1987, 97–137
- , 1991 *Excavation and salvage at Runnymede Bridge 1978: The Late Bronze Age waterfront site*
- , 1993 The structure of settlement and ritual in the Late Bronze Age of south-east Britain, in C Mordant, & A Richard (eds), *L’habitat et l’occupation du sol à l’Age du Bronze en Europe*, 49–69, Editions du Comité des Travaux historiques et scientifiques, Paris
- , & Longley, D, 1980 Runnymede Bridge, Egham: a Late Bronze Age riverside settlement, in Barrett & Bradley 1980, 397–436
- , & Spence, T, 1997 Refuse and the formation of middens, *Antiquity*, **71**, 77–90
- Oakley, K P, Rankine, W F, & Lowther, A W G, 1939 *A survey of the prehistory of the Farnham district*, SyAS
- Parker Pearson, M, 1993 *Bronze Age Britain*
- Potter, G, 1995 A prehistoric site at 542–46 Purley Way, Croydon, *London Archaeol*, **7.12**, 307–12
- Proctor, J, 1999 Late Bronze Age/Early Iron Age placed deposits from Carshalton, *London Archaeol*, **9.2**, 54–60
- Ratcliffe-Densham, H B A, & Ratcliffe-Densham, M M, 1961 An anomalous earthwork of the Late Bronze Age on Cock Hill, *Sussex Archaeol Collect*, **99**, 78–101
- Richardson, B, 1979 Excavation round-up 1978, *London Archaeol*, **3.10**, 261–4, 275
- , 1982 Excavation round-up 1981, *London Archaeol*, **4.6**, 159–66
- Simpson, D D A (ed), 1971 *Economy and settlement in Neolithic and Early Bronze Age Britain and Europe*
- , 1971 Beaker houses and settlements in Britain, in Simpson (ed) 1971, 131–52
- Switsur, V R, & Jacobi, R M, 1979 A radiocarbon chronology for the Early Postglacial stone industries of England and Wales, in R Berger & H E Suess (eds), *Radiocarbon dating*, 42–68
- Tucker, S, 1996 Further evidence for prehistoric occupation found on the Purley Way, Croydon, *London Archaeol*, **8.1**, 12–17