

# Chapter 4: Other Prehistoric Material

## The amber artefacts

by Stuart Needham

Two amber artefacts were recovered during the excavation of Trench 1. Both have been identified as of Early Bronze Age types broadly contemporary with the cup (although one was at first thought to be so fresh as to be more recent!) A pommel fragment was unfortunately not *in situ*, having come from an animal run somewhere in the eastern half of the trench (not precisely located). The second fragment is identified as from a pendant and came from the pit (F. 1024) cut into the turf mound at the centre of the monument (Figs 10–11). It was retrieved from spoil immediately after it had been excavated from the upper, woody layer (1025) towards the southern end of the feature. These are the first Early Bronze Age amber artefacts to be recognized from east Kent, although an amber bead necklace has recently been discovered at a barrow site near Longfield in west Kent (Askew 2001).

## Pommel fragment

### Condition

Approximately half of the object, or a little more, survives (Fig. 24a; Colour Pl. 4). All of the original surfaces are crazed and weathered to a matt orangey-brown colour. Fractured surfaces along one side of the mouth and at the main break are the glass-like dark orange of freshly fractured amber. At these breaks the weathered surface is seen to be extremely thin (< 0.1mm). Minor loss by chipping close to the pointed end and along the near-intact side of the mouth appears to be ancient.

### Form

The top of the pommel had an elliptical or more probably a lenticular plan; uncertainty is due to removal of a chip to one side of the apex. In side view the top is very gently domed and extends to a pronounced lip, the socket wall beneath contracting sharply. The lip itself is flattened all round with a vertical facet between 1.5 and 2.0mm deep. The undersides of the lip meet in a ridge on the longitudinal axis running out towards the apex. Where the mouth is intact, the socket wall is 1.2mm thick. The socket was lenticular in plan and tapers slightly in profile towards a flat to rounded end.

The intact perforation is an exceedingly neat cylindrical drilling, 1.5mm in diameter; it would have continued through to the other face, where a fragment may survive in the break. If a second peg hole existed towards the other end, reconstruction suggests that the two would not have been symmetrically placed.

### Dimensions

|                      |                                   |
|----------------------|-----------------------------------|
| Extant length 13.4mm | Estimated original length 20–21mm |
| Extant width 8.8mm   | Estimated original width 9mm      |
| Depth 6.7mm          |                                   |

Depth of socket 3.7mm

Extant length mouth 9mm

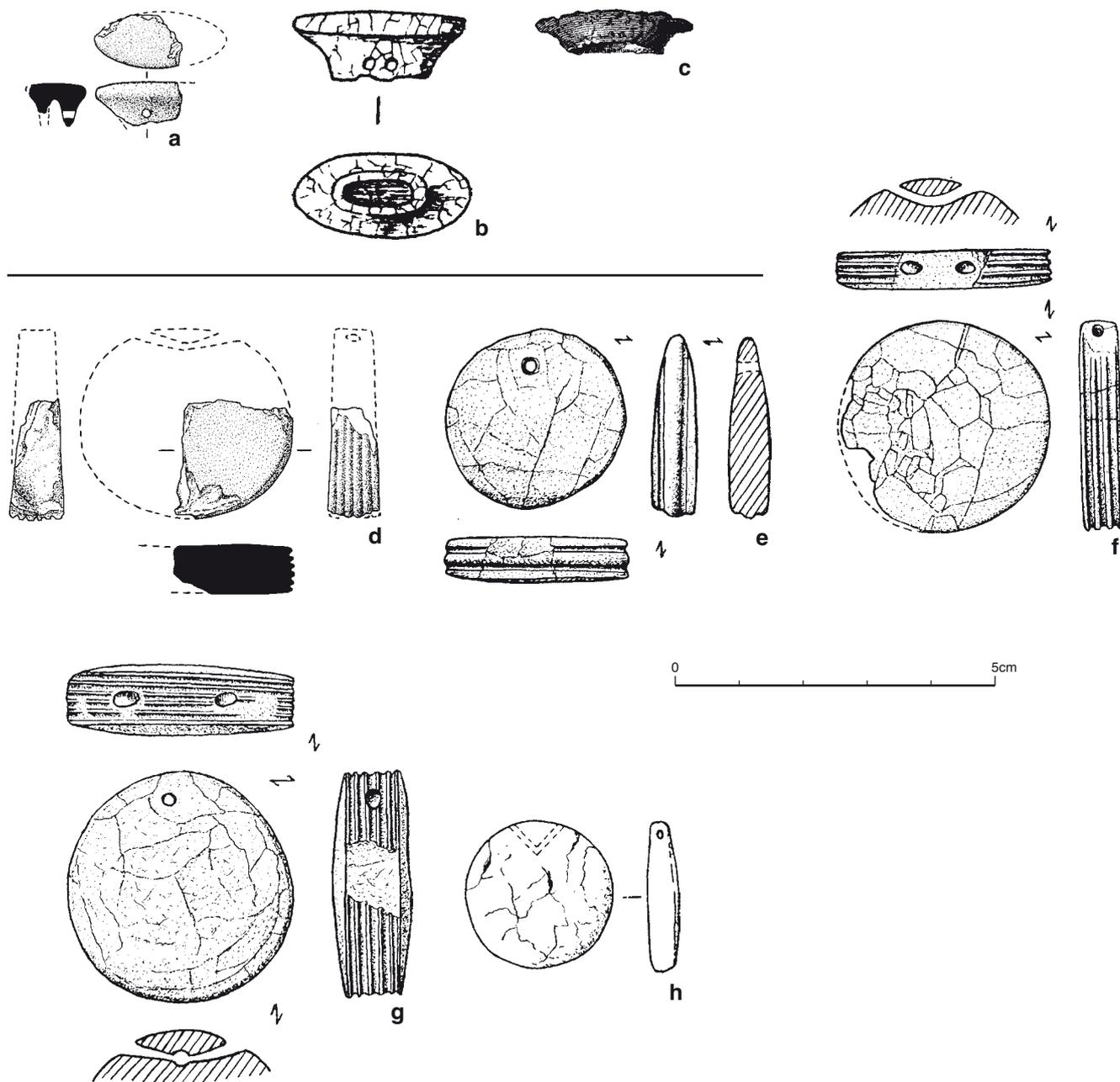
Width mouth (one side damaged) 5.5mm

## Identification, parallels and dating

The form of this pommel compares well generally with several in Hardaker's group II (1974), most of which are made of bone or similar organic materials. More specifically, it is similar in proportions and size to two of only three previously known amber pommels, those from the Manton barrow, Preshute G1a, Wiltshire (ibid, 10–11 no. 7; Annable and Simpson 1964, 47 no. 208; Cunnington 1907–8, 7 no. 1, pl.) and Winterbourne Stoke G9, Wiltshire (Annable and Simpson 1964, 60 no. 453; Thurnam 1871, 503 fig. 196). The Manton pommel is badly decayed, between 26 and 28mm long and around 10mm deep (Fig. 24b), hence a little larger than Ringlemere all round; (Hardaker's stated length of 22mm does not correspond with two views in his drawings). It has two symmetrically placed pegholes of fine bore. The Winterbourne Stoke example is now lost (Annable and Simpson 1964, 60 no. 453), but fortunately Thurnam published a drawing from one of Hoare's unpublished plates (1871, 503 fig. 196). It appears as around 24mm long and 6mm deep, again highly comparable to the Ringlemere example (Fig. 24c). No peg holes are apparent in the engraving. The one surviving associated artefact is a simple flared cup with dot decoration, a form not unlike the squatter version in the Manton grave.

These three amber pommels belong to the main group of pommels post-dating c. 2000 BC and termed *long oval pommels with pronounced lips*; they mostly equate with Hardaker's group II and twelve examples are now known in bone (Needham forthcoming). The amber examples are not quite so long on the main axis as most bone ones, but a bone pommel from Narrowdale Hill, Staffordshire, is only 19.5mm long (Hardaker 1974, no. 9), while those from Irthlingborough, Northamptonshire, and Radwell I, Bedfordshire, may not have been much longer (Needham forthcoming). This shortening may simply be due to their being intended to furnish knives rather than daggers. It is suggested that pommels under 35mm long generally belong to knives and may in turn signify female graves (ibid). The Ringlemere pommel is likely to have been attached to a slender handle, not more than 12 x 6mm in cross section.

The remaining amber pommel known from Britain is the ornate and famous example (sadly destroyed) from Hameldon Down, Devon, which was inlaid with dozens of tiny gold studs (Hardaker 1974, no. 33, pl. 11e; Pearce 1983, pl. 128). This too is oval with a pronounced lip, in keeping with an early 2nd millennium date, but the oval is of broader proportions than the main group above. In shape it finds good parallels in the gold-covered wood(?) pommel from Ridgeway 7, Dorset, and the



**Figure 24** The Ringlemere amber objects and their closest parallels: a) Ringlemere; b) Manton Preshute G1a, Wiltshire (after Annable and Simpson 1964); c) Winterbourne Stoke G9, Wiltshire (after Thurnam 1871); d) Ringlemere; e-g) Kernonen-en-Plouvorn, Côtes d’Armor (after Briard 1970); h) Wilsford G7, Wiltshire (after Annable and Simpson 1964). Scale 100%

bone or ivory example from Grange, Co. Roscommon, Ireland (Hardaker 1974, fig. 7, pl.2). These were classified as group VI by Hardaker, but two others in that group are entirely different. An unpublished amber pommel from Liscahane, Co. Cork, excavated with fragments of Encrusted Urn by Barra Ó Donnabháin (Mary Cahill – pers. comm.), also belongs to this group; it is reconstructable to 40mm in length compared to 45–60mm for the other three. It has a double-socket mode of attachment very similar to the Grange example.

Oval pommels with pronounced lips occur in a good number of datable graves and span the earlier half of the 2nd millennium BC (Needham forthcoming). The very similar amber example from Manton comes from a grave group which is of classic Wessex I (Bush Barrow series) composition. Current dating of this assemblage is 1950/1900–1750/1700 BC. The slightly larger bone example from a Collared Urn cremation at Irthlingborough, Northamptonshire, is radiocarbon dated (by the cremated bone) to 3520 ± 30 BP (GrA-19652/20156/20176

combined), calibrating to 1970–1740 BC. Four more graves yielding socketed bone pommels with pronounced lips have been dated to 3665 ± 45, 3590 ± 100, 3520 ± 30 and 3257 ± 80 BP (see Needham forthcoming for full details).

**Pendant fragment**

**Condition**

The original surfaces are lightly weathered, matt orangey-brown with incipient crazing and some more reflective orange patches. The two straighter edges are fractures – these and some chipped corners expose very dark orange glass-like amber and it is possible that some damage occurred during recovery. The weathered surface is shown to be extremely thin.

**Form**

Two faces are virtually flat and are parallel on one cross-sectional axis, but converge significantly on the orthogonal axis (Fig.24d; Colour Pl. 4). The original edge of the object is a very

neatly fashioned squared side engraved with five grooves. In plan the middle section follows an even curve of about 12mm radius, but this is flanked by straighter stretches; it appears not therefore to have come from a totally circular object. One of the straighter parts is at the thickest end and is most likely to be close to the base of the ornament on the assumption that the ornament would hang best if suspended from the slighter end. It may be that the outline is simply that of a disc which was not perfectly circular (see parallels below), but if so, it was rather asymmetrical given the care in execution evident; the alternatives are a sub-hexagonal or sub-pentagonal shape.

The grooves are of crisp V profile, their sloping walls retaining longitudinal scoremarks from the cutting instrument, perhaps a flint tool. Although neatly executed and regularly spaced, under magnification they do not exhibit constant profiles or widths to a high precision. The ribs left standing in between retain a flat crest, but those along the two outer angles are narrower, more rounded beadings.

### Dimensions

Maximum dimension 24.5mm

Maximum intact thickness 7.9mm

Estimated thickness at base (before chipping) > 8.0mm

Minimum intact thickness 6.7mm

Estimated thickness at thinnest point of fragment (before chipping) c. 6.0mm

Groove width 0.4–0.8mm

Groove depth c. 0.2mm

### Identification, parallels and dating

This is obviously an object of ornamental character, but the absence of any point of attachment makes its identification a little speculative. Nevertheless, there are sufficient points of comparison with other Early Bronze Age ornaments to suggest that this would have been from a disc-like object, presumably serving as a pendant. A variety of amber pendant and bead forms are known from Britain (Beck and Shennan 1991).

Circular amber discs with symmetrical profiles in all directions are a well known feature of just four Wessex I graves. Those at Manton Preshute Gra, Amesbury G44 and Wilsford G8 have gold bindings around the edges, leaving the centre as exposed amber. They have narrower edges than on the Ringlemere piece, but still carry edge grooves; they also have encircling grooves on their faces (Annable and Simpson 1964, nos 188-9, 195; Clarke *et al.* 1985, 109 fig. 4.32). An example from Wilsford G7 is plain and has no gold binding (Fig. 24h), in this respect seemingly similar to the Ringlemere one.

More specific parallels for the features on the Ringlemere piece can, however, be found among the 12 amber ornaments from the Armorican tomb of Kernonen, Côtes d'Armor (Fig. 24e–g; Briard 1970; Needham 2000b, 165 fig. 6.23). Here three rather thick discs of different sizes have squared edges which are broad enough, on the largest one, to carry five parallel grooves as at Ringlemere (Fig. 24g). The others have two and three grooves. Their diameters are 29, 34 and 37mm, the last being very close to that reconstructed for Ringlemere. The faces of the smallest Kernonen example (Fig. 24e) converge towards the point of suspension, but the other two are parallel-faced. The largest one, that otherwise most similar to the Ringlemere piece, has the symmetrical swollen profiles of the Wessex discs. The

Kernonen discs are not perfectly circular and it is therefore perhaps possible that the Ringlemere outline also derives from an imperfect circle.

The derivation of this disc form of pendant is uncertain, but one possible source of inspiration is the earlier 'pulley-rings'. These are open in the centre, but have a more-or-less broad annular band often carrying one or occasionally two edge grooves – for example, an unprovenanced example of shale or jet in Devizes Museum (Annable and Simpson 1964, 43 no. 133, 96 fig. 133). At 50mm diameter this is larger than the Ringlemere ornament is likely to have been, whereas the gold-bound amber discs are between 25 and 30mm diameter.

All three of the types discussed – the Wessex discs the pulley-rings and the Armorican discs – were most often suspended by means of a V-boring penetrating one side of the ornament. This is most likely therefore to have been the mode of suspension for the Ringlemere ornament, but two from Kernonen have a straight face-to-face perforation, in one case doubling up with a V-boring. While the pulley-rings are a feature of mature Beaker contexts, c. 2200–1950 BC, all the amber disc parallels cited here are datable again to Wessex I or the equivalent Armorican phase – Kernonen/Kerodou.

### Prehistoric pottery

#### Grooved Ware

##### by Gillian Varndell

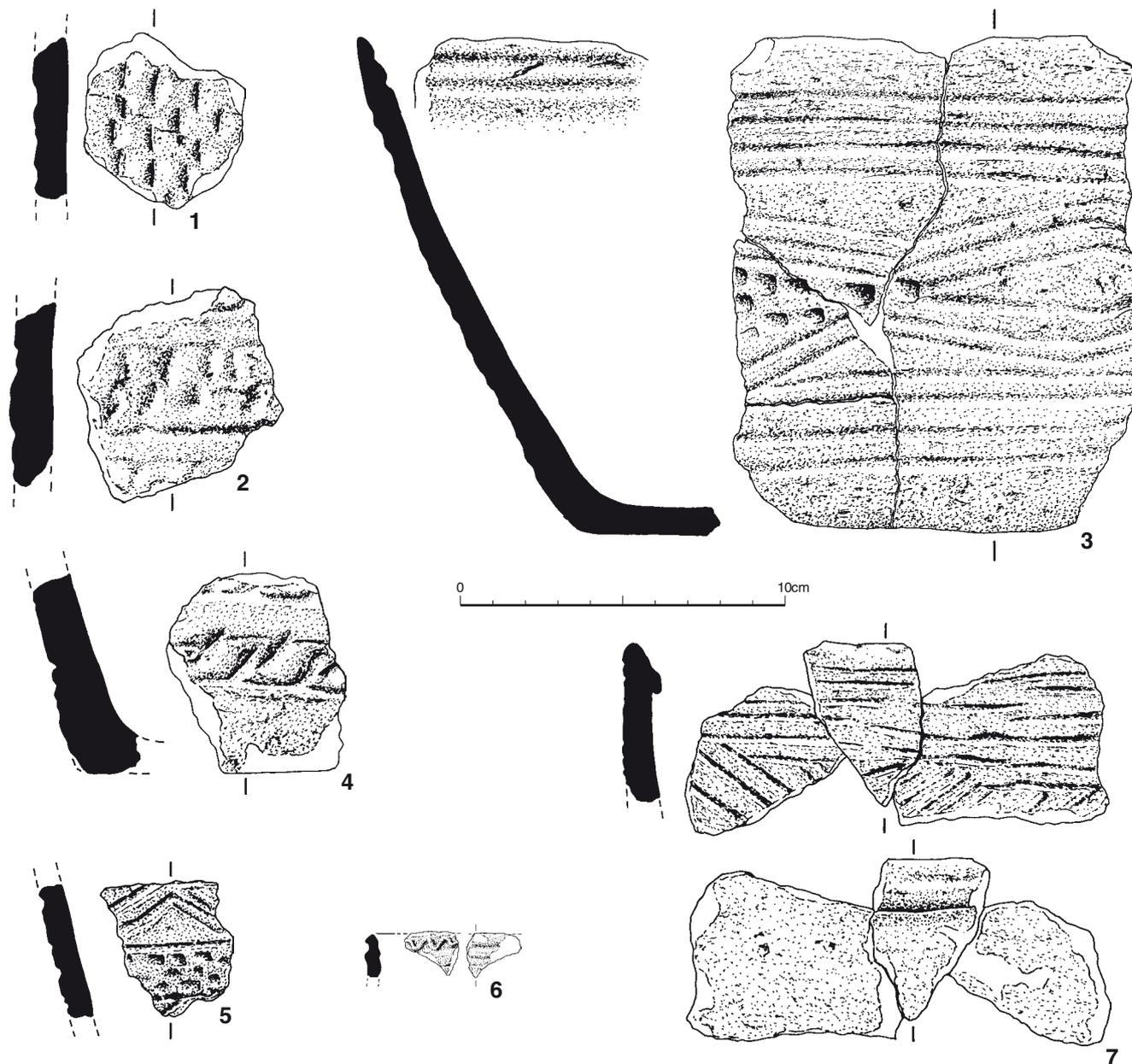
The bulk of the prehistoric pottery retrieved from the site to date is Late Neolithic Grooved Ware. The assemblage is of considerable size (over 5,000 sherds so far) and derives from pre-mound occupation. Grooved Ware pottery was recovered from cut features, the buried soil and from the turf mound. Some of the pits yielded very large sherds including the greater part of a tub-shaped vessel (Fig. 25.3). Some sherds have burnt residues and one has produced a date from associated charcoal (see below). One vessel appears to be entirely fire-blackened.

A preliminary assessment was carried out after the first year's work, and an evaluation of the material excavated subsequently confirms the initial impression that this assemblage falls into the Clacton sub-style (Wainwright and Longworth 1971, 236ff). The range of decorative traits includes the use of wavy cordons occurring externally and on internal rim bevels (Fig. 25.6). Cordons are finger-pinched and not applied, and this sometimes manifests itself quite crudely when fingernails and tips are used to mould the cordon into a wavy shape. In some cases this technique produces raised lentoids forming a herringbone pattern between grooves or ridges. There are zones of nail impressions (Fig. 25.1), impressed circular pits and other impressions in staggered rows. Occasionally a solid round-sectioned tool has been used to create jabbed impressions. Grooved decoration includes opposed lines as well as one or more circumferential grooves. A minority of vessels appears to be fairly small and thin-walled with larger, thick-walled vessels in the majority. Jar and tub shapes predominate.

Most of the sherds range from moderately eroded to quite fresh. The bulk display bipartite colouration, red externally and black internally. There is little by way of filler other than grog although some vessels have sporadic large flint grits. Breaks may have a finely laminated appearance.

The regular association elsewhere in southern Britain of

Grooved Ware



Beaker

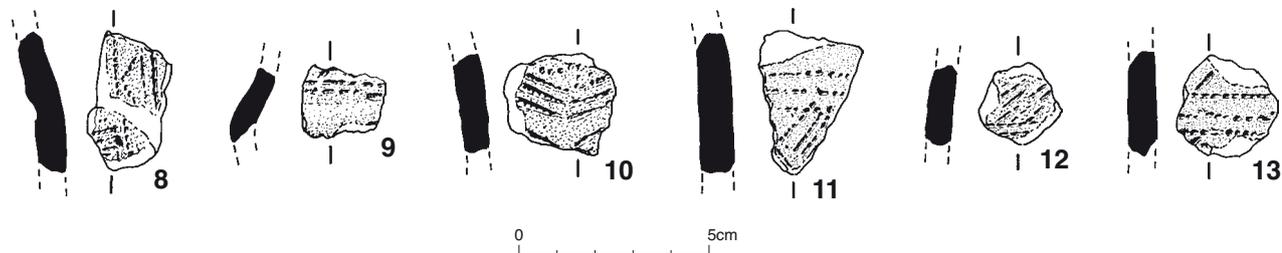


Figure 25 Selection of Grooved Ware and Beaker sherds from Ringlemere M1. Scale 50%

Grooved Ware with Neolithic ritual sites has posed the question as to whether its occurrence in some quantity under Ringlemere M1 is more than fortuitous. Clearly this exciting possibility requires much more excavation and analysis before we can venture an informed opinion but either way, some form of regular Late Neolithic activity must have occurred at Ringlemere.

**Beaker pottery**  
**by Stuart Needham**

From preliminary inspection of the prehistoric pottery it is apparent that there is a small admixture of Beaker ware in both the turf mound and the pre-mound soil horizon. The quantity is very small by comparison with Grooved Ware, but will be significant in terms of the chronology of the sequence.

The Beaker sherds recognized so far are mainly fineware

thin-walled vessels, ranging from 4–9mm thick, and made in fine-sand fabrics with occasional to sparse grits of well crushed calcined flint. Colour is mainly two-tone with pale to mid grey core and buff to light orange exterior. A selection is shown in **Figure 25**. Decoration is predominantly by tooth-comb stamp with the probable addition of fine incised line. Although the sherds are mainly small to medium sized, several motif variations are already apparent. Most are probably based on horizontal filled/reserved zoning, sometimes with pendant triangle rows (**Fig. 25.11**), but departures include one with vertical panel division (**Fig. 25.8**; context 1209) and another with a weak zigzag field comprising a reserved band between multiple lines (**Fig. 25.10**; Context 1001/131 – mound).

The Beaker material is all rather weathered, partly because of the friable nature of the fabric, but taking into account sherd size as well, there is little to suggest this material was newly deposited at the time the turf mound was erected. With Beaker pottery first coming into use in Britain around 2500/2400 BC and some of the design elements unlikely before about 2250 BC

(Needham 2005), the Ringlemere assemblage suggests that the turf mound should date to the last quarter of the 3rd millennium BC at the earliest.

### Flintwork

#### by Chris Butler

To date, well over 30,000 prehistoric worked flints have been recovered from the excavation of Ringlemere MI, with several thousand more from field-walking in the area. At this stage, only an assessment of the 12,000 flints from the initial field-walking and Trenches 1 and 2 has been carried out (**Table 2**) and the following report is based on the results of that study. It should be seen as an interim statement on the nature of the lithic material present on the site. Nevertheless, it is already clear that several different industries are represented by the flint assemblage. Six different types of raw material have been noted, most of which could be obtained as nodules in the vicinity of the site, or from other sources nearby.

**Table 2 Details of the analysed flintwork from Ringlemere**

|                                | Fieldwalking | Trench 1    | Trench 2    | Total        |
|--------------------------------|--------------|-------------|-------------|--------------|
| Hard hammer-struck flakes      | 897          | 2928        | 1232        | 5057         |
| Soft hammer-struck flakes      | 137          | 1317        | 88          | 1542         |
| Hard hammer-struck blades      | 10           | 45          | 7           | 62           |
| Soft hammer-struck blades      | 9            | 119         | 9           | 137          |
| Soft hammer-struck bladelets   | 17           | 76          | 2           | 95           |
| Bladelet fragments             | 9            | 112         | 4           | 125          |
| Flake/blade fragments          | 306          | 2177        | 464         | 2947         |
| Chips                          | 6            | 479         | 58          | 543          |
| Shattered pieces               | 53           | 420         | 128         | 601          |
| Chunks                         | 17           | 24          | 8           | 49           |
| Axe thinning flakes            | 3            | 16          | 0           | 19           |
| Core rejuvenation flakes       | 5            | 21          | 1           | 27           |
| Crested blade                  | 1            | 4           | 0           | 5            |
| Core tablets                   | 2            | 0           | 0           | 2            |
| Single platform flake cores    | 53           | 44          | 23          | 120          |
| Two platform flake cores       | 46           | 46          | 16          | 108          |
| Multi platform flake cores     | 9            | 7           | 1           | 17           |
| Single platform blade core     | 1            | 3           | 0           | 4            |
| Single platform bladelet core  | 0            | 1           | 0           | 1            |
| Discoidal core                 | 2            | 2           | 3           | 7            |
| Core fragments                 | 4            | 29          | 8           | 41           |
| Tested nodules                 | 3            | 0           | 0           | 3            |
| End scrapers                   | 72           | 129         | 33          | 234          |
| Side scrapers                  | 24           | 26          | 8           | 58           |
| End & side scrapers            | 19           | 37          | 0           | 56           |
| Hollow scrapers                | 2            | 8           | 4           | 14           |
| Button scrapers                | 2            | 5           | 0           | 7            |
| Miscellaneous retouched pieces | 16           | 2           | 1           | 19           |
| Combination tools              | 6            | 4           | 1           | 11           |
| Piercers                       | 10           | 11          | 4           | 25           |
| Awls                           | 2            | 2           | 0           | 4            |
| Notched flakes                 | 17           | 5           | 1           | 23           |
| Notched blade                  | 1            | 1           | 0           | 2            |
| Backed knives                  | 3            | 3           | 0           | 6            |
| Discoidal knife                | 0            | 1           | 0           | 1            |
| Serrated flakes/blades         | 0            | 6           | 3           | 9            |
| Burin                          | 0            | 1           | 0           | 1            |
| Truncated blades               | 0            | 3           | 0           | 3            |
| Arrowheads                     | 1            | 15          | 2           | 18           |
| Fabricator                     | 1            | 2           | 1           | 4            |
| Tranched adze                  | 0            | 1           | 0           | 1            |
| Tranched adze sharpening flake | 1            | 5           | 0           | 6            |
| Misc. axe/adze fragment        | 0            | 3           | 0           | 3            |
| Polished axe fragment          | 1            | 0           | 0           | 1            |
| Chopper                        | 1            | 1           | 0           | 2            |
| Pick                           | 3            | 1           | 1           | 5            |
| Hammerstones                   | 11           | 11          | 3           | 25           |
| Cores re-used as hammerstones  | 18           | 4           | 2           | 24           |
| <b>Total</b>                   | <b>1801</b>  | <b>8157</b> | <b>2116</b> | <b>12074</b> |

### Mesolithic activity

There was a small group of residual Mesolithic material, making up less than 5% of the analysed assemblage. These pieces included bladelets, a tranchet adze, a number of tranchet adze-sharpening flakes, a pick and some flake implements. Despite the fact that there were bladelets and bladelet fragments in the assemblage, there is little evidence that microliths were being produced at the site. This seems typical for Mesolithic sites in east Kent (see above p. 8), which tend to have no microliths and instead have high proportions of tranchet adzes and adze-sharpening flakes (G. Halliwell and K. Parfitt pers comm.; Butler 2005, 118; Butler forthcoming). The mix of implement types would suggest the presence of a longer-stay camp site, rather than just a short-stay hunting or special-task site.

### Early Neolithic activity

There was a component of the analysed assemblage that comprised soft and hard hammer-struck blade and long-flake debitage, much of which had prepared platforms. This material, which was mostly of one flint type, also includes a small number of cores typical of the Early Neolithic, with prepared platforms at right angles to one another, as well as some crested blades. Furthermore, Early Neolithic flintworking traits could be seen on a group of well-produced implements that included scrapers, backed knives, serrated flakes and a burin, together with other retouched pieces made on blades and long flakes.

In addition, a small leaf-shaped arrowhead was recovered from Trench 2. The type is primarily characteristic of the earlier Neolithic (Green 1984) and, taken together with other earlier material, seems to indicate an Early Neolithic phase of activity at the site, for which no associated features or pottery have yet been recognised. It may also be noted that a fragment of Neolithic ground stone axe of coarse-grained rock comes from the pre-mound topsoil in Trench 1. Further fragments of both flint and stone polished axeheads have come from subsequent excavations on the site (K. Parfitt – pers.comm.).

### Late Neolithic and Bronze Age

Most of the excavated flint assemblage is of Late Neolithic character, possibly extending into the Early Bronze Age, and comes from the same range of contexts as the large collection of Grooved Ware pottery. It had a mixture of hard and soft hammer-struck debitage, with hard hammer-struck flakes predominating, together with flake cores and limited evidence of platform preparation. The large proportion of fragments, chips and shattered pieces found indicate that knapping and implement manufacture were very probably taking place on the site.

The implements include large numbers of finely retouched scrapers with abrupt retouch around the distal end and occasionally along one or more sides. One or two scrapers had invasive retouch around the distal end, and there were also a number of button scrapers. The latter is a Beaker/Early Bronze Age type. Amongst the other flake implements found were piercers, awls, notched pieces and knives, a polished discoidal knife and a number of combination tools, which are found in the Late Neolithic and Early Bronze Age. Sixteen later Neolithic transverse arrowheads were also found, together with a single Early Bronze Age barbed-and-tanged arrowhead. These arrowheads cover a broad span, at least c. 3000 to 2000 BC.

Transverse arrowheads are frequently found in association with Grooved Ware pottery (Wainwright and Longworth 1971, 257–9).

A number of pits under the barrow mound contained Neolithic flintwork and pottery (Fig. 6). Amongst these, pit F. 1004 produced six pieces of worked flint, comprising three rough hard hammer-struck flakes and three scrapers, one of which was broken. Pit F. 1006 contained 21 pieces of worked flint, which apart from the mostly hard hammer-struck debitage included five scrapers. Central L-shaped timber slot, F. 1099 (see above) produced 22 pieces of worked flint, including two end scrapers and a side scraper.

Pit complex F. 1046, near the centre of the enclosed area, contained a total of 229 pieces of worked flint. The debitage is predominantly hard hammer-struck with a large proportion of fragments. The implements include a number of end scrapers on blades or long flakes, some of which appear to have prepared platforms. An oblique arrowhead and two further retouched fragments which may be arrowheads, were also recovered from the pit. Some of this material is residual Mesolithic material, with other pieces, especially the long flake/blade scrapers, resembling the depositions in pits F. 1004 and F. 1006. The worked flints contained within these pits may be interpreted as special 'placed' deposits.

The flint assemblage contained within the make-up of the mound dates from the Late Neolithic to Early Bronze Age, with some residual Mesolithic and Early Neolithic components incorporated. Although there appears to be little overall difference between the debitage from the pre-mound topsoil and that from the mound, there is a tendency towards longer, almost blade-like flakes from the pre-mound topsoil. The implements from the pre-mound soil also tend to be Neolithic rather than Early Bronze Age. The initial ditch fill seems to have an assemblage that is broadly contemporary with the mound.

The final component of the analysed assemblage, seen in the modern plough-soil and also in the upper ditch fills, and therefore associated with later use of the site, is later Bronze Age material, comprising hard hammer-struck flakes and a few crude scrapers (Ford *et al.* 1984).

### Conclusions

Overall then, the substantial flintwork assemblage recovered from the Ringlemere site includes material dating from the Mesolithic period through to the later Bronze Age. The main phase of activity is associated with the Late Neolithic and Early Bronze Age activity at the site, and a full analysis of the assemblage in due course will enable comparisons to be made with other sites of this period in Kent and elsewhere in southern Britain.

The excavations and field-walking have also yielded very large quantities of calcined flint (approaching 500 kg). Plotting the surface distribution indicates that the entire area is liberally covered with such material, with a marked concentration in the area of M1. A number of other minor concentrations occur further away from the mound implying extensive prehistoric activity across the area. A number of struck flakes which have been subsequently calcined are present which demonstrates that flint working and flint calcination were, at least in part, contemporaneous activities.

## Wood remains

### **Identification of wood and charcoal remains associated with the central features and the cup**

**by Caroline Cartwright**

Wood and charcoal samples recovered from four contexts were submitted for identification: those excavated archaeologically from contexts 1025, 1103 and 1104 and that retrieved by the finder with the gold cup. Standard techniques of wood identification usually require transverse, radial longitudinal and tangential longitudinal thin sections to be made of each wood sample. These thin sections, approximately 12–14 microns in thickness, are usually cut on a base-sledge microtome, and are then mounted on glass microscope slides and examined by transmitted light optical microscopy with darkfield and polarising capabilities and a range of objectives providing magnifications from x50 to x1000. However, these wood samples were far too desiccated and powdery to be thin sectioned, so they were examined using the fracture method and reflected light microscopy normal for charcoal, but under similar magnification. Each fragment of sufficient size was fractured by hand to expose the required transverse and longitudinal surfaces. Identification of the surviving diagnostic features was carried out according to standards laid down by the International Association of Wood Anatomists (IAWA), published by Wheeler *et al.* (1986) and Wheeler, Baas and Gasson (1989). For each wood sample, the key features were also compared with reference collection specimens and text descriptions.

The samples from the southern L-shaped slot F. 1102 (1103, 1104) included a mixture of charcoal, partially burnt and unburnt wood. In 1103 ('Samples 1–3') identifiable material was of *Quercus* sp. (oak), *Acer campestre* (field maple), *Corylus avellana* (hazel), *Buxus sempervirens* (box) and *Fagus sylvatica* (beech). The first three species were found in all three conditions, the box as charcoal and the beech as partially burnt wood.

Context 1104 ('Sample 4') contained only tiny fragments of charcoal and partially burnt wood; those identifiable were *Quercus* sp. (oak), *Acer campestre* (field maple) and *Corylus avellana* (hazel). Also noted were soil pellets with dark, possibly mineral staining.

Under the binocular microscope many of the tiny fragments of unburnt wood from context 1025 appeared to be fragmenting in an irregularly 'prismatic' fashion. When sectioned for examination, these orange-brown fragments rapidly disintegrated into very fine powder, owing to their extremely desiccated state. Despite this condition, sufficient diagnostic features survived to enable the identification of the following three taxa: yew (*Taxus baccata*), field maple (*Acer campestre*) and beech (*Fagus sylvatica*). It is worth emphasising that none of the fragments in this batch is root material. *Acer campestre* was selected for radiocarbon dating (below).

The small sample of organic material found with the cup was received from the finder in two small self-seal bags. One bag contained very fine root filaments from modern cereal crops. The other had a few tiny fragments of unburnt wood which are possibly from *Acer campestre*, but which have a slightly darker colour and less 'prismatic' appearance than those excavated

from context 1025. The difference in condition means that it is not certain from the taphonomic and anatomical evidence alone that they can be considered to be from the same context.

Assuming that the majority of the wood fragments from 1025, 1103 and 1104 are not modern or intrusive, it is worth noting the type of ecology which the identified taxa represent and some of the distinctive properties of the timber yielded.

The yew is a slow growing, long-lived evergreen tree which prefers chalky soils, often in the dense shade of oak woods. Yew timber is strong but elastic and is particularly well suited to the manufacture of archery bows. It is also used for tool handles, furniture veneers and firewood. The field maple is most commonly found in hedgerows, edges of woods or as understorey in woodlands. It is frequently associated with ash, hazel and oak on heavy calcareous soils. As it coppices strongly it is very suitable for hedges. Its wood is fine grained, but as it is seldom available in long lengths, its use is largely confined to small turned artefacts, marquetry and firewood. Beech trees grow well on chalk and limestone but are also tolerant of a wide range of soils and conditions. Large trees may produce building timber, although not generally suitable for outside use; instead the wood is mainly used for furniture, small turned artefacts and veneers. It is a particularly good source of firewood and charcoal.

Hazel (*Corylus avellana*) comprises deciduous shrubs and small trees, often found as understorey in oak woodlands. Hazel is frequently coppiced, providing long sticks, hurdles, thatching and spars. The wood is relatively fine grained and is useful for cask hoops, basketry and good firewood. Management of hazel woods not only ensures productive coppicing timber but also maximises the harvest of the nutritious nuts (when protected from large birds, squirrels and mice).

Oaks (*Quercus* spp.) are large, long-lived deciduous trees which will tolerate a range of soil pH and moisture conditions, including wet soil and dry clay. Oaks yield good all-purpose long lasting and durable timber, useful for building, furniture, firewood and charcoal. Coppicing of oak woodland produces stakes and poles for fencing.

The box tree (*Buxus sempervirens*) is an evergreen species that once formed part of woodlands which are now very rare. Its preferred habitat is on chalk and limestone slopes, sometimes with beech. Box timber is very hard, heavy and close-grained and is used for tool handles, precision instruments and decorative carving and turnery.

In conclusion, the wood and charcoal samples recovered from excavated contexts 1025, 1103 and 1104 at Ringlemere have been identified as typical southern England oak and beech wood components consisting of field maple (*Acer campestre*), hazel (*Corylus avellana*), oak (*Quercus* sp.), beech (*Fagus sylvatica*) and box (*Buxus sempervirens*).

### **Radiocarbon dates from the central structures**

**by Keith Parfitt and Stuart Needham**

Since the excavation of monument M1 is ongoing, no systematic dating programme has yet been instigated. However, a few samples have been submitted for radiocarbon measurement in order to give some early indications on the chronology of the site sequence and particularly the central structures (Table 3).

Table 3: Radiocarbon and OSL dates for Ringlemere and Mill Hill, Deal

| Site       | Feature   | Material  | Date BP       | Calibrated date<br>(2-sigma) bc | Lab. ref.   |
|------------|---|---|---------------|---------------------------------|-------------|
| Ringlemere | Pit F. 1321 – charcoal at interface of two layers | Charcoal – whitebeam ( <i>Sorbus aria</i> ) and box ( <i>Buxus sempervirens</i> ) | 4170 ± 40     | 2890–2600                       | Beta-183862 |
| Ringlemere | Buried soil 1020/103                              | Pot sherd (KF 49)   | 2530 ± 460 BC | 2990–2070<br>(1-sigma)          | OSL(Oxford) |
| Ringlemere | L-slot F. 1102, context 1103 sample 2             | Unidentifiable charcoal flecks, 1.3g  | 3460 ± 40     | 1890–1680                       | Beta-180487 |
| Ringlemere | L-slot F. 1102, context 1103 sample 3             | Unidentifiable charcoal flecks, 1.5 g   | 1750 ± 40     | AD 130–410                      | Beta-180488 |
| Mill Hill  | Pit SRD F. 428                                    | Cow bone  | 4105 ± 45     | 2880–2500                       | OxA-7441    |
| Mill Hill  | Pit CRD F. 1                                      | Sheep bone  | 4020 ± 60     | 2870–2450                       | OxA-7531    |

Beta-183862 gives an initial indication that at least some of the Grooved Ware activity on the site belongs to the first half of the 3rd millennium BC rather than the second half. Further samples will be dated in due course. Radiocarbon dates for Grooved Ware contexts at Mill Hill, Deal, are shown for comparison.

The decayed, unburnt woody material at the base of F. 1102, the southern L-shaped slot, was thought to be too degraded to allow the extraction of any suitable samples for radiocarbon dating. Small charcoal fragments, which occurred in the same deposit, provided an alternative. In the light of initial uncertainties about both the age and potential significance of this feature, it was decided that it would be worth attempting to

get dates from this charcoal, accepting from the outset that the sample material was far from ideal. This in fact seems to be the case for the two results are somewhat unsatisfactory in being very divergent from one another. There can now be little doubt that sample Beta-180488 had been contaminated by later, intrusive organic matter. The Early Bronze Age date for sample Beta-180487 may be reliable but the possibility remains that, if intrusive organic matter accounts for the other measurement coming out late, it may also have infiltrated this one. Another sample, this time of unburnt wood fragments, was submitted from context 1025 in the stratigraphically later pit F. 1024. After rigorous pretreatment it failed to yield datable material (Groningen Laboratory – Van der Plicht, pers. comm.).