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**Early Anglo-Saxon vessels and containers from
Saltwood Tunnel, Kent**

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All artefact catalogue descriptions and illustrations are included in the illustrated grave catalogue

1 INTRODUCTION

The vessels and containers from Saltwood Tunnel include two Byzantine copper-alloy bowls and one bowl of Frankish origin, 11 ceramic vessels, four glass vessels, 00 boxes, one casket and two drinking vessel mounts.

2 COPPER ALLOY BOWLS

by Anthea Harris

2.1 Typology

Two of the copper-alloy vessels (*ONs* 1090 and 804) from graves C1048 and C1081 are analogous in form and material to vessels often referred to as ‘Coptic bowls’ of the B1 type. The distributional focus of these vessels extends across south-eastern England, the Rhine valley, south-west Germany, Italy and Hungary. The majority form part of the assemblages of late sixth- and early seventh-century burials (although several examples have no known archaeological context at all).

‘Coptic bowls’ in the western European archaeological record were first identified by Martin Conway in the early twentieth century, who remarked upon their resemblance to vessels from Late Antique Egypt. However, it was largely the work of Joachim Werner that brought them to the attention of the broader archaeological community and this remains extremely valuable, although other important work has been published in more recent years, particularly that of Patrick Périn (Conway 1912; Werner 1957; 1961; Richards 1980; Bruce-Mitford 1983; Périn 1992; 2005).

There are several variations of ‘Coptic bowl’: Werner identified eight of these – including the B1 type – and other scholars have added more categories to his classificatory system (Richards 1980). B1 bowls are shallow-bodied vessels with two omega-shaped drop-handles and a low foot-ring, often decorated with chevron-shaped perforations. The handles are not formally attached to the bowl, but are supported by two pairs of lugs attached on opposite sides of the exterior of the vessel, just beneath the rim. The examples appear to have been cast as one piece (with the exceptions of the handles themselves) and, where metallurgical tests have been carried out, these have revealed the bowls to be produced from a copper-alloy containing lead and, in smaller quantities, tin and zinc.

Bowl (*ON 1090*) and bowl (*ON 804*) fit neatly within this category, and both appear to have been cast, for there is no evidence of solder between the body of the vessel and either the foot-ring or the handle attachments. Both were turned on the lathe in the finishing process, and both have the same internal pattern of incised concentric rings and a pronounced central dimple or lathe mark. Yet, they have different dimensions and were not, therefore, cast from the same mould. Furthermore, although both bowls have simple, slightly out-turned rims, that of bowl (*ON 804*) is grooved on the exterior, while that of bowl (*ON 1090*) is not. There are also different numbers of perforations around their foot-rings (bowl *ON 804*: 34; bowl *ON 1090*: 24).

Bowl (*ON 2471*) from grave C6653 shares some characteristics with bowls (*ONs 1090* and *804*) and, therefore, with B1 'Coptic bowls' more generally. It is a shallow-bodied vessel with two omega-shaped drop-handles attached to the outer body of the bowl by four copper-alloy lugs or handle attachments. Yet, the handle attachments are smaller and attached to downwardly pointing triangular-shaped plaques, rather than protruding directly from the body of the bowl. Moreover, these plaques were soldered to the body of the bowl, rather than having been cast as one piece. The body itself is flat-bottomed, rather than globular and made from very thin sheet metal. It is highly unlikely to have been cast in a mould and the metal was probably hammered into shape. More importantly, bowl (*ON 2471*) rested in the grave on a low trivet comprised of a circular band of copper-alloy, with three looped feet. There is some evidence that the trivet had been soldered to the base of the bowl, so as to form a foot-ring. Taken together, these characteristics preclude us from classifying this vessel as a B1 'Coptic bowl'.

A close parallel for bowl (*ON 2471*) was found at Gilton (Kent) (grave 8) (Faussett 1856). Whereas the handles of Saltwood bowl (*ON 2471*) are uniformly omega-shaped, those of the Gilton bowl are slightly more sub-rectilinear in form. Both bowl and trivet were also larger than the Saltwood example: the Gilton trivet was approximately 310 mm (12 inches) in diameter compared to 145 mm, while the Gilton bowl was approximately 462 mm (18 inches) in diameter compared to 340 mm. Both bowls had a depth of approximately 114 mm (4 inches). Like the Saltwood bowl and trivet, this example was also badly decayed and had been repaired in antiquity.

Grave 18 at Gilton is described as containing 'a brass pan or kettle and a brass trivet, exactly like those described at No. 8, but smaller' (Faussett 1856). Unfortunately, no dimensions are given for this second bowl and trivet and one can only speculate on the possibility that they were the same size as the Saltwood example. It is also possible that the 'thin-walled copper-alloy bowl, with flat out-turned rim' found at Sutton Hoo Mound 6 is of the same type (Carver 1998, 182).

Another analogous bowl was discovered at Coombe (Kent), a neighbouring village to Gilton. This, too, differed from the Saltwood example in terms of handles and size. The former, while approximately omega-shaped, took a roughly sub-rectilinear form, and the bowl had an overall diameter of 142 mm, with an extrapolated height of 29 mm (Ellis Davidson and Webster 1967).

2.2 The archaeological context and parallels

The bowls were deposited, intact, in three separate graves in the Central cemetery (graves C1048, C1081 and C6653). The bowl in grave C6653 (*ON 2471*) lay face up beyond the foot of the body on the left-hand side, in close proximity to the wooden bucket. That in grave C1081 (*ON 1090*) was deposited vertically on the extreme left-hand side of the grave just outside the coffin, but within the chamber itself. The bowl in grave C1048 (*ON 804*) was also deposited on its side, towards the centre of the grave on the right-hand side.

The deposition of a single B1 ‘Coptic bowl’ in a grave, along with other grave-goods (including weapons and other vessels), has several parallels in Anglo-Saxon archaeology. Although some ‘Coptic bowls’ have been found as chance finds, almost all bowls from stratified archaeological contexts are part of grave assemblages. Most of these burials are inhumations and most have been interpreted as the burials of males of elite social status. The practice is restricted to Kent, East Anglia and Lincolnshire, with the exception of Asthall Barrow (Oxfordshire), where fragments of copper-alloy were identified as part of a B1 bowl with a beaded rim and open-work foot-ring (Dickinson and Speake 1992, 101-4 and fig 17). Besides Saltwood, other Kentish examples come from Sarre, Faversham, Gilton, Teynham, Wickhambreaux and, possibly, Reculver and Westwell (Harris 2003, 164-7). On the Continent, B1 bowls have been found along the Rhine valley and in northern Italy (Werner 1961; Périn 1992; 2005). A B1 vessel was also found in a grave at the Avar cemetery at Zarárdi, Hungary (Bardós 1992).

‘Coptic bowls’ undoubtedly had high-status associations. They were found at both Sutton Hoo Mound 1 (Suffolk) and Prittlewell (Essex), the most extravagantly furnished Anglo-Saxon graves known (Bruce-Mitford 1983; Museum of London Archaeology Service 2004; Blair et al 2004). Both are interpreted as princely burials. A further example comes from the Taplow mound burial, although this, like the one from Sutton Hoo Mound 1, is not a B1 vessel (but falls into Werner’s class C). However, while ‘Coptic bowls’ were plainly objects with which elite individuals could expect to be buried, their use was not restricted to the burials of such people. Most Anglo-Saxon graves containing ‘Coptic bowls’ (especially B1 vessels) were far less ostentatious and in at least one case (Wheathampstead, Hertfordshire) the ‘Coptic bowl’ (class

B4) appears to have been the only non-organic object deposited in the grave, or at least the only one archaeologically visible (Harris 2003, 164 and 166).

The position of bowl (*ON 1090*) in the grave has parallels at Prittlewell and Sutton Hoo, where the ‘Coptic bowl’ was hung on the wall of the wooden chamber. The recorded weight of bowl (*ON 1090*) is 3.5kg, thus making it only slightly lighter than the ‘Coptic bowl’ (class C) from Sutton Hoo Mound 1, which weighed 3.95kg. The wood associated with this bowl – one fragment following the curvature of the interior of the bowl and the other adhering to the handle – is most plausibly interpreted as part of the wall and roof of the chamber. The grain of the wood flows from handle to handle, suggesting that the bowl was probably hung by one handle from the side of the chamber.

The wood associated with the other two bowls probably represents part of the coffin wall or its lid. These fragments were also found on the interior of the bowls, although another piece adhered to one handle of bowl (*ON 804*). It is likely that this fragment represents part of the coffin lid. No identification of these wood fragments was available at the time of writing. Bowl (*ON 804*) also bore traces of having contained, or having been adjacent to, one or more small ferrous objects (which it was not possible to identify), although a small nail is the most likely interpretation.

A series of gaming counters was also associated with bowl (*ON 804*). This is, again, a feature seen in other Anglo-Saxon burials with ‘Coptic bowls’, and can be seen as part of the ‘standard package’ of goods deposited in the grave of a high-status individual. There association can be seen, for example, at Prittlewell, Sutton Hoo and Asthall Barrow. Unfortunately, bowl (*ON 804*) suffered post-depositional damage and consequently the precise relationship between the counters and the bowl is unclear.

The same bowl contained (or was closely associated with) organic remains – two seed-pods, possibly nuts. These have been retained for further study, but have not been identified at the time of writing. Again, this is a feature noted at other sites: two ‘Coptic bowls’ excavated at Faversham (Kent) and Sarre (Kent) respectively, for example, are said to have contained hazelnuts, as did one from a royal grave at Cologne Cathedral (Werner 1964).

The position of bowl (*ON 2471*) at the foot of the body also has parallels in Anglo-Saxon archaeology. The bowls from graves 8 and 19 at Gilton were placed in an analogous position (described by Faussett (1856) as being ‘at the feet and beyond the coffin’). Grave 205 at Kingston Down – opened in 1771 – yielded another shallow, copper-alloy trivet with three feet. The feet were plainer than those on the Saltwood and Gilton trivets but the trivet itself was approximately the same size as the example from Saltwood, lay at the foot of the body and, like

the Saltwood example, apparently inside the coffin. This grave belonged to another high-status individual and one of its more famous finds is the ‘Kingston Brooch’ (Faussett 1856, 78).

2.3 Manufacture

As we have seen, bowls (*ONs 1090* and *804*) are mould-cast vessels, whereas bowl (*ON 2471*) is likely to have been produced from sheet metal and hammered into shape. X-radiography confirms this, suggesting that bowls (*ONs 1090* and *804*) have a relatively high lead content, with an even higher level of lead in the handles. Bowl (*ON 2471*), by contrast, is made from an extremely poor quality, degraded metal, with a high slag content, although its handles and lugs were probably cast, since they, too, have a high lead content. The series of small, thick off-centre concentric rings on the base of the bowl suggest that the metal had previously been used in at least one other vessel. It had also been repaired several times before being deposited in the grave, possibly even having repairs made to areas of earlier repair. Bowl (*ON 1090*), too, had been repaired before deposition, but the extreme care with which this repair had been carried out, and the fact that the lathe marks pass continuously over the repaired area, indicate that this repair was carried out at a very early stage in the life of the bowl, possibly before it left the workshop.

Although initially cast, bowls (*ONs 1090* and *804*) were subsequently turned on a lathe as part of the finishing process, as the central lathe pips and circular lathe marks attest. It is curious, given the obvious care taken over the repair to the body of bowl (*ON 1090*) (which is scarcely visible macroscopically), that the decorative perforations on the foot-ring appear to have been made in what might be described as a clumsy fashion, with perforations of varying lengths and puncture marks left sharp rather than smoothed over. Given that the perforations cut the lathe marks, it is likely that these were added at a later – post-production – point, and perhaps, therefore, at a different workshop, although it is not possible to ascertain how much time elapsed between the two stages of working.

2.4 Origin

The geographical origin of all three these bowls remains a subject of debate. Although the appellation ‘Coptic’ is often employed to the B1 vessels, it is by no means certain that all such vessels derive from Byzantine, let alone Egyptian, workshops. That they are often found in association with other material from the Eastern Mediterranean is tantalising but does not provide proof that they are ‘Byzantine’ (Drauschke 2006). The main problem is that exact parallels are rarely found in Byzantine contexts, although a wealth of Byzantine metalwork of other types is known. This, of course, does not necessarily indicate that such bowls were always absent. Their

general absence on Eastern Mediterranean sites may be more a reflection of the nature of archaeological activity than a reflection of their overall number. Furthermore, much metalwork was melted down for re-use in the medieval period, especially in Egypt and elsewhere in the Eastern Mediterranean, where the cultural matrix was transformed and radically different tastes emerged during the course of the seventh century (Ward 1993, 29).

It should also be noted that in some regions the social function of the bowls might render them particularly visible in archaeological terms. For example, the Germanic practice of extravagantly furnished burials might render the bowls over-represented in the Western archaeological record when compared to the Byzantine world, where burial practices were much plainer. That is, we would not expect to retrieve ‘Coptic bowls’ from Eastern Mediterranean burial contexts, even if local communities had been in possession of them.

B1 mould-cast bowls are generally accepted as having been produced either in the Eastern Mediterranean itself or at least in a ‘Byzantine’ cultural or economic context, such as Byzantine Italy. Maria-Carmela Carretta (1982), for example, has suggested that Byzantine vessels from an initial phase of importation were copied in Lombard workshops and exchanged northwards towards Germany and Anglo-Saxon England. In particular, she sees sheet-metal bowls with mould-cast counterparts as the products of Lombard workshops in northern Italy. This aspect of her argument is based on the rarity of hammered sheet-metal bowls in Egypt and the rupture that she sees in contacts between Egypt and the northern Mediterranean after 618, when Egypt was occupied first by the Persians and then by the Arabs.

An Italian origin cannot be ruled out (Zagari 2005, 110). Given that the exarchate of Ravenna was, in any case, under Byzantine rule for much of the late sixth and early seventh century, it is possible that the bowls were produced in a wholly ‘Byzantine’ context, yet in northern Italy. The metallurgical evidence tends to support this proposition: the high lead content of several B1 vessels and especially their handles (including those from Saltwood) is at odds with the much lower lead content – and higher zinc content – of attested Egyptian vessels of this period (Dannheimer 1979; Oddy and Craddock 1983; Mortimer and Gilmour 1991; Périn 2005). Nevertheless, the arguments against Egypt must still be treated with caution. Hammered sheet-metal bowls are known from Egyptian contexts: for example, one with analogous relative proportions to bowl (*ON 2471*) was found at Samannoud, complete with omega-shaped handles, foot-ring and three small feet (Bénazeth 2001, 407-408). Three triangular-shaped copper-alloy attachments (probably lugs) were retrieved at the same site. These are more likely to have been attached to a vessel produced from sheet metal than to a mould-cast one, where handle attachments are usually an intrinsic part of the vessel itself. An omega-shaped handle in the

Petrie Museum, London, derives from Egypt (sadly without other provenance) and may also have formed part of an analogous vessel (Petrie Museum UC72307).

Finally, the role of the seventh-century invasion of Egypt must not be over-stated. The extent to which contacts between Egypt and the rest of the Mediterranean were disrupted is uncertain. In any case, it is possible that all 'Coptic bowls' were produced before 618. Indeed, it is even possible that their high-status associations and subsequent deposition in seventh-century graves in the West derived, in part, from their value as rare goods that were no longer available, even in the East. The deposition of the 'Coptic bowl' at Sutton Hoo Mound 1, for example, is generally thought to have taken place in 624/5, less than a decade after the invasion of Egypt. Other 'Coptic bowls' in Anglo-Saxon contexts may have been deposited earlier in the seventh century and possibly even in the late sixth century (Harris 2003).

A B1 vessel from an eighth-century demolition deposit at Pella in Jordan may bring another perspective to the discussion of distribution patterns and origin (McNeill et al 1982, 140, plate 59a). It was excavated from a residential building that had been violently destroyed, apparently in an earthquake in 749, so swiftly that occupants did not have an opportunity to flee, let alone to retrieve valued possessions. The Pella example does not yield any conclusive evidence as to where the bowl was produced, although it is worth noting that the town played an important role in Late Antiquity (and beyond) as the gateway from the Jordanian Highlands to the Mediterranean. Its importance lies in the evidence it provides for the use of such vessels in the Eastern Mediterranean region, as well as the length of time that may have elapsed between its production and deposition. It is salient that the bowl was retrieved from a secular (residential), not a burial or ecclesiastical, context and interesting that the occupants, while not poor, were apparently not members of a social elite. It is important, too, that the bowl was found at a site where the occupants demonstrably had no opportunity to retrieve the vessel – leaving open the possibility that they would have made efforts to retrieve it, if they had been in a position to do so. Thus, by implication, the absence of such vessels on sites abandoned in a more orderly fashion does not necessarily indicate that they had never been present there. On the contrary, the B1 bowl from Pella, potentially over a century old at the time of deposition, might indicate that such objects were highly valued and, therefore, likely to have been taken with people abandoning one settlement site for another. Of course, as time went by such bowls may have become more valuable for their metallic content than for their form or cultural associations, especially if they had sustained damage.

It is likely that bowl (*ON 2471*) does not derive from the Byzantine Empire and, at present, a Rhineland, south-west German or Italian origin seems most plausible. Analogous

(although not identical) bowls have been found in early medieval graves in both the Rhineland and northern Italy. One of the closest Continental parallels is a bowl from the well-known Krefeld-Gellep cemetery with a similar looped-feet tripod foot-ring (Pirling 1964, 214). However, a flat-bottomed bowl with omega-shaped handles and circular protruding lugs from grave 38 at Nocera Umbra in northern Italy has the same dimensions as bowl (*ON 2471*) from Saltwood, although it does not have an associated tripod foot-ring (Carretta 1982, 24, plates 10.5, 11.1).¹ The presence of such bowls in ‘Lombard’ graves does not resolve the question of whether they are of Germanic, Lombard or Italo-Byzantine production, of course, although the proximity of Nocera Umbra to Byzantine-governed Ravenna could be noted in this particular instance. The sheet-metal vessels have been the subject of less testing than mould-cast vessels but, in any case, the attested re-use of metals would tend to render these results ineffective.

2.5 Transportation

The question of how the bowls reached Kent is important for understanding how the Saltwood community was linked into the wider European, and even Mediterranean, world during the Anglo-Saxon period. As we have seen, analogous vessels on the Continent have a distribution along the Rhine and across northern Italy. If not merely a reflection of burial practices (in the parts of Frankia making up modern France, for example, copper-alloy vessels tended not to be deposited as grave-goods), this suggests an Alpine route to the English Channel, followed by a riverine route into southern England. Given the rarity of other Eastern Mediterranean objects in graves in Kent, it is highly unlikely that actual Byzantines brought them into England. It is much more likely that they made their way across western Europe by means of down-the-line-exchange – perhaps one with a political or social component, as well as an economic one. ‘Coptic bowls’ have frequently been found in cemeteries where other ‘foreign’ objects (for example, garnets, cowrie shells, Merovingian coins, Lombard foil crosses) have been excavated. This might suggest that they were part of a repertoire of goods for which Continental – perhaps Frankish – merchants knew there was a demand on the other side of the Channel. It does not rule out the possibility that, once in Anglo-Saxon England, the circulation of the bowls was restricted by social or political means.

¹ Another flat-bottomed bowl from Nocera Umbra (grave 121), has similar dimensions, but the handle attachments are placed higher on the body of the vessel. Another bowl, with lower handle attachments, came from grave 106 at Soest in Westfalen, Germany. (Werner, J 1935, 92, tafel 18.24; Carretta 1982, 24, plates 10.5, 11.1)

2.6 Dating

Bowl (ON 2471) had been repaired several times and was plainly of some age when it was deposited in the grave. Since other examples of this type have been found in sixth-century contexts – that from Krefeld-Gellep may have been deposited around 535, for instance – it is likely that the Saltwood bowl is also of sixth-century date.

By contrast, there is presently little or no reason to see B1 ‘Coptic bowls’ as being imported before the late sixth century. So, if the vessels travelled through or from Italy, as seems likely, then their journeys probably took place after the peace between the Franks and the Lombards was concluded in 591, thereby opening up routes from northern Italy along the course of the Rhine. This does not give a date for their arrival in Kent in particular, let alone their deposition, and it is, of course, possible that they were deposited much later than the date at which they were imported. To reiterate, the ‘Coptic bowl’ from Sutton Hoo Mound 1 was probably deposited in 624/5, while a Merovingian coin in the hoard associated with a B1 bowl at nearby Sarre gave a *terminus post quem* of 613. This accords well with a grave containing a B1 bowl at Wonsheim in Germany, where a coin of Heraclius provided the same *terminus post quem* (Werner 1935, 102-103). By analogy with these and other sites, it is likely that the Saltwood bowls were deposited in the first half of the seventh century.

2.7 Metallurgical Summary

by Brian Gilmour

Grave C1048

Copper alloy bowl [ON 804]: A complete but fragmentary large cast Byzantine bowl, which had survived in four large fragments, plus the two original handles. XRF analysis (HM471a) of one of the broken edges showed the bowl to consist of a heavily leaded gunmetal:- copper 75%, zinc 5%, tin 5%, and lead 15%.

Grave C1081

Copper alloy bowl [ON 1090]: A large cast Byzantine bowl, which had survived complete including the two original handles, although the end of one of these had broken off. XRF analysis

of the broken handle, near the break revealed this to be made of leaded gunmetal:- copper 80%, zinc 5%, tin approx 5%, and lead 10%.

Grave C6653

Copper alloy bowl [ON 2471]: The very fragmentary remains of a large, very thin-walled copper alloy bowl. It would appear to have been made by spinning on a lathe and the metal used was bronze: copper 89%, tin 10%, lead 1%, and possibly a trace of zinc. The surface had been tinned - in this case plated with a tin/lead pewter-like alloy with tin (approx 70%) and lead (approx 30%) - to give it the appearance of white metal.

3 CERAMIC VESSELS

by Paul Blinkhorn and Ian Riddler

Eight of the 11 ceramic vessels were deposited in graves within the Central cemetery and three came from the Western cemetery. A single vessel was found in each grave. Nine of the eleven graves included other grave goods and one of the remaining graves (C4721) had been largely destroyed by machining. One of the graves with a ceramic vessel (grave C3762) was richly furnished whilst the others merely contained a few items. A similar situation prevailed elsewhere in east Kent cemeteries at Cuxton, Dover Buckland, Lyminge, Mill Hill, Mount Pleasant and Polhill, where most of the graves with ceramic vessels included other objects, but none of these graves was richly furnished (Blinkhorn 2004; Mainman forthcoming; Evison 1987, 94; Parfitt and Brugmann 1997, 79; Warhurst 1955, 18 and 28; Riddler and Kerep forthcoming; Hawkes 1973, 199; Philp 2002, 28). Graves with ceramic vessels are comparatively rare in these cemeteries and generally occur in less than 5% of all graves, the figure rising to 8% at Dover Buckland. The figure for Saltwood is 5.1% (11 of 216 graves).

Small quantities of human remains were recovered from six graves. None of the individuals could be sexed but estimates of age could be provided in some cases and these indicate the presence of one infant, one infant – juvenile, one juvenile, one sub adult – adult and two adults. Of the remaining graves, three were only large enough to accommodate an infant or juvenile, and one was of adult size. In summary, six of the eleven graves could have been occupied by infants or juveniles, one by a sub adult – adult and three by adults, with one indeterminate. The preference for the use of ceramic pots as accessory vessels in the graves of infants and juveniles echoes the situation at Dover Buckland (Evison 1987, 94; Mainman

forthcoming). The accompanying grave goods suggest that seven of the nine graves were of male gender, and two were female (Table 1).

Table 1: Graves with Ceramic Vessels

Cemetery	Grave	ON	Phase	Gender	Category	Age	Fabric	Form
Central	C1408	4064	2 - 3		Sub adult to Adult	14 – 20	MLS4B	
Western	C3762	4005	3	Female	Adult	18 – 25	EMS1A	Jar
Central	C1286	4062	3b - 4a	Male			EMS5	
Central	C1216	1329	3b - 4	Female			EMS1A	
Central	C1352	1228	3b - 4	Male	Juvenile	7 – 9	EMS1A	Jar
Western	C4721	2200	4				Evison I	Bottle
Western	C3998	4066	4 - 6	Male	Adult	18 – 35		Jar
Central	C1214	1177	4	Male	Infant	2 – 3	EMS1A	Jar
Central	C2816	4061	4	Male	Infant to Juvenile	3 – 8	EMS1A	Jar
Central	C6532	2507	4	Male				Jar
Central	C1197	1180	4 - 5	Male			EMS4	Jar

Ten of the vessels are handmade in local fabrics and one is a Frankish import (Fig. 244). Most of the vessels were produced in EMS1A, a fabric with moderate to dense sub-rounded quartz (Macpherson Grant and Mainman 1995, 818-22). The small, coarse sandy ware beaker from grave C1352 in this fabric (Fig. 244.15) is similar to an example from the Lyminge cemetery (Warhurst 1955, fig 12.2). Handmade vessels with a sand matrix and voids on the surface resulting from the leaching out of calcareous inclusions were found also at Dover Buckland (Mainman forthcoming) and differences apparent between vessels of this fabric lie in the density of quartz and the quantity and size of voids present.

A vessel with four pierced lugs from grave C1286 was produced in a sand and glauconitic fabric (EMS5) whilst that from grave C1408 included several applied bosses and was made in a profuse shell-filled fabric (MLS4B). Shell-tempered fabrics have been recognised nearby at *Sandtun*, although most of these are of a later date (Gardiner *et al* 2001, 198-209). This particular vessel came from a well-stratified grave of phase 2 – 3. A jar from grave C1197 with vertical burnishing strokes on the upper surface (Fig. 244.3) has been made in an organic tempered fabric (EMS4). The pottery bottle from grave C4721 (Fig. 244.12) belongs to Evison's fabric I, a fine sandy fabric with few inclusions and with grains fairly equal in size (Evison 1979, 24). This particular example is grey in colour.

The handmade vessels are largely jars, few of which have any decoration. The rounded rims are upright or lightly everted on the smaller jars, which have flat or rounded bases and globular bodies (*ONs* 1228, 4066 and 1177). They resemble Myres' series of plain globular accessory vessels, which includes examples from Risely and Howletts in Kent (Myres 1969, 27 and fig 8). The large jar from grave C3762 (Fig. 244.13) has a carinated profile and narrows to a broad neck with a spout. It is decorated with faint vertical bosses below a double cordon and resembles vessels from Canterbury and Westbere in Kent (Myres 1977, fig 279.1078, 1086 and 1087). The unusual sand and glauconitic tempered vessel from grave C1286 has four pierced lugs on the body in the manner of several vessels from Hartigans and Mucking (Blinkhorn 1993, figs 107.109 and 112; Hamerow 1993, 41-2 and fig 26). A further example is known from a grave at Northfleet although vessels with applied lugs tend to be concentrated in the midlands (Myres 1969, 28-9 and fig 12; 1977, fig 77.349). The shell-tempered vessel from grave C1408 has several applied bosses, which recall the decoration on ceramics from nearby *Sandtun* (Gardiner *et al* 2001, figs 30 and 32-4).

The pots had been placed either at the head of the grave (graves C1216, C1352, C6532 and C3762) or at the foot (graves C1197, C1214, C1286, C1408, C2816 and C3998). There is no obvious correlation between the location of the vessel in the grave and the phasing, gender or age of the deceased. The two graves with ceramic vessels from the Western cemetery do not cluster together and do not belong to the same phase. Six of the graves within the Central cemetery surround grave C1048, either to the west (graves C1197 and C1214) or to the east (graves C1286, C1408, C1216 and C1352) and those to the east form a small cluster.

The earliest vessel may that from grave C1408 in the Central cemetery. The grave was cut by grave C1328, which was itself cut by grave C1244, the horse burial associated with grave C1048. Grave C1408 has been placed in phase 2 – 3 on that basis, with phase 3 more likely. The jar from grave C3762 lay beyond the head of the deceased; the grave belongs to phase 3. At Dover Buckland, Evison had previously noted that burials with ceramic vessels belonged largely to her phase 5 (AD 650 – 675) but subsequent work on the lower part of that cemetery has shown that they extend back to the middle of the 6th century, and the Saltwood evidence confirms that revised dating (Evison 1987, 94; Mainman forthcoming). Three vessels come from graves of phase 3b – 4 or 3b – 4a (graves C1286, C1216 and C1352) and these include the earliest graves with a combination of a spear, knife and accessory vessel, a combination that occurs six times within the Central cemetery. Grave C1286 included a shield and buckle in addition to the spear and knife, and was probably the burial of an adult male. The four graves with spears, knives, pots and no other grave goods (graves C1197, C1214, C2816 and C6532) are all burials of infants or

juveniles of phase 4 or 4 – 5 and all lie within the western part of the Central cemetery, each surrounding one of the auspicious graves (Fig. 44). The grave from the Western cemetery (C3998) was that of an adult with a ceramic vessel and a large knife of type D. The grave goods do not allow it to be closely dated but it lies in a peripheral location and there must be a suspicion that it is a grave of phase 4 or 5 and demonstrates a late variant of the weapon rite.

The imported bottle from grave C4721 serves to date the grave itself. Vessels of this type, with lateral linear decoration, formed Evison's type Ib (Evison 1979, 9 and figs 1d-g and 2a). They include a bottle from Folkestone (Evison 1979, fig 1f). The type is not closely dated but the majority seem to belong to contexts of the first half of the 7th century (Evison 1979, 9), equating with phase 4 at Saltwood. A number of fragments of Frankish vessels have also been recovered from settlement contexts at Dover (Philp 2003, 73), including bottles and biconical jars with rouletted decoration.

In summary, the ceramic vessels come from contexts of the second half of the 6th century or the 7th century, with most probably buried in phases 3 and 4, possibly extending into phase 5. However, later copies of imported vessels (which belong to the second half of the 7th century) do not occur at Saltwood, and later forms of imported vessel are also absent, although some occur nearby at *Sandtun*. The pots are found in the graves of male and female gender with males predominant, and with six examples of the combination of spear, knife and ceramic vessel. Three of the graves were those of adults and up to six may have been occupied by infants or juveniles. Crawford has noted that there are correlations to be made between the age of a child and the number and type of grave goods in their burial (Crawford 1999, 27-32). However, some of the previous correlates of age and grave goods, like the size of knives and the age at death, now appear to be less reliable (Härke 1989; Crawford 1999, 71-2). Containers form another type of grave good deposited with both children and adults, although it is important to specify the material and type of the container, given that a glass or wooden vessel may have performed a different function to a ceramic vessel. For 7th century east Kent it does appear that there is a distinct link between ceramic vessels and burials of the young, although the connection is strongest with imported vessels. Of the 12 examples from recent excavations in early Anglo-Saxon cemeteries in east Kent, only two come from the graves of adults, although two other burials included inhumations that have been described as 'young adults'. The remainder contained juveniles. It is likely therefore that the destroyed grave C4721 was that of a juvenile.

Until recently the emphasis on accessory vessels in east Kent cemeteries has lain with imported vessels (Evison 1979; 1987, 92-4). This is now balanced to some extent by the new excavations at Dover Buckland, as well as the discoveries from Cuxton, Mill Hill Deal, Monkton

and Polhill West. Of the twenty ceramic vessels recovered from the 1994 excavations at Dover Buckland, no less than eighteen were handmade and of local origin. The only ceramic vessel from Mill Hill Deal (grave 67) was a handmade beaker or cup, and both vessels from Monkton are handmade, as are two of the three vessels from Cuxton. The two vessels from Polhill West fall at the end of this tradition, as local copies of imported vessels. At the same time, the Saltwood accessory vessels are heavily biased towards local handmade forms, which form 91% of the assemblage, against 68% for the entire Dover Buckland cemetery.

4 GLASS VESSELS

by Vera Evison

The bell beaker from grave C3764 (Fig. 87) belongs to Group 30 allocated to Period I, AD 400-550, 'Bell beakers with incurved walls and base knob', of which five are listed in this country, all from Kent (Evison 2000, 63, 74 and fig.2.27). These include a published drawing of a lost beaker from Woodnesborough, and it is recorded that about thirty of these were found at the same time in the middle of the 19th century and were used by farm workers. The Woodnesborough drawing is extremely close in shape to the Saltwood vessel and Akerman was obviously struck by the accomplished workmanship and elegant shape as his description would also fit the new discovery – 'Its outline is very graceful and its weight scarcely perceptible in the hand' (Akerman 1855, 33, pl.XVII, fig.1). The Saltwood glass is further remarkable for the very unusual colours of the trail below the rim which is an opaque vivid green-blue, and the applied knob on the base which is dark blue. The other bell beakers of this form in England are undistinguished in light greens with white trails, except for the beaker from Ozengell grave 152 which is brown with white trails, both horizontal and vertical (Evison 2000, 63, pl. I,h). This form of bell beaker is very common in northern France and Belgium and the distribution suggests production in the Meuse valley (Koch 1996, 617, Abb.470), with a concentration of find in the Departments of Marne and Aisne (Feyeux 2003, figs 26, 27). They were mostly in use in the period AD 520-600, but beginning by about AD 500 with this strongly carinated shape and growing taller and narrower towards the end of the 6th century (Périn 1995, fig A,T.52; Feyeux 1995, 116, T.52.1a, T.52.1ae, pl.10; Alénus-Lecerf 1995, 66(a) fig.14, T.45 and T.91, fig.15, 1 and 2, fig.16).

A catalogue of beakers of Type 52 in the north-east quarter of France shows that on most here the base was simply nipped to a point, but on some it was nipped into a knob shape and covered with opaque white glass (Feyeux 2003, n°s 270, 272, 283). There are variations in the

shades of white, but on one misshapen green-yellow beaker from Jouy (Val d'Oise) a terminal is covered in green-blue glass and the horizontal trails by the rim are in the same colour (Feyeux 2003, 105-7, n°s 302-314, Type 52.1e, n° 310). Like the Saltwood vessel it is a unique and distinctive variation in its series.

Glass fragments in grave W1705 (Fig. 60) can be reconstructed to form a cone beaker named the Kempston type after the find spot of a complete example. It is a tall cone decorated with applied trails overall, a zone of horizontal trails below the rim and slightly thicker vertical loops below, smoothing in towards the tip. The Kempston cone beaker itself is the best example of its type as the trails are applied with precision and the vertical loops, twelve in number, stop neatly short of the zone of horizontal trails above. In contrast, fewer vertical loops have been attempted on the cone from Saltwood, about seven, and they run over the lower horizontal trails, causing distortion. These trails are widely spaced and slanting from the horizontal. The diameter of the rim of the vessel is c.100 mm, slightly wider than most of the type. With an estimated height of c.26.5 cm this cone belongs to the tall variety, group 16 (Evison 2000, 74).

Distribution of the type is widespread and suggests that the main production areas were in Germany and England (Evison 1972, fig. 23; Evison 1987, fig. 114; Koch 1987, 118-145, fig. 47) so that the Saltwood cone is likely to have been produced in this country. Some beakers of Group 26 were found in early 5th-century graves, and the form continued into the first half of the 6th century (Evison 1972, 53-5). The French cones are scarce and belong to the second half of the 5th century with later occurrences (Cabart and Feyeux 1995, 43; Feyeux 1995, T.21, 2fh; Périn 1995, fig. 6) and a French origin was suggested for these yellowish vessels (Evison 1972, 59). Four of the type are listed by Feyeux in north east France (Feyeux 2003, 87 n° 192, Rixheim (Haut Rhin), N° 193 in 'verre translucide' from Mailly-le-Camp, 'La Tommelle' (Aube), N° 194 a yellowish example of the end of the 5th century from ?Aube (Evison 1972, 65, N° 51, Troyes Museum 4583) and N° 195 a yellowish fragment from Normée, La Tempête (Marne).

A total of forty three examples is listed of Groups 24-6 together in England (Evison 2000, 74, fig. 2, I, 21-3), and the distribution is mostly in Kent with some in the Thames Valley and a few on the south coast. Grave W1705 at Saltwood is a male grave with two spearheads, shield boss and knife. On the Continent this cone type often occurred in weapon graves of men of high rank (Koch 1987, 120), but in England the weapon graves are not particularly distinguished and some cones are in female graves.

The palm cup from grave C4677 (Fig. 114) is a moulded form with a quincunx or cruciform design of knobs on the base, merging into vertical ribs on the side of the body. It belongs to a type occurring mainly in the Rhineland and the production area was probably

between the rivers Rhine and Erft (Rademacher 1942, 302, Taf.53.3; Koch 1996, 614-6, Abb. 468). The distribution, however, includes France where it belongs to a series identified by Feyeux as Type T.55.3km (Feyeux 1995, 117, pl.12). Périn places these mostly between AD 550/560 and 620/630 (Périn 1995, fig. 4). A later assessment places the palm cups in north-east France to between c. AD 520 and 650 (Feyeux 2003, 209, fig. 29, Type 55 3km, N°s 484-499, fig 52).

The globular beaker from grave C4677 (Fig. 114) is shattered into 126 fragments, but the original form can be deduced from the remains. The rim is slightly everted and thickened inside, and the shoulders incline steeply so that the maximum girth of the vessel is near the base, which was pushed in by a sharp point. There are remains of three turns of a fine trail decoration on the neck. The form is taller than most globular beakers and similar to the undecorated beaker from Sittingbourne (Evison 2000, 68-9, fig 3, II, 14, Group 61), but because of its decoration it conforms to Group 62, 'Globular beakers with horizontal neck trails'. Group 61, without decoration, has 18 examples, and Group 62, the variety with horizontal neck trails has 43, and out of these combined numbers, 61, nearly half are from Faversham, which is no doubt an indication of the production area. The basic form occurred in England in Period II, AD 550-700, continued with some changes into Period III, AD.700-900, and in a more bowl-like form into Period IV, AD 900-1100 (Evison 2000, fig 3, II, 12-20, fig 4, III, 6-8, IV, 1-3).

The general form also occurs in northern France, Belgium and Germany, but not in any great numbers, and the varieties range from a near-bowl at one extreme to a near-bottle at the other (Rademacher 1942, 311-4, Taf 63-5; Feyeux 1995, 113, 119, T.20, T.90, pls 7, 15, 16; Périn 1995, figs 3, 5; Feyeux 2003, 178, N°s 692-738). These widely varied forms were in existence throughout the period AD 450-700.

Two of the glass vessels at Saltwood were produced in England, the Kempston cone occurring at the beginning of the early Anglo-Saxon period, and the globular beaker in its last phase. The early bell beaker, however, was imported from a centre in the Meuse valley and the palm cup was a later product from the Rhineland.

5 BOXES AND CASKETS

by Ian Riddler

The metal fittings of boxes or caskets were recovered from eight graves, with a possible example in a ninth grave (C1132). Three of these graves (C3762, C3951 and C4584) were located in the Western cemetery, four graves (C1216, C6524, C6421 and C6653) lay in the Central cemetery

and one (W1634) was in the Eastern cemetery. Most of the box or casket remains are of different types with iron or copper-alloy mounts, locks, hinges and handles of various forms (Table 2). Simple drop handles were found in graves C6524, C6653 and C3951 (Figs. 100, 199 and 207). The handle (*ON 2489*) in grave C6524 lay towards the bottom of the grave, to the right of the lower legs of the deceased. The handle (*ON 2460*) in grave C6653 was discovered in a similar position, lying above the angon. In grave C3951 the handle lay beside an area of organic material at the foot of the grave. In all three cases there were no other iron fittings for a box in the grave. The handles would have been mounted on the tops of boxes similar to that reconstructed for Dover Buckland (Evison 1987, text figure 18a). Handles of this type, either of circular or square section and associated with split loops, were found in several of the graves from Dover Buckland (Evison 1987, figs 19.8a, 25.5a, 30.5a, 33.4c, 34.6 and 51). They have also been found in a number of early Anglo-Saxon graves, including Burghfield, Castledyke South, Prittlewell and Shudy Camps (Butterworth and Lobb 1992, fig 11; Drinkall and Foreman 1998, fig 112; Tyler 1988, fig 3; Lethbridge 1936, fig 9.3). In contrast, a handle from Edix Hill, Barrington is twisted in part along its main section, in a similar manner to the iron handle from Saltwood grave C3762, which is described below (Malim and Hines 1998, fig 3.64.3).

A drop handle (*ON 2417*) of circular section was also found in grave C6421, alongside a number of other iron fittings (Fig. 193). These include two sets of iron rings enclosed by looped staples of square section (*ONs 2416* and *2420*), with their lower parts tapering and set perpendicular to the loops. In each case split loops are set across these staples, just behind their looped ends, securing them to the box. Both sets would therefore have secured iron rings firmly within loops. The loops were set at either end of the box, either on the sides or close to the edges and they can be regarded as unusual but nonetheless practical forms of hinges. The looped fittings are partially constrained in their movement by the iron rings that they secure. The split loops, however, restrict their movement considerably and enable them to function as hinges. A similar arrangement may also have been present within grave W1634 in the Eastern cemetery, where fragments of two rings and split loops survive. An iron knife lay nearby and may have been included within the box. Split loops were found with iron rings at Harford Farm (Penn 2000, fig 86). They also occur used as hinges with iron rings attached to bent iron rods on a box from a near-contemporary grave in the Nordeifel (Janssen 1981, 373-5 and abb 21). This box was also equipped with corner brackets, a drop handle and a lock plate. A similar if even more elaborate arrangement can be seen on the casket from Flörsheim-Weilbach (Schoppa 1953, abb 2). An incomplete iron corner bracket with a nail towards one end (*ON 2416*) was found at one end of the Saltwood box. Corner brackets of this type have been found with a number of boxes,

including those from Burghfield and Castledyke South (Butterworth and Lobb 1992, fig 11; Drinkall and Foreman 1998, fig 65). The box was also equipped with an iron lock mechanism (*ON 2415*), with a bolt plate and two springs set between split loops.

A similar lock mechanism (*ON 1166*) was discovered in grave C1216 (Fig. 163). A key complex lay between a set of beads and a ceramic vessel with the lock mechanism at the other end of the grave. It appears therefore that the lock formed part of a box located at the head of the grave. The mechanism consists of a bolt plate with two accompanying springs. Locks of this type have been discussed by Evison (1987, 100-1 and text fig 17) and it is clear from her reconstruction that in the case of grave C1216 the lock was unlocked when deposited in the grave. The box in Saltwood grave C6421, however, was locked. One of the keys from grave C1216 could possibly have been used with the box. Similar bolt plates have been found at Gilton and Sarre in Kent, as well as Chamberlains Barn grave 7 (Faussett 1856, 19; Brent 1868, 314; Hyslop 1963, 196 and fig 7). A broadly similar lock mechanism from Pleidelsheim grave 5 had also been left unlocked in the grave (Koch 2001, 203 and taf 5.12).

Two sets of hinges (*ON 2132*) came from grave C4584 (Fig. 104). The two elements of the hinges interlock at the centre with two closely spaced nails securing each part. The set of nails has been bent over at the ends, indicating that they secured wood 10 mm in thickness. Similar hinges have been found at Dover Buckland grave 35, Finglesham and Gilton grave 94, as well as in cemeteries beyond east Kent at Burghfield, Chamberlains Barn, Harford Farm and Tattershall Thorpe (Faussett 1856, 30-1; Butterworth and Lobb 1992, fig 11.857-8; Evison 1987, fig 21.8a; Hyslop 1963, fig 17k; Speake 1989, fig 26; Penn 2000, fig 83; Hinton 2000, figs 28-9). In some cases they appear as pairs of hinges with or without other fittings and in others they occur singly. Boxes with hinges of this type belong to graves largely dated to the middle or second half of the 7th century and they were often secured to lids with curved sides (Hinton 2000, 89). The hinge elements from grave C4584 are set at an angle to each other and conform well with this type, suggesting that the box in this grave possibly had a curved lid. A perforated iron strip associated with this box was secured by a split loop at one end, with a second split loop at the middle. It probably formed a simple hasp that hinged on the outer split loop, with the central loop rotating to allow it to lift upwards.

The evidence for a possible box in grave C1132 consists of two small cleats, each with two plates attached by rivets, as well as a series of fourteen small iron nails (Fig. 147). The latter are very similar to those recovered from a box within the Dover Buckland cemetery (Riddler forthcoming) and can be compared also with the fittings of the casket in Saltwood grave C3762. Equally, however, the cleats are of the same type as those found in grave C1048, which may have

been used as structural fittings, and they occurred by the edge of the grave. The nails may also have been used to reinforce the coffin.

Table 2: Components of Wooden Boxes and Caskets

Grave:	C3762	C6421	C3951	C6524	C6653	C1216	C4584	W1634
Handle	■	■	■	■	■			
Casket Mounts	■							
Lock Mechanism		■				■		
Lock Plate or hasp	■	■					■	
Hinges							■	■
Corner Plates	■	■						

Within Anglo-Saxon England most wooden boxes come from graves of the late 6th and 7th centuries (Meaney and Hawkes 1970, 46; Evison 1987, 102; Geake 1997, 81-2; Hinton 2000, 87-9). A variety of forms can be identified from the evidence of the metal fittings. They include simple examples, presumably with flat lids, of the type seen in Saltwood graves C3951, C6524 and C6653, where only the handles remain and no hinges were found. The box from grave C6421 is of a related form but it was adorned with a range of additional fittings, including a corner bracket, an unusual set of hinges and a lock plate. The lock mechanisms from graves C1216 and C6421 occur in several forms with a variety of different apertures, or in some cases with no aperture for the key at all. Metal hinges like those from grave C4584 are comparatively rare (Hinton 2000, table I) and mostly occur from *c.* AD 650 onwards, often on boxes with curved lids.

The complex of copper-alloy fittings and bone mounts found in the lower part of grave C3762 can be described as a casket, rather than a wooden box. Its remains were spread over an area of 440 x 340 mm (Fig. 245). The basic components of its design can be reconstructed from the larger pieces. These include square and rectangular copper-alloy mounts, which were secured to a wooden framework by copper-alloy nails. A number of these mounts are decorated by doubled ring and dot patterns. In a number of cases the mounts have been placed over decorated bone strips (*ONs* 2109, 2110, 2111, 2117 and 2118). The strips are decorated by large double ring and dot patterns, often in a single row but occasionally in a broader configuration of two rows (*ON* 2099). They survive only where they have been in contact with copper-alloy, or in close proximity to it. Several of the copper-alloy strips (*ONs* 2109, 2110) are bent over along their length, suggesting that they formed reinforcements for the edge of the box. Other

components of the box include a handle of twisted iron (*ON 2123*), a lock plate (*ON 2098*) and part of a hasp (*ON 2121*).

In essence, therefore, the casket was formed of decorated bone strips, reinforced at the edges by copper-alloy mounts that carried broadly similar decoration, in the manner of those from Flörsheim-Weilbach (Vanhaeke 1997, pl 12). It was probably rectangular with a flat lid, to which a drop handle was fastened. No hinges were present but there was a copper-alloy lock plate on one side. Hinges seldom occur on caskets at this period, Flörsheim-Weilbach forming a notable exception (Schoppa 1953, abb 2; Vanhaeke 1997, 73).

Merovingian caskets with bone inlay have been reviewed recently by Vanhaeke (1997) and her survey also includes the principal early Anglo-Saxon examples. Part of a casket came from Old Park at Dover, and fragments of bone strips have been recovered from Abingdon, Asthall and Illington (Myres and Green 1973, 86; MacGregor 1985, 197; Davison, Green and Milligan 1993, fig 44). More extensive components of an inlaid casket came from Caistor-by-Norwich grave X11 (Myres and Green 1973, 85-7 and pls XX-I). In most cases the surviving remains consist merely of small quantities of fragmentary bone strips. The caskets from Flörsheim-Weilbach, Maroeuil, Heilbronn and Maastricht have been reconstructed, however (Schoppa 1953, abb 2; Vanhaeke 1997, pls 13, 15, 24 and 25; Dijkman and Ervynck 1998, fig 28). Copper-alloy mounts are not present on most Merovingian caskets, a single corner piece from the casket in Cologne Junkersdorf grave 125 forming a rare exception (Vanhaeke 1997, 75). Within Anglo-Saxon England they are slightly more common. Several copper-alloy mounts on a casket from Swallowcliffe Down were regarded as later additions (Speake 1989, 29 and fig 26) and three copper-alloy mounts were present also on a casket from Dover Buckland grave 255 (Parfitt and Anderson forthcoming). There were at least twelve mounts on the Saltwood casket and, alongside the copper-alloy nails, they formed an integral part of its design. The decoration of the bone strips is very similar to that seen on the casket from Illington grave 172, and also on the strips from Bulles, Flörsheim-Weilbach, St. Denis and Trier (Vanhaeke 1997, pls 16, 17 and 20; Schoppa 1953, taf 9.1, 2 and 4). That raises the possibility that the Saltwood casket is Merovingian, although the presence of copper-alloy mounts is more in keeping with Insular design and the range of motifs seen on caskets is, in any case, very restricted.

Three of the Merovingian caskets belong to the 6th century, although some are of 7th century date (Vanhaeke 1997, 85; Dijkman and Ervynck 1998, 74). The Saltwood casket came from a grave of the second half of the 6th century and it accords well with the dating of the series in general.

6 BUCKETS AND TUBS

by Ian Riddler

The remains of four buckets and tubs were retrieved from separate graves in the Central cemetery. Three vessels, from graves C1081, C6421 and C6653 are iron-bound, whilst the fourth example from grave C1145 consists merely of a handle and accompanying mounts. The three iron-bound vessels are of broadly similar construction although they vary in their arrangement of ironwork and they are all of different sizes. Following Cook (2004, 30) the examples from graves C1081 and C6653 can be described as tubs rather than buckets, because they are large open vessels with iron ring handles. The vessel from grave C6421 is slightly different in construction at the rim, and it could be incomplete.

The tub from grave C1081 (*ON 1533*) lay at the foot of the grave on the right side, beyond the coffin (Fig. 144). It consists of a narrow and a broad hoop at the base, two narrow hoops of D-section along the sides and two broad hoops at the apex. The upper hoops had been compressed in the grave by the weight of the broader rim hoop above. Iron mounts to either side were secured to the rim hoop and nailed to the staves, and they enclose thick iron rings of circular section. The close pairing of narrow and broad hoops at the base recalls the buckets from Bergh Apton grave 19 and Snape grave 47, as well as the tub (object D) from Morning Thorpe grave 238 (Green and Rogerson 1978, fig 76.hjk; Filmer-Sankey and Pestell 2001, fig 109; Green, Rogerson and White 1987, fig 374). The use of heavy iron ring handles is seen also on the Morning Thorpe tub, which, however, utilises a rounded rim and secures rivets through both sides of the handle mounts.

The tub from grave C6653 (*ON 2472*) is of a similar construction to the tub from grave C1081 but with a single basal hoop of rectangular section and a hoop of the same type at its midpoint (Fig. 208). The rim hoop consists of a broad iron band with mounts to either side, once again enclosing thick iron rings. Where the lower parts of the mounts of the tub in grave C1081 were secured by nails and washers, those from grave C6653 are single, integral sections of iron, with the lower parts bent over and hammered into the staves. The tub was also discovered in the lower right hand corner of the grave. The use of three hoops of rectangular section recalls the iron-bound bucket of a smaller size from Dover Buckland grave 53, as well as several buckets from Berinsfield and Lechlade (Evison 1987, 104 and fig 29; Boyle *et al* 1995, fig 68; Boyle *et al* 1998, figs 5.90 and 98).

The vessel from grave C6421 (ON 2432) lay in the upper left hand corner of the grave (Figs. 192 and 194). It consists of three iron hoops of D-shaped section with a narrow hoop of a more rectangular section at the base. The welded junctions of the two medial hoops can be seen on radiographs. The upper rim hoop is narrow in comparison with the Saltwood tubs and simple, curved mounts are placed at either side of it. These have perforations through them, with no accompanying loops or rings, but vestiges of a handle. In addition, upright iron mounts extend below the lowest hoop, effectively forming small feet, in a similar manner to a bucket from Sutton Hoo (Bruce-Mitford 1964, fig 10).

The fourth bucket is represented merely by a handle of rectangular section, which was located in the upper part of grave C1145, close to the spearhead (Fig. 150). No additional iron fittings were recovered from this grave and although an early 20th-century trench had disturbed the burial, this area remained intact. It is likely therefore that the iron handle accompanied a bucket with no other metal reinforcements. A similar situation can be envisaged for a grave at Long Wittenham, where a fragmentary iron handle represents the only vestige of a bucket (Clutterbuck 1848, 292; Cook 2004, n° 201). A vessel handle from Shavards Farm, Meonstoke forms another example. As with Saltwood grave C1145, it came from a male weapon burial (Stoodley and Stedman 2001, 141, 164 and fig 8J). A handle from a 19th-century find at Barrington may represent another example (Malim and Hines 1998, 224).

Iron-bound wooden buckets occur in both 6th and 7th century graves on the Continent, and similar dating can be applied to the Anglo-Saxon series (Martin 1976, 121-2; Koch 2001, 244-5; Cook 2004, 43-4). Iron-bound buckets and tubs overlap with the series of copper-alloy buckets and may supplant them during the course of the later 6th and 7th centuries (Geake 1997, 91; Cook 2004, 43-4). Iron-bound tubs are less common than buckets, with examples known from Melton Mowbray, Morning Thorpe, Sleaford, Taplow and Sutton Hoo Mounds 1 and 2, as well as Saltwood (Green, Rogerson and White 1987, figs 308 and 374; East 1983, 554-63, 591 and figs 388-94 and 414-6; Cook 2004, n°s 11, 133, 142, 147, 151, 232 and 236). They are larger vessels, with diameters of 300 mm or more, extending to over 500 mm at Sutton Hoo. Where their dating can be established, these tubs may conceivably belong to the period c. AD 600 – 625. As in England, Continental examples of tubs, like that from Dittenheim, for example (Haas-Gebhard 1998, 82 and taf 73.11) are less common than buckets.

The diameters of the tubs from graves C1081 and C6653 are 425 and 320 mm respectively and their heights are commensurate with these diameters (as Cook 2004, 40-1). Each has near-straight sides and they would have contained approximately 60 and 34 litres respectively, or 13 and 7.5 gallons, using an analysis similar to that of Ellmers (1964, 39).

Interestingly, 34-5 litres is the equivalent of one bushel, or a quarter amber, and 68-70 litres would represent two bushels or a half amber. The food-rent of the *Laws of Ine* refers to 12 ambers of Welsh ale and 30 ambers of clear ale as payable for every 10 hides (Blinkhorn 1999, 12). Werner has suggested that tubs were used to contain beer rather than water and that they formed part of the feasting equipment of the deceased and his kin (Werner 1992, 11). In graves of the Viking period the combination of a wooden bucket or tub and a drinking vessel forms one of several arrangements of drinking equipment, with glass vessels belonging to a separate combination. This is the case also at Saltwood, where drinking vessel mounts, tubs, buckets, glass and ceramic vessels all come from separate graves. It should be noted, however, that the Saltwood tubs might originally have been accompanied by drinking horns, in the manner of those from Sutton Hoo Mound One and Snape. Horn rarely survives in archaeological deposits (Bruce-Mitford 1983, 316-408; Filmer-Sankey and Pestell 2001, 204-7; Riddler and Trzaska-Nartowski forthcoming). Ellmers noted that drinking horns of 25 – 30cms in length would have had a capacity of 0.3 – 0.5 litres and the Sutton Hoo example, with a length of over 1m and a capacity of 7 litres, is an exceptional item (Ellmers 1964, 39). The more prosaic drinking horns, therefore, could have been filled over 100 times from the larger Saltwood tub.

7 DRINKING VESSEL MOUNTS

by Ian Riddler

The copper-alloy rim mounts for two separate drinking vessels were recovered from the area to the right of the skull in grave C3885, within the Western cemetery (Figs. 93-4). Each mount consists of a rounded copper-alloy rim of C-shaped section with three perpendicular clip attachments. The clips were riveted to the body of the vessel with two copper-alloy rivets and they include lateral grooves along their surface forming five ridges, with the central ridge slightly wider than the others.

The mounts stem from drinking vessels with internal rim diameters of 75 – 80 mm. Traces of wood on the attachments indicate that the vessels were small drinking cups or bowls. The clips flare outwards from the rims and originally secured wood 4 – 5 mm in thickness. The vessels may conceivably have resembled the pair from Sibertswold grave 69, which have globular bodies with rounded bases, and which taper slightly at the rim (Faussett 1856, 113). Examples produced in both silver and copper-alloy have come from Chartham Downs, Dover Buckland, Faversham, Ozingell, Sarre and Sibertswold within Kent (Faussett 1856, 113-4, 174 and pl XVI.7; Evison 1987, 105; Millard, Jarman and Hawkes 1969, 24-5 and fig 3.2; Brent 1866, 167;

Bruce-Mitford 1983, 387-9 and fig 281.c-d). Most of these are fairly elaborate rims, some with accompanying decorative mounts. The Saltwood examples can be compared, however, with the simpler forms seen at Dover Buckland, Ozingell and Sibertswold, as well as Alton (Evison 1987, figs 17 and 19; 1988, 26 and fig 28; Geake 1997, fig 4.36; Faussett 1856, 113). The rim diameters for the Saltwood examples lie towards the upper end of the scale for this series of objects (Bruce-Mitford 1983, 390 note 3). Most of the known examples come from male graves, although this is not invariably the case. They can be dated to the later 6th and 7th centuries (Millard, Jarman and Hawkes 1969, 25; Bruce-Mitford and East 1983, 390; Evison 1987, 105). Although rim clips occur after the middle of the 7th century, vessels with both full rounded rims and attachment clips are seldom found after that date.

8 BIBLIOGRAPHY

- Akerman, J Y, 1855 *Remains of Pagan Saxondom*, London
- Alenus-Lecerf, J, 1995 Contribution à l'étude des verres provenant des tombes mérovingiennes de Belgique, in Foy 1995, 57-69
- Bárdos, E, 1992 'Kopt' bronzedény a Zamárdi Avar temetőből, *Somogyi Múzeumok Közleményei*, **9**, 3-40
- Bénazeth, D, 2001 *Catalogue général du Musée copte du Caire. I. Objets en metal*, Cairo
- Blair, I, Barham, L, and Blackmore, L, 2004 'My Lord Essex', *British Archaeology*, **76** (May issue), 10-17
- Blinkhorn, P, 1993 Early and Middle Saxon Pottery from Pennyland and Hartigans, in Williams 1993, 246-64
- Blinkhorn, P, 1999 Of Cabbages and Kings: Production, Trade and Consumption in Middle Saxon England, in M. Anderton, *Anglo-Saxon Trading Centres: Beyond the Emporia*, Glasgow, 4-23
- Blinkhorn, P, 2004 Pottery from ARC CXT98, CTRL specialist report series, in ADS 2006
- Blockley, K, Blockley, M, Blockley, P, Frere, S S, and Stow S, 1995 *Excavations in the Marlowe Car Park and Surrounding Areas*, The Archaeology of Canterbury V, Canterbury
- Boyle, A, Dodd, A, Miles, D, and Mudd, A, 1995 *Two Oxfordshire Anglo-Saxon Cemeteries: Berinsfield and Didcot*, Thames Valley Landscapes **8**, Oxford
- Boyle, A, Jennings, D, Miles D, and Palmer, S, 1998 *The Anglo-Saxon Cemetery at Butler's Field, Lechlade, Gloucestershire I. Prehistoric and Roman Activity and Grave Catalogue*, Thames Valley Landscapes **10**, Oxford
- Brent, J, 1866 An account of the Society's Researches in the Saxon Cemetery of Sarr. Part 2, *Archaeologia Cantiana* **6**, 157-185
- Brent, J, 1868 An account of the Society's Researches in the Saxon Cemetery of Sarr. Part 3, *Archaeologia Cantiana* **7**, 307-21
- Bruce-Mitford, R L S, 1964 Excavations at Sutton Hoo in 1938, *Proc. Suffolk Institute of Archaeology* **30**, 1-43
- Bruce-Mitford, R L S, 1983 The Coptic Bowl, in Bruce-Mitford 1983, 732-52
- Bruce-Mitford, R L S, 1983 *The Sutton Hoo Ship Burial. Volume Three*, London
- Bruce-Mitford, R L S, and East, K, 1983 Drinking-Horns, Maplewood Bottles and Burr-Wood Cups, in Bruce-Mitford 1983, 316-408
- Butterworth, C A, and Lobb, S J, 1992 *Excavations in the Burghfield Area, Berkshire. Developments in the Bronze Age and Saxon Landscapes*, Wessex Archaeology Report 1, Salisbury
- Cabart, H, and Feyeux, J. Y, 1995 Verres de Champagne, *Bulletin de la Société Archéologique Champenoise* **88**, 1-180
- Carretta, M-C, 1982, *Il Catalogo del Vasellame Bronzео Italiano Altomedievale*, Florence
- Carver, M O H, 1992 *The Age of Sutton Hoo*, Woodbridge

- Carver, M. O. H, 1998 *Sutton Hoo. Burial Ground of Kings ?* London
- Clutterbuck, J. C, 1848 Discovery of a Saxon Interment at Long Wittenham, *ArchaeolJ* **5**, 291-4
- Conway, M, 1918 Burgundian Buckles and Coptic Influences, *Proceedings of the Society of Antiquaries of London*, **30**, 63-89
- Cook, J M, 2004 *Early Anglo-Saxon Buckets. A Corpus of Copper Alloy and Iron-bound, Stave-built Vessels*, Oxford University School of Archaeology Monograph **60**, Oxford
- Crawford, S, 1999 *Childhood in Anglo-Saxon England*, Stroud
- Dannheimer, H, 1979 Zur Herkunft der 'koptischen' Bronzegefäße der merowingerzeit, *Bayerische Vorgeschichtsblätter*, **44**, 123-47
- Davison, A, Green, B, and Milligan, B, 1993 *Illington: a Study of a Breckland Parish and its Anglo-Saxon Cemetery*, EAA 63, Gressenhall
- Dickinson, T, and Speake, G, 1992 The seventh-century cremation burial in Asthall Barrow, Oxfordshire: a reassessment, in Carver 1992, 95-130
- Dijkman, W, and Ervynck, A, 1998 *Antler, Bone, Horn, Ivory and Teeth. The Use of Animal Skeletal Materials in Roman and early Medieval Maastricht*, Archaeologica Mosana **1**, Maastricht
- Drauschke, J, 2006 (in press) 'Byzantine' and 'Oriental' imports in the Merovingian Empire, c, 450-700, in Harris 2006
- Drinkall, G, and Foreman, M, 1998 *The Anglo-Saxon Cemetery at Castledyke South, Barton-on-Humber*, Sheffield Excavation Reports **6**, Sheffield
- East, K, 1983 The Tubs and Buckets, in Bruce-Mitford 1978, 554-96
- Ellis Davidson, H R, and Webster, L E, 1967 The Anglo-Saxon Burial at Coombe (Woodnesborough), Kent, *Med Archaeol* **11**, 1-41
- Ellmers, D, 1964-5 Zum Trinkgeschirr der Wikingerzeit, *Offa* **21-2**, 21-43
- Evison, V I, 1972 Glass Cone Beakers of the 'Kempston' type, *Journal of Glass Studies* **16**, 48-66
- Evison, V I, 1979B *Wheel-Thrown Pottery in Anglo-Saxon Graves*, Royal Archaeological Institute, London
- Evison, V I, 1987 *Dover: Buckland Anglo-Saxon Cemetery*, HBMC Archaeological Report **3**, London
- Evison, V. I, 2000 Glass vessels in England AD 400–1100, in J. Price (ed.), *Glass in Britain and Ireland AD 350-1100*, British Museum Occasional Paper **127**, London, 47–98
- Faussett, B, 1856 *Inventorium Sepulchrae*, London
- Feyeux, J. Y, 1995 La typologie de la verrerie mérovingienne du nord de la France, in Foy 1995, 109-38
- Feyeux, J. Y, 2003 *Le verre mérovingienne du quart nord-est de la France*, Collections de l'Université Marc Bloch, Etudes d'Archéologie et d'Histoire ancienne, Strasbourg
- Filmer-Sankey, W, and Pestell, T, 2001 *Snape Anglo-Saxon Cemetery: Excavations and Surveys 1824 – 1992*, EAA 95, Gressenhall

- Foy, D, 1995 *Le verre de l'antiquité tardive et du haut moyen âge*, Guiry-en-Vexin, 15-19
Novembre 1992, Musée Archéologique Départemental du Val d'Oise
- Gardiner, M, Cross, R, Macpherson-Grant, N, and Riddler, I. D, 2001 Continental Trade and Non-Urban Ports in Mid-Anglo-Saxon England: Excavations at *Sandtun*, West Hythe, Kent, *Archaeological Journal* **158**, 161-290
- Geake, H, 1997 *The Use of Grave-Goods in Conversion-Period England, c. 600 – c. 850*, BAR, Brit Ser 261, Oxford
- Green, B, and Rogerson, A, 1978 *The Anglo-Saxon Cemetery at Bergh Apton, Norfolk: Catalogue*, EAA 7, Gressenhall
- Green, B, Rogerson, A, and White, S. G, 1987 *The Anglo-Saxon Cemetery at Morning Thorpe, Norfolk. Volume I: Catalogue*, EAA 36, Gressenhall
- Haas-Gebhard, B, 1998 *Ein frühmittelalterliches Gräberfeld bei Dittenheim (D)*, Europe médiévale **1**, Montagnac
- Hamerow, H, 1993 *Excavations at Mucking. Volume 2: the Anglo-Saxon Settlement*, English Heritage Archaeological Report **21**, London
- Härke, H, 1989 Knives in early Saxon burials: blade length and age at death, *Med Archaeol* **33**, 144-8
- Harris, A, 2003 *Byzantium, Britain and the West. The Archaeology of Cultural Identity AD 400 – 650*, Stroud
- Harris, A, 2006 *Incipient Globalisation: long-distance contacts in the sixth century*, Reading Medieval Studies **32**, Oxford
- Hawkes, S C, 1973 The Dating and Social Significance of the Burials in the Polhill Cemetery, in Philp 1973, 186-201
- Hinton, D. A, 2000 *A Smith in Lindsey. The Anglo-Saxon Grave at Tattershall Thorpe, Lincolnshire*, Society for Medieval Archaeology Monograph 16, London
- Hyslop, M, 1963 Two Anglo-Saxon cemeteries at Chamberlains Barn, Leighton Buzzard, Bedfordshire, *Archaeol J* **120**, 161–200
- Janssen, W, 1981 Ein reicher fränkischer Grabfund aus der Nordeifel, *Germania* **59**, 357-92
- Koch, U, 1987 *Der Runde Berg bei Urach VI, Die Glas- und Edelsteinfunde aus den Plangrabungen 1967-1983*, Heidelberger Akademie der Wissenschaften, Kommission für Alamannische Altertumskunde, Schriften, Bd **12**, Heidelberg
- Koch, U, 1996 Glas-Luxus der Wohlhabenden, *Die Franken. Wegbereiter Europas. Ausstellung Reiss Museum, Teil II*, Mainheim, 605-17
- Koch, U, 2001 *Das alamannische-fränkische Gräberfeld bei Pleidelsheim*, Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg **60**, Stuttgart
- Lethbridge, T C, 1936 *A Cemetery at Shudy Camps, Cambridgeshire*, Cambridge Antiquarian Society Quarto Publications, New Series **5**, Cambridge
- MacGregor, A, 1985 *Bone, Antler, Ivory and Horn. The Technology of Skeletal Materials since the Roman Period*, London
- Macpherson Grant, N, and Mainman, A, 1995 Early to Late Saxon, in Blockley *et al* 1995, 818-97

- Mainman, A, forthcoming The Ceramic Vessels, in Parfitt and Anderson forthcoming
- Malim, T, and Hines, J, 1998 *The Anglo-Saxon Cemetery at Edix Hill (Barrington A), Cambridgeshire*, CBA Research Report **112**, London
- Martin, M, 1976 *Das fränkische Gräberfeld von Basel-Bernerring*, Basle
- McNeill, A, Smith, R H, Hennessy B, et al, 1982 *Pella in Jordan I*, Canberra
- Meaney, A L, and Hawkes, S C, 1970 *The Anglo-Saxon Cemeteries at Winnall, Winchester, Hampshire*, Society for Medieval Archaeology Monograph **4**, London
- Millard, L, Jarman, S, and Hawkes, S C, 1969 Anglo-Saxon Burials near the Lord of the Manor, Ramsgate. New Light on the site of Ozengell ? *Archaeologia Cantiana* **84**, 9-30
- Mortimer, C, and Gilmour, B, 1991 *Compositional Analysis of Four Early Anglo-Saxon Copper-alloy Vessels from Loveden Hill, Lincolnshire*, Ancient Monuments Laboratory Report 85/91
- Museum of London Archaeology Service, 2004, *The Prittlewell Prince: the discovery of a rich Anglo-Saxon burial in Essex*, London
- Myres, J N L, 1969 *Anglo-Saxon Pottery and the Settlement of England*, Oxford
- Myres, J N L, 1977 *A Corpus of Anglo-Saxon Pottery of the Pagan Period*, Cambridge
- Myres, J N L, and Green, B, 1973 *The Anglo-Saxon Cemeteries of Caistor-by-Norwich and Markshall, Norfolk*, London
- O'Brien, E, 1999 *Post-Roman Britain to Anglo-Saxon England: Burial Practices Reviewed*, BAR Brit Ser **289**, Oxford
- Oddy, W A, and Craddock, P T, 1983, Scientific Examination of the Coptic Bowl and related Coptic Metalwork found in Anglo-Saxon contexts, in Bruce-Mitford 1983, 753-7
- Page, T, 1986 Coptic Bowl from Loveden Hill, *Archaeology in Lincolnshire and South Humberside* 1985, 76-7
- Parfitt, K, and Brugmann, B, 1997 *The Anglo-Saxon Cemetery on Mill Hill, Deal, Kent*, Society for Medieval Archaeology Monograph **14**, London
- Parfitt, K. and Anderson, T, forthcoming *The Anglo-Saxon Cemetery at Dover Buckland. The 1994 Excavations*, London
- Penn, K, 2000 *Excavations on the Norwich Southern Bypass, 1989 – 91 Part II: The Anglo-Saxon Cemetery at Harford Farm, Caistor St Edmund, Norfolk*, EAA 92, Gressenhall
- Périn, P, 1992 A propos des vases de bronzes 'coptes' du VIIe siècle en Europe de l'Ouest: le pichet de Bardouville (Seine-Maritime), *Cahiers Archéologiques* **40**, 35-50
- Périn, P, 1995 La datation des verres mérovingiennes du nord de la France, in Foy 1995, 139-50
- Périn, P, 2005, La vaisselle de bronze dit 'coptes' dans les royaumes romano-germaniques d'Occident. Etat de la question, *Antiquité Tardive*, **13**, 85-97
- Philp, B, 1973 *Excavations in West Kent, 1960-1970*, Kent Archaeology Research Reports **2**, Dover
- Philp, B, 2002 *The Anglo-Saxon Cemetery at Polhill near Sevenoaks, Kent 1964 – 1986*, Kent Special Subject Series **15**, Dover
- Philp, B, 2003 *The Discovery and Excavation of Anglo-Saxon Dover*, Kent Monograph Series **9**, Dover

- Rademacher, F, 1942 Fränkische Gläser aus dem Rheinland, *Bonner Jahrbücher* **147**, 285-344
- Richards, P, 1980 Byzantine Bronze Vessels in England and Europe: the Origins of Anglo-Saxon Trade, University of Cambridge, Unpublished Phd Thesis
- Richardson, A, 2005 *The Anglo-Saxon Cemeteries of Kent*, BAR, Brit Ser 391, Oxford
- Riddler, I D, Cameron, E, and Marzinzik, S, 2006 Early Anglo-Saxon Personal Equipment and Structural Ironwork from Saltwood Tunnel, CTRL specialist report series, in ADS 2006
- Riddler, I. D, forthcoming Boxes and Caskets, in Parfitt and Anderson forthcoming
- Riddler, I. D. and Kerep, A, forthcoming *The Mount Pleasant Anglo-Saxon Cemetery, Isle of Thanet, Kent*, Kent County Council Monograph Series, Maidstone
- Riddler, I. D. and Trzaska-Nartowski, N. T. N, forthcoming *An Invisible Craft. Horn-Working in England and Ireland, AD 400 – 1200*, London
- Schoppa, H, 1953 Ein fränkisches Holzkästchen aus Weilbach, *Germania* **31**, 44-50
- Speake, G, 1989 *A Saxon Bed Burial on Swallowcliffe Down*, English Heritage Archaeological Report **10**, London
- Stoodley, N, and Stedman M, 2001 Excavations at Shavards Farm, Meonstoke: The Anglo-Saxon Cemetery, *Proceedings of the Hampshire Field Club and Archaeology Society* **55**, 129-69
- Tyler, S, 1988 The Anglo-Saxon Cemetery at Prittlewell, Essex: an Analysis of the Grave-Goods, *Essex Archaeology and History* **19**, 91-116
- Vanhaeke, L, 1997 Le Coffret mérovingien de Maroeuil, *Histoire et Archéologie du Pas-de-Calais* **15**, 59-92
- Ward, R, 1993 *Islamic Metalwork*, London
- Warhurst, A, 1955 The Jutish Cemetery at Lyminge, *Archaeologia Cantiana* **69**, 1-40
- Werner, J, 1935, *Münzdatierte Austrasische Grabfunde*, Berlin
- Werner, J, 1957 Zwei Gegossene Koptische Bronzeflaschen aus Salona, *Vjesnik za arheologiju i historiju u dalmatinsku*, **LIX**, 115-128
- Werner, J, 1961 Fernhandel und Naturalwirtschaft im östlichen Merowingerreich nach archäologischen und numismatischen Zeugnissen, *Bericht der Römisch-Germanischen Kommission*, **42**, 307-46
- Werner, J, 1964 Frankish Royal Tombs in the Cathedrals of Cologne and St-Denis, *Antiquity* **38**, 201-16
- Werner, J, 1992 A Review of the Sutton Hoo Ship Burial Volume 3: Some Remarks, Thoughts and Proposals, *Anglo-Saxon Studies in Archaeology and History* **5**, 1-24
- West, S, 1998 *A Corpus of Anglo-Saxon Material from Suffolk*, EAA **84**, Gressenhall
- Williams, R J, 1993 *Pennyland and Hartigans. Two Iron Age and Saxon Sites in Milton Keynes*, Buckinghamshire Archaeological Society Monograph Series **4**, Aylesbury
- Zagari, F, 2005 Il vasellame bronzeo dell'inizio dell'epoca bizantina: l'Italia. Riflessione e storia degli studi, *Antiquité Tardive* **13**, 105-113