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**Early Anglo-Saxon personal equipment and structural  
ironwork from Saltwood Tunnel, Kent**

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## 1 INTRODUCTION

The personal equipment from the early Anglo-Saxon cemeteries at Saltwood includes horse harness, gaming pieces, a leather pouch or shoe, keys, chatelaines and rings, chain, tweezers, lozenges, a quartz crystal ball, knives and their sheaths and a number of miscellaneous iron implements. Most of the objects are made of iron. The small quantity of Roman objects found in early Anglo-Saxon graves are discussed here, as well as the structural ironwork. The texts are written by Ian Riddler, with the exception of those credited to Esther Cameron and Sonja Marzinzik.

## 2 HORSE HARNESS

The iron components of horse harness lay underneath the angon at the foot of grave C1081 in the Central cemetery, on the left side of the burial, beyond the coffin (Fig. 140). The harness consists of a snaffle bit with large iron rings at either end, onto which rectangular mounts with looped ends are now accreted. Beyond this lay a number of interlocking rings with a figure-of-eight mount at the centre of the arrangement. To either side of the ring harness were strap distributors and further rectangular mounts with looped ends, either bound together (*ON 1144*) or attached to a central ring (*ON 1142*). There was no trace of a horse in the grave and there would not have been enough room for an animal in the space to the south of the coffin. The teeth of a horse were discovered in grave C1244, which lay to the north of this burial, reasonably close to grave C1048 and plausibly associated with that grave. The components of three strap distributors (*ONs 868, 870 and 871*), attached to iron rings, were found in grave C1048, but there was no sign there of any snaffle bit. Nonetheless, this also appears to be part of a harness arrangement of a similar type to that in grave C1081.

Horse burials and harness equipment in early Anglo-Saxon England were reviewed by Vierck and they have been considered also by Härke and Lucy (Vierck 1970-1; Härke 1992, 121-3; Lucy 2000, 90-2). The horses themselves have been evaluated by O'Connor (1994). Recent excavations have emphasised Vierck's assertion that the north Midlands and East Anglia were centres for horse burial during the early Anglo-Saxon period (Vierck 1970-1, 190-1). At the same time, the relative quantity of such burials in early Anglo-Saxon England is low and there is clearly a further centre to be identified in Kent, where horse equipment is more common than horse burials, a reversal of the situation seen elsewhere (Härke 1992, 122). Kent burials with

horse equipment include Bourne Park Barrow C, Faversham, Howletts and Sarre (Vierck 1970-1, 191 and note 255; Wright 1845, 255; Faussett 1856, 96). Snaffle bits have been found in Bourne Park Barrow C and possibly, in part at least, in Sarre graves 28 and 271 (Richardson 2005, 311 and 326). Vierck has noted that they tend to define the more auspicious horse burials, with the horse itself often present nearby, if not in the immediate vicinity of the burial (Vierck 1970-1, 191). Horses' teeth were found in Sarre grave 43 and this burial, alongside that at Breach Downs, where the jaw of a horse was found (Baldwin-Brown 1915, 421) could conceivably reflect the situation seen at Saltwood, with the burial of a horse placed at some distance from one or more graves containing horse equipment. More recently, a horse burial was found at Lyminge, once again separate from the inhumation graves of the cemetery, and unaccompanied (Richardson 2005, II, 48). In Kent, therefore, the horse harness is not normally found with the horse itself. Within east Kent the deposition of horse harness appears to be limited to the later 6th and early 7th centuries.

The assemblage of rings, strap distributors and snaffle bits from grave C1081 is similar in form to those from Marston St. Lawrence (Vierck 1970-1, abb 58). Both are united by the simplicity of the equipment, which is entirely of iron and does not include any decorative mounts. The same situation occurs with other contemporary burials, as with those pieces from Sarre and Market Overton illustrated by Baldwin-Brown (1915, pl C.5-6) and the fittings from Bourne Park Barrow C, Snape grave 47 and West Heslerton grave 186 (Wright 1845, figs 5-6; Filmer-Sankey and Pestell 2001, fig 110; Haughton and Powlesland 1999, 331-3). These sets conform with Merovingian ring harness, as defined by Oexle (1992, 19 and abb 2.1), which has a simple, functionally oriented design. Merovingian examples are largely of 6th century date, with a few occurring in the 5th century, but very few in 7th century contexts (Oexle 1992, 32-4 and abb 4).

### **3 GAMING PIECES**

Two graves in the Central cemetery contained gaming pieces. A set of at least 42 antler counters was found close to the copper-alloy bowl in grave C1048, and a single ceramic counter was recovered from grave C6653, near to the lower part of the angon in that burial. The gaming pieces in grave C1048 survived because of their proximity to the bowl, whose corrosion products effectively neutralised the acidic soil of the surrounding area. The counters were found underneath the bowl, close to a leather object identified below by Esther Cameron as a pouch or shoe. Fragments of wood were also present. These are undecorated and are likely to represent parts of the burial structure, rather than components of a gaming board.

Forty-two gaming pieces survive from grave C1048. Most are complete or near complete, although several consist merely of laminated fragments. All of them have been stained green from the corrosion products leaching out of the bowl; they are not deliberately coloured. They are plano-convex in section with flat bases and shallow domed apices. Eleven are decorated by single ring-and-dot patterns at the apex, whilst 15 have three motifs of the same type arranged about the upper surface. Fourteen are undecorated and two are indeterminate fragments. Within the existing sample, the ratio of decorated to undecorated gaming pieces is almost 2:1 (26:14). Most of the gaming pieces are of a similar size, with diameters of 13 – 18 mm. Two of the undecorated examples are larger, however, with diameters of 21 – 22 mm.

No base marks are present on any of undersides. These tend to be found on gaming pieces of 6th century date, as at Spong Hill, for example (Hills and Penn 1981, fig 177; Hills, Penn and Rickett 1987, fig 116; 1994, figs 125-6) and they reflect the method of manufacture at that time (as Krüger 1982, 219). Gaming pieces of late 6th and 7th century date may have been produced in a similar but slightly more sophisticated manner, with the base marks eradicated (Riddler 2006, 352).

Gaming pieces of bone or antler with a shallow plano-convex section are found in contexts of the early Anglo-Saxon period. They are particularly common in cremation cemeteries but examples are also known from inhumation burials (Youngs 1983, 872-4). Decorated examples which are devoid of any base marks, as is the case here, are known from Loveden Hill, Cold Eaton and Sarre (Bateman 1861, 179-81; Ozanne 1962-3, 37; Youngs 1983, 867-8; Brent 1866, 157). Two styles of decoration can be identified, both of which utilise ring-and-dot patterning. With the first, seen at Cold Eaton and Loveden Hill, the entire surface is covered in ring-and-dot designs (Youngs 1983, fig 620). The second style, which occurs at Saltwood as well as Loveden Hill, is more restrained with single or small numbers of motifs across most (but not all) of the gaming pieces.

The set of gaming pieces from Sarre grave 198 forms a close parallel for the Saltwood assemblage. It consists of 48 gaming pieces of shallow plano-convex section, as well as two modified horse teeth (Brent 1866, 157; Baldwin-Brown 1915, 413 and pl XCVII.1; Youngs 1983, 874 and pl 15e). The gaming pieces lay together in the grave, as if they had originally been enclosed within a container. Eighteen of the gaming pieces are decorated and thirty are not (excluding the two horse teeth) and there is an approximation to a ratio of 2:1 once again, as noted by Youngs (1983, 868). The two horse teeth gaming pieces stand out in this assemblage, much as the two large plano-convex gaming pieces are distinctive within the Saltwood assemblage. It is likely, moreover, that the two burials are broadly contemporary.

The larger sets of gaming pieces from early Anglo-Saxon England, with forty or more pieces, belong to the later 6th and 7th century. Sets from Spong Hill extend to 37 pieces (cremation 1047), but few from that cemetery include more than twenty counters. At Loveden Hill, a cremation cemetery that continues into the 7th century, there are sets with 37, 41 and 48 counters (Riddler 2006). Large assemblages are known also from inhumation burials at Carisbrooke, Faversham, Sarre (grave 198), Shudy Camps, Taplow and Tugby (Youngs 1983, 873-4; Young 2000, 88). The absence of base marks, alongside the presence of decoration and the number of gaming pieces from Saltwood, suggests that they belong to the first half of the 7th century.

The approximation to a ratio of 2:1 is important in the context of the game of *taefl* or *hnefatafl*, where the defendants of a king piece attempt to move him to the edge of a gaming board, whilst resisting the onslaught of their opponents. The opponents outnumber the defendants in a ratio of 2:1 (Murray 1952, 57; Page 1969; Riddler 2006, 348). Gabriel has noted that with a set of 33 counters it was possible to play all of the games known to the northern world at this time (Gabriel 1988, 235-6). Equally, the archaeological evidence suggests that *taefl* was the sole board game to be played in England before the late Saxon period. Gaming pieces from early Anglo-Saxon burials reflect the game of *taefl*, although there is no simple correlation to be made, and sets of the 7th century fit the game's requirements better than those of an earlier date (Riddler 2006).

The single gaming piece from grave C6653 is discoidal in shape, with bevelled edges. It has been cut from a Roman potsherd. The ceramic gaming pieces are known from Bourne Park Barrow C in Kent, as well as several cremation burials from Loveden Hill and an inhumation burial at Shavards Farm, Meonstoke (Wright 1845, 255; Baldwin-Brown 1915, 413; Youngs 1983, 874; Stoodley and Stedman 2001, 163-4 and fig 19B). Ceramic gaming pieces are also known from early Anglo-Saxon settlement contexts, at Aylesbury, Old Down Farm and West Stow (Farley 1976, 196-8 and fig 14; Davies 1980, fig 9.9-11; West 1985, fig 191.5).

#### 4 LEATHER POUCH OR SHOE

by Esther Cameron

Four fragments of leather were found inside a copper-alloy Byzantine bowl with a number of antler gaming counters. Three of the counters were found lying on top of the leather, which was positioned to one side of the inner face of the bowl. Above the leather and counters were

fragments of wood, the largest fragment, length 125 mm, width 90 mm, thickness 11 mm in its present shrunken state.

Fragments 1 and 2 join to form a circular shape 67 mm in diameter with a seam around part of the edge. Three of the fragments have the same type of seam with the impressions of threads passing in and out of the cut edges in tunnel stitch. The resulting seam would have been almost invisible and the frequency of the stitches (2.5 mm intervals) and the fine thread-holes (0.5 mm max.) suggest that the workmanship was of a high quality. The evidence also indicates that the leather must once have been thicker, perhaps 2 mm thick, and that only some of it has survived.

There is not enough leather to identify the object with certainty but the most likely candidates are a shoe or a bag. The curved outline brings to mind the heel of a turn-shoe and although the context may seem surprising it would not be unique (Bruce-Mitford 1983, 788-812). But the intimate association of the leather with the gaming counters argues for it having been a container for them, and a bag with a circular base could be supposed. This would not be the first evidence of a small bag or pouch to be found in similar contexts, for example the deerskin pouch for a strike-a-light from Snape, Suffolk (2183/2321), but it would possibly be the most complete. Purses in Anglo-Saxon graves are normally surmised from metal fittings or the discreet grouping of objects they contained but none has been found with sufficient leather to enable description.<sup>1</sup>

## 5 KEYS AND CHATELAINES

*by Sonja Marzinzik*

A number of key complexes were excavated at all three cemeteries (Table 1). In total, there are 25 keys and key groups from 21 graves. They range from single objects to large complexes comprising rings, knives and other implements. All of the finds are iron and they come in various forms: L-shaped with one or several prongs, finger-crooked and T-shaped. As observed elsewhere, T-shaped keys are the rarest variety (Malim and Hines 1998, 218). It is thought that the L and T-shapes represent slide keys, while the finger-crooked variety are latch lifters (Geake 1997, 57).

Grave C1138 (*ON 1108*) contained a total of six keys of various forms (Fig. 149). Usually, keys occur in pairs or perhaps groups of three, so this large number is unusual

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<sup>1</sup> Crowfoot *et al* 2005 contains evidence of eleven possible purses of the late 5th and 6th century and a discussion of how they might have been worn.



(Marzinzik 2003, 66). Grave C1138 has been placed in phase 4 – 5. At Dover Buckland, more than two keys were only observed from Evison phase 3, i.e. *c.* 575 to 625, onwards (Evison 1987, 117) and this corresponds well with the evidence from Saltwood. There is only one grave from Saltwood with keys prior to phase 3b and this only has a single example in the grave (C4643). All other graves included at least two keys.

The use of keys at Saltwood ties in with that observed elsewhere in Kent. Typically, it is rather different from the way of wearing objects suspended from the belt in the Anglian areas of England (cf Dübner-Manthey 1987, 111). Copper-alloy girdle hangers, such as those particularly common in East Anglia and in the ‘Anglian’ areas further north (cf. MacGregor and Bolick 1993, 228ff), are absent. One object has been described as a possible iron girdle hanger. *ON 1168* from grave C1261 in the Central cemetery consists of a semi-circular head loop, joined to a rod which is now broken off; it is the only object of this type (Fig. 170).

The meaning of iron keys is unclear. At least some forms may have been functional. As they often occur in identical pairs or larger numbers and are regularly associated with other objects suspended from the belt, a deeper, symbolic meaning is likely. Their capacity of locking property up or away may confer a certain status (Meaney 1981, 179). This appears to be supported by early Kentish laws which assign a special status to the key-bearing mistress of the house (Blair 1994, 28). Their close association with women of child-bearing age (Marzinzik 2003, 66), as well as the significance of the key during the Roman era and in Nordic mythology have also led to interpretations as fertility symbols (Steuer 1982).

Chronologically, iron keys are unfortunately rather robust, apparently appearing throughout the 6th and 7th centuries. Evison suggested that they were found in all phases at Buckland (Evison 1987, 117), i.e. range from the later 5th into the 8th centuries, and that appears to be the situation at Saltwood as well.

*Table 1: Graves with Keys*

Cemetery	Grave	Phase	Sex	Gender	Age Category
Western	4643	2		Female	
Eastern	1634	3b		Female	Adult
Central	1210	3b		Female	Juvenile – Subadult
Western	4677	3b	? Male	Female	Adult
Central	1216	3b – 4		Female	
Central	1261	3b – 4		Female	
Central	1124	3b – 4			Adult
Central	1137	3 – 6			Adult

Cemetery	Grave	Phase	Sex	Gender	Age Category
Central	3041	3b – 6			Subadult
Central	1188	4	? Female		Adult
Central	1107	4 – 5			
Western	6202	4 – 5		Female	
Central	1138	4 – 5		Female	Adult
Central	1072	4 – 6			
Central	1122	4 – 6		Female	Infant – Juvenile
Central	1165	4 – 6			
Central	6411	4a – 6			
Central	6520	4a – 6			
Central	6524	5 – 6		Female	Adult
Western	4699	5 – 6	? Male	Female	Adult
Central	6630	5 – 6			

The most remarkable group of objects (*ON 2512*) within the category of chatelaines comes from the Central cemetery, grave C6630 (Fig. 202). Rather than a bundle of keys and miscellaneous other rods and rings found in other graves, this is a proper chatelaine, made up from iron rods linked by small copper-alloy rings. The position in the grave suggests that it was worn suspended from approximately waist height. Such chatelaines made up from iron rods are not overly common in Anglo-Saxon contexts. They are more typical of the Continent, where they could assume very elaborate forms. English chatelaines seem to be more often made up from iron chain links or S-hooks (Meaney 1998, 273; Stoodley 1999, 22).

Nonetheless, other examples of linked rods for chatelaines have been observed in Anglo-Saxon England. At Dover Buckland, for example, there were five instances, graves 75, 110, 113, 132 and 134 (Evison 1987). Directly below the looped end, the chatelaine rods in grave C4502 from the Western cemetery have a wire wound around the shaft, which fixates the loop (Fig. 103). In this they are particularly close to *ON 2512*, where the x-rays suggest a similar arrangement. The best parallel perhaps to our chatelaine comes from Sewerby, Yorks, grave 24 (Hirst 1985). The arrangement closely resembles *ON 2512*, but the linking rings are not made from copper-alloy. The interpretation of their meaning varies from the practical to the decorative and may have been a hybrid of the two (Geake 1997, 58).

Generally speaking, chatelaines were more popular in Kent than elsewhere. It appears that they are a late feature. Although examples have been found in 6th-century contexts, they are much more characteristic of the 7th to early 8th centuries (Geake 1997, 58). Evison dates the

chatelaines from Buckland to her phases 5, 6 and 7, i.e. to the mid-7th to mid-8<sup>th</sup> centuries and the Saltwood evidence confirms that dating (Evison 1987, 175f).

## 6 RINGS

*by Sonja Marzinik*

Many of the girdle groups at Saltwood contained one or more rings. Most of them were simply made from iron and served as suspension rings for the iron keys. Other rings may have been used for the suspension of other objects or for 'when they might be needed' (Evison 1987, 119). It has also been suggested that they, as other odds and ends found in female bag assemblages, may have served as some sort of 'small change' that could be used to barter (Myres 1978, 352). Iron rings were invariably found with keys or chatelaines, except for grave C4726 in the Western cemetery, where a copper alloy ring and an iron ring accompanied an iron lozenge (Fig. 122). Grave C4726 has been placed in phase 2, suggesting that this is a 6th century practice. A circular iron ring of oval section lay at the waist of the body in grave C6231 (Fig. 125), and was the only example of a ring to have been found in a grave of male gender.

## 7 IRON CHAIN

Lengths of iron chain were encountered in grave C6653 in the Central cemetery and graves C3041 and C6202 in the Western cemetery (Figs. 74, 123 and 207). A few links and a terminal with an oval loop were recovered from grave C3041 in association with two sets of keys, whilst a longer chain with figure-of-eight loops and terminals came from grave C6202. It was found with a knife, lying above a set of keys. A similar arrangement can be seen in Dover Buckland grave 157, where the chain includes both iron and copper alloy components (Evison 1987, figs 61 and 83). Buckland grave 157 was placed in phase 5 and the two Saltwood graves from the Western cemetery have been assigned to phase 4 – 5 and phase 3b – 6, indicating perhaps that the association of chains with keys in east Kent is essentially a 7th century phenomenon. However, a much earlier example came from Mill Hill, Deal, although without the association of a chain and a knife and keys. The iron chain from Mill Hill grave 73 lay at the waist, but well away from any other objects, and that grave was assigned to Kentish Phase II, essentially equivalent to Saltwood Phase 2.

A single figure-of-eight link in grave C6653 was accompanied by two iron rings and lay close to the apex of the angon (Fig. 207). It is a heavier and thicker loop than the chains described above, more akin to elements of horse harness, but its purpose is unclear.

## 8 TWEEZERS

A single set of iron tweezers came from grave C4692 in the Western cemetery, which has been assigned to phase 5 – 7 (Riddler and Trevarthen 2006)(Fig. 118). The tweezers are undecorated with lightly splayed arms, a form redolent of those of the Roman period (Riha 1986, 33-8 and taf 13). Both copper alloy and iron tweezers are known from early Anglo-Saxon graves in east Kent. Those of iron are less common and can be difficult to identify securely, as is the case with a possible set from Cuxton (Blackmore 2004a). Four sets of iron tweezers came from Dover Buckland and another set is known from Mill Hill, Deal (Evison 1987, 118; Parfitt and Brugmann 1997, 77; Parfitt and Anderson forthcoming). They have been found in graves of both 6th and 7th century date. Within east Kent tweezers of copper alloy and iron have a strong but not exclusive correlation with males, and are found with adults rather than children or juveniles (Hawkes and Hogarth 1974, 79; Richardson 2005, 158).

## 9 LOZENGES

Iron lozenges were found in two graves within the Western cemetery (Graves C3757 and C4726), as well as in the fill of pit 310 in the same area of the landscape (Figs. 81 and 122). Lozenges are diamond-shaped plates of iron with broad central apertures, which resemble the roves associated with clench nails. They are largely found in the graves of women (Evison 1987, 118). The gender of grave C3757 is unclear, the only other grave goods being a buckle and a knife; grave C4726, however, was the grave of a female, assessed from the grave goods.

Almost thirty examples of lozenges were found in the Dover Buckland cemetery and they have also been discovered in graves at Bifrons and Mill Hill, Deal within east Kent (Godfrey-Faussett 1876, 309 and 311; 1880, 553; Hawkes and Pollard 1981, fig 8.3; Evison 1987, 118; Parfitt and Brugmann 1997, 68-9). They occur also in cemeteries within northern France, as at Frénoville and Giberville (Pilet 1980, pls 38, 60 and 150; Pilet *et al* 1990, pl 15.11). They are largely absent from later cemeteries, both in Kent and elsewhere, although one example came from Dover Buckland grave 74, one of the latest graves from that cemetery, and Evison has

suggested that the latest graves to contain them date to *c.* AD 650 (Evison 1987, 118). The majority, however, come from 6th century contexts.

The lozenge in grave C3757 lay close to the buckle and the knife in that burial, in the area of the waist, and the location of the example from grave C4726 is unfortunately not known. In general, they occur in the waist area, often in association with other items suspended from a belt, or perhaps fastened to the belt itself, as at Snape (Filmer-Sankey and Pestell 2001, 74 and fig 100). Several have traces of leather straps within their central apertures (Parfitt and Brugmann 1997, 68).

## 10 CRYSTAL BALL

A spherical rock crystal ball was found in grave C3762 in the Western cemetery, in the lower part of the grave (Fig. 86). The crystal was enclosed within a broad silver cruciform frame, with a knop at the head. A silver disc (*ON 2087*) originally surrounded this knop but has subsequently become detached from it. In a similar manner, part of the silver frame (*ON 2086*) is now separate from the remainder. The upper part of the crystal remains enclosed within sand and organic material, so that the precise nature of the upper terminal is not entirely certain, although it is likely to resemble the example from Sarre grave 4 and to belong to Heege's type 3 (Brent 1862-3, pl I; Heege 1987, 36-7). A small quantity of silver wire found in this location probably represents the suspension loop for the crystal.

Quartz crystal balls have mainly been found within East Kent graves, with comparatively few from elsewhere in early Anglo-Saxon England (Meaney 1981, 82-4; Huggett 1988, 70-3). Within Kent, examples are known from Beakesbourne, Bifrons, Chatham Lines, Dover Buckland, Faversham, Finglesham, Folkestone, Gilton, Harrietsham, Howletts, Lyminge, Mill Hill at Deal, Milton and Sarre (Arnold 1982, 64-5; Parfitt and Brugmann 1997, 67-8; Parfitt and Anderson forthcoming; Warhurst 1955, 32 and pl XIII; Meaney 1981, 82 and note 68; Brent 1862-3, pl I). In graves they are often found between the knees of the deceased (Arnold 1982, 65; Meaney 1981, 84) and this was probably the position of the Saltwood example, which was situated 0.85 m below the teeth and skull fragments discovered in the upper part of the grave, just above the complex of copper-alloy fittings for the casket (Fig 169).

Associated grave goods suggest that quartz crystal balls are concentrated in the middle and second part of the 6th century, with some dating perhaps as late as the first few decades of the 7th century and others, particularly from Bifrons, belonging to the early 6th century (Arnold 1982, 64; Meaney 1981, 84; Hawkes and Pollard 1981, 347 and 350; Huggett 1988, 70).

Continental examples are predominantly of 6th century date, mostly *c.* 530 – 580, with a few extending further towards the end of the century (Heege 1987, 34-7; Koch 2001, 242 and 562-3). Rock crystal balls occur only in richly furnished graves within Kent and are often – but not invariably – accompanied by sieve spoons; there was no sieve spoon in Saltwood grave 3762. The specific function of both object types is uncertain. Crystal balls have often been associated with wine, alongside skimmers, and they are naturally cool to the touch, which has allowed them to be imbued with magical properties (Meaney 1981, 87 and 90-6; Martin 1984, 115-6).

## 11 KNIVES

### 11.1 Introduction

95 iron knives were recovered from 91 graves within the three cemeteries, with a little over half of the sample coming from the Central cemetery (Table 2). The knives have been assigned to type using the system devised by Evison and subsequently revised by Drinkall, with larger knives following the definitions provided by Härke and Geake (Evison 1987, 113; Drinkall and Foreman 1998, 279-84; Härke 1992, 90-1; Geake 1997, 14-15; cf also Blackmore 2004b). Evison identified six types of knife at Dover Buckland on the basis of the shape of the blade and all six are present at Saltwood, although several are sparsely represented (Table 2). Where Evison applied numbers to the types, Drinkall subsequently changed these to letters and used numbers to refer to the three size groups for knives advocated by Härke. However, Härke's size divisions are not appropriate for all cemeteries, as noted below, and the Saltwood knives are described here by type letter alone.

### 11.2 Knife types

Knives of Type A are dominant across all three cemeteries, emphasising the popularity of this form within east Kent during the Anglo-Saxon period as a whole. It is almost the only knife type to occur within 6th century graves and it continued to be the most popular form throughout the 7th century at Saltwood. Type D is second in popularity to type A and is another form found in 6th century contexts; it continues into the 7th century. Type B is essentially of 6th century date, although a few examples may come from early 7th century graves; just two examples were recovered at Saltwood (Evison 1987, 115; Böhner 1958, 214-5; Riddler forthcoming A). Type C is of 6th to 7th century date and it may have served as a precursor to the related Type E, although it is possible that both forms originated at roughly the same time (Evison 1987, 115). There are

five examples of type C knives, as well as three of Type F, which can also be viewed as a late 6th to 7th century type (Riddler forthcoming A). Type E retains the angled back of the Type C knife but utilises a straight cutting edge. Within east Kent, the type does not appear much before the 7th century, and it increases in popularity thereafter, becoming one of the most common forms of the Middle and Late Saxon periods (Riddler 2001A, 232-4). The Saltwood assemblage does confirm, however, that the type was in use in the late 6th century, from phase 3b onwards.

The knives from the Eastern cemetery belong entirely to type A and are consistent with a broad 6th century date. A slightly wider range of knives is present in the Western cemetery, where those of type A are less dominant, forming just 35.7% of the sample there, against 48.3% in the Central cemetery.

*Table 2: Knives by type*

Type:	A	B	C	D	E	F	Large	Short Seax	Unclassified	Total
Cemetery:										
Western	10	1	0	5	4	1	5	0	2	28
Central	29	1	5	8	4	2	3	3	5	60
Eastern	6	0	0	0	0	0	0	1	0	7
Total:	45	2	5	13	8	3	8	4	7	95

### 11.3 The Sizes of Knives

The lengths of the blades of the knives vary from 54 to 230 mm and the tangs extend from 29 to 88 mm. The blade lengths can be compared with those from Cuxton (52 – 163 mm) and Dover Buckland (84 – 312 mm) (Blackmore 2004b). Figures 238-40 show that the majority of knives from each site have blades extending up to 126 mm in length and that the sample cannot readily be separated into any further groups on the basis of the blade length alone, in contrast to the situation observed by Härke for the Finglesham cemetery, and Blackmore for Cuxton (Härke 1992, 90-1 and tab 5; Blackmore 2004b). Similarly, no distinction could be seen at this point for the Dover Buckland cemetery, or for the sample examined by Siegmund from the lower Rhine (Riddler forthcoming A; Siegmund 1998, 112). Within each cemetery at Saltwood there is an even and continuous distribution of knives with blades between 54 and 126 mm and the only distinction to be made lies between these knives and the group of large knives, which at Saltwood have blades in excess of 145 mm in length. For the lower Rhine, Siegmund suggested that larger knives had blade widths of over 150mm (Siegmund 1998, 87 and abb 19). The length of the tang

is generally of the same proportions in relation to the length of the blade, irrespective of the type of knife.

Eight knives, all of which come from the Western and Central cemeteries, have blades up to 167mm in length and they can be placed in the category of large knives, which equates with Härke's Group 3 (Table 3). A further four knives, with blades exceeding 200 mm in length, can be described as *Kurzsaax*, or short *seaxes*, being smaller than the *Schmalsax* or narrow *seax* (Hawkes 1973, 189-90; Härke 1992, 89-90; *cf* also Siegmund 1998, tab 12). All but one of these longer knives has a blade of type A and most have relatively short tangs in relation to the length of the blade. Large knives and short *seaxes* are further discussed in Ager *et al* 2006.

Table 3: Large Knives and Short Seaxes

Cemetery	Grave	Sf	Blade Length	Tang Length	Type	Form	Gender
Eastern	1767	385	230	88	Short Seax	A	Male
Central	1325	1162	230	87	Short Seax	A	Male
Central	1154	896	210	83	Short Seax	A	Not known
Central	1319	40	205	64	Short Seax	A	Male
Central	6673	2663	167	78	Large Knife	A	Male
Central	1045	779	164	76	Large Knife	A	Male
Western	4665	2240	164	66	Large Knife	A	Male
Western	3998	2069	163	86	Large Knife	D	Not known
Western	3713	1961	155	64	Large Knife	A	Male
Western	3953	2067	150	68	Large Knife	A	Male
Western	4614	2241	150	60	Large Knife	A	Not known
Central	1132	899	145	60	Large Knife	A	Male

#### 11.4 Pairs of Knives

In most cases a single knife was found in each grave, but there were pairs of knives in three graves (Table 4). With graves C1132 and W1767 a large knife or short *seax* was accompanied by a smaller example of the same type, well dispersed from each other in the former grave, and close together underneath the sword in the latter. The third grave (C1286) from the Central cemetery included a conventional knife at the waist and a fragment of a blade towards the bottom of the grave on one side. The latter may stem from a knife or a pair of shears.

Pairs of knives are relatively common in east Kent cemeteries (Table 4), with examples from Cuxton, Dover Buckland, Monkton and Sarre (Blackmore 2004b; Riddler forthcoming A; Perkins 1985, 53; 1991, 147; 1992, 109, 111, 114 and 117). They occur in the graves of juveniles



and adults, but not children, and are found with both males and females (Härke 1989, 147). Werner has stressed that the provisioning of two knives in a grave can be a mark of status in male graves on the Continent (Werner 1968; Siegmund 1998, 112-3). Within east Kent, however, there are several circumstances where pairs of knives occur, in both male and female graves, and not all of these relate directly to status. As weapon burials, Saltwood graves C1132 and W1767 broadly correspond with Werner's suggestion, however, and they can be compared with Dover Buckland graves 91 and 93 in that respect.

Table 4: East Kent Graves with Pairs of Knives

Cemetery	Grave	Knife Types	Gender	Age	Knife Blade Lengths	
Saltwood Central	1132	A and large A	Male			145
Saltwood Central	1286	BC	Male		88	
Saltwood Eastern	1767	A and seax A	Male		80	230
Cuxton	282	CE	Male	Adult		118
Cuxton	299	D and large A	Male	40 – 70	70	163
Cuxton	312	C-	Male	9 – 12	52	
Dover Buckland	38	AA	Female	20-30	130	125
Dover Buckland	65	AB	Male		302	125
Dover Buckland	83	AD	Female		125	75
Dover Buckland	87	AA	Male			90
Dover Buckland	91	AA	Male	20-30	115	90
Dover Buckland	93	AF	Male	30-45	275	155
Dover Buckland	135	AA	Male	25-35	185	90
Dover Buckland	137	AA	Male		80	55
Dover Buckland	162	--	Male			
Dover Buckland	218	AA	Female ?		172	99
Dover Buckland	245	A-	Female	35-45		97
Dover Buckland	337	AA	Male	40-45	132	91
Dover Buckland	381	AB	Female	30-40	205	106
Dover Buckland	391B	AA	Female	20-25	120	105
Dover Buckland	413	EE	Female	22-27	88	80
Monkton, Thorne Farm	1	AD	Indeterminate	12-15	86	90
Sarre	285	AA	Female			82

## 11.5 Handles and Blades

All of the knives have whittle tangs and the majority were equipped with horn handles, with small vestiges of the horn often visible, and larger areas occasionally present. Two knives, both of type E, have handles of bone or antler. One of these (*ON 1847*) comes from grave C3029 in the

Western cemetery whilst the other (*ON 1136*) is from the Central cemetery, grave C1188 (Figs. 72 and 155). The latter knife also has a rivet hole behind the vestiges of bone or antler and a rivet may have been used to secure the material to the tang. Single rivets were used in a similar manner on several knives from Dover Buckland, and examples are known also from Berinsfield, Cuxton and Winnall (Riddler forthcoming A; Härke 1995, 75; Blackmore 2004b; Meaney and Hawkes 1970, fig 13.8).

The knife from grave C4677 in the Western cemetery is also worthy of comment (Fig. 114). Its tang is relatively long and broad and it does not flow into the blade but is stepped at their junction, with a copper alloy guard plate or binding sheet between them. Guard plates are more commonly seen on knives of medieval date, although an iron example was found on a knife from Dover Buckland (Evison 1987, 114 and fig 36). The bands of copper alloy can be seen on some Continental *seaxes* from male graves of mid to late 7th-century date (Koch 2001, 321, 337 and tafn 87.A1 and 100.A1: Haas-Gebhard 1998, taf 98.5); however, this grave has been assigned on good grounds to phase 3b (Riddler and Trevarthen 2006).

## 11.6 Knife Types and Gender

Bone survival was extremely poor at Saltwood and it is impractical to establish any relationships between the biological sex or age of the deceased and the size of knives. At Dover Buckland the overall length of knives from the graves of women were a little shorter on average than those from male graves, and a similar situation has been noted also for southern Germany (Riddler forthcoming A; Sasse 2001, 98). It is not possible to obtain a reliable correlation for the Saltwood sample. The various forms of knife outlined in Table 2 have, however, been compared with the gender of the graves from each cemetery and virtually all forms of knife are found with both males and female burials. The exceptions lie with knives of type C, and with the larger knives. The five examples of knives of type C all come from the Central cemetery and four stem from graves of male gender; the fifth is indeterminate. The sample is a small one, however, and both males and females were buried with this type of knife at Dover Buckland, where the sample is larger. Härke has previously noted the association between larger knives and the graves of males (Härke 1992, 90 and 188-9) and it is reinforced at Saltwood, as Table 3 indicates. The correlation relies entirely on attributions of gender from grave goods, however, and can be criticised on that basis. Larger knives also become more common over time, with their floruit occurring in the 7th century (Härke 1989, 145 and table 2; 1992, 189 and tab 31).

## 11.7 Sheaths of knives

by Esther Cameron

### *Technology of the Sheaths*

Among the ten sheaths examined nine were from late 6th and 7th-century graves and one (grave W1762, Phase 2) was from an earlier context. Little is known of the shape and style of small Anglo-Saxon knife sheaths of the 5th to 8th centuries except that they were seamed at the edge and extended over the handles of knives (Cameron 2000, 53-6, 63 and fig 36). Most of the evidence from Saltwood supports what is already known, for example, that seams were closed with tunnel stitch and that the leather used to make the sheaths was 1–2 mm thick. There is also further evidence to suggest that the sheaths from graves C1325 and W1279 may have had suspension flaps although their full outlines are unknown, and that the spines of both these and of a case containing a pair of shears, also from grave W1279, might have been moulded. This technique of shaping wet leather so that it retains its form in the dry state was also practiced by leatherworkers in tenth-century York, specifically on sheaths (Mould *et al* 2003, 3262 and fig 1702).

### *Decoration*

Tooled lines, possibly to mark the outlines of blades, are faintly traced on sheaths from graves W1279 and C4502 and other lines on the case for the shears from grave W1279 could be a panel of decoration. Further examples of tooled leather sheaths from 7th-century contexts in eastern parts of England are from the Sutton Hoo ship burial, Suffolk (BM1939.1010.163-4); Castledyke, Barton-on-Humber, grave 94; Broomfield, Essex (BM1894.1216.8); Snape, Suffolk, grave 2063 and Buttermarket, Ipswich, grave 968. These, together with larger sheaths of seaxes, fragments of belts and other miscellaneous finds, also from eastern England, form a growing body of evidence for a 7th-century fashion in fine, decorated leather objects, possibly influenced by Rhineland trade through Dorestad or by cross-channel trade with northern France.

## 12 MISCELLANEOUS IRON IMPLEMENTS

Four iron implements have been gathered here in a single category. Each of them fulfilled a different function, although they are largely of a similar date. A single example of a pointed iron implement came from grave C1204 in the Central cemetery (Fig. 160). It lay on the left side of the grave, close to a buckle and a knife. The grave also included a spearhead of type D2. The

object has a tang of rectangular section, which is covered in wood, and a tapering point of circular section leading to a rounded end.

The objects have often been described as 'awls', although this is a misleading term. Geake has redefined them as 'pointed iron tools' (Geake 1997, 93-4) but the term 'pointed iron implement' has been preferred here, on that basis that they were probably not used as tools. They consist of iron implements from 45 – 110 mm in length with tapering shafts, usually of circular section, and tangs of square section. There have wooden handles, although a few have handles of horn. As small iron implements that can easily be confused with nails or rods, relatively few have been recorded from Kent, although they are known from Dover Buckland, and possibly from Monkton (Evison 1987, 30 and 110; Riddler forthcoming B; Perkins and Hawkes 1984, 91 and fig 7). At least eleven were recovered from Finglesham, mostly from 7th century contexts (Geake 1997, 94).

Geake has stressed their occurrence in 7th century graves, although several examples from Dover Buckland are now known to have come from 6th century contexts, possibly from the second half of that century (Geake 1997, 94; Riddler forthcoming B). The majority do still appear to come from 7th century contexts, including examples from Burghfield, Burwell, Garton II, Harford Farm, Snape and West Heselton (Butterworth and Lobb 1992, 23, 57 and fig 12; Geake 1997, 93-4; Filmer-Sankey and Pestell 2001, 107, 111 and fig 110.Ovi; Haughton and Powlesland 1999, 120).

They occur also on the Continent, where they are not closely dated, occurring in both 6th and 7th century contexts within inhumation cemeteries, with examples from cremations going back to the late Roman period (Martin 1976, 69; Heege 1987, 61; Jørgensen and Jørgensen 1977, 75; Bode 1998, 97). They mostly occur as single finds in graves, although pairs of pointed iron implements have been found in graves at Dover Buckland grave 414, Harford Farm grave 25 and Spong Hill grave 1244 (Riddler forthcoming B; Penn 2000, 25 and fig 92; Hills 1977, 48 and fig 124.1244). The majority come from male graves, with a few from female burials. Several examples from West Heselton were found in association with tweezers, suggesting that they were used as toilet items. Raddatz had previously suggested that they were toilet items, possibly even used in tattooing (Raddatz 1981, 6). Their position in graves by the head may also endorse their interpretation as toilet items, which is the most likely alternative. In some cases, as with Saltwood grave C1204, they have been found close to knives, possibly in organic pouches held at the waist (as Heege 1987, 61).

A single example of a spatulate implement was recovered from grave C4597 within the Western cemetery. It lay close to the knife at the centre of this grave. The object has a narrow

rectangular blade, which leads imperceptibly to a tapering tang. Organic residues adhering to the tang suggest that it was enclosed within a sheath. Spatulate implements have been discussed in detail by Geake (1997, 92-3 and fig 4.37). Within Kent, examples are known from Cuxton, Dover Buckland, Finglesham, Kingston, Mount Pleasant, Polhill and *Sandtun* (Blackmore 2004a; Evison 1987, 110; Swanton 1973, fig 64f; Geake 1997, 93; Hawkes 1973, 199; Riddler 2001A, 234). With a few exceptions, they have come from 7th century and later contexts and they occur in both male and female graves (Penn 2000, 56). They are usually found close to a knife, as is the situation here, and at the level of a belt. Their precise function is uncertain. Both Mortimer and Hawkes argued that they were used as sharpening steels, but metallographic analysis of an example from Sewerby indicated that the metal was softer than the accompanying knife, casting some doubt on this functional interpretation (Hirst 1985, 89). They may possibly represent a 7th-century form of firesteel, but they occur in several graves alongside identifiable firesteels of a different and more familiar type (Geake 1997, 93). Geake has stressed their association with knives and has returned to the suggestion that they acted as sharpeners (Geake 1997, 93). Equally, they can be equated with *fiches*, which are also found in association with knives, albeit almost invariably in male graves (Riddler and Kerep forthcoming). If *fiches* were used alongside knives in food consumption, it is possible that spatulate implements performed a similar culinary function. For this purpose the spatulate object could have been held in the hand by the blade, with the tang forming a tapering point. Geake (1997, 93) has noted that the tang was not attached to a handle, and it should be considered to be a part of the implement itself. Significantly, within grave C4597 at Saltwood it was the tapered end that was enclosed in a sheath and not the broader end.

An iron strip (*ON 2076*) with a rivet hole from grave C4502 in the Western cemetery (Fig. 103) can be compared with a strap mount from Carisbrooke, found near the waist of the deceased (Young 2000, 95 and fig 41.3).

An iron object from grave C1267 in the Central cemetery has a circular shaft and a looped head, now largely separate from the shaft (Fig. 171). It was found in the waist area of the burial, near to a knife and buckle, with a spearhead further up the grave. The form of the head is redolent of a *fiche à belière*, a type of object found largely in Merovingian cemeteries (Joffroy 1974, 32; Pilet 1980, 55). *Fiches à belière* are widespread in graves from the fifth century onwards, and they cannot be closely dated (Pilet 1980, 56; Koch 2001, 273). They are confined to male graves, where they are normally found in the belt area, often close to a knife, which corresponds with the situation seen here. A few examples of *fiches à belière* have been found in Anglo-Saxon graves. A *fiche* with a spiral twisted shaft came from grave 5 at the Mount Pleasant

cemetery on the Isle of Thanet and several were recovered from graves in the Dover Buckland cemetery (Riddler and Kerep forthcoming). A further example is known from the Middle Saxon site at Dorney Reach, near Maidenhead (Foreman, Hiller and Petts 2002, iron object n° 25).

Fiches à belière have been regarded as awls, or as objects fulfilling a variety of utilitarian functions (Joffroy 1974, 32; Evison 1987, 110; Koch 2001, 273). Their close association with knives has led recently, however, to a return to an earlier interpretation, as eating implements. The principal objection to this interpretation has been their absence from women's graves (Joffroy 1974, 32) but it remains, nonetheless, a plausible explanation of their function.

### 13 ROMAN MATERIAL FROM EARLY ANGLO-SAXON GRAVES

There were few items of Roman date within the early Anglo-Saxon graves at Saltwood and they are limited to a sherd of Roman glass, part of a spoon probe, and several coins. A small sherd of naturally coloured bottle glass came from grave C1391 in the Central cemetery (Fig. 178). Meaney has noted that 'broken pieces of Roman glass, often fairly thick ones, are also found as a regular feature in the 'amulet bags' of Anglo-Saxon women' (Meaney 1981, 227) and the description fits this piece very well. Examples have been found in east Kent graves at Barfreston, Chatham Lines, Kingston, Sarre, Sibertswold and Stowting (Meaney 1981, 227-8).

A fragment of the upper end of a copper-alloy probe came from grave W1453 (Fig 52). It consists merely of the upper terminal and has fractured above the shaft, so that the original form of the probe is unclear. It can be added to the list of Roman copper alloy personal equipment found in early Anglo-Saxon graves, its fragmentary form reflecting the customary situation seen also with Roman spoons, which have usually had their stems removed (Meaney 1981, 222-7; White 1990, 143-4).

A Roman coin was also found in grave W1453. The coin and the spoon probe may originally have lain in a bag together although their original positions in the grave are not known. Single examples of Roman coins were also found in grave C1048 in the Central cemetery and grave C4692 in the Western cemetery. The coin in grave C1048 (*ON 826*) lay at the head of the grave, beyond the sword (Fig. 135) and may possibly have been placed in or near the mouth of the deceased, although sadly no human remains survived from the grave to substantiate this suggestion. A Merovingian coin from Bradstow School, Broadstairs grave 71 was found in the mouth of the deceased (White 1990, 140 note 71). Equally, however, the coin may have lain in the hand. The location of the coin in grave C4692 is not known. All three coins are large, heavy issues of the early Roman period, and they are heavily worn and illegible. They have not been

perforated for suspension, but one has been clipped on its edge, in the manner of a coin from Mill Hill, Deal (Parfitt and Brugmann 1997, 249). Two come from graves of female gender and the third was found in the auspicious male grave C1048. They vary in phasing from phase 2 (grave W1453) to 3b – 4a (grave C1048) and phase 5 – 7 (grave C4692).

Roman coins are reasonably common items in early Anglo-Saxon graves and have been discussed on a number of occasions, most recently by White (1990, 138-40). Coins of every issue period have been identified in early Anglo-Saxon graves, with the exception of those of Theodosius (White 1990, 138). They are mostly found in female graves, where they occur singly or in small numbers (*ibid*, 139). Earlier examples were incorporated as jewellery, whilst later finds occur in bags or purses; the latter may have been regarded as amuletic (Meaney 1981, 220). Recent examples of Roman coins from early Anglo-Saxon graves in east Kent include several from grave 105c at Mill Hill, Deal, and a number from the Dover, Buckland cemetery, as well as one example from Cuxton (Evison 1987, 122; Parfitt and Brugmann 1997, 249; Parfitt and Anderson forthcoming; Blackmore 2004a).

## 14 STRUCTURAL IRONWORK

### 14.1 Introduction

A wide variety of structural ironwork, including single and double cleats, clench nails, staples and nails of various sizes, was recovered from a relatively small number of graves, most of which were located in the Central cemetery. Eight graves were found with small quantities of nails; the other structural fittings were limited to one or two graves in each case. Those graves include three of the four prominent graves in the Central cemetery (graves C1048, C6421 and C6653), as well as two of the weapon graves (graves C1132 and C6643). Although the presence of structural ironwork (other than nails) in prominent graves implies a correlation with burial status, the ironwork was almost certainly functional rather than symbolic and simply helped to secure large or complex coffins or burial structures. Indeed, the correlation of structural ironwork and prominent graves is not as precise or convincing as is the case with other object categories.

### 14.2 Cleats

Four cleats were recovered from grave C6421. They lay on each side of the grave, opposite the head and the feet of the deceased. Each consists of a rectangular strip of iron, pierced by a nail towards either end. Some of the strips are slightly bent and distorted, possibly by post-

depositional processes, and the nails are mostly set at an angle, with few remaining in a vertical position. Wood traces on the nails and the undersides of the cleats indicate that they were used to fasten adjoining sections of wood together without overlapping them. The nails penetrated 47 – 50 mm into the wood and were set 95 – 110 mm apart along the cleats.

Iron cleats have been found in east Kent graves at Chartham Downs, Dover Buckland, Lyminge, Sarre and Sibertswold, and further afield at Broomfield, Taplow, Sutton Hoo and Garton Slack (Douglas 1793, 105; Faussett 1856, 166; Evison 1979; 1980; 1986; 1987, 99-100; Evans 1983; East 1984; Mortimer 1905, 254 and figs 712-4). The Lyminge grave can be placed in the middle of the 6th century (Evison 1980, 123 and fig 6.1c) whilst the remaining graves belong to the 7th century, with Sibertswold 172 the latest of the group. Sutton Hoo Mound One, Broomfield, Taplow and Dover grave 41 are the graves of males, all of which belong to the early decades of the 7th century, whilst Lyminge grave 44 and Sibertswold 172 are the graves of women. The gender of the deceased in Chartham Downs barrow F and Sarre grave 235 is not known. All of the graves are linked by their sheer size and that was likely to be the factor that led to their reinforcement with structural ironwork.

The cleats from Saltwood grave C6421 are 135 – 140 mm in length and they are shorter than those from Sutton Hoo, Broomfield or Taplow, and roughly the same size as those from Lyminge (Evison 1979A, fig 6.1). The cleats from Dover grave 41 are somewhat smaller, although the nails are of a similar length. The nails of the cleats from Kent graves protrude up to 50 mm into wood, whilst the Sutton Hoo nails are much shorter (East 1984, 81). The Saltwood cleats correspond with the four examples from Lyminge grave 44 for their number, with Dover grave 41 providing seven cleats and Sibertswold grave 172 including at least eighteen (Evison 1979A, fig 6.2; 1987, fig 71; Faussett 1856, 130).

East has argued that the Sutton Hoo Mound One cleats may have secured sections of a floor to underlying battens in the burial chamber (East 1984, 82) but the short lengths of the nails there would argue strongly against that possibility, as noted by Evison (1986, 207), and they may simply have strengthened the floor of the burial chamber. Within Saltwood grave C6421 the cleats were aligned perpendicular to the main axis of the grave and it is possible that they secured a coffin whose sides fell outwards when the burial chamber subsided in this burial. The body lay within the burial, whilst the bucket and the box were outside but within a chamber. Transverse wood seen on the upper surface of one cleat (*ON 2418*) would then stem from the chamber. Alternatively, they were set with their nails facing downwards and they secured a lower platform for the burial, in a similar manner to the suggested situation for Sutton Hoo.



*Double Cleats*

Small double cleats were found in graves C1048 and C1132 within the Central cemetery, and grave W1705 in the Eastern cemetery (Figs. 60, 135 and 147). They are formed of thin, rectangular strips of iron, fastened towards each end by rivets of circular section. They resemble the cleats discussed above but are much smaller, with lengths of 20 – 35 mm. They were used to secure relatively thin sections of wood together, probably conjoining their edges, with a rivet passing through each piece of wood and burred over the cleat. Unlike the larger cleats, the ironwork here appears on both the interior and the exterior faces of the wood.

Three sets of double cleats lay close to a buckle on the right side of grave C1048, above the Byzantine bowl. All three lay within an area of 15cm<sup>2</sup>, close to the edge of the grave. Two similar double cleats in grave C1132 also lay close together, on the left side of the grave, around its midpoint. The location of the double cleat in grave W1705 is not clear. Double cleats have been found in burials at Monkton in Kent, as well as Barrington, Shudy Camps, Swallowcliffe Down, Winkelbury Hill and Woodyates (Malim and Hines 1998, 263-4 and fig 3.40; Perkins and Hawkes 1984, 97, 111 and fig 10; Speake 1989, 83-6, 107 and fig 89). A double cleat has also been identified at Sutton Hoo (Evison 1986, 210 and fig 1d). All of these, however, are much more substantial objects, of the size of the single cleats described above, and most if not all of them – possibly including Monkton grave 32 as well – were used to secure the fixtures of a bed within the grave (Speake 1989, 98-107; Malim and Hines 1998, 263-4).

The Saltwood cleats should be distinguished from these larger examples and in no case are they likely to have been part of a bed burial. With graves 1048 and 1132 they are localised to a small area of the burial and appear to have strengthened the wood in that location. Similar items from a burial at Burghfield (where two rivets accompanied a single cleat, rather than a double) were associated there with a shield (Butterworth and Lobb 1992, 50 and fig 15.709). A single example from Caister-on-Sea lay vertically in the grave and probably acted as reinforcement for the coffin (Darling and Gurney 1993, 104, fig 78.500 and pl XXVIII). Plain and decorated double cleats from Köln-Müngersdorf grave 63 were thought to have formed part of a box (Fremersdorf 1955, 129 and taf 10.63). The double cleats from Saltwood grave C1048 lay in a group together and may possibly have strengthened a box there, which had no other metal fittings. Equally, they may have secured and repaired part of a coffin or burial structure, as was probably the case with the other Saltwood examples.

### *Staples*

Staples were found in graves C6643 and C6653 within the Central cemetery (Figs. 205 and 207). They have structural similarities with the cleats of grave C6421, although they are formed of single pieces of iron. Those from grave C6653 have straight backs of rectangular section with tapering arms extending from them. The staples from grave C6643 are similar, but are nearly square in section. As with the cleats, the purpose of these staples was to hold conjoining sections of wood together. Within grave C6643 two staples lay close together, towards the centre of the grave, with a third staple nearby and a further example at the top of the grave. Their irregular arrangement can be contrasted with the layout of the cleats in grave C6421, and it suggests that they formed an additional reinforcement for a coffin, rather than a planned part of its original design. Within grave C6653 the staples occur both at the top of the grave and in the lower part, to either side of the copper alloy bowl, and they were found also in two locations along one side.

Elsewhere in Kent, staples have been found in graves at Barfreton, Dover Buckland, Chartham Down, Sarre and Sibertswold (Faussett 1856, 141; Brent 1868, 309, 316 and fig XI; Evison 1987, 99 and fig 60). Several have been found with the bed burials noted above, and small numbers have been found in graves at Morningthorpe and Snape, amongst other sites (Green, Rogerson and White 1987, fig 335; Filmer-Sankey and Pestell 2001, fig 107.Ci-ii). They occur occasionally in Continental graves, as at Giberville, for example (Pilet *et al* 1990, pl 27.321). Kent graves containing staples are entirely of 7th century date, with Buckland 155 and Sibertswold 172 belonging to the second half of the century.

### **14.3 Clench Nails**

Seven clench nails were recovered from grave W1323, a grave located in the eastern part of the Central cemetery (Fig. 222). They were the only objects in the grave, which contained a small quantity of human bone. Four clench nails were found above the head, roughly in a lateral line, and three others were parallel to this group towards the lower part of the grave. In effect, they formed two lines running across the grave. Some appear to have been set vertically in the grave, whilst others were aligned horizontally. They form a homogeneous group of objects, which originally clenched two sections of overlapping wood of a total width of around 75 mm.

Clench nails have been found in graves at Beakesbourne, Mill Hill Deal, Dover Buckland, Margate, Monkton, Ozingell, Rochester and Sarre, making them the most common form of structural ironwork (with the exception of nails) to have come from east Kent graves. Unfortunately, few of these graves contained any additional grave goods, making it difficult to date them with any precision (contra Rodwell 1993, 254). It is clear that they occur in both 6th

and 7th century graves, and they are found outside of Kent in graves extending into the late Saxon period (Rodwell 1993, 253-5; Kjølbye-Biddle 1995, 500-3). Clench nails have also been found in Merovingian graves in northern France (Roach Smith 1854, 17). They are often associated with boats and boat burials, almost in a romantic way, although the clench nail is a ubiquitous form of structural ironwork of the Anglo-Saxon period, designed to fasten overlapping sections of wood and used on buildings as much as on maritime vessels (Ottaway 1992, 615-8). At Nørre Sandegård Vest, for example, they merely reinforced coffins and no association was made with boat burials (Jørgensen and Jørgensen 1997, 55 and pls 5, 9 and 19). Where grave plans of the east Kent examples are available, for Dover Buckland graves 135 and 300, Thorne Farm Monkton and Mill Hill grave 38, clench nails have been found in rows running parallel with the body, either above or below it. Rows apparently running across the grave, as at Saltwood, are more unusual although a lateral row occurred in one grave at Caister-on-Sea, and some of the clench nails in Mill Hill grave 38 form a lateral line across that grave (Darling and Gurney 1993, 53 and fig 32.67; Parfitt and Brugmann 1997, fig 62). The clench nails in Sarre grave 245 lay at the feet of the burial (Brent 1868, 314).

*Table 5: Clench Nails from East Kent Graves*

Cemetery	Grave	Quantity	Location	Gender	Category	Age
Saltwood	W1323	7	Two rows across grave		Juvenile	9 – 11
Dover Buckland	135	2	Left side of grave	Male	Adult	25 – 35
Dover Buckland	300	14	Two rows beneath legs	Male	Adult	30 – 40
Ozengell		20				
Monkton, Thorne Farm	1	18			Juvenile	12 – 15
Deal, Mill Hill	38	31	Two rows, side of grave	Female	Adult	22 – 29
Margate, Half Mile Ride	3			Female ?	Juvenile	
Beakesbourne II	37/8	1				
Sarre	7		Down left side			
Sarre	33/4	a few				
Sarre	134		At head & down left side	Upper burial female	Upper burial adult	
Sarre	208			Male		
Sarre	231	16		Male		
Sarre	245					
Sarre	255	80				
Sarre	259	1				
Rochester Cathedral						

#### 14.4 Nails

Small quantities of iron nails were found in eight graves (Table 6). In most cases a single nail was discovered, although there were two nails in graves C4665 and W1767, and four in grave C3764. Most of the nails are fragmentary and only a few are complete. They can nonetheless be separated into two groups on the basis of their size. Small nails with slender heads and tapering shafts up to 45 mm in length are described here as Group One. They occurred in five graves, either singly or in pairs. Their locations were not always recorded. The nail (*ON 2084*) in grave C3762 was found in the area of the wooden box, at the foot of the grave, and could be a part of that object. The nail (*ON 271*) in grave W1767 lay on the right edge the burial, whilst in grave W1577 the nail (*ON 236*) was in the upper fill.

The second group of nails from graves C1325 and C3764 are longer, with shafts of at least 55 mm in length, and with broad discoidal heads. The position of the nail in grave C1325, in the upper left corner, suggests that it helped to secure the sides of a coffin. This location is echoed in the positions of nails in the Dover Buckland cemetery (Parfitt and Anderson forthcoming).

The four large nails in grave C3764 lay in a line extending through the centre of the grave. These formed the most substantial nails to come from the Saltwood Anglo-Saxon cemeteries and they recall the sets of four nails retrieved from several burials at Bourne Park and described by Martin (1853). Large iron nails have also been recovered from burials in east Kent at Crundale and Bifrons (Faussett 1856, 187; Evison 1967, fig 7f and g; Chadwick Hawkes 2000, 25 and fig 17.16-17).

Cemetery	Grave	Quantity	Group	Phase	
Central	1325	1	2	4	
Western	3762	1	1	3	
Western	3764	4	2	1 – 2	
Western	4665	2	1	3b – 4a	
Eastern	W1767	2	1	3	
Eastern	1577	1	1	Late Roman	
Eastern	1634	1	1	3b	

### 14.5 Additional Ironwork

An iron fitting found on the opposite side of the grave to the staple (*ON 2458*) in grave C6653 consists of an oval ring lying within two split loops. The loops were driven into the wood of the burial structure, leaving the ring free to rotate about their curved ends. The ring may possibly have been used to lower a coffin into its burial space, although it was located towards one end of the grave (alongside most of the structural ironwork in this burial) with no corresponding fixtures at the other end. The arrangement of an iron ring and staples occurs also at Sutton Hoo and Evison has suggested that they were attached to a coffin there and used to carry it, and to lower it into the ground (Evison 1986, 210 and fig 1f).

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