Prehistoric, medieval and post-medieval finds at the West Sands Caravan Park site, Selsey

F. M. Meddens
Unit 54, Brockley Cross Business Centre, 96 Endwell Rd, Brockley, London, SE4 2PD.

Between 10 October and 16 November 1999 an archaeological watching brief was carried out as part of construction works at the West Sands Caravan site (SZ 8365 9312) in Selsey, West Sussex (Figs 1, 2). The site code allocated was WSCP 99 and the area of the site measured c. 3440 m². Within this space a series of trial pits, foundations, drain and service trenches were investigated with the largest section measuring c. 9 × 13 m, being subject to more detailed examination.

ARCHAEOLOGICAL BACKGROUND

Selsey in later prehistoric times was an island at high tide, although there may have been a causeway or bar linking it to the mainland from prehistoric and Roman times onward. As a result of coastal erosion and rising sea levels, with levels rising by about 10 m between 5000 and 4000 yr to close to its present level (May & Hansom 2003, 15), several hundreds of metres are known to have been lost to the sea along the south side of Selsey Bill since 1672 (Aldsworth 1987, 42–3), and possibly as much as 2 km since Saxon times (Casteldon n.d.). Prehistoric and early historic materials in the form of prehistoric and Roman pottery as well as coins, and a Palaeolithic and a Mesolithic stone tool, are known from the immediate vicinity of the site. Neolithic stone tools, pottery and animal remains have also been found. Two Bronze Age gold bracelets and a Bronze Age palstave have come from Selsey beach. A possible early Beaker inhumation burial has been noted for Selsey (Garwood 2003, 52). Further Bronze Age remains comprise evidence for the formalised removal and curation of occupation remains by deposition of this material in a well at Selsey Bill West (Seager Thomas 1998; 2001). Continuation of this tradition into the Iron Age is demonstrated by further evidence for the placed deposition of midden material in a second slightly later well in the vicinity (Hamilton 2003, 75–6). The remains from the latter also include a small amount of imported continental pottery (Seager Thomas 2001; Hamilton 2003, 77). Iron Age ceramics and lithics were also found at Selsey Bill in association with occupation remains including a floor (Heron-Allen 1911, 54, 74). Elements of a Late Bronze Age field system with some pits and occupation debris as well as various probable round houses and field boundaries of Iron Age date have been found at Chichester Road in Selsey (Hammond & Preston 2005). The presence of a significant Late Iron Age ‘urban’ type centre, classed as a territorial oppidum, pertaining to the Atrebatic kingdom has been speculated upon at Selsey Bill, with the evidence for the site argued as having been largely lost as a result of coastal erosion (Cunliffe 1978, 100, 286). The remains of a Saxon occupation site at Medmerry just northwest of Selsey Bill were recorded in the early 1930s (White 1934; Goodburn 1987). Finds from this site include pottery, burnt bone, shell, rotary quern fragments, loom-weights, part of a barrel and a boat timber (Goodburn 1987). The remains of two shell middens are also known from the shore. Most of these finds were discovered being eroded out of the seacliff.

THE POTTERY

The prehistoric pottery group comprised 69 small, mostly worn sherds and fragments. Two could be assigned to the Mortlake style of the Peterborough Ware tradition of Neolithic date and a further sherd may also be Neolithic in date. Peterborough wares mostly derive from midden accumulations, pits and river deposits. They are rarely associated with funerary remains (Barclay 2002, 91–2) and are frequently seen as being linked to ritual and votive contexts. Four sherds are positively of Bronze Age date, based on the quality of the fabrics with finely crushed calcined flint or sand inclusions. The rim sherds are round and derive from everted necked vessels such as bowls or jars. A further 23 sherds are likely to date to the same period. A further sherd may also be Neolithic in date. Peterborough styles of the Peterborough Ware tradition of Neolithic date and a further sherd may also be Neolithic in date. Peterborough wares mostly derive from midden accumulations, pits and river deposits. They are rarely associated with funerary remains (Barclay 2002, 91–2) and are frequently seen as being linked to ritual and votive contexts. Four sherds are positively of Bronze Age date, based on the quality of the fabrics with finely crushed calcined flint or sand inclusions. The rim sherds are round and derive from everted necked vessels such as bowls or jars. A further 23 sherds are likely to date to the same period. A total of 8 of these sherds are likely to be in the Iron Age tradition.

The remains of a Saxon occupation site at Medmerry just northwest of Selsey Bill were recorded in the early 1930s (White 1934; Goodburn 1987). Finds from this site include pottery, burnt bone, shell, rotary quern fragments, loom-weights, part of a barrel and a boat timber (Goodburn 1987). The remains of two shell middens are also known from the shore. Most of these finds were discovered being eroded out of the seacliff.

The watching brief at the West Sands Caravan site produced a number of features comprising ditches, a butt-ended gully, some post-holes and pits. A small number of prehistoric potsherds were recovered as were some medieval, post-medieval pottery and a total of 150 pieces of struck flint and 3340.4 g of unmodified burnt flint (Fig. 3). A small amount of this material was recovered from the features, but the great majority derived from layers constituting the disturbed overlying subsoils.

The medieval and post-medieval ceramic assemblage comprises 10 sherds of pottery, eight of which are medieval in date and two of a nineteenth-century date. The medieval pottery fabric was quartz- and flint-tempered and oxidized. They tend to be from white firing clays and are products of the Chichester kilns, probably the Orchard Street kiln (Fabric EA) (Gardiner 1990), which date to the thirteenth century. The forms present were difficult to distinguish owing to a lack of rims and bases, but the majority of the sherds are thin-walled and suggest jugs. One sherd was externally splash-glazed. None showed signs of sooting and they were therefore unlikely to have been used for cooking. The two sherds of nineteenth-century pottery consisted of a fragment of a Blue Transfer Printed ware bowl and the foot-ring of a nineteenth-century Buff ware bowl (Jarrett 2000).
Fig. 1. Site location plan.
The lithic material consisted of flint or cherty flint, the largest component by weight being burnt flint. A total of 150 pieces were worked. The majority consisted of flakes, but in addition, true cores (12%), retouched pieces (6%) and core tools (2.7%) were present (Bishop 2000).

The majority probably derived from alluvial or marine pebble sources, with a small proportion likely to have been obtained from sources closer to the parent chalk, present within a few kilometres of the site (Gibbard 1986).

Cores were mostly small with frequent thermal fractures and proto-fractures, and of fairly low knapping quality. One hammerstone was recovered with light but obvious damage to each end. In addition several flakes had damage consistent with use as hammers and four core tools were identified (Bishop 2000).

Flakes were variable in shape and size, although tending to be small and chunky, and reasonably homogeneous. Nine retouched flakes, constituting 6.0% of the struck assemblage, were recovered; none was diagnostic, although the relatively crude retouch is more suggestive of Middle or Late Bronze Age industries. Crude core tools, although present throughout the Neolithic and Bronze Ages, were especially associated with Middle or Late Bronze Age industries. One scraper (Fig. 3:3) was notable in having been more competently produced, and may be the product of an earlier industry, perhaps dating to the Neolithic. With this may be a used flake (Fig. 3:6), which was manufactured on a blade and a long sturdy flake with severe battering around its distal end, which was more like the piercer-type core tools (Bishop 2000).

Scrapers and piercers formed the majority of tool types; types often associated with hide preparation. The assemblage suggested that core reduction was never important on site, and that activities were more centred on tool use than on production (Bishop 2000).
Fig. 3. Struck and worked flint; Middle to Late Bronze Age: 1, 4–5) irregular cores; 2–3) end scrapers; 6) piercing tool.
THE ARCHAEOLOGICAL FEATURES

With one exception the pottery was recovered from the post-medieval subsoil and features. The single sherd, which was not, was hard, well-fired and abraded with abundant calcined flint inclusions. It probably dates to the Iron Age (Gibson 2000) and came from the fill of a curvilinear ditch feature (Fig. 4 [453]). In addition, five flint flakes and one core came from the same fill.

Some eight metres north of this gully and running parallel to it, a substantial ditch orientated northwest by southeast was found. The single largest stretch of it excavated measured 6 m in length by 1.3 m in width, although it was almost certainly significantly longer as it was observed in four other exposures suggesting a total length of greater than 50 m. There was evidence for its intersecting a slightly smaller north–south aligned ditch. Eleven lithics comprising eight complete and one broken flake and two cores were recovered.
from the largest excavated section of this feature. This small sub-group was fairly characteristic of the lithic assemblage as a whole. It included a few thin blade-like flakes and two extensively reduced cores, which may represent a possible Neolithic industry (Fig. 3:4–5). However, the remainder of the material was more crudely produced suggesting that the possibly earlier material found in this fill was residual (Bishop 2000).

Other undated features include pits, post-holes and a right-angled cut. The variety and density of these elements are suggestive of settlement remains.

DISCUSSION AND CONCLUSIONS

The medieval and post-medieval activity on the site had truncated the archaeological features leaving mostly the basal fills and lower parts of the cuts and resulting in spreading the relatively limited artefactual evidence across the site. The observations extending over a series of exposures indicate the presence of at least one substantial ditch (Fig. 4) together with numerous smaller features probably reflecting multi-period land-use from the Neolithic to the Iron Age. The small size of the artefactual assemblage, the absence of animal bone or other midden-type material suggests sparse, perhaps intermittent occupation with the larger feature perhaps being part of a system of field boundaries. There is sufficient evidence to suggest the presence of limited prehistoric settlement activity with possible storage and rubbish pits and potential structural elements. The remains represent but a small section of the intense prehistoric land-use known to have taken place on Selsey Bill and now largely lost as a result of the erosion of the sea cliff along the sea front.

The prehistoric and later activity at Selsey Bill is probably related to the variety of resources present in the vicinity, with access to the sea, estuary, shore and land-based ecosystems. Its geographic location with access to sea communication routes will also have played an important role in making this an attractive location. This pattern is confirmed at the later Saxon period site at Medmerry to the northwest (Goodburn 1987). The earlier prehistoric and Roman resource base is likely to have been similarly broad and may explain the time-depth and richness of the archaeological record for the Selsey area as a whole.

Acknowledgements

The author wishes to thank Mr Geoff Parsons for the fieldwork he carried out. I also wish to thank Barry Bishop, Alex Gibson and Chris Jarrett for their specialist contributions. I am grateful to Dr Damian Goodburn, Mr Gary Brown and the two anonymous reviewers for their advice and comments, to Josephine Brown and Helen Davies for the illustrations and to White Horse Caravan Co. Ltd and Roger Harden from Construction Services who facilitated access and funded the project.

REFERENCES

The production of the Chichester Helmet

Jaime Kaminski
University of Brighton, Watts Building, Lewes Road, Brighton, West Sussex, BN2 4GJ.
&
David N. Sim
School of Construction Management and Engineering, University of Reading, Whiteknights, Reading, Berkshire, RG6 6AY.

INTRODUCTION

In 1893 the Sussex Archaeological Society purchased a first-century AD copper-alloy Roman infantry helmet from the Bateman collection. The Sussex Archaeological Collections for 1894 records the accession as a ‘Bronze infantry helmet (Chichester)’. The museum’s accessions register states:

No. 196 bronze helmet of the Roman Foot Soldiery (legionary helmet) from the Bateman Collection and previously from the Collection of George Lane Fox, Esq. Bramham (Bateman Cat. No. 159). This helmet has lain in the seas for some time as an oyster has attached its shell to the crown. Found near Chichester.

The helmet has received passing mentions in the Sussex Archaeological Collections and other journals as a Chichester find. By 1976 museum records mention Bosham Harbour as the find spot and Russell Robinson, who conducted the most detailed research on the helmet, actually refers to it as the ‘Bosham I helmet’. However, in view of the ambiguity of the find spot the helmet will be referred to as the Chichester Helmet.

Roman military helmets of the ‘Coolus’ form are comparatively rare in the UK, certainly compared to the numerous examples from the German frontier (the Limes). The Chichester helmet therefore provides an ideal opportunity to study the construction of this form of Roman military headgear and to use this information to infer how the helmet was produced.

DESCRIPTION

The Chichester Helmet (A007.196) is a helmet of the Coolus form; a ‘jockey cap’ construction which has its origins in Celtic helmets, from the Coolus region of the Marne Valley in France prior to its adoption and adaptation by the Roman military. According to Russell Robinson’s typology, the helmet is the only known example of a helmet of Coolus type F. The helmet is made of copper alloy, has a circumference of 669 mm and weighs 1052 g (see Fig. 1). Only the body of the helmet remains; the cheek-pieces, reinforcing peak and helmet loop attachments were not recovered. The general construction and high neck-guard is consistent with an infantry rather than a cavalry helmet. However, in the absence of an inscription identifying the owner it is impossible to determine if the Chichester Helmet was issued to legionary or auxiliary troops. The large numbers of auxiliary infantry in the garrison of Britain also wore helmets, probably including many Coolus forms. With the exception of the crest knob the helmet shows no signs of decoration, or attachment points for crests or plumes, suggesting that this was the equipment of a rank-and-file infantry soldier rather than that of an officer.

THE HELMET BOWL

The bowl of the helmet has sustained considerable damage, and some metal has been lost. The principal damage is a tear with associated loss of material that runs approximately 560 mm around the rim of the helmet. This tear is so extensive that only 104 mm of the bowl holds the helmet rim to the crown. The outward curl of the metal seen around the edges of the tear clearly points to the origin of the rupture coming from the inside. A second area of damage is evident at the top of the helmet below the crest knob. Again the origins of the damage originate from the inside, although little loss of material is evident. The tears have also caused distortion of the helmet bowl. Although it is impossible to determine how or when this damage was sustained, the fact that both the ruptures were caused by forces acting from the inside of the bowl, could imply that the damage was caused during the recovery of the helmet possibly by becoming fouled on an anchor or during dredging.

Two holes, 4.0 mm in diameter and 3.7 mm apart, are located on the right-hand side of the helmet 7.1 mm above the helmet rim. These holes are for attaching the hinge plates for the cheek-pieces (bucculæ) which were not recovered with the helmet. As with all the other extant holes on the helmet these were punched, not drilled, from the outside.

The corresponding cheek-piece attachment points are not visible on the opposite side of the helmet because much of the helmet is missing in that region. One further hole, 2.5 mm in diameter, is evident on the helmet bowl about three-quarters of the way up the bowl. This would have been the attachment point for the reinforcing peak.

It is apparent that the helmet would have had rivets for attaching the cheek-pieces and the reinforcing peak. Although these may have been filed down on the inside of the helmet, they would have still caused some discomfort to the wearer. This emphasises that helmets would have had some form of internal lining, to increase the comfort, fit and the protection of the wearer.

Despite the extensive damage to the helmet bowl it is possible to determine that the internal area of the helmet was formed into a slight ellipse. The dimension of the minor axis of the helmet was 203 mm while the major axis dimension was 213 mm.

THE NECK-GUARD

The comparatively shallow neck-guard protrudes 57 mm from the rear of the helmet bowl at an angle of 9° below the horizontal and was designed to protect the wearer’s neck. The neck-guard on the Chichester helmet is in exceptionally good condition and exhibits no damage. The underside of the neck-guard shows the characteristic hammer marks associated with the process of folding the copper-alloy sheet over the anvil or form. The hammer marks radiate outwards from the fold.

A hole 4.1 mm in diameter is centred about 25 mm from the rear edge of the neck-guard. The hole was punched (rather than drilled) from the outside, as indicated by the depression in the metal and the burr on the inner surface. It is most probable that this hole was used to rivet a carrying strap attachment for the helmet (the tie-loop). The depression caused by the rivet is still evident on the upper surface of the
neck-guard. Two examples of the Coolus helmets (the Coolus type C from Liechtenstein and the type H from Nidda) still have the tie-loops riveted to the neck-guards. It should be noted that the hole on the Chichester Helmet is offset from the central axis of the neck-guard. This differs from all known examples of the Coolus helmet where the attachment point is on the central axis of the neck-guard.

CREST KNOB
The helmet is topped by a conical crest knob. This is the only decorative feature of the helmet, there is no evidence for any other attachment points for other decorative crests such as plume tubes. The lower part of the crest knob is obscured by an oyster shell so the exact method of attachment to the helmet is unclear. There is certainly no evidence on the underside of the helmet of the crest knob having been riveted in place suggesting that it was hard soldered on.

The crest knob on the Chichester Helmet is the smallest of the known examples of finials on Coolus helmets. Furthermore, many other examples of Coolus helmets from the first century AD have a slot cut into the crest knob from front to back and a hole drilled through the sides for a securing pin. The slot and hole would have allowed a helmet crest to be attached to the crest knob.
THE METHOD OF PRODUCTION

The body of the Chichester Helmet (excluding the crest knob) was produced from a single sheet of copper alloy. The now missing cheek-pieces and reinforcing peak would have been produced in a series of operations separate from those of the main helmet body. Measurement of the thickness of the metal in the helmet bowl revealed comparatively little variation in mean thickness (see Table 1). The two transects of the helmet bowl reveal a mean thickness of 1.50 mm (A–B) and 1.46 mm (C–D), and a range between 0.76 mm and 0.89 mm.

It is simply not possible to achieve this level of dimensional accuracy over such a large area using hand tools alone. Furthermore, the variation corresponds to the ranges seen in other sheet metal from the Roman period. This implies that the sheet was produced using some mechanical method such as rolling. Machine-rolled sheet would have provided a more consistent material to work with compared to hand-hammered sheet. It is also the basis for mass production. In contrast, the measurements obtained from the rim of the helmet (mean 2.61 mm) and the neck-guard (mean 2.19 mm) show a greater variation, but both of these have clearly been modified from the original sheet. The helmet rim shows evidence of flaring and the neck-guard edge has been heavily hammered.

Two principal methods of helmet production are known to have been used in the Roman period:

- **Raising**: hammering a sheet of metal into a helmet ‘form’ or ‘die’, and finishing on a ball stake; or
- **Spinning**: using a lathe to spin the bowl of the helmet into shape.

The Chichester Helmet was produced using the latter method. The inner surface of the helmet bowl shows the characteristic signs of having been spun on a lathe. No such marks are evident on the outer surface of the helmet. This is because fewer working marks would have been produced on the outer surface of the helmet during production, and any that were would have been polished away before use. A number of other Coolus helmets exhibit evidence of spinning marks (see Table 2).

The fact that the spinning marks were retained on the inner surface of the helmet bowl highlights the fact that there would most probably have been a helmet lining that would have covered any such marks. As with the inside of the helmet bowl, the underside of the neck-guard was left unfinished with the hammer marks still plainly evident. The fact that the hammer marks from production were still visible on the underside of the neck-guard emphasise its utilitarian function. Although these production marks would not have been visible during normal use, higher-status helmets have these marks removed. The outer surface, as would be expected, was well finished. Any hammer marks that remained after production would have been polished out. The rim of the helmet was slightly flared.

The neck-guard would have been produced in a specific manner as dictated by the properties of the metal. The smith would have folded the edge of the copper-alloy sheet over the edge of an anvil or other ‘form’ using a metal hammer. The neck-guard would have been hammered in a series of blows radiating out from the fold (see Fig. 2). This is plainly evident in the hammer marks preserved on the underside of the neck-guard. Hammering radially outwards from the fold prevented the metal from creasing and forming a lap. If the smith were to have randomly hammered the neck-guard to flatten it after folding, the metal would most probably have split.

Folding the unturned copper alloy after spinning the bowl to form the neck-guard would have served to strengthen the entire helmet, producing a much stronger product than could have been achieved through welding on a separate piece of metal.

![Fig. 2. Preserved hammer marks from production on the underside of the neck-guard.](image-url)
The helmet bowl was formed into a slight ellipse. To achieve this shape the smith would have hammered along the rim that is adjacent to the side of the head with a wooden mallet. Had the ellipse been formed using a metal hammer the hammering marks would have obliterated the spinning marks on the inside. Around half of the known examples of Coolus helmets have an elliptical form (see Table 2). This would have been more comfortable to wear than a simple hemisphere as it corresponds more closely to the shape of the head.14

Once the helmet was completed, holes would have been punched from the outside in order to allow external attachments such as the cheek-pieces, tie-loop and the reinforcing peak to be attached with rivets.

In order to finish the helmet the spinning marks on the exterior could have been removed using abrasives. Although no literary or epigraphic evidence reveals how Roman smiths finished armour, experimental evidence suggests that in the absence of sandpaper a leather strip soaked in oil and dipped in an abrasive such as sand, ground glass, ceramic or hammer-scale would have produced a fine finish. The use of progressively finer abrasives such as ground charcoal and buffing would have yielded a mirror-polish.

DATE AND CONTEXT

The stylistic form of the Chichester Helmet is suggestive of a production date in the first half of the first century AD. The other typologically similar British examples of Coolus helmet certainly fall into this timeframe. In the west of the Empire the Coolus helmet form began to be phased out of service in the late-Claudian period as improved helmet patterns with better cheek and neck protection were produced. In the East, however, Coolus helmets were certainly used until at least c. AD 70.13

This apparently clear dating to the Claudian period has led some authors to link the helmet directly with the invasion. Dudley and Webster felt that ‘helmets similar to that at Lewes are a sure sign of Claudian military activity’.16 This point was taken further by Russell-Robinson who considered the helmet to date from ‘43–44, having been lost in Chichester harbour during the westward advance of Legio II Augusta under Vespasian’.17 Although these are plausible theories, they cannot be substantiated from the archaeological evidence alone. As Manley notes:

The helmet is typologically one that could have been worn (and lost overboard) by a legionary arriving in Chichester harbour in AD 43 ... but ... using a single find as proof for the presence of an invasion force of some 40,000 strong is not advisable.18

The Chichester find is simply a first-century AD infantry helmet that was, at some point, lost in the sea. Helmets were valuable pieces of equipment and would have stayed in circulation long after they were produced.19

Although a post-invasion date is most likely for the helmet, it cannot even be assumed that the helmet was deposited after the invasion. It is increasingly probable that Roman military equipment was in circulation in Britain before the Roman conquest. Roman armour could have arrived in Britain as diplomatic gifts, through the deliberate use of Roman equipment by client kings, as the property of British natives who had served in the Roman army, or as captured items. Some authors even contend that Roman troops may have been present in Britain before the conquest ‘on loan’ to client rulers.20

Although some high-quality armour may have been presented to client kings or other nobles by Rome, the Chichester Helmet is simply too utilitarian for this. In contrast, a silver-plated iron cavalry parade helmet from the so-called East Leicestershire hoard recovered from near Market Harborough came from a Late Pre-Roman Iron Age context and is of very high quality.21 It is a potential candidate for such pre-conquest diplomatic gifts or traded goods. However, it is known that some client kings, especially those who had been brought up in Rome (obsides) and who had seen service with the Roman army, trained and equipped their own troops in Roman style. Legio xxii Deiotariana was raised from just such troops in Galatia.22

A place like late pre-Roman Iron Age Chichester with its pro-Roman stance would have been a potential site for such equipment. Certainly, pre-Roman military finds have also been recovered from Fishbourne where a fragment of copper-alloy openwork from the scabbard of a Mainz-type gladius was found in association with ceramics of 10 BC–AD 25 at the base of a late Iron Age ditch.23 The increasing evidence for a high-status site at Fishbourne from theAugustan period onwards has led some authors at least to face the possibility that there was a ‘reasonably substantial Romanised settlement at Fishbourne in the Late Iron Age’.24 The date when the Chichester Helmet was lost is far from clear.

CONCLUSIONS

Although heavily damaged, the Chichester Helmet is a good example of a copper-alloy ‘jockey cap’ infantry helmet of Coolus type. However, a great deal of caution has to be applied to the use of stylistic typologies such as those developed by Russell-Robinson. Although a helmet such as the Chichester find was mass-produced, with some elements of machine production, this does not in any way imply that each helmet was identical. This equipment was produced using a combination of standardised production techniques and hand-production that differs from contemporary machine-produced items. It is precisely this element of manual production which allows variation to be introduced. According to Russell-Robinson’s typology Coolus Type F helmets differ only by the shape of the neck guards. It has to be wondered whether there was any practical difference other than that these helmets were produced by different smiths. For example, the shape and angle of the neck-guard may have been influenced by the smith producing the helmet. Differently-sized crest knobs or shaped decorative rivets may have been influenced by what components were available to the smith on the day of manufacture. If the different component parts were produced by different smiths, this would give rise to the stylistic variation seen in the helmets.25

The helmet was produced from a single copper-alloy sheet that may have been machine-rolled. This was spun on a lathe to create the bowl and then the neck-guard was hammered over a form. After this was completed the rim would have been cut to shape and radiusied. Holes would have been punched from the outside to allow the attachment of the cheek pieces and the riveting of the reinforcing peak to complete the helmet.

---

15 A place like late pre-Roman Iron Age Chichester with its pro-Roman stance would have been a potential site for such equipment. Certainly, pre-Roman military finds have also been recovered from Fishbourne where a fragment of copper-alloy openwork from the scabbard of a Mainz-type gladius was found in association with ceramics of 10 BC–AD 25 at the base of a late Iron Age ditch. The increasing evidence for a high-status site at Fishbourne from the Augustan period onwards has led some authors at least to face the possibility that there was a ‘reasonably substantial Romanised settlement at Fishbourne in the Late Iron Age’. The date when the Chichester Helmet was lost is far from clear.

22 Although heavily damaged, the Chichester Helmet is a good example of a copper-alloy ‘jockey cap’ infantry helmet of Coolus type. However, a great deal of caution has to be applied to the use of stylistic typologies such as those developed by Russell-Robinson. Although a helmet such as the Chichester find was mass-produced, with some elements of machine production, this does not in any way imply that each helmet was identical. This equipment was produced using a combination of standardised production techniques and hand-production that differs from contemporary machine-produced items. It is precisely this element of manual production which allows variation to be introduced. According to Russell-Robinson’s typology Coolus Type E and Type F helmets differ only by the shape of the neck guards. It has to be wondered whether there was any practical difference other than that these helmets were produced by different smiths. For example, the shape and angle of the neck-guard may have been influenced by the smith producing the helmet. Differently-sized crest knobs or shaped decorative rivets may have been influenced by what components were available to the smith on the day of manufacture. If the different component parts were produced by different smiths, this would give rise to the stylistic variation seen in the helmets.

23 The helmet was produced from a single copper-alloy sheet that may have been machine-rolled. This was spun on a lathe to create the bowl and then the neck-guard was hammered over a form. After this was completed the rim would have been cut to shape and radiusied. Holes would have been punched from the outside to allow the attachment of the cheek pieces and the riveting of the reinforcing peak to complete the helmet.
As would be expected of the Roman military, the Chichester Helmet reveals a number of examples of efficient production. These include the use of sheet metal to facilitate rapid production of the helmet on the lathe, time-savings made by not removing hammer and lathe marks on the underside of the helmet, not having any decoration on the helmet bowl, and punching rather than drilling holes. The utilitarian nature of the Chichester Helmet is suggestive of mass-produced equipment for a rank-and-file infantry soldier.

Acknowledgements
The authors would like to acknowledge the assistance of Emma O’Connor and David Rudkin of the Sussex Archaeological Society for allowing access to the Chichester Helmet and providing information about its purchase by the Society. Support was also provided by Ian Scrivener-Lindley of the Chichester District SMR. The helpful advice and comments made by the anonymous referee are also acknowledged.

NOTES
2 The ‘Old Accession Register’ was started c. 1928 to list material already in the museum. The reference to the Chichester Helmet can be found on page 82.
5 Named because the form of the helmet is reminiscent of a jockey’s headgear — the neck-guard being the equivalent of the peak of the cap. For a detailed review of the typology of Roman infantry helmets of Coolus Type, see Russell Robinson, The Armour of Imperial Rome, 26–41.
6 The cheek-pieces and reinforcing peak were attached with rivets so would have been particularly vulnerable to loss after the decay of the rivets. Because of this cheek-pieces are a comparatively rare find on Roman helmets. The reinforcing peak displayed with the helmet in the Barbican House Museum is a modern reproduction based on an example from the British Museum.
7 A defining feature of the Chichester helmet is the presence of an oyster (Ostrea edulis) shell which is attached to the crown of the helmet below the crest knob. The shell has a maximum dimension of 81 mm. The underside of the neck-guard also reveals concretions of marine worms; both support the account that the helmet was recovered from estuarine waters. Certainly, oyster beds can still be found today around Chichester Harbour at Bosham, cf. E. M. Somerville & J. K. Bonell, ‘Marine shell’, in J. Manley & D. I. Rudkin (eds), Facing the Palace: excavations in front of the Roman palace at Fishbourne. SAC 141 (2003), 123–4.
8 Hard solder — possibly silver solder or spelter provides a strong joint. Soft solder such as that based on lead-tin alloy is too weak to stay attached when a helmet is subject to general wear-and-tear.
10 In the absence of these attachments no comment can be made about their construction.
11 Transects A–B and C–D were specifically designed to assess the variability in the thickness of the helmet bowl. The transects were chosen because they allowed a complete radius to be measured from the crest to the rim. Areas of excessive corrosion along the transect were omitted and the flared rim was not included in the calculations of the thickness range.
12 Comparable evidence for sheet of consistent thickness can be found in M. Fulford, D. Sim & A. Doig, The production of Roman ferrous armour: a metallographic survey of material from Britain, Denmark and Germany and its implications, Journal of Roman Archaeology 17 (2004), 197–220. There is however, no literary or epigraphic evidence for machine-rolling from the Roman era.
14 It is not clear if the ellipse was a field modification made by the soldiers squeezing the sides of the helmet to achieve a more comfortable fit or if it was actually produced at source by the smiths — or both.
15 Fragments of a Coolus-type helmet were found with other elements of a single legionary’s panoply in deposits laid down during the siege of Gamla, Israel c. AD 70.
18 J. Manley, ad 43 The Roman Invasion of Britain: a Reassessment (Stroud: Tempus, 2002), 136.
19 For example a Coolus-type helmet from Cologne has multiple ownership inscriptions indicating that the helmet had stayed in service for some considerable time: Bishop & Coulston, Roman Military Equipment, 45.
25 Furthermore, it has been over 30 years since the publication of Russell Robinson’s typology. During this period new examples of helmets have been discovered which do not fit neatly within his categories. The European naming system based on find-sites rather typological categories is more cumbersome however. See H. Russell Robinson, The Armour of Imperial Rome.
Medieval seal matrices and papal bullae from Sussex, 2003–2007

Liz Andrews-Wilson
Finds Liaison Officer, Sussex Archaeological Society,
169 High Street, Lewes, East Sussex, BN7 1YE.

Christopher Whittick
Senior Archivist, East Sussex Record Office, Lewes, BN7 1YT.

This paper has been written in order to highlight the large number of seal matrices and papal bullae which have been recorded in Sussex between the appointment of co-author Liz Andrews-Wilson as Finds Liaison Officer (FLO) through the Portable Antiquities Scheme (PAS) in 2003 and the end of August 2007. During that period, 68 medieval matrices and six bullae have been reported by local metal detectorists and recorded by the Scheme. The format of this paper is based on the annual catalogue of medieval seal matrices published since 1999 in Norfolk Archaeology and uses the same classifications and terms.

The catalogue of seal matrices is divided into sections as follows: official secular, official religious, personal seals with arms, personal seals with names, personal seals with mottoes, with initials only, without inscription, illegible; it is followed by a brief list of the papal bullae.

Again to follow the pattern established by the Norfolk catalogue, entries have been organised as follows: material, overall shape of matrix, shape of face and dimensions, central motif, surrounding inscription (and translation), supporting information, parish name and the PAS data base number. Following the Norfolk example, the impressions have been researched as carefully as possible by the FLO and an archivist.

If part of the inscription is illegible it has been placed inside square brackets and illegible letters have been marked with a [•]. Spaces are added to make the reading clearer and no full stops appear after the inscription to avoid confusion with any dots or drills contained within it. Where possible, the matrices have been listed alphabetically, by the opening word of the inscription. Some of the better examples have been illustrated.

In addition to the pattern established by the Norfolk articles, we have attempted to identify whether the reverse of the matrix indicates the manner in which it should be applied to the wax in order to produce an upright image. This could be achieved in two ways: either by the position of the lugs or by guide-marks on the reverse of the matrix. A record has been made of the position of the lugs on the reverse of the matrix (if a flat type) or whether there is a ‘reverse initial mark’, for example a star, to assist the user in the deployment of the matrix (if it is a conical handle type).

In order to view more detailed descriptions of these objects, simply enter the PAS data base number in the database search engine, available at www.finds.org.uk. A more detailed analysis of these Sussex seal matrices is available in the PAS conference proceedings (forthcoming).

No seal matrices in this category were recorded during 2003-2007.

OFFICIAL SECULAR

1 Copper alloy, flat with rib ending in pierced lug on the reverse. Pointed oval, 33.3 × 20.7 mm. Elaborate full-length image of St Mary Magdalene carrying an alabaster jar of ointment in her left hand and a box or possibly a book in her right hand. She is wearing a full-length hooded robe. *S'ROBTI.PRIORIS DE BENTELE (the seal of Robert Prior of Bentley). Bentley was a priory or cell of Augustinian canons situated in Harrow. It was dedicated to St Mary Magdalen and in the patronage of the Archbishops of Canterbury. Prior Robert occurs in 1321, and this is possibly the matrix for a counter-seal to be applied to the reverse of the corporate seal of the priory.  Lug at 12 o’clock position. Fourteenth century. Near Firle (East Sussex) SUSS-9DC6E5. See Figure 1.

Fig. 1.

PERSONAL SEALS WITH ARMS

2 Copper alloy, fine condition, hexagonally-faceted conical handle with triple-collared pierced trefoil terminal (now broken). Circular, 20.6 mm. Square shield, hanging from cords and supported by stylized foliage, bearing the arms a sword erect in pale point upwards between three cinquefoils, all represented on a stippled field. *S'RICARDI.DE.ABINGDONE (the seal of Richard de Abingdon). The arms most closely resemble those of the Hamilton family of Loughton in Essex, to which the owner of this matrix was perhaps related. The de Abingdon family was prominent in London in the fourteenth century, and although a Richard de Abingdon served as a royal administrator between 1284 and his death in 1322, as a clerk he is unlikely to have borne a shield of arms. No reverse initial mark. Fourteenth century. Firle (East Sussex) SUSS-2F74A8.

PERSONAL SEALS WITH NAMES

3 Lead, flat (broken into two pieces) with an unpierced lug on the reverse. Circular, 32.1 mm. Basic flower with six petals. *S'ADE: [FIL'] SIMON.[FAB][RI] (the seal of Adam, son of Simon the smith). A charter of this individual, dated 1283, and granting land in Battle, survives in the Webster of Battle Abbey archive. Although the wax seal remains appended to the charter, and an impression has been made on its surface, no details of the impression are visible. The impression appears to have been made by a slightly smaller matrix. Lug at 12 o’clock position. Thirteenth century. Battle (East Sussex) SUSS-0AB571.

4 Lead, flat (bent and damaged) with an unpierced lug on the reverse. Pointed oval, 32.7 × 20.1 mm. Tree with four
branches on either side. Crudely scratched inscription: ‘S’ ALICIE FIL’ DAN[---] (seal of Alice the daughter of Daniel). A Daniel ater Melne is listed in the subsidy return for Brede and Udimore in 1296, and an Alice atte Watere at Udimore in 1332.¹ Lug at 12 o’clock position. Thirteenth century. Near Udimore (East Sussex) SUSS-BC7C86.

5 Copper alloy, flat (very worn) with rib ending in pierced lug on the reverse. Circular, 21.8 mm. Head of a boar. ‘*S’EME DE LAMPORT’ (the seal of Emma de Lamport). Above the M there is a small dash, suspending a second Pointed oval, 32.2 × 19.5 mm. Stylized fleur-de-lis within a centre of the reverse horizontally along the width of the oval. 7


7 Lead, flat with a broken pierced lug positioned in the centre of the reverse horizontally along the width of the oval. Pointed oval, 32.2 × 19.5 mm. Stylized fleur-de-lis within a border. Above the M there is a small dash, suspending a second M ‘*S’EME DE LAMPORT’ (the seal of Emma de Lamport). Lamport was a tithing, or subdivision, of the hundred of Eastbourne. Thomas de Lamport was a significant contributor to the subsidy of 1296.⁶ Lug position non-applicable. Late 13th century. Near Firle (East Sussex) SUSS-B233A2.

8 Lead, flat (bent and damaged) with a pierced lug on the reverse. Pointed oval, 30.3 × 15.7 mm. Eight-pointed, disjointed star. Scratched inscription: ‘*S’HERI FIL’ BRATON (? the seal of Henry son of Braton); the inscription is very indistinct. Lug at 12 o’clock position. Thirteenth century. Steyning (West Sussex) SUSS-659550.

9 Lead, flat with a projecting unpierced loop. Circular, 35.8 mm. Flower with sixteen petals. ‘S’HERNICI DE BOSCO’ (the seal of Henry de Bosco). De Bosco in Latin means ‘of the wood’, suggesting that the owner of this seal was called either Wood or Atwood. Lug at 12 o’clock position. Thirteenth century. Upper Beeding Area (West Sussex) SUSS-82C057.

10 Copper alloy, flat with a pierced lug on the reverse. Pointed oval, 31 × 19 mm. Lion rampant. ‘S’HERNICI DE RIDALE’ (lis) (the seal of Henry de Ridale). A prominent de Ridale family was based at Berwick upon Tweed, where Philip de Ridale, a merchant, founded the House of God, a college for poor people, at the beginning of the fourteenth century. In 1306 the executors of Henry de Ridale acknowledged a debt of £20 before the mayor of York.⁷ Data on lug position not recorded. This record was created before the PAS began using the Central Database and this object has not been seen by the authors. First half of fourteenth century. Westbourne (West Sussex) HAMP850. See Figure 2. Photograph by Sally Worrell. © The Portable Antiquities Scheme.

11 Copper alloy, flat with pierced lug on the reverse. Pointed oval, 31.2 × 20.1 mm. Bird on a nest or branch looking back over its shoulder. ‘*S’HENRICI FOLIOT:* (the seal of Henry Foliot). Lug at 12 o’clock position. Fourteenth century. Steyning (West Sussex) SUSS-4C8165.

12 Copper alloy, hexagonally-faceted conical handle — broken, missing terminal. Circular, 18.6 mm. Merchant’s mark, which resembles a beacon, comprised of a flag on a flagstaff, with a triangular support and a cross-beam. ‘*S’EIAN’:ERDMON (the seal of Jehan [H]erdmon), the form of the forename suggesting a French origin; no reference to the name appears in the Sussex Subsidies. A six-pointed star forms the reverse initial mark at the 12 o’clock position. Fourteenth century. Firle (East Sussex) SUSS-B4E850.

13 Copper alloy, flat with projecting pierced loop. Circular, 25 mm. Lion passant. ‘+SIGILL:GAVCEM:IOhAN’ (the seal of Gaucem John). Gaucem may derive from the French for left-handed. Recorded by David Williams, this object has not been seen by the authors. Lug at 12 o’clock position. Fourteenth century. Southease (East Sussex) SUR-CEB492.

14 Copper alloy, hexagonally-faceted conical handle with double-collared pierced trefoil terminal, with an additional loop on the terminal proper. Circular, 22 mm. Shield, divided into four by a voided cross, hanging from a stylised tree. In opposite quarters of the shield there are crescent moons, whilst the other two quarters have suns in splendour. ‘S’IOAN PERIS DE GINEGO’ (the seal of John Peris of Ginego). Probably continental, possibly Portuguese. Data on lug position not recorded. Fifteenth century. Steyning (West Sussex) SUSS-23D4D3.

15 Lead, flat, two-thirds survives, with rib and pierced lug on the reverse. Circular, 27.7 mm. Fleur-de-lis. ‘S’IOHANNIS’ (the seal of John [---]). Lug at 12 o’clock position. Thirteenth century. Near Bury (West Sussex) SUSS-5E74D0.

16 Lead, flat, edges and much of surface missing, with rib and pierced lug on the reverse (now broken). Circular, bent 29 mm. Fleur-de-lis above a star. ‘S’IOHANNIS CL[-----]AR’ (the seal of John [-----]). This indistinct inscription may incorporate the misspelling JOHANNIS; an alternative reading would treat the SIS as the first element of a surname. The termination –AR, which is secure, suggests a trade-name. Identified by David Williams, this object has not been seen by the authors. Data on lug position not recorded. Thirteenth century. Southease (East Sussex) SUR-3B2497.

17 Lead, flat with a rib ending in an unpierced lug. Circular, 22.9 mm. Cross, each arm terminates with a fleur-de-lis, these are not uniform. In the centre of the cross, extending into each quarter, is a small lobe. The initial mark is a diamond shape,

Fig. 2.

Fig. 3.
made up of four drills. The inscription is further punctuated by three vertical drills (represented in the inscription by colons). Above the h and the D (of Bordere) is a suspension mark, indicating that letters have been omitted. *S*:HOI:IS: D':LA:BORD'E: (Sigillum Joh[ann]is d[e] la Bord[e]re — the seal of John Bordere). Lug at 12 o’clock position. Thirteenth century. Beckley (East Sussex) SUSS-22C466. See Figure 3.

18 Lead, flat, with decorated reverse, with a pierced lug on the reverse. Pointed oval, 29.4 × 18.9 mm. The whole matrix occupied by the inscription, which begins conventionally at the edge but runs (at the point marked with an oblique) into the centre. *S*: MARGINIE FL’ GODFRI’ / D’ NITIMBRE (the seal of Margery, daughter of Godfrey of Newtimber or Nyetimber in Pagham). Lug at 12 o’clock position. First half of the thirteenth century. Near Stopham (West Sussex) SUSS-F14C47.


20 Copper alloy, flat with a pierced lug on the reverse. Pointed oval, 32 × 21 mm. Crescent and star. *S’ RAL’ MORE NIEMONACH (a translation ‘the seal of Ralph Morvie the monk’ could be extrapolated from the inscription as recorded). This record was created before the PAS began using the Central Database and the object has not been seen by the authors. Data on lug position not recorded. Fourteenth century. Littlehampton area (West Sussex) KENT3843.


23 Copper alloy, hexagonally-faceted conical handle with a pierced pentagonal terminal (containing iron corrosion). Circular,19.9 mm. Curled-up lion with centrally parted mane, similar to SUSS-IC7C77 and SUSS-222E27. *S’:STEPHANI:LE:POWER (the seal of Stephen le Power). Men of this name are listed in the Sussex Subsidies of 1296, 1327 and 1332 at both Ecclesden in Angmering in the Hundred of Poling and at Thakeham in the Hundred of East Easewrithe. The manor of Thakeham was in the possession of the Power family by 1163 and held by a succession of men called Stephen between 1213 and 1357. This seal may have belonged to the Stephen Power who was licensed to found a chantry in Thakeham church in 1351. Four punched dots in a diamond form the reverse initial mark at the 12 o’clock position. First half of the fourteenth century. Steyning (West Sussex) SUSS-D030D2. Horsham Museum accession number: 2007.66. See Figure 4.


25 Copper alloy, un-faceted conical handle with collared terminal. Circular, 18.7 mm. Lion’s face with prominent ears, showing tongue. The face is enclosed within an eight-pointed star, formed of two interlocking squares. *S’WALTERI CL’I D’ORMSBY (the seal of Walter the clerk of Ormsby). ‘Ormsby’ could refer to one of several settlements of a similar name: near Middlesbrough in Cleveland are both Ormsby and Ormsby North; in Lincolnshire there are Ormsby North and South. The name is formed from the Norse personal name Orm, meaning dragon, and –by for settlement. Five dots (four in a square, with one in the middle) form the reverse initial mark at the 12 o’clock position. Fourteenth century. Near Tarring Neville (East Sussex) SUSS-C94921.

26 Copper alloy, flat with rib ending in pierced lug on the reverse. Pointed oval, 32 × 20 mm. Lion rampant. +SWILLELMII DE WIVILE (the seal of William de Wivile). The Wivile family was prominent in Sussex in the thirteenth and fourteenth centuries, as lords of both Catsfield and Ovingdean. A John Wivile of Catsfield was sheriff of Sussex in 1365. The date of this seal roughly coincides with the purchase by Thomas Wivile, in 1325 and 1346, of a large estate at Bishopstone. Recorded by David Williams, this object has not been seen by the authors. Lug at 12 o’clock position. First half of fourteenth century. Altfriston (East Sussex) SUR-C66751.


29 Copper alloy, hexagonally-faceted conical handle broken to a stump; roughly a third of the matrix survives. Circular, 16.2 mm. Uncertain motif. * S[———]I (only the first and last letters of the inscription survive). No reverse initial mark. Fourteenth century. Patching (West Sussex) SUSS-0B4DC6.
PERSONAL SEALS WITH MOTTOES

30 Copper alloy, flat with a rib ending in a pierced lug on the reverse. Circular, 24.7 mm. Two heads facing each other, with a flower between them and possibly some sort of animal below. *AMIAMETELAMIAVET which can be rendered as *AMI AMET LEL AMI AVET (you have a loyal friend). A similar inscription, AMIE AMET CAR LEL AMI AVET, occurs on two seal matrices in the British Museum. Lug at 12 o’clock position. Second half of the fourteenth century. Steyning (West Sussex) SUSS-BF0F87.

31 Copper alloy, hexagonally-faceted conical handle with collared pierced trefoil terminal, which is filled with iron corrosion. Circular, 20.5 mm. A hawk attacking another bird. ALAS IE SV PRIS (Alas, I am taken). See Figures 5a for the seal matrix and 5b for its impression. For an impression made by an almost identical matrix, applied to a deed of 1373 conveying land in the marsh of Megham in Hailsham, see East Sussex Record Office AMS 5592/42 (Fig. 6). No reverse initial mark. Second half of the fourteenth century. Ringmer (East Sussex) SUSS-174752.


33 Copper alloy, edges missing, hexagonally-faceted conical handle with collared pierced quatrefoil terminal. Circular, 7.9 mm. Figure praying inside a structure; an object, possibly intended to represent a chalice and paten, appears in front of him. AVE AVE may be visible. The figure is carved with great detail and skill, in contrast to the structure and letters, which have been carved much more crudely. Traces of red wax appear in the indentations. No reverse initial mark. Fourteenth century. Near Pulborough (West Sussex) SUSS-190CA47.

34 Lead, flat, edges and much of surface missing, with decorated reverse, with an unpierced lug. Circular, 25 mm. Stylised six-petalled flower. AVEMRAVIVRECLI’ (reading and meaning uncertain, but possibly incorporating AVE MARIA (Hail Mary) and REGINA CELI (Queen of Heaven). Lug at roughly 12 o’clock position. Thirteenth century. Near Firle (East Sussex) SUSS-0E7FE8.

35 Copper alloy, hexagonally-faceted conical handle with collared pierced trefoil terminal. Oval, 23.9 × 15.4 mm. Virgin Mary holding baby Jesus on her left hip and a book in her right hand; she wears a late fourteenth- to fifteenth-century wimple and draped robes. The figure is flanked by two large palm fronds. * AVE MARIA GRACIA (Hail Mary [full of] grace). No reverse initial mark. Early fifteenth century. Near Hamsey (East Sussex) SUSS-E56DD0.

36 Copper alloy, hexagonally-faceted conical handle with collared pierced pentagonal terminal. A fine wire chain link was found in situ, wrapped around the pierced terminal. Circular, 16.9 mm. Bird with outstretched wing, looking over its shoulder. CREDE FERENTI (Believe the bearer). The star (initial mark) is at the 3 o’clock position, not at the top of the matrix face. A number of faint scratches indicate the reverse initial mark; these have been made at the 11 o’clock position. Fourteenth century. Firle (East Sussex) SUSS-2F50A3. See Figure 7. Photograph by Liz Andrews-Wilson. © The Portable Antiquities Scheme.

37 Copper alloy, flat with rib ending in pierced lug on the reverse. Pointed oval, 22.6 × 12.9 mm. Dragon with coiled tail, looking over its shoulder. + CREDE MICHI (believe/trust in me). Lug at 12 o’clock position. Possibly early fourteenth century. Firle area (East Sussex) SUSS-9DB4E7.

38 Copper alloy, unfaceted conical handle with a pierced terminal. Miniature. Circular, 12.5 mm. Stag’s head facing forward. CREDE MICHI (believe/trust in me). No reverse initial mark. Fourteenth century. Steyning (West Sussex) SUSS-D9EEF3.

39 Copper alloy (gunmetal), flat, edges and much of surface missing with pierced lug (broken) on the reverse. Circular, originally 22 mm. Lamb and Flag crudely depicted, the flagstaff ascending into the inscription and terminating in a plain cross. + ECCE AGNVS DEI (Behold, the Lamb of God). Lug is at a 9 o’clock position. Fourteenth century. Berwick (East Sussex) SUSS-84FA02.
40 Copper alloy, flat with pierced lug on the reverse. Circular, 21.9 mm. Lamb and Flag, the flagstaff descending below the lamb’s chest and ascending into the inscription and terminating in a cross potent. + ECCE AGNVS DEI (Behold, the Lamb of God). Lug at 12 o’clock position. Fourteenth century. Firle (East Sussex) SUSS-B501D1. See Figure 8.

41 Copper alloy, much of surface missing, hexagonally-faceted conical handle with collared pierced terminal. Circular, 19.3 mm. Owl sitting on a branch, represented by a vertical twig with horizontal leaves either side. *HAVLOVLHAVL (representing the cry of an owl). Four drills in the shape of a diamond form the reverse initial mark at roughly the 12 o’clock position. Fourteenth century. Walberton (West Sussex) SUSS-1BB1D1. See Figure 9.


43 Copper alloy, hexagonally-faceted conical handle with double-collared pierced quatrefoil terminal. Oval, 25.8 × 18.8 mm. Facing figures, separated by a large lily which they hold in their clasped hands. Both are clad in long gowns, with heads covered; the female’s by a veil which leaves her face uncovered, the male’s by a coif. A kneeling figure is below, his hands joined in supplication. Almost certainly an annunciation scene, the figures representing Gabriel and Mary; but if so the inscription is curiously more appropriate to a secular one. IE SV SEL DA[MVR] (I am the seal of love), very crudely scratched. No reverse initial mark. Fourteenth century. Oving (West Sussex) SUSS-FD3847.

44 Copper alloy, hexagonally-faceted conical handle with collared pierced trefoil terminal. Circular, 19.3 mm. Stag with a cross caught in his antlers. * IESVS MERCI (Thank you Jesus). St Hubert of Liege and St Eustace both saw a vision of a stag with a crucifix between its antlers. The image is almost identical to a seal matrix found in Oxfordshire (PAS data base number BERK-EDC4A8). No reverse initial mark.

45 Copper alloy, octagonally-faceted conical handle with collared pierced terminal. Octagonal, 17.5 mm. Lion and dragon fighting, similar to SUSS-D030D2 and SUSS-222E27. LEO PVNGNAT CVM DRACONE (the lion fights with the dragon). Although the edges of the matrix are straight, the inscription appears within eight cells which are concave to the edge of the object. Four punched dots in the shape of a diamond form the reverse initial mark at the 12 o’clock position. Fourteenth century. Near Willingdon (East Sussex) SUSS-4C7C77.

46 Copper alloy, hexagonally-faceted conical handle with pierced terminal. Circular, 15 mm. Two crossed falconry gauntlets, the fingers pointing up, surmounted by a hawk, its jesses twisted round the gauntlets. * PRIVE SV (I am private). This object has not been seen by the authors, recorded by Irene Szymanski. A very similar, though cruder image, appears on SUSS-9CFEB2 from Firle. Data on reverse initial mark not recorded. Fourteenth century. Arundel (West Sussex) IHS-7D9B66.


48 Copper alloy, hexagonally-faceted conical handle with pierced terminal. Circular, 16.2 mm. Two crossed falconry gauntlets, the fingers pointing up, surmounted by a hawk, its jesses twisted round the gauntlets. * PRIVE SV (I am private). A very similar but more finely depicted image occurs on IHS-7D9B66 from Arundel. No reverse initial mark. Fourteenth century. Firle (East Sussex) SUSS-9CFEB2.

49 Copper alloy, hexagonally-faceted conical handle with triple-collared pierced trefoil terminal. Oval, dimensions not recorded. St Helen, a hooded figure in robes, standing with a star next to her head and offering a cross for the adoration of a kneeling figure with hands clasped in prayer. Three trefoil-shaped objects decorate the area around the figures. Above three similar trefoils with stalks. *SCA.ELENA.PRO.ME.ORAC (St Helen pray for me). No reverse initial mark. Late fourteenth century. Firle (East Sussex) SUSS-B32995.

50 Copper alloy, hexagonally-faceted conical handle with collared pentagonal pierced terminal. Circular, dimensions not recorded. Lion rampant. * SVM LEO FORTIS (I am the strong lion). Recorded by David Williams, this object has not been seen by the authors. Data on reverse initial mark not
recorded. Fourteenth century. Lewes St Anne Without (East Sussex) SUSS-20A9C7.


52 Copper alloy, flat with pierced lug on the reverse. Pointed oval, 23.9 × 15.4 mm. Man wearing a cap, looking up into the sky observing a star or possibly a comet. The hand of God, in a gesture of blessing, is visible in the upper field. The hand has two fingers outstretched, pointing directly at the man’s head below. * TIME•DEV•SEM•PER• (Fear God Always). Lug at 12 o’clock position. First half of the fourteenth century. Near Hamsey (East Sussex) SUSS-E557E1.

53 Copper alloy, hexagonally-faceted conical handle with broken terminal. Circular, 15.2 mm. Cockerel strutting right, with prominent spurs. *VEIT CI L’ARTI (See here the bold one). No reverse initial mark. Fourteenth century. Patching (West Sussex) SUSS-079FB5.

54 Copper alloy, hexagonally-faceted conical handle with triple-collared broken quatrefoil terminal. Shield-shaped face, 18 × 20 mm. A winged two-legged beast with animal hind-quarters and a human head, holding a branch in its mouth. *VEIT CI MERVAILE (See here a Wonder). Recorded by David Williams and John Cherry; the object has not been seen by the authors. Data on reverse initial mark not recorded. Second half of the fourteenth century. Alfriston (East Sussex) SUR-CE1B96.

55 Copper alloy, hexagonally-faceted conical handle with pierced terminal. Circular, 19 mm. 10% of face has broken off. Lion dormant with centrally-parted mane, resembling SUSS-4C7C77 and SUSS-D03D2. *WAKE ME NO MAN (inscription in English). Three small dots in a line on one of the facets form the reverse initial mark at the 12 o’clock position. Fourteenth century. Berwick (East Sussex) SUSS-222E27.

WITH INITIALS ONLY


WITHOUT INSCRIPTION

58 Lead, flat with a small conical shaped lug in the centre on the reverse. Pointed oval, 22.4 × 16.1 mm. Three crude concentric incised ovals. No inscription. No reverse initial mark. 13th century. Ringmer (East Sussex) SUSS-AB09E0.

59 Copper alloy, standing to a height of 12.8 mm only, with a roughly crescent-shaped handle with a circular loop extending from the top of the handle. Both surfaces of the crescent and the loop have been decorated with an engraved floral design. Oval, 17.7 mm (wide). Griffin rampant, enclosed in a lozenge, surrounded by a floral design. No inscription. No reverse initial mark. Sixteenth century. Berwick (East Sussex) SUSS-23347.

60 Copper alloy, hexagonally-faceted conical handle with double-collared pierced trefoil terminal. Circular, 19.2 mm. Lion dormant, surmounted by a male bust with curling hair portrayed in the Classical style, with bunches of flowers or sheaves either side. No inscription. Notably similar to SUSS-222E27 and SUSS-4C7C77 (above). An incised star forms the reverse initial mark at the 12 o’clock position. Near Patching (West Sussex) SUSS-5511B2. Fourteenth century. Littlehampton Museum accession number AT1228.

ILLEGIBLE

61 Copper alloy, flat with rib ending in pierced lug on the reverse. Pointed oval, 24.8 × 16.6 mm. Uncertain motif, possibly an animal’s head. Illegible inscription, but could read MARIA .... probably legible if conserved. Lug at 12 o’clock position. Fourteenth century. Firle (East Sussex) SUSS-B22783.


63 Lead, flat, less than half surviving, with decorated reverse; the lug would have been on the missing portion. Pointed oval, fragment only, 18.7 × 20.8 mm. Uncertain motif. Illegible inscription of five or six letters. Thirteenth century. Shoreham-by-Sea (West Sussex) SUSS-AC1252.

64 Lead, flat, circular; fragment only, 24.8 × 14.5 mm. Fleur-de-lis. Illegible inscription of five remaining letters. Thirteenth century. Near Upper Beeding (West Sussex) SUSS-376827.

65 Copper alloy, hexagonally-faceted conical handle with double-collared pierced terminal. Circular, 17.4 mm. Four leaves, arranged in a diamond shape, radiating out from a central point. Illegible inscription. No reverse initial mark. Fifteenth century. Rodmell (East Sussex) SUSS-0631E1.

66 Copper alloy, hexagonally-faceted conical handle now broken. Circular, 24.2 mm. Five-pointed star with a dot in each of the six cells formed by the design. Illegible Black-letter inscription. No reverse initial mark. Fifteenth century. Storrington (West Sussex) SUSS-52D315.

67 Copper alloy, hexagonally-faceted with collared conical handle with collared pierced trefoil terminal. Oval, 24.5 × 20.9 mm. St Peter (holding a key) and St Paul (holding a sword), both wearing loose-fitting robes, standing on a plinth above a praying figure. Illegible inscription. No reverse initial mark. Fourteenth century. Wisborough Green (West Sussex) SUSS-238D44.
Copper alloy, edges and much of surface missing, hexagonally-faceted conical handle with broken terminal. Circular, 13 mm. Rampant griffin or lion, crudely drawn. Inscription worn or trimmed away. No reverse initial mark. Fourteenth century. Laughton (East Sussex) SUSS-65D175.

PAPAL BULLAE

Bullae, known traditionally as bulls, were the lead seals attached to many forms of papal letters. Their design and dimensions changed little over the course of the many centuries in which they were in use, and they have not been described in detail here. The obverse depicts the facing heads of St Paul and St Peter, with a sceptre between them, the busts surmounted by the inscription SANCUS PAULUS SANCTUS PETRUS. The reverse depicts the name and number of the Pope.

Probably Alexander III (1159–81) or IV (1254–61) — name and number largely illegible. Singleton (West Sussex) SUSS-E4F456.

Gregory IX (1227–41). Beddingham (East Sussex) SUSS-63AE03.

Innocent IV (1243–54). Several holes have been driven through this bull, apparently by nails. Three holes can be seen on the obverse and five holes and a part-hole can be seen on the reverse. The royal proclamation of 9 June 1535, ordering the erasure of the Pope's name from liturgical and other documents, or the royal proclamation of 1588 against the possessors of papal bulls, provide a possible context for what seems to have been deliberate damage to this object. Lancing (West Sussex) SUSS-F5E022


John XXII (1316–34). Long Man (East Sussex) SUSS-B91BE0.


Acknowledgements

We would like to acknowledge the work of the local metal detectorists, without whom this article and indeed the research could not have been done. David Williams and Irene Szymanski have produced some of the PAS data base records. Thanks should also go to Dominic Andrews (illustrator) who noticed some of the finer details on the matrices as he sat for hours drawing each one; all illustrations are copyright to Dominic Andrews and the PAS. HAMP850 was photographed by Sally Worrell. © The Portable Antiquities Scheme.

NOTES


3 Victoria County History (hereafter VCH), A History of the County of Middlesex 1 (1969), 169–70.

4 Henry E Huntington Library, San Marino, California, BA 43/637. We are grateful to Dr Mary Robertson for checking the dimension of the impression.

5 Sussex Record Society (hereafter SRS) 10 (1910), 15, 322.

6 Walter Budgen, Old Eastbourne (Westminster: Frederick Sherlock Ltd, 1912) 141, 331; SRS 10 (1910), 20.

7 The National Archives SC8/34/1658, C47/22/3/9, C241/49/286.

8 SRS 10 (1910), 53, 142, 158, 263, 271.


Investigations of a post-medieval rural site on Horsham Road, Southgate, Crawley

Jim Leary

Pre-Construct Archaeology Ltd, Unit 54 Brockley Cross Business Centre, 96 Endwell Road, Brockley, London, SE4 2PD.

Archaeological excavations were undertaken in 2004 by Pre-Construct Archaeology Ltd in advance of the construction of 82 new houses at Horsham Road/Newlands Road and Denne Road, Southgate, Crawley, West Sussex (Figs 1 & 2). The site consisted of three plots of land: Horsham Road/Newlands Road (Phases 1 and 2) and Denne Road (Phase 3), with central National Grid References of TQ 2650 3650 and TQ 2640 3645 respectively. Seventeen trenches of differing sizes were excavated across the area, however, only the plot to the west, adjacent to Horsham Road, contained archaeological features; leading to the excavation of a 768 m² irregularly shaped section.

BACKGROUND

The site lies on Weald Clay and is located to the southwest of Crawley town centre (Fig. 1). Situated on the northern side of a hill, it slopes from the south (88.10 m OD in Trench 17) down to the north (77.79 m OD in Trench 13).

There is little evidence for earlier prehistoric activity in the vicinity, although a small quantity of residual struck flint of Mesolithic and Neolithic date was uncovered during excavations along the line of the Crawley High Street Relief Road (Saunders 1998). Excavations in 1970 at Goffs Park, on the western side of Horsham Road and immediately opposite the site, revealed clear evidence of Late Iron Age ironworking in the form of features containing roasted ore, charcoal, tap- and furnace-slag, enclosed within curvilinear ditches (Gibson-Hill & Cartwright 1992). This activity was associated with
Fig. 1. Site location.

Fig. 2. Trench locations and excavation area.
Eastern Atebratic-type pottery, and the lack of Roman forms suggests that the enclosure had probably been abandoned by AD 43. Ironworking in the area continued, however, with the establishment of new production sites in the nearby vale of Broadfield, which continued at least until the late third century (Gibson-Hill 1974; Cartwright 1992). The site lies beyond the presumed southwest extent of medieval Crawley, an early-thirteenth-century new town. A licence in 1202 granted Crawley a market and records dating to the late fourteenth century suggest that tanners, cloth-weavers and ironworkers were working in the town (Gardiner 1997; Cooke 2001). Evidence for ironworking has been recovered from several sites, mostly from the High Street area, indicating the importance of medieval Crawley to the Wealden iron industry (Stevens 1997; Saunders 1998; Cooke 2001). Evidence for later medieval ironworking comprising re-deposited bloomery and forging slag found in cut features comes from a site at the junction of High St and Kilnmead just over 1 km north-north-east of the Horsham Rd site. The introduction of the blast furnace in the late fifteenth century in Sussex, which provided a much more efficient process, resulted in a decline in the relatively small-scale industry that had supported Crawley’s economy for so many years (Saunders 1998; Cooke 2001). The seventeenth century saw a marked effect on the landscape by the demands of the Iron industry for fuel, resulting in a discernible increase in coppiced woodland in the Weald for charcoal burning (Barber 2003, 203).

The site remained peripheral to the town throughout most of the post-medieval period, and cartographic evidence suggests that it was used for agricultural activities until the later nineteenth century when the town rapidly expanded. The area of the main excavation was wooded until immediately prior to the excavations, whilst terraced houses had been constructed on the Phase-2 and -3 areas in the late nineteenth century. A V1 missile towards the end of World War II destroyed a number of these houses; the remaining buildings were demolished immediately prior to our excavations.

**The Archaeological Sequence**

Identified along the eastern edge of the main excavation area was a layer of colluvium that had filled a large but relatively shallow natural hollow (Fig. 3). Sixty-eight sherds of grog-tempered East Sussex ware, dating to the Late Iron Age or Early Roman period and deriving from two or three separate vessels, were recovered from the deposit. The lack of any other features of this date would suggest that the enclosure recorded at Goffs Park did not extend to the east; this area being peripheral and possibly used for agriculture.

The first clear evidence for human activity on the site was the construction of Building 1 (Fig. 3); a north–south aligned structure with a west-facing porch and represented by a series of post-holes that had been tightly packed with Horsham Stone. An abraded sherd of Roman mica-dusted pottery was recovered from the post-packing fill of one of the post-holes; although this was clearly residual, as a small
quantity of glass and pottery fragments recorded from the final infilling of some of the post-holes suggests that the building was demolished in the nineteenth century. Part of another building (Building 2), on the same alignment and also demolished in the nineteenth century but this time constructed on sill beams, was recorded to the north of the site (Fig. 3). The beam slots were very fragmented and shallow, only penetrating the natural clay by 100 mm. Both structures produced a remarkably small assemblage of finds, indicating that they probably did not have a domestic use, and neither building would have had a long life given the construction techniques used. Considering the date for their demolition and their absence from the earlier OS maps of the area (1876), they were probably constructed during the eighteenth or the earlier nineteenth century. It is difficult to assess what their purpose was. However, their insubstantial and lightweight nature suggests that they were associated with agriculture (barns or granaries) or, (less likely) small-scale industry, such as brick-drying or as forges. Overlying these buildings was a layer of colluvium which contained a few pieces of abraded prehistoric flint, a flint of a flintlock pistol and a mixture of metal-working waste, comprising run slag (produced as a result of being liquefied but not necessarily tapped), glassy slag (not the product of a blast furnace), cinder, clinker and coal, possibly introduced to the area as hardcore.

Superimposed over Building 1, and cutting the layer of colluvium, was Building 3 (Fig. 4). Represented by a group of ten post-holes in two parallel lines and this time packed with large fragments of late-eighteenth- to nineteenth-century bricks. This building is likely to represent a similar, but marginally later, temporary structure, possibly a granary. Contemporary with this was Building 4 (Fig. 4), a small brick structure represented by concrete strip foundations with one surviving course of bricks and a concrete internal surface, possibly indicating an outbuilding such as a tool store or potting shed. Both Buildings 3 and 4 were on the same alignment as Buildings 1 and 2, and they have been dated to the later nineteenth century. The final phase of activity recorded on the site corresponded to a small number of pits, gullies and post-holes dating from the early to mid-twentieth century containing a good assemblage of finds of a domestic and agricultural nature. Fragmented plough marks across the site suggest that at one time in the site’s recent history it was turned over to agriculture.

CONCLUSIONS

There has been much iron-working activity recorded from the vicinity of the site, clearly suggesting that the area was important in the Wealden iron industry, and the residual slag recovered from the site adds to this corpus of information. The lack of features contemporary with Goffs Park suggest that the Iron Age enclosure did not continue this far east, whilst the presence of eighteenth- or nineteenth-century barns or sheds either associated with an agricultural or small-scale industrial use and constructed using, by then, out-dated techniques, constitutes evidence for the rural nature of the area.

Acknowledgements

Pre-Construct Archaeology Ltd would like to thank Duncan Hawkins of CgMS Consulting Ltd for commissioning the project and Bryant Homes for funding it. Pre-Construct Archaeology Ltd would particularly like to thank Paul Brydon of Bryant Homes (Taylor Woodrow), as well as John Mills, West Sussex County Council Archaeological Officer. Jim Leary would like to thank the managers, Peter Moore and Frank Meddens, the surveyor, Dan Waterfall, the photographer, Cheryl Blundy and the excavation staff. Thanks are also due to Malcolm Lyne and Bernie Sudds for the pottery and building material analysis, Lynne Keys for the slag and Marit Gaimster for the small finds reports, J. Hodgkinson for commenting on the slag during a site visit and to Luke Barber for his comments and identification of the Horsham Stone.

REFERENCES


SA Saunders, M. J. 1998. Archaeological investigations on the route of the Crawley High Street Relief Road, Crawley, West Sussex, SAC 136, 81–94.


Stevens, S. with Barber, L. & Hodgkinson, J. 2006. Archaeological investigations at the junction of High St and Kilnmead, Crawley, West Sussex, SAC 144, 203–7.