CHAPTER 5

THE SPECIALISTS' REPORTS AND DISCUSSIONS

THE LATE IRON AGE AND ROMAN POTTERY FABRICS

By Stephen Benfield

INTRODUCTION

The key accounts of the Late Iron Age and early Roman pottery from Colchester are to be found in *Camulodunum* (Hawkes and Hull 1947), *Sheepen: an early Roman industrial site at Camulodunum* (Niblett 1985), and *Colchester Archaeological Report* **10** (*CAR* **10**). The first two publications deal with the large native settlement at Sheepen, whereas *CAR* **10** covers the town-centre excavations between 1971 and 1986. The Sheepen and town-centre publications each have their own pottery form and fabric type series. For the Stanway report, we have used the Sheepen form series (indicated by the usual prefix 'Cam'), but the fabrics are referenced to the series devised for *CAR* **10** and to the National Roman Fabric Reference Collection (NRFRC: Tomber and Dore 1998).

Neither of the two existing Colchester fabric series proved to be entirely suitable for recording the fabric divisions required for the Stanway coarsewares, and consequently a number of new fabric descriptions were introduced into the *CAR* **10** series for this report. The Late Iron Age pottery and early Roman coarsewares in the Camulodunum and Sheepen reports were broadly divided into groups of 'native', 'Romanising' and 'Roman' wares (Hawkes and Hull 1947, 206–7; Niblett 1985, 52, with fabric sub-codes for 'Romanising' wares). The more recent *CAR* **10** fabric series, which uses lettered codes, was based on assemblages from the Roman fortress and town and does not include 'native' Late Iron Age grog-tempered wares. Also, the 'Romanising' coarsewares of intermediate potting technique, which predominate at Stanway, could not be directly paralleled among samples from the appropriate *CAR* **10** sub-fabric groups in the fabric series archive (Colchester Museums Resource Centre). However, the pottery in the *CAR* **10** report has been quantified, and will remain the basis for much future work. In respect of this, where appropriate, *CAR* **10** fabric codes have been adopted. Although *CAR* **10** encompasses some fabrics and form-related fabric groups relevant to the Stanway assemblage, the *CAR* **10** fabric groups UR (*terra nigra*-type wares) and DZ have not been used. The *terra nigra*-type forms are divided between fabrics, although named fabrics used in *CAR* **10** under fabric group UR (*CAR* **10**, 219–20) are reproduced here. Where coarseware vessels would fall into this *CAR* **10** group, this has been noted with the individual numbered pot. The description 'fine oxidising ware' (DZ) has not been used, as there are no fabric sub-divisions within this *CAR* **10** fabric group, and instead vessel fabrics were individually recorded.

It should be noted that coarsewares from the burials and features containing pyre debris, and the assemblages from the enclosure ditches, were quantified and recorded separately. At a later date, the coarseware fabrics from both assemblages were compared and rationalised into one set of fabrics. However, on comparison, there proved to be limited overlap between the pottery fabrics present in the burials and those in the enclosure ditches.

FABRIC DESCRIPTIONS

Fabric BPW/NOG WH3 Butt-beaker parchment ware/North Gaulish (Gallo-Belgic) white ware 3. Fine white fabric with cream-yellowish surfaces and commonly with grey core (NRFRC, NOG WH 3).

Fabric CAD AM Cadiz amphora. Light-coloured fabrics ranging from pale brown to pale red or orange, frequently with lighter or pale yellow to green-cream margins or self slipped surfaces. The fabric is hard with rough surfaces and an irregular fracture (NRFRC).

Fabric CAM AM 1 Campanian (Black sand) amphora 1. Pink or red to red-brown fabric, sometimes with slightly lighter internal surfaces and normally with an external slip showing as very pale pink or cream. Sherds are hard and the break is hackly with harsh surfaces (NRFRC).

Fabric CAM AM 2 (Northern) Campanian amphora 2. Fabric typically orange-brown or red-brown, occasionally with buff surfaces. The fabric is very hard with a hackly fracture and rough surfaces (NRFRC).

Fabric CAT AM Catalan amphora. Fabric is distictively red-brown to red throughout, with surfaces slightly lighter or duller in the same tones. The fabric is very hard with harsh surfaces and a hackly fracture (NRFRC).

Fabric CG CC1 CC2 Central Gaulish colour-coated wares, Lyon ware/Central Gaulish (white and cream) colour-coated wares. CG CC1: Clean white fine fabric with few inclusions, typically colour-coated or can be glazed (NRFRC, CNG CC1). CG CC2: Fabric varies from cream to buff, though occasionally pale orange, distinguished from CG CC1 by the range of inclusions and the presence of mica (NRFRC, CNG CC 2).

Fabric CNG GL1 GL2 Central Gaulish lead-glazed ware/Central Gaulish (white and cream) glazed wares 1 and 2. CNG GL1: Clean white fine fabric with few inclusions and glazed surfaces (NRFRC, CNG GL1), CNG GL2 Fabric varies from cream to buff, though occasionally pale orange, distinguished from CNG CL1 by the range of inclusions and the presence of mica (NRFRC CNG GL 2).

Fabric CSOW Coarse sandy micaceous oxidised ware. Fabric brownish-red throughout with smoothed or burnished surfaces. Fabric contains visible sand and common fine mica. The fabric appears similar to FMW and FSOW (vessels in this category could be included in *CAR* **10** under fabric group DZ – fine oxidising wares).

Fabric DJ/DJ(D) Coarse oxidised and related wares (*CAR* **10** fabric group). Predominantly local Roman oxidised wares. At Stanway the vessels are all in buff fabric with few inclusions, sub-fabric DJ(D), *CAR* **10** fabric group DJ colour code D buff/whitish buff (*CAR* **10**, 310).

Fabric FJ Brockley Hill/Verulamium region oxidised ware (*CAR* **10** fabric group). Cream or off-white hard very sandy fabric, though surfaces may vary from pink to pale orange to yellow, and often with a pale core of pink or other colour similar to the range of surface colours (NRFRC, VER WH).

Fabric FMW Fumed micaceous ware (oxidised). The fabric is closely defined with a fine-grained even textured micaceous matrix, initially fired in an oxidising atmosphere to orange and then in a final short phase of 'fuming' using 'wet' smoke to produce a thin black coating over the exterior. Being so fine-grained, a kiln structure was required to ensure that the rise in temperature was slow to prevent the pots exploding as the water of crystallisation was evaporated. The source is unknown but must be in southern Britain, possibly even at Camulodunum itself. In texture the fabric is very similar to 'silty wares', a group of more or less micaceous fine-grained fabrics (always oxidised) which were used for a range of flagons, *lagenae*, honeypots, butt-beaker copies, and lid-seated jars found in the King Harry Lane cemetery. Originally it was thought that some or all were imports, but thin-section analysis suggested that a source could be local to Verulamium and that they were the first pots made using Roman techniques of clay and temper selection, fabrication and firing in the Claudian period (Rigby and Freestone 1988). Typological research demonstrated that wherever the source, it apparently supplied a region extending at least through adjacent parts of Bedfordshire, Cambridgeshire, Essex, Hertfordshire and Northamptonshire. There are *lagenae* or flagons in cremation burials, including the Stansted Airport cemetery, Baldock, the 'Kayser Bondor Burial', Hertfordshire, and Ashton, Northamptonshire.

FSOW Fine sandy oxidised ware (micaceous). Fabric as FMW but surfaces not fumed.

Fabric FSW/EGW Fine sandy ware/early grey wares. A common, non-specific fabric group with fine-grained, even-textured matrix and fine quartz sand temper. In the hand, specimen examples vary from non-micaceous to micaceous, although the mica is not prominent. The surfaces are typically burnished and kiln-fired to grey. Micaceous sandy ware (fabric FMW, FSOW and possibly CSOW) may fall into the group. Just where and by how many potteries it was produced remains to be determined. There was a source at Much Hadham, Hertfordshire, on the main east–west road from Camulodunum, which was working from *c.* A.D. 60, and there may have been one at Camulodunum itself (*CAR* **10**, 219–20). Versions continued to be produced at Hadham in the late Roman period. It remains to be seen how

significant the presence/absence of mica may be in determining the sources and dating. There is just one complete vessel at Stanway, a cup in the Doctor's grave CF47, which provides useful dating evidence for the introduction about A.D. 50 of kiln-fired, reduced, fine sandy wares (*CAR* **10**, 219).

Fabric GBW Glossy burnished ware. Surfaces burnished charcoal grey/black to dark brownish-grey. Fabric reddish-brown, though thicker sherds may have a brown-grey core. The fabric appears moderately fine and clean, sparse to occasional fragments of black burnt organic matter and grog. Typically, on platters the upper inner visible surface was finished with a smooth glossy burnish, while that on the lower outer surface varies from a smooth glossy burnish to rough and unfinished. An unusual feature is multi-pronged combed circles or spirals decorating the upper base, clearly characteristic of a concentrated group of potters if not of one workshop. The forms are post-conquest introductions, and the technology bridges Late Iron Age and Roman methods. The fabric resembles West Stow, Fabric 2, and two forms are similar to West Stow types (West 1990, 76). As the list of potters' stamps shows, some West Stow products did reach Camulodunum (*CAR* **10**, 219 — Smooth ware).

Fabric GTW Grog-tempered wares. Vessels of Late Iron Age potting tradition. Crushed fired clay was the typical Late Iron Age temper used from early in the 1st century B.C. Other inclusions like coarse sand, flint and glauconite occur in GTW depending on the type of clay selected as well as how the added temper was prepared. Fired in a bonfire, the matrix was either grey or brown with black, white and orange argillaceous inclusions depending on their origins, while the surface colours varied from light red-brown to dark brown and could be very patchy.

Fabric GX/GX(H) Other coarse wares, principally locally produced grey wares (*CAR* **10** fabric group). Various fabrics, but predominantly Roman local sandy grey wares. At Stanway all vessels appear to be in sub-fabric GX(H), very coarse sandy grey 'Colchester' fabric (*CAR* **10**, 379).

Fabric HD/HD(F) Shell-tempered and calcite-gritted wares (*CAR* **10** fabric group). Commonly vessels where the predominant temper is crushed shell. At Stanway the vessels in this fabric have been identified on form Cam 259 which only occurs in shell-tempered fabrics (*CAR* **10**, 478–9) as the shell temper has been dissolved out of the fabric leaving voids. Sub-fabric HD(F) hand-made red/brown/black fabric with sparse inclusions (*CAR* **10**, 458).

Fabric HZ Large storage jars and other vessels in heavily tempered grey wares (*CAR* **10** fabric group). Predominantly large storage jars but also other vessels where the fabric has been heavily tempered with grass, straw or other organic material which has burnt out during firing leaving an irregular pitted surface. At Stanway these vessels also commonly contain various quantities of grog temper.

Fabric MVW Mixed vesicular ware. The fine-grained smooth matrix is heavily tempered with coarse black argillaceous inclusions, possibly glauconite or grog, fragments of black burnt organic matter and white sand grains, probably flint. There are also numerous voids throughout the fabric which are most visible at the surfaces. The vesicular effect is due to the leaching of calcareous inclusions after burial or the burning out of organic inclusions during firing and/or the cremation rite. The surfaces are so eroded that it is not possible to identify the finish, but all were presumably burnished, at least on the visible surfaces. All vessels were fired to grey and blue-grey. Given the degree of tempering, no kiln structure was necessary.

Fabric PW 'Pimply' ware. Fine-grained dense matrix with coarse sand inclusions which, when the finish has been eroded, produces a rough, pimply texture to surfaces. Fired in a kiln to light grey-buff (*CAR* **10**, 219–20). A similar fabric occurred in 1st-century A.D. contexts at Baldock, Hertfordshire in a range of decorative tablewares including platters (*CAR* **10**, 220; Stead and Rigby 1986, 265, Fabric 17).

Fabric RCVW Romanising coarse vesicular ware. The fabric is grey or brown-grey in colour and is generally moderately hard. The surfaces are sometimes patchy grey to brown, but are predominantly grey in colour and often appear abraded. The surfaces are generally pitted and vesicular, with small voids from burnt-out or dissolved temper, and tiny flecks of silver mica are visible. The fabric contains dark inclusions or temper that appear to be fragments of burnt organic matter (possibly dung or sawdust) and grog. The vessels appear to be wheel-made and kiln-fired.

Fabric RCW Romanising coarse ware. The fabric colour is grey or red-brown, often with red-brown margins and a grey-brown or grey core. The fabric is generally slightly soft and sometimes has a tendency to laminate. The surfaces are dark grey-brown to dark grey, sometimes with small voids from burnt-out or dissolved temper, and tiny flecks of silver mica are visible. The surfaces are smooth, but vary from almost burnished to a coarse and 'pimply'. The fabric contains dark inclusions, or temper, that appear to be fragments of burnt organic matter (possibly dung or sawdust) and grog. The vessels appear to be wheel-made and kiln-fired.

Fabric ROW Romanising oxidised ware. Surfaces smooth or burnished and reddish-brown. Fabric generally fairly clean with reddish-brown margins and brown-grey core though with occasional dark inclusions of grog and/or possibly organic (dung) temper. (Some vessels in this category would be included in *CAR* **10** under fabric group DZ — fine oxidising wares.)

Fabric SW Sandy ware. A grouping of non-specific fabrics tempered with coarser and more visible mixed sand temper than fine sandy ware (FSW/EGW). Kiln-fired to light grey or blue-grey with a smooth burnished finish, it forms a continuum with fine sandy ware and in some cases simply reflects different production batches rather than different workshops or sources (*CAR* **10**, 219–20). There is only one certain example in the fabric, a close copy of an imported Gallo-Belgic platter in CF403, though a second sherd from BF40 (also probably part of a platter though a different vessel) may be part of this fabric group (*CAR* **10**, 220).

Fabric TN/GAB TN1(A) *Terra nigra*/Gallo-Belgic *terra nigra* 1. Grey to dark grey surfaces with a high-quality slip and fine grey fabric (NRFRC, GAB TN 1).

Fabric TR1(C)/GAB TR1(C) *Terra rubra* 1(C)/Gallo-Belgic *terra rubra* 1(C). Fabric red- to red-orange to pale orange, and surfaces with a polished slip of the same colour range but usually darker than the fabric (NRFRC GAB TR 1C).

Fabric TR3/GAB TR3 *Terra rubra 3*/Gallo-Belgic *terra rubra* 3. Fabric in variety of colours, but commonly pale red fabrics with orange surface unless the surface is fumed to darker brown (NRFRC, GBA TR 3).

Fabric WPW/NOG WH1 White pipe clay ware/North Gaulish (Gallo-Belgic) white ware 1. Fabric cream-white with slightly darker surfaces or pale pink margin (NRFRC, NOG WH 1).

THE POTS FROM FUNERARY CONTEXTS AND PYRE DEBRIS IN PITS

By Valery Rigby

Four of the five burials and ritual deposits richest in imported Gallo-Belgic pottery of the Tiberio–Neronian period in Britain have been found at Camulodunum, one in 1940 in St Clare Drive (Hull 1942) within the site of the Lexden cemetery, and three (BF64, CF47, BF6) at Stanway. They are a snapshot of what was available in the cupboard and the market place at the time of a single event and provide a useful dating tool. For sites like the Stanway cemetery, there is one basic chronological question about each burial or ritual deposit: is it pre-Caesarean, pre-conquest or pre-Boudican? — and the answer to this apparently simple question is central to any cultural interpretation illustrating either continuity or change.

Numerically, pots are the most popular surviving funerary item, with the total for the cemetery of at least 99 in thirteen deposits (*i.e.* the burials and chambers and the pits with pyre-related debris). At Stanway, averages are meaningless, for the number per context varies between a singleton and 23 pots. In addition, the numbers in individual burials/contexts with pyre-related debris differ markedly between Enclosure 1, just one and two pots, Enclosure 4 with one group of 22 pots, and Enclosures 3 and 5 where the range is from two to 23.

Richness can be measured also by whether the pots are imports or more easily obtained local products, *i.e.* made somewhere in the vicinity of Colchester. The 68 imports comprise an impressive 67 per cent, which is way ahead of the King Harry Lane (KHL) cemetery with 29 per cent. As with the total number of pots, averages per context mask the really significant numerical range. There are no imports in the Enclosure 1 contexts and only three in Enclosure 4, so the total of 63 is unevenly divided between seven deposits in Enclosures 3 and 5 where four (BF6, BF64, CF42, CF115) are entirely comprised of imports, but again the numerical range is wide; in one context, two pots out of two (CF115), in another (BF64), fifteen out of fifteen. One assemblage of fourteen pots (CF47) has a token local product apparently to make up a 'place setting' in an otherwise import-dominated burial. This is in contrast to a burial with two local pots and one import (CF72). Finally, one burial (CF403), probably the latest from the enclosures, contains just two local products.

THE CHRONOLOGY OF BURIALS, PITS WITH PYRE-RELATED DEBRIS, AND ENCLOSURES

The dating of individual burials and the enclosures is argued elsewhere and is summarised on pages 436–7. The earliest pot is from pyre-related debris filling pit CF7 which lies outside the enclosure system. It is hand-made and entirely pre-Roman Iron Age in typology and technique and could have been made any time in the 1st century B.C. Although traditional potting techniques survived Roman occupation but apparently not the Boudican revolt, so providing a conventional *terminus ante quem* of A.D. 65, the most likely date range for the manufacture of this pot, based on typology and technology, is 75–25 B.C. Thus, allowing a couple of decades for an 'heirloom' factor, the latest date of deposition would be 5 B.C.

Enclosure 1 is the earliest of the funerary enclosures. Only three pots can be identified as being funerary-related (from AF18 and the chamber AF25), but they and several incidental sherds are also pre-Roman Iron Age in typology and technique, and so a date of manufacture in the 1st century B.C. is likely. There was one imported flagon sherd in the enclosure ditch, but it is small and abraded and can be disregarded. The absence of Gallo-Belgic imports from the funerary-related contexts (AF18, AF25, AF48) supports a date of deposition before 25 B.C. If these contexts in Enclosure 1 do belong to the mid 1st century B.C., then there is a gap of at least as much as a century before Enclosures 3, 4 and 5 were laid out. This is equivalent to a gap of roughly four generations.

Using the pottery alone (and this qualification should be stressed because of the other grave goods from this feature), the earliest funerary-related context in the second stage of use could be burial CF72, for here two traditional Iron Age carinated bowls with a date range 75 B.C. to A.D. 65 are accompanied by an import with a date range A.D. 25 to 65. Theoretically, at least, the burial could be pre-Claudian and so be the earliest in Enclosure 5, despite lying in a position secondary to chamber CF42.

Using only the Gallo-Belgic stamps, the second stage sequence begins with chamber BF6 in Enclosure 3 which is the only deposit to include definitely pre-Claudian imports (13 per cent of the total) and where nothing has to date to the post-conquest period. The date of deposition should therefore lie between A.D. 35 and 50 at the latest. BF6 has numerically the largest assemblage from the site. The chamber CF42 in Enclosure 5 is later than BF6, because it contains a flanged cup Cam 58 which was standardised after A.D. 45 and continued in production until A.D. 70.

If BF6 is pre-Claudian, then Enclosure 3 spans the conquest period because the Warrior's burial (BF64) contains two Claudio–Neronian forms, two flanged cups of Cam 58 and two offset platters of Cam 14. The same two forms also feature in the Doctor's burial in Enclosure 5 (CF47), which is also post-conquest. There may be little difference between it and BF64, since the same die (Stamp 16–19) is represented in both on 'identical' platters. Enclosure 5 also contains the latest burial in the cemetery (*i.e.* CF403) deposited sometime between A.D. 50 and 70. The two pots in CF403 are local kiln-fired products which illustrates how the local ceramic production evolved in the later 1st century A.D. with the introduction of new forms as well as new techniques.

Being datable to around A.D. 60, the assemblage of pottery in BF24 in Enclosure 4 was the latest from the chambers. Although the group only contained three imports, one is a pre-Flavian Central Gaulish colour-coated cup which occurs rarely in graves. Its varied array of local products illustrates how local potters adapted to trading conditions after the Roman occupation. Three workshops producing copies of Gallo-Belgic imports have been identified.

Comparing the chronologies of the imports in the Stanway and King Harry Lane cemeteries, the latter roughly fills the gap between Enclosure 1 and Enclosures 3 and 5 suggesting that the sequence is as follows:

King Harry Lane	**Stanway**
	Stanway Enclosure 1
— a gap in both cemeteries —	
KHL Phase 1	

KHL Phase 2	Burial CF72, Enclosure 5
KHL Phase 3 most burials	central chamber BF6, Enclosure 3
	Stanway Enclosures 3 and 5 (excluding Burial CF403, Enclosure 5)
KHL Phase 3 at least Burial 28, 295, 316	
	Stanway Enclosure 4
	Stanway Enclosure 5, Burial CF403
KHL Phase 4	

CHOICE OF POTS

The typological and functional range differs markedly between Enclosure 1 and Enclosures 3, 4 and 5, probably as a result of chronological differences, but possibly also due to the very small sample of just three or four vessels in the former. In Enclosure 1 (AF18, AF25, AF48), there are two closed-jar forms and one unusual straight-sided bowl or mug. They are Late Iron Age products for a Late Iron Age market showing no influence of imports in form, function or technique, although the latter must have been influenced by lathe-turned wood or shale containers. The largest jar was used as the cremation urn, the others were accessory vessels like the single pot in the isolated pyre-debris pit CF7.

In contrast, the functional range in Enclosures 3, 4 and 5 consists of so-called 'tableware', *i.e.* platters, footring cups, flagons (single- and two-handled) to decant, display and consume food and drink formally in the Roman manner, and this is regardless of whether the pots are imports or local products. Whatever happened in life, in burial there has been a complete change in manners which integrates Stanway into the customs of the wider Roman world, for while the burials in Enclosure 1 could only be found in a particular region of southern Britain, those in Enclosures 3 and 5, with the exception of burial CF72, could have been found in Gallia Belgica and Germania Inferior, that is between the Loire and lower Rhine. Given this, the inkwell in burial BF67 takes on enormous significance with the growing need for written communication.

Compared to Camulodunum, the typological range of imports, particularly the platters and cups, is limited, with few pre-Claudian products, which implies that chronology is the crucial factor. In burials BF64 and CF47, one small platter and a footring cup seem to match up into individual place settings, along with an amphora and a large flagon presumably for decanted liquid, wine, beer or water. Even the badly fragmented assemblages in the central chambers BF6 and CF42 display a probable functional symmetry occasionally present in the King Harry Lane cemetery and present in the St Clare Drive burial (Hull 1942) within the Lexden cemetery.

When choosing imports as grave goods, whether at the behest of the deceased or as their own preference, the mourners associated with the Warrior's burial and Doctor's burial demonstrated their ability to acquire these exotic objects. Just how rare they had become by A.D. 50 is questionable, but one thing is incontrovertible; the imports were the most colourful, glossy and flamboyant pots available at the time. They were in marked contrast to the earth colours of Late Iron Age techniques and the muted colours of early vessels produced using Roman techniques like those which occurred in the chamber BF24 in Enclosure 4. The most striking would have been the Warrior's burial BF64, with white, pale yellow, orange, red, blue, black and finally a glazed green miniature flagon; then there was his collection of glass and bronzes! The grave goods in the Doctor's burial too must have been almost as spectacularly colourful (CF47), and even the secondary grave BF67 with just two pots consisted of one red inkwell and a white *lagena*. The similarity in the assemblages in the two burials may indicate close family ties. Gallo-Belgic imports may predominate, but Stanway shows that increased competition from other regions of Gaul is coming on stream, particularly the samian factories of South Gaul but also the specialist workshops around Lyon in Central Gaul.

Comparison with the St Clare Drive burial (referred to above), an assemblage rich in imports, highlights two notable differences. The first and more easily explicable difference is the absence of large-diameter Gallo-Belgic platters from the Stanway burial groups, although they

are present in the ?mortuary enclosure BF32 in Enclosure 4 and the chamber CF42 in Enclosure 5 which is almost certainly the result of chronology, namely the cessation by A.D. 40 to 50 of the production of large platters. The second difference is a complete surprise and not easily explained — the total absence from burials and the chamber in Enclosure 5 of butt-beakers of Cam 113 in parchment wares. This vessel was so common at the Sheepen site at Camulodunum that the excavators considered it a local product and not an import (Hawkes and Hull 1947, 238). There is one in the St Clare Drive burial and three in the Sheepen Cremation Group 3 (Niblett 1985, 25–6, fig. 15), so it was acceptable as grave goods in the specific area. There is nothing in its area of distribution or dating to account easily for the absence at Stanway of the single most common fineware type in the King Harry Lane cemetery and also in cremation burials in southern Britain generally (Parfitt 1995). The situation is rendered even more inexplicable by the occurrence of Cam 113 beakers in burials at Stanway on Site D (DF1.1 and DF28.1; pp. 402, 405) and sherds in the ditch of the ?mortuary enclosure in Enclosure 4, and in ditches of Enclosure 3, 4 and 4/5 where a minimum of eight vessels is represented, all pretty thoroughly fragmented and abraded and with almost no joins.

THE LATE IRON AGE AND ROMAN POTTERY FROM THE ENCLOSURE DITCHES AND THE DITCHES OF ?MORTUARY ENCLOSURES BF32 AND CF43–6 (FIGS 138–44; TABLES 37–42)

By Stephen Benfield

THE NATURE OF THE ASSEMBLAGE (FIGS 138–44; TABLES 37–8)

Late Iron Age and Roman pottery was recovered from all of the enclosure ditches and the ditches of the ?mortuary enclosures BF32 and CF43–6, but the amount varied greatly according to the context and circumstances of the excavation (FIG. 138; TABLE 37). The pottery assemblages from the ditches in Enclosures 3–5 proved to be different in composition to the assemblages from the burials, and the Gallo-Belgic elements in those two groups also differed.

The Late Iron Age/Roman pottery from Enclosure 2 was very small in quantity and only occurred in the main fill of the enclosure ditch. Only a small part of the enclosure ditch of Enclosure 1 was excavated, and the amount of pottery recovered from it was correspondingly limited. The much more extensive excavations of the ditches in Enclosures 3–5 provided a pottery assemblage which was not only much larger, but accounts for most of the Late Iron Age and Roman pottery that survived in those enclosures.

Much of the pottery from the ditches consisted of sherd clusters from smashed pieces of broken pots (termed here 'partial pots'). Despite the aggressive (*i.e.* acid) soil conditions which have degraded surfaces and eroded the sherd edges, it proved possible to identify sherds relating to at least 149 different pots and, in some cases, partly reconstruct them. This has provided approximate minimum numbers of broken vessels represented in the ditches (TABLE 38). Pots have been illustrated where enough of the profile can be reconstructed (FIGS 139–44).

Overall, the pottery groups from the enclosure ditches and ?mortuary enclosures represent the types and range of vessels that would be expected in domestic assemblages of the Late Iron Age and early Roman periods. The Gallo-Belgic and Gaulish imports from the ditches add status and extend the range of vessel functions to include flagons and a few cups. The approximate composition of the vessel types in the assemblage is as follows (TABLE 39): jars 34% (49), beakers 19% (28), platters 10% (15), bowls 10% (15), flagons and two-handled flagons 6% (8), cups 5% (7), amphoras 7% (10), and other 9% (13).

Apart from the Gallo-Belgic wares and a few sherds of amphoras and samian, the pottery is mostly, if not almost entirely, of local origin. Although the two shell-tempered pots (FIG. 142, Pots 104–5) may be part of the South Essex shell-tempered tradition and therefore may have originated from the south of the county, the only certain regional import is a flagon handle from the Verulamium area (Enclosure 5, Pot 134).

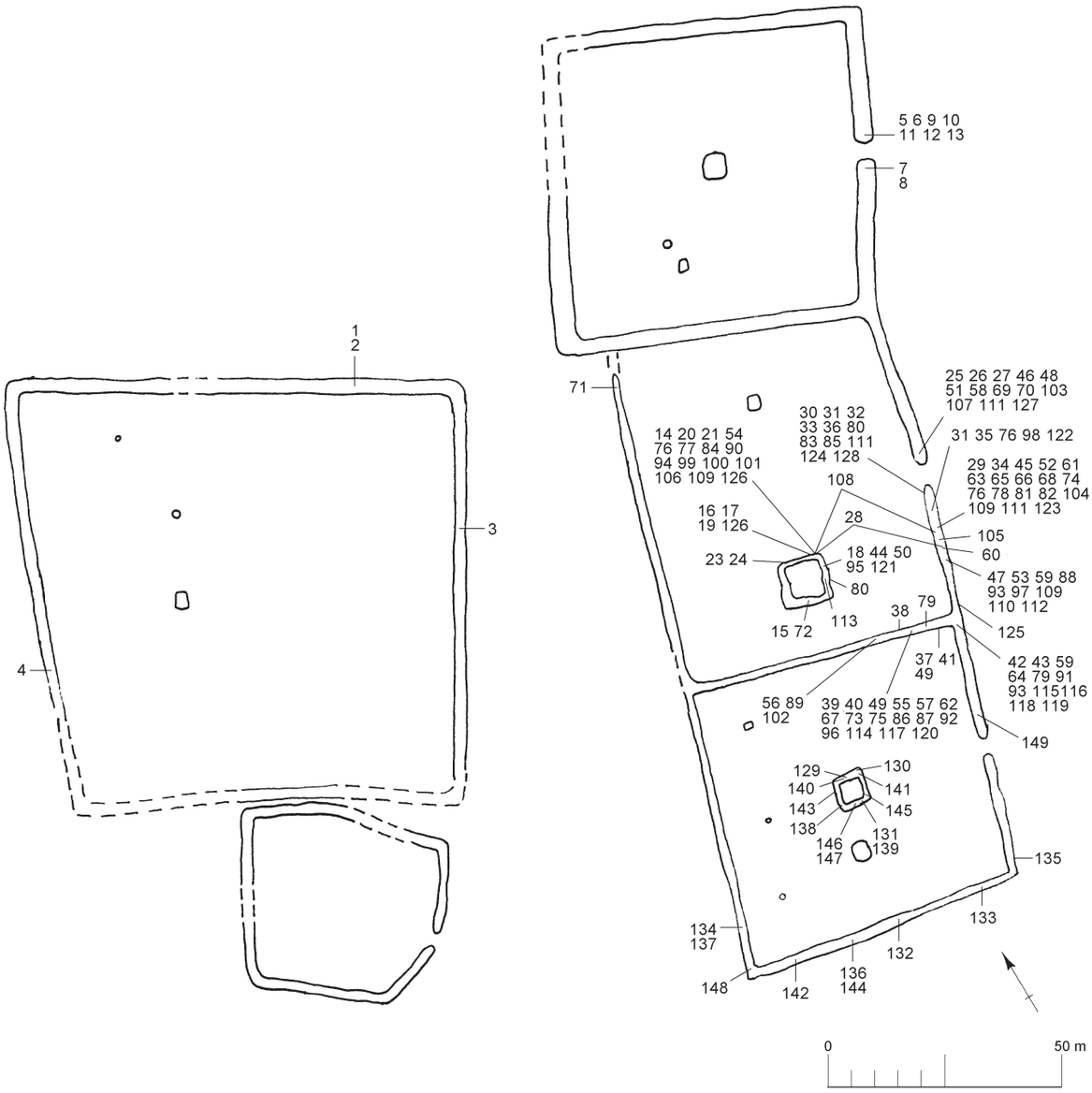


FIG. 138. Distribution of pottery vessels in the ditches

The pottery reflects a range of vessels relating to the storage, preparation, serving and consumption of food and drink. Among the coarse wares, most of the cooking pots, together with some of the jars, show signs of use with sooting on external surfaces, and there are traces of carbonised organic matter on Pots 105 and 111. The few post-firing holes noted in bases (FIG. 141, Pots 95–6) and necks (FIG. 139, Pot 53; FIG. 141, Pot 92) of some coarseware pots are also not uncommon on occupation sites. Although not unusual among domestic assemblages, the presence of the large storage jars deserves comment. They occur as sherds in all the enclosures, but are best represented among the large assemblage associated with Enclosure 4 (FIGS 142–3). The presence on the site of so many of these vessels is somewhat surprising, considering that they were large and heavy and must have been rather awkward to move around easily.

Collectively, the enclosure ditches and ?mortuary enclosures of Enclosures 3–5 produced a different pottery assemblage from that in the burials and chambers of these enclosures. The range of forms differs, with only the two following exceptions. Two-handled flagon sherds in

TABLE 37: STANWAY POTTERY OTHER THAN AMPHORAS FROM THE ENCLOSURE DITCHES AND PYRE-SITES

	Enclosure 1 ditches			*Enclosure 3 ditches*			*Enclosure 4 ?mortuary enclosure*			*Enclosure 4 ditches*			*Enclosure 5 ?mortuary enclosure*			*Enclosure 5 ditches*		
Fabric	*Cam form*	*fabric weight (g)*	*fabric EVE*	*Cam form*	*fabric weight (g)*	*fabric EVE*	*Cam form*	*fabric weight (g)*	*fabric EVE*	*Cam form*	*fabric weight (g)*	*fabric EVE*	*Cam form*	*fabric weight (g)*	*fabric EVE*	*Cam form*	*fabric weight (g)*	*fabric EVE*
BPW				113	106	0.40	113 (?4+)	71	0.38	113 (?4+)	265	0.40	113	1				
CSOW					19											158	530	0.40
DJ					1			1		140D	5	0.20		11		154, 154/155	245	0.10
FJ																f	10	
FSOW	14/28	160	0.20															
GBW		2			6		?28, j, j	582	0.20	28C (2), 32, 221, 222, 230, j	1,117	1.05						
GTW	229, 263	340	0.48		29		j	87	0.13	24C, 28, 32, j, p	355	0.44	lid	98	0.18	251	895	0.82
GX		3			10			1		266	36	0.06		18		243–244/ 246, b (307?)	515	0.65
HD							258C	35	0.28	258C (2)	350	1.12						
HZ		175			5		254, 270B, ?271, 273	5,602	1.22	259, 270B (4+), ?271, 273 (3)	15,163	4.68		103		271 (?2)	411	0.10
RCVW							?218, 266 (?3)	1,446	2.14	266	496	0.85						
RFOW				114, f/l	62			48	0.28	68, ?91, bk	272	0.59						
RCW		68	0.21	266 (2)	120	0.45	24, ?30, 109, (119), 119B, 218 (2), 231/ 232, 266 (2+), j, j/bk, p	4,387	4.16	30, 44A, 92, 112, 119, 119A(4), 218 (3), 222, 228, ?230, 259, 266, (11+), j, j, j, j, j, j/b, pj/b	15,205	2.93	212–17, 218 (2+), 266	502	1.84		144	0.44
RSOW				f/l	19											158	530	0.40
SW										56, pl	56							
TN							5, 7/8–8	54	0.15	8, 58, lp	149	0.39						
TR1										74 (?2)	97		(74)	3				
TR3							84, 112/91, bk	25		84, 91, 112Cb (?2+), bk	106	0.53		1	10			

Key: b – bowl, f/l – flagon/lagena, f – flagon, lp –large platter, J – jar, j/b – jar or bowl, j/bk – jar or beaker

TABLE 38: MINIMUM NUMBER OF BROKEN POTS REPRESENTED IN THE ENCLOSURE DITCHES AND DITCHES OF THE ?MORTUARY ENCLOSURES

Enclosure	*?Mortuary enclosures*	*Enclosure ditches*	*Minimum number of pots*
1		4	4
3		9	9
4	27	88	115
5	11	10	21
total	**38**	**111**	**149**

TABLE 39: APPROXIMATE NUMBER OF IDENTIFIED EXAMPLES OF VESSEL TYPES FROM THE ?MORTUARY ENCLOSURES AND ENCLOSURE DITCHES AT STANWAY

Vessel type	*Enclosure 1*	*Enclosure 3*	*Enclosure 4 ?mortuary enclosure*	*Enclosure 4 ditch*	*Enclosure 5 ?mortuary enclosure*	*Enclosure 5 ditch*	*Total*
flagon	1	3	1	1	1	3	10
cup				5	1	1	7
beaker		2	9	20	1		32
platter	1		5	10			16
bowl	1			9	3	3	16
jar	1	2	8	30	1		42
narrow neck jar			1				1
large storage jar			1	10		1	12
lids					1		1
amphora		2	1	2	3	2	10
other			1	1			2

fabric WPW (Pots 5 and 7) from Enclosure 3 ditch terminals are probably of the same form (Cam 161) as pots BF24.2 and BF24.3 from chamber BF24, and a cup (FIG. 144, Pot 140) from the ?mortuary enclosure BF43–6 in Enclosure 5 is of the same form as the two in the cremation burial CF72 (CF72.2–3). The range of fabrics too does not overlap, apart from two platters (FIG. 139, Pots 46 and 49) in fabric GBW from the Enclosure 4 ditch which are from the same workshop as the platters from the chamber BF24.

The differences in fabric types is largely because the burials are dominated by imported products, especially Gallo-Belgic wares, which are almost absent from the ditches.

The assemblage from the ditches of Enclosure 5 is the only one of its kind to contain sherds or partial vessels which have been exposed to sufficient heat to discolour or disfigure them. Despite their modest number, these vessels are important because they would appear to provide a direct link between the breaking of the pots scattered in the ditches and the funerary ceremonies. Most of them, *i.e.* Pots 129, 130, 138 (FIG. 144; a ?waster), and 141 (FIG. 144) came from the ?mortuary enclosure CF43–CF46, so that evidence of scorching or burning is not particularly surprising in these cases. However, there were two pots (Pot 37 and the near-complete Pot 135) from the enclosure ditches that had been burnt. Pot 130 is probably the same pot as the base representing Pot 37 (from enclosure ditch BF4/CF1), and both had been burnt or scorched. Pots 135 and 138 (FIG. 144) from the ?mortuary enclosure CF43–CF46 had been badly scorched on one side, as if they had been placed on the ground close to the edge of a pyre rather than on it.

DATE (FIGS 139–44; TABLE 40)

Collectively the pottery from the ditches spans the Late Iron Age and the early Roman periods. The earliest pottery from the enclosure ditches are two grog-tempered Late Iron Age pots (FIG.

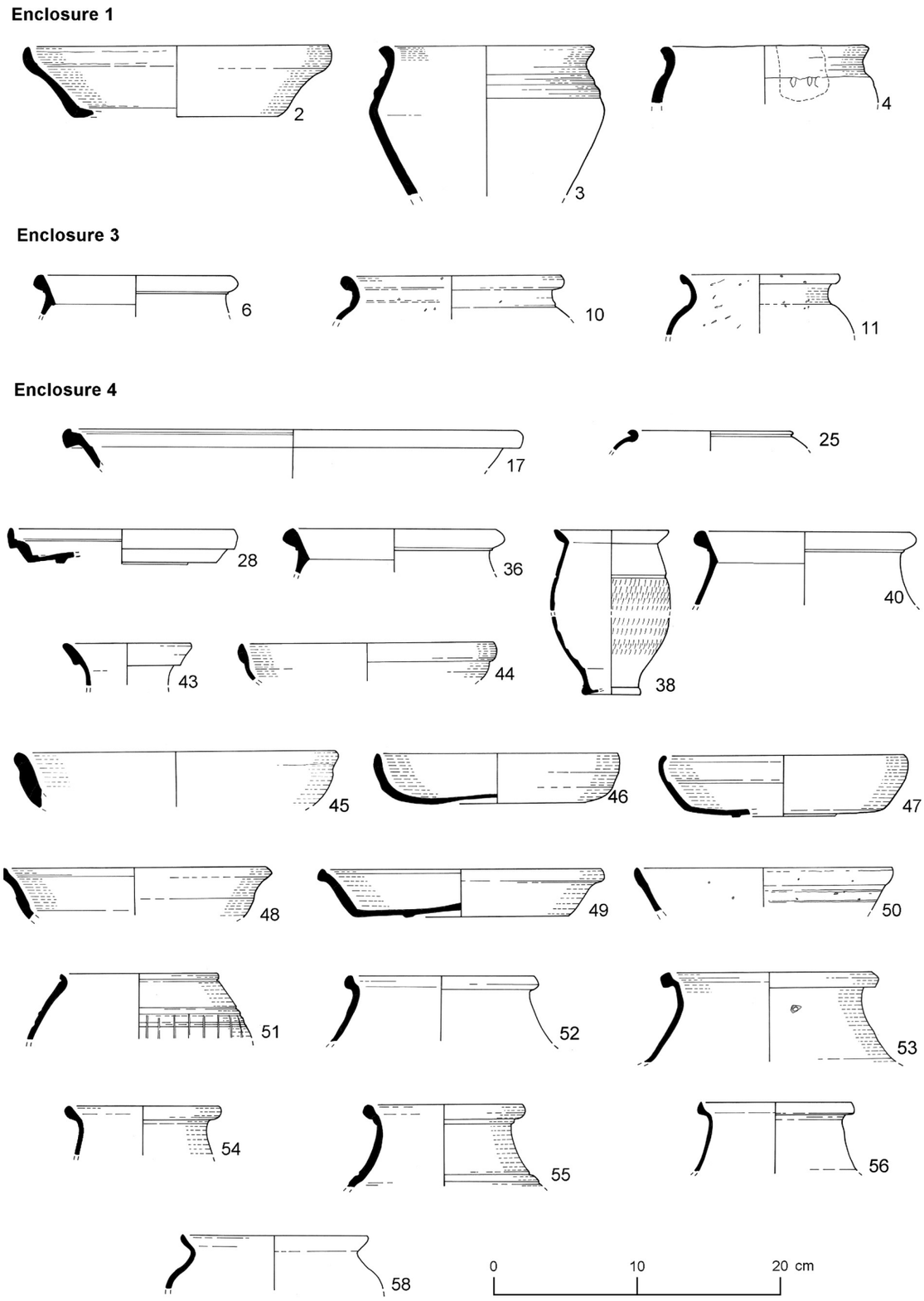


FIG. 139. Pottery vessels from the ditches of Enclosure 1 and Enclosures 3–4: Pots 2–58 (scale 1:4)

139, Pots 3–4) from the lower fill of the Enclosure 1 ditch. These can be dated to after *c.* 75–50 B.C., and have parallels at Sheepen, which is dated (not necessarily correctly) to after *c.* A.D. 5. The pottery from the ditches in Enclosures 3–5 include imported Gallo-Belgic wares, introduced *c.* 20–10 B.C. From Enclosure 5, there are Roman fabrics and pottery vessel types introduced at the conquest which remained current until the early to mid 2nd century, although there is nothing about them which need date to later than the Claudio–Neronian period.

For Enclosures 3–5, close dating of the coarsewares on their own is difficult. The pot types from the ditches are predominantly of native Late Iron Age/Gaulish background. The forms and fabrics contrast with pottery assemblages from the fortress/early *colonia*, which are of post-conquest date. The Stanway pottery is dominated by Romanising fabrics of intermediate Late Iron Age/Roman potting technique. A search of the *CAR* **10** Roman pottery fabric archive (in Colchester Museums) produced no clear parallels for the common fabric types at Stanway, although it should be borne in mind that the Stanway pottery has suffered from burial in acidic soils which makes identification of fabrics more difficult.

The presence of *terra rubra* in the ditches of Enclosures 4 and 5 may be indicative of a relatively early date for these contexts, since it is absent from stratified deposits in London where occupation is thought to date from the A.D. 50s (Davies *et al.* 1994, 166). *Terra rubra* is well represented among the Gallo-Belgic wares in Enclosures 4 and 5 with sherds from eleven pots (Pots 19, 20, 24, 25, 31–34, 37–39) from Enclosure 4 and one pot (Pot 130) from Enclosure 5.

Overall, the earliest date for at least some of the pottery associated with Enclosures 3–5 is the late 1st century B.C. There is nothing which need date to later than *c.* A.D. 70. The predominance of Romanising fabrics suggests the majority of the pottery from Enclosures 4 and 5 is of early post-conquest (Claudio–Neronian) date. The absence or low incidence of common early post-conquest fabrics and forms and the presence of *terra rubra* among the assemblages supports a Claudian date (p. 437).

The pottery assemblages from the ditches are also difficult to date by enclosure. Late Iron Age grog-tempered wares, Gallo-Belgic/Gaulish wares and early Roman fabrics and forms occur in all the enclosure ditches (except Enclosure 2). This is probably a result of the ditches being left open so that pottery sherds accumulated in them during the later life of the enclosures. Nevertheless, there are differences between the dates of each of the assemblages which can be described as follows.

Enclosure 1. Excavation of the Enclosure 1 ditches was limited, making dating difficult. However, sherds from two Late Iron Age pots came from the lower ditch fill, *i.e.* a Cam 263 (Pot 4) and a Cam 229 (Pot 3), the latter being a partial vessel (FIG. 139; TABLE 40). The pots date from *c.* 75/50 B.C. to about *c.* A.D. 5, the later date because they occur at Sheepen (Niblett 1985, 1–3, where Cam 229 is moderately well represented, but Cam 263 less so (TABLE 38). The only Gaulish import, a single sherd from a flagon (Pot 1) dated A.D. 10–60, is from the main ditch fill. There was also a small quantity of early Roman pottery from the middle of the main fill (pp. 69–70) among which was a partial pot, a Cam 14/28 platter of probable Claudio–Neronian date (FIG. 139, Pot 2). Although the pottery from the lower ditch fill is limited, the Late Iron Age pots and the absence of any imports suggest a date after *c.* 70/50 B.C. and possibly before *c.* 10 B.C. for the earliest ditch fill.

Enclosure 2. A very small quantity of grog-tempered and Late Iron Age/early Roman pottery came from the main fill of the Enclosure 2 ditch. Six sherds from the ditch terminal forming the north-east side of the entrance are all probably from one pot. They were found a short distance from the funerary feature CF415 (pp. 47–8), and the sherds could thus represent the deposition of a partial pot associated with it. The sherds demonstrate that the ditch must still have been open in the Late Iron Age and early Roman periods, and that funerary-related activities may have taken place there focused on the ditch.

TABLE 40: THE INCIDENCE OF POTTERY FORMS (OTHER THAN AMPHORA) FROM THE ?MORTUARY ENCLOSURES AND ENCLOSURE DITCHES AT STANWAY AND SHEEPEN, COLCHESTER
(after Hawkes and Hull 1947, 277–81)

Cam form	*Stanway*							*Sheepen*	
	Enc. 1 ditch	*Enc. 3 ditch*	*Enc. 4 ?mort. enclosure*	*Enc. 4 ditch*	*Enc. 5 ?mort. enclosure*	*Enc. 5 ditch (pyre sites & ditches)*	*Totals*	*Cam form*	*Totals*
5			1				1	5	376
8			1	1			2	8	393
24			1	1			2	24	54
28			?1	3			?4	28	124
14/28	1						1	14b–c	85
30			?1	1			?2	30	3
32				2			1	32	18
44A				1			1	43 & 44	7+
56				1			1	56	675
58				1			1	58	67
68				1			1	68	2
74				?2	?1		?2–3	74	38
84			1	1			2	84	275
91			?1	?2			?3	91 & 91D	57+
92				1			1	92	60
109			1				1	109	22
112			?1	?3+			?4+	112	597+
113		1	3–4+	3–4+	1		8+	113 & 113B	2750+
114		1					1	114A & B	262
119			2	5			7	119	704
140D				1			1	140D	32
154 & 154/155						1	1	154 & 155	99
158						1	1	158	6
212-217					1		1	212–17	172
218			?3	3	2		?8	218	1000+
221 & 222				3			3	221 & 222	129
228				1			1	228	2
229	1						1	229	34
230				?2			?2	230	8
231/232			1				1	231 & 232	496
243–44/246						1	1	243, 244 & 246	288
251						1	1	251	10
254			1				1	254	238
258			1	2			3	258	58
259				2			2	259	648
263	1						1	263	10
266		2	?5	13+	1		?21+	266	1000++
270A & B			1	4+			5+	270	1000++
271			?1	?1		2	?4+	271	1000++
273			1	3			4	273	37

Enclosure 3. As with Enclosure 1, the quantity of pottery recovered from the enclosure ditch is very small. Gaulish imports of flagons and butt-beakers (Pots 5–7) and sherds of Dressel 2-4 amphora (Pots 12–13) place the ditch fill after the late 1st century B.C. (TABLE 40). There is no samian, although this is probably a reflection of the small quantity of pottery recovered from the enclosure ditch. Also, there are no common post-conquest pot forms or pot forms closely associated with assemblages in the fortress/*colonia* (TABLE 42). However, there are two rims from necked jars of the Late Iron Age/early Roman form Cam 266 (Pots 10–11) from the base of the ditch fill. Overall, the pottery assemblage cannot be dated more closely than the late 1st century B.C. to the early–mid 1st century A.D.

Enclosure 4. The pottery from the enclosure ditch and the ?mortuary enclosure makes up the largest assemblage from the site. Among the coarsewares, there is a near absence of common early post-conquest forms or forms associated with assemblages in the fortress/*colonia* other than the Late Iron Age/early Roman jar form Cam 266 (TABLE 40). However, the assemblage should probably date to after the conquest. There is one collared flagon rim (FIG. 139, Pot 43) of form Cam 140 which is probably post-conquest, although this came from the ditch shared with Enclosure 5 (BF4/CF1). Given the predominance of Romanising coarsewares and the presence of South Gaulish samian, the assemblage should probably be dated to *c.* A.D. 43–50.

Enclosure 5. The pottery assemblage associated with Enclosure 5 differs from the other enclosures. Overall Gaulish imports are limited and butt-beakers are scarce, while post-conquest forms and fabrics of the type introduced and used in the fortress/*colonia* (including the Late Iron Age/early Roman jar form Cam 266) are present (TABLE 40). There are ring-neck (Cam 154; FIG. 144, Pot 133) and pinch-mouth flagons (Cam 158; FIG. 144, Pot 132), a reed-rim bowl (Cam 243–244/246; FIG. 144, Pot 137), and a second bowl in Roman grey ware (FIG. 144, Pot 136), and a sherd from the Brockley Hill/Verulamium region potteries (Pot 134). The assemblage is likely to belong to the *c.* mid A.D. 40s, and is probably not later than the Neronian period.

DEPOSITION (TABLE 41)

The manner in which the pottery was deposited in the ditches and ?mortuary enclosures at Stanway is of particular interest. Much of it was disposed of as broken-up parts of pots, forming sherd clusters and localised sherd spreads. Although some are nearly complete, all appear to represent broken 'partial pots' rather than whole vessels. For Enclosures 3–5, on average 19 per cent of each of the vessels was represented in the sherds as measured by estimated vessel equivalence (eve). This figure drops to 9.4 per cent for Enclosure 3 alone (TABLE 41).

A partial pot of Late Iron Age date (FIG. 139, Pot 3) has been identified as coming from the lower fill of the enclosure ditch of Enclosure 1. This suggests that pottery was broken and deposited in the enclosure in the same manner as occurred on a wider scale in Enclosures 3–5. An early Roman partial pot from the main ditch fill (FIG. 139, Pot 2) indicates at least one episode of this nature in the enclosure in the early Roman period. Evidence for the breaking of pots appears to be absent in Enclosure 2, although small fragments of an oxidised ware vessel (fabric RFOW) from the east terminal of the enclosure ditch could possibly indicate the deposition of a partial pot. Sherds of deliberately broken pots had clearly been deposited in the enclosure ditch of Enclosure 3, but deposition seems to have been restricted to the ditch terminals forming the entrance. It is probable that Gaulish flagon sherds (Pots 5 and 7) found on either side of the entrance are from the same pot, although there are no joining sherds to prove this supposition.

Some of the groups of sherds in Enclosure 4 were mixed and contained parts of more than one vessel, showing that some of the partial pots must already have been broken before they entered the ditches. The concentration of pottery in the south-east area of Enclosure 4 may indicate that the pots were broken and discarded in and around this area before being deposited in the ditch. Enclosure 4 is the only enclosure where parts of pottery vessels (*i.e.* Pots 28 and 108) have been positively identified in more than one feature (FIGS 139, 142). Joining sherds of

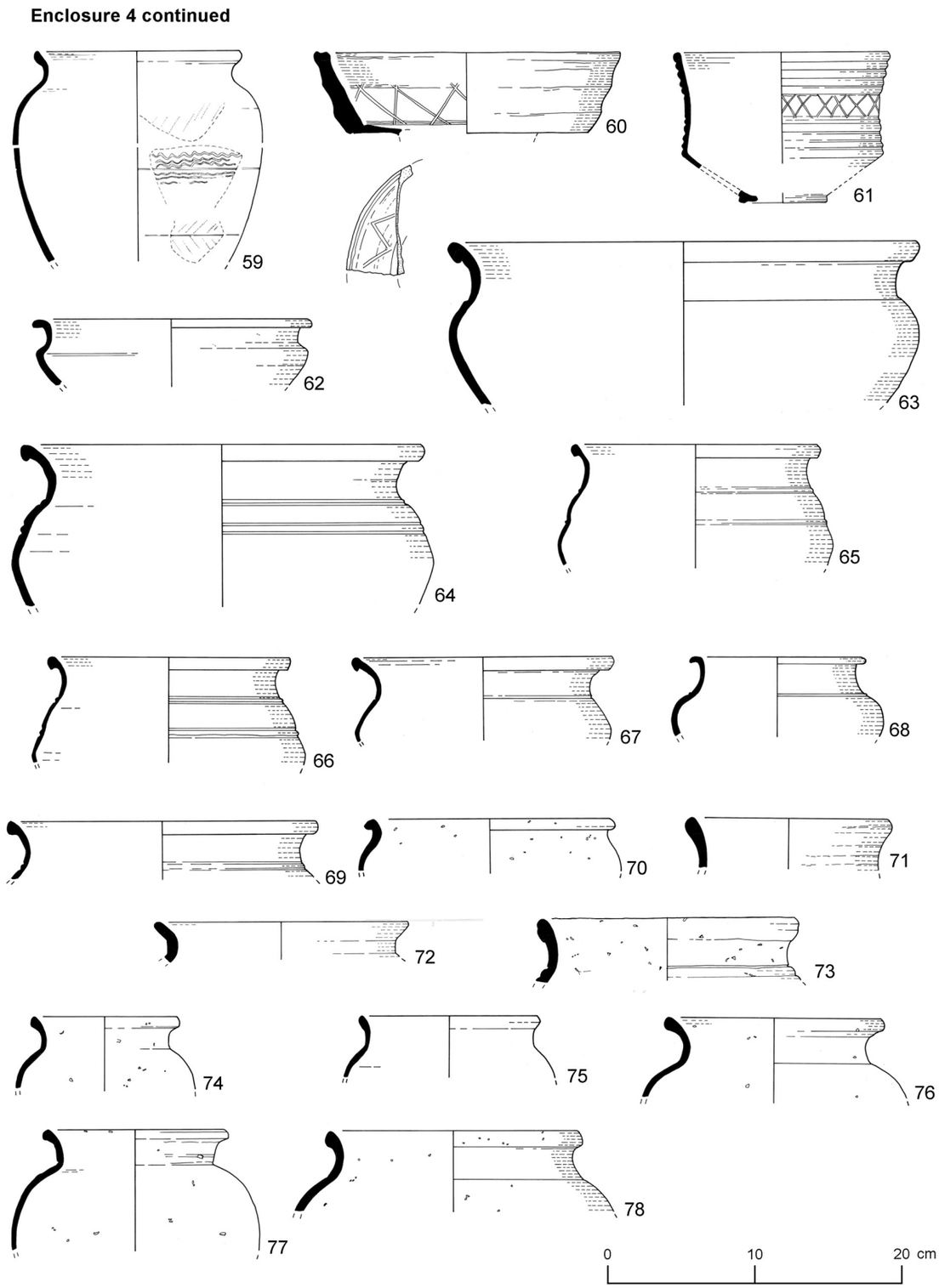


FIG. 140. Pottery vessels from the ditches of Enclosure 4: Pots 59–78 (scale 1:4)

TABLE 41: ESTIMATED VESSEL EQUIVALENCE (EVE) AS A PERCENTAGE OF IDENTIFIED VESSELS

Enclosure	*Number (approx.) of identified vessels*	*Total eve*	*Eve as percentage of number of identified vessels*
3	9	0.85	9.40
4	115	22.18	19.30
5	21	5.03	23.90
total/overall %	**145**	**28.06**	**19.35**

these pots were recovered from the ?mortuary enclosure BF32 and the enclosure ditch BF40/CF5. Moreover, although not joining, sherds from Pot 109 (FIG. 142) were distributed in more than one place (?mortuary enclosure BF32 and the enclosure ditch BF40/CF5), and these are sufficiently distinctive to allow them to be confidently assigned to the same vessel.

Of all the broken pots deliberately discarded in the ditch of Enclosure 5, three (FIG. 144, Pots 132, 135, 136) were almost complete. In Enclosure 5, no joining sherds were found to link the pottery from the enclosure ditches with the pottery from the ?mortuary enclosure-related CF43–6, although Pots 37 and 130 could be from the same pot, thus providing the missing connection.

Stratification of the broken pots in the ditches is interesting. The sherds in the enclosure ditches were not deposited in them when they were freshly dug, but shortly afterwards, maybe after a period of a few months or years had passed (p. 436). This was especially evident in Enclosure 5 and the ditch BF41/CF1 (which is common to Enclosures 4 and 5), where the broken pots lay at the base of the main ditch fill (as opposed to the lower, 'rapid' fill; *see* p. 436). Although much of the ditch of Enclosure 4 was mechanically excavated, the pottery occurred in clusters and presumably was similarly low in the ditch fill. Some of the pot sherds in the ditches of the ?mortuary enclosures were near the base of those features showing that they must have found their way into the ditches soon after they were dug.

There are some significant depositional patterns. The quantity of pottery deposited in Enclosure 4 is substantial (115 identified pots being 79 per cent of the 145 identified from Enclosures 3–5), and suggests that more pottery was used and broken in this enclosure than in all the others put together. Almost all the broken pottery was disposed of in the eastern half of the enclosures. This is in contrast to the burials, which are all located in the western halves, and may explain the near-absence of residual pottery in the backfill of the burials. The focus of pottery deposition in Enclosures 3 and 4 was at their entrances, whereas in Enclosure 5 this was clearly not the case. In Enclosure 5, the partial pots appear more discrete and isolated in their placement than in Enclosure 4, but this may simply reflect the lower numbers of pots represented there. Concentration of pottery sherds from the ?mortuary enclosures in Enclosures 4 and 5 is greatest in the ditches closest to the chamber, and thus presumably reflects the position of the chambers.

THE POTTERY ASSEMBLAGE IN RELATION TO THE CONTEMPORARY POTTERY ASSEMBLAGES FROM THE FORTRESS AND EARLY COLONIA (TABLE 42)

The rarity or absence at Stanway of common pottery forms and fabrics which appear in assemblages from the fortress/*colonia* and are introduced at the conquest requires some discussion. In pottery groups from the fortress/*colonia*, it is well-fired, often hard, fabrics which predominate (*CAR* **10** archive fabric collection, Colchester Museums). Gallo-Belgic wares/Gaulish imports, especially Cam 113 butt-beakers and Cam 161 two-handled flagons, are rare or absent. Rather than butt-beaker forms, the globular/ovoid beaker Cam 108 is common, and there are small cups (Cam 62) and beakers (Cam 94) in early fineware. The predominant flagon types are single-handled collared flagons (Cam 140) with ring-neck flagons (Cam 154). Mortaria (Cam 191–195) also form a consistent part of pottery assemblages (TABLE 42).

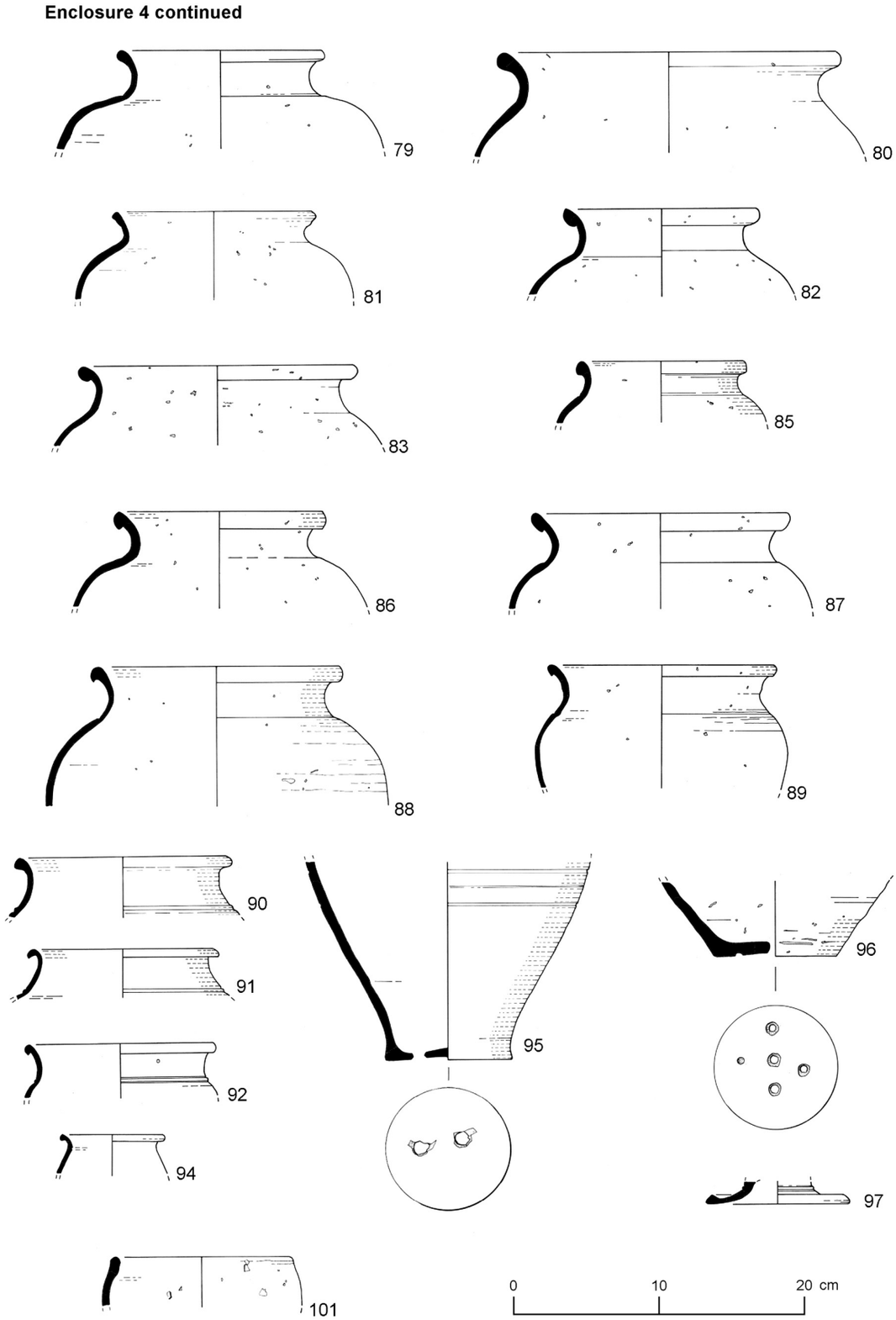


FIG. 141. Pottery vessels from the ditches of Enclosure 4: Pots 79–101 (scale 1:4)

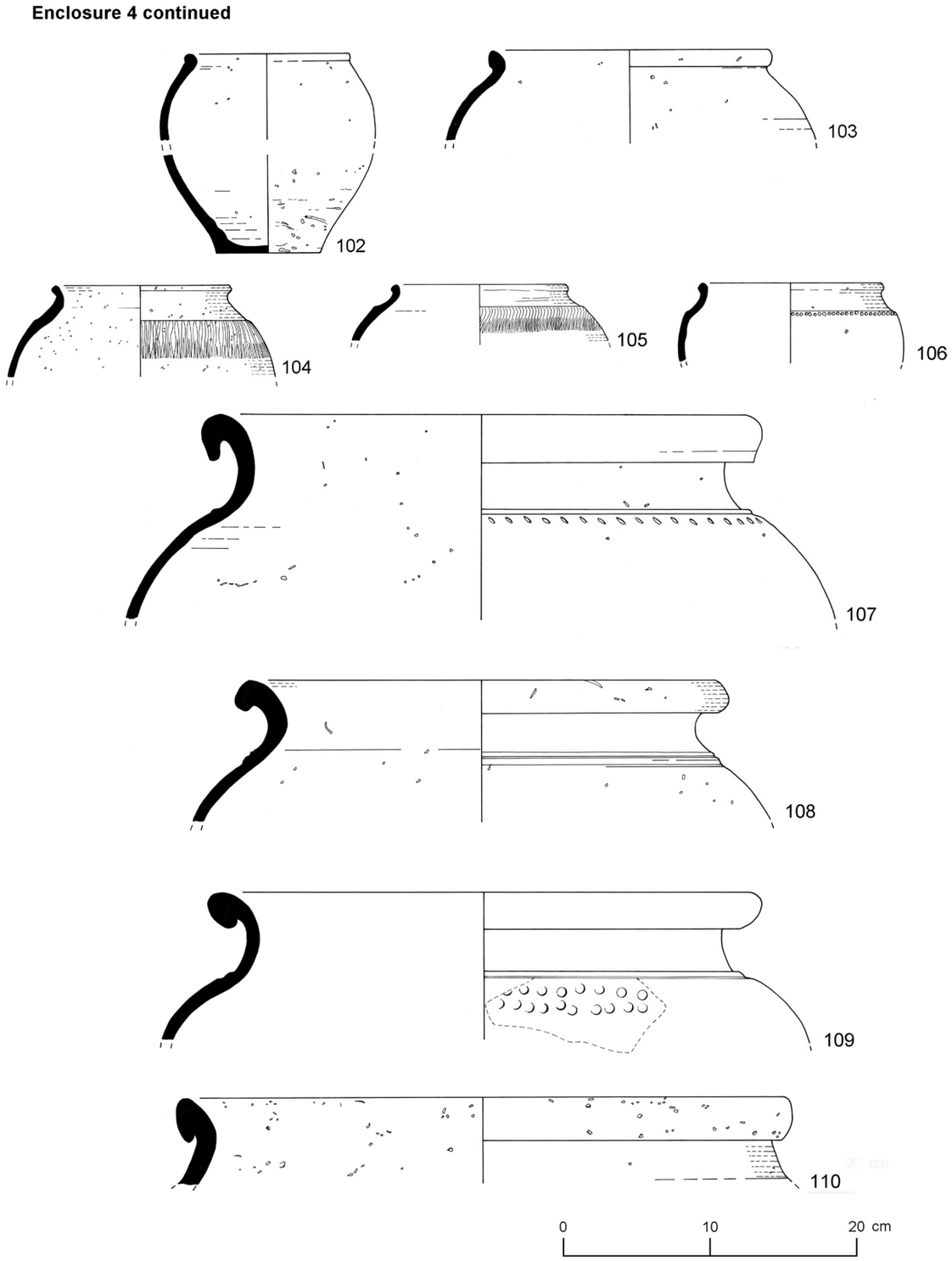


FIG. 142. Pottery vessels from the ditches of Enclosure 4: Pots 102–110 (scale 1:4)

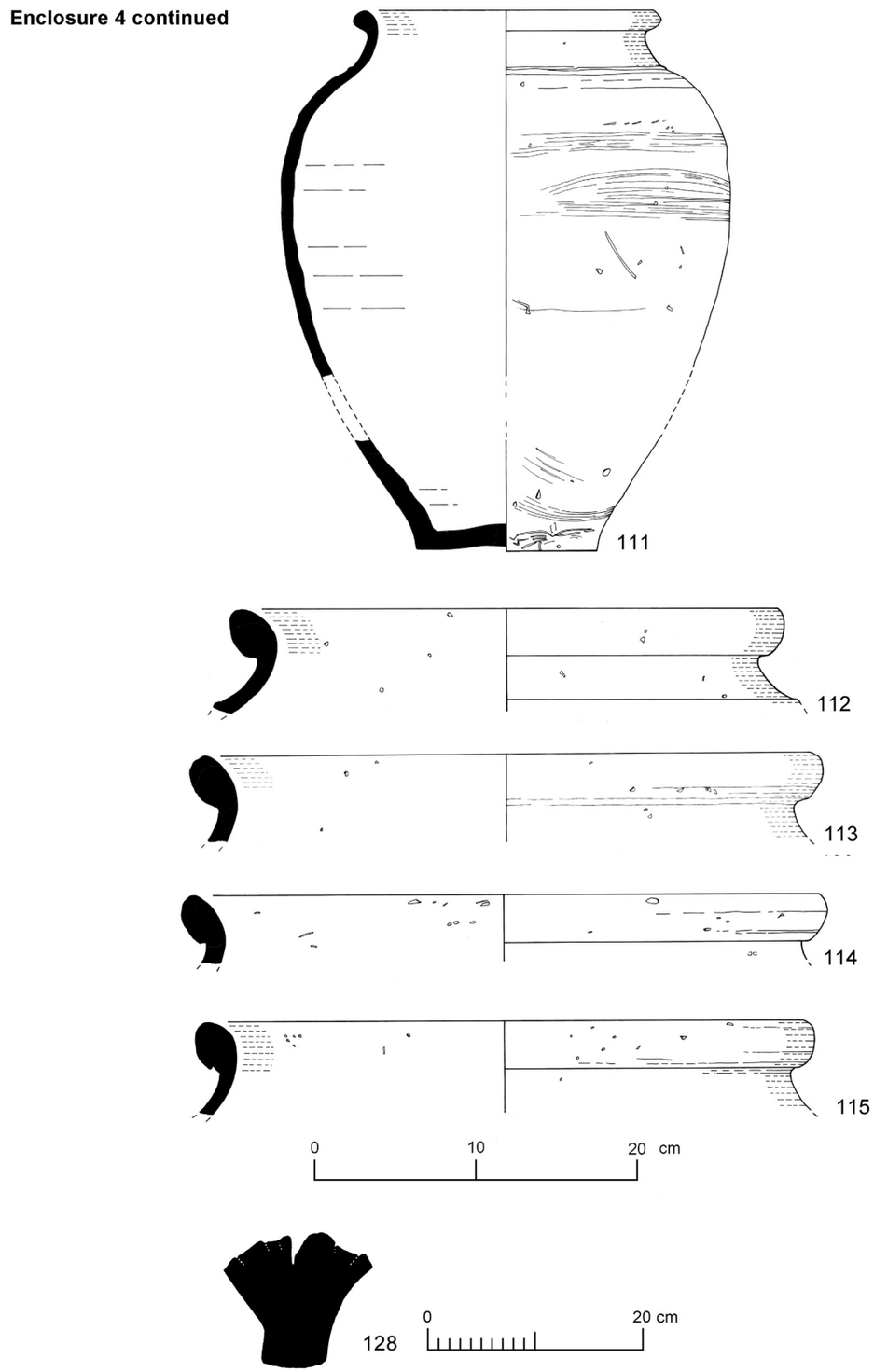


FIG. 143. Pottery vessels from the ditches of Enclosure 4: Pots 111–15 (scale 1:4) and amphora Pot 128 (scale 1:6)

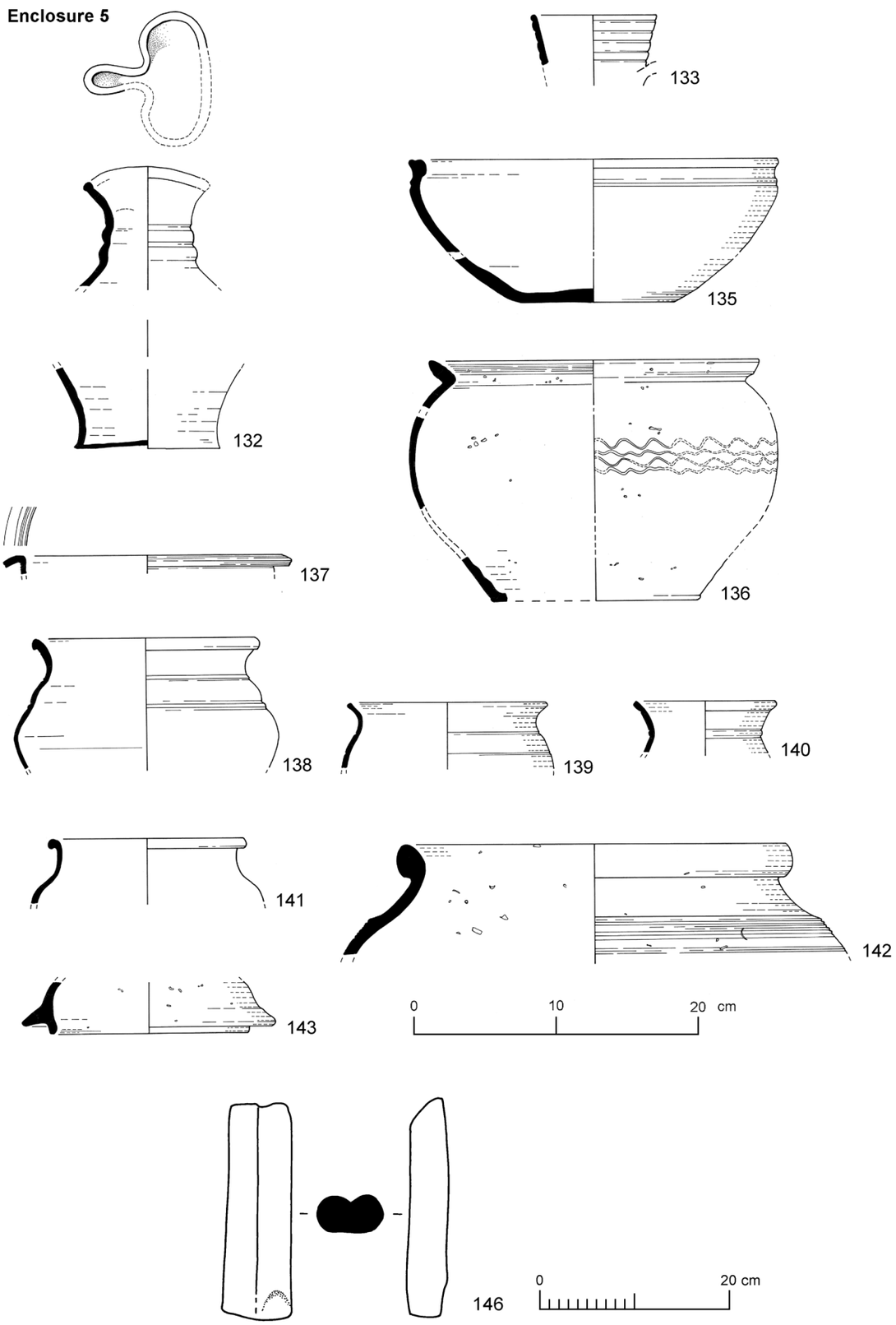


FIG. 144. Pottery vessels from the ditches of Enclosure 5: Pots 132–43 (scale 1:4) and amphora Pot 146 (scale 1:6)

TABLE 42: COMPARISON OF SELECTED POTTERY FORMS FROM STANWAY ?MORTUARY-ENCLOSURE AND DITCH ASSEMBLAGES, AND ROMAN ASSEMBLAGES FROM THE COLCHESTER FORTRESS AND THE EARLY *COLONIA*

Vessel form number	*Vessel type*	*Numbers in ditch contexts at Stanway*	*Context*
Forms rare or absent in Roman assemblages from Colchester			
Cam 74 (TR)	pedestal beaker	?2+	Enc. 4 (?2); Enc. 5 (1)
Cam 112	beaker	?2	Enc. 4
Cam 113	beaker	8+	Enc. 3 (1); Enc. 4 (6+); Enc. 5 (1)
Cam 114	beaker	1	Enc. 3
?Cam 161	two-handled flagon	?2+	represented by sherds in fabric WPW from Enc. 3, with single sherds from Enc. 4 and 5
Cam 212-217	carinated bowl	1	Enc. 5. (note: also two from burial CF72)
Cam 266 (LIA and 'Romanising' fabrics)	necked jar	21+	Enc. 3; Enc. 4; Enc. 5
Forms introduced at the conquest and common in early Roman assemblages at Colchester			
Cam 62	cup	absent	(note: one only from chamber BF24 in Enc. 4)
Cam 94	beaker	absent	
Cam 108	beaker	absent	(note: one only from burial CF403 in Enc. 5)
Cam 140	collared flagon	1	Enc. 4/5 (ditch CF1)
Cam 154/155	ring-neck flagon	2	Enc. 5 (ditch CF3, slot CF96)
Cam 158	pinch mouth flagon	1	Enc. 5 (ditch CF3)
Cam 241/242	carinated bowl	absent	
Cam 243/244-246	reed-rim bowl	1	Enc. 5 (ditch CF3)
Cam 266 (Roman grey ware – Fabric GX)	necked jar	absent	
Cam 191–195	mortaria	absent	

At Stanway, beaker forms in the ditches are dominated by butt-beakers (Cam 112, Cam 113 and Cam 119/119A) of Late Iron Age/Gaulish background, while the common post-conquest beaker Cam 108 is absent (TABLE 42). Smaller drinking vessels are represented by Gallo-Belgic style cups, and the early fineware cup and beaker forms Cam 62 and Cam 94 are absent. It should be noted that Cam 108 and Cam 62 appear once among the funerary assemblages (*i.e.* CF403.2 and BF24.1). Flagons are represented by Gaulish imports in Gallo-Belgic white ware (probably representing Cam 161, a form which is absent from the fortress/*colonia*). Coarseware forms and fabrics seen in the fortress/*colonia* are only associated with Enclosure 5, though mortaria as a pot type are absent from Stanway.

One form which is common at both the Roman fortress/*colonia* and Stanway is the relatively simple necked-jar form Cam 266 (Hawkes and Hull 1947, 271; *CAR* **10**, 479). Nevertheless, none of the jars described as form Cam 266 at Stanway are in Roman sandy grey ware (Fabric GX), although the majority are clear examples of the form type as previously described and illustrated (Hawkes and Hull 1947; Niblett 1985; *CAR* **10**). The presence of the jar Cam 266 in Romanising fabric is therefore not necessarily indicative of a post-conquest date.

The predominantly native character of the assemblage at Stanway in relation to the fortress/*colonia* is very striking. The differences between the two groups seem likely to be related to date, cultural background, and channels of supply. The large pottery assemblage from Enclosure 4 appears to be essentially post-conquest in date, and pottery from Enclosure 5 is certainly so. Paul Bidwell and Jane Timby have commented on aspects of the pottery assemblages of the fortress/early *colonia* in relation to imported wares. Bidwell noted the rarity of some imported Gallo-Belgic forms and that stamps on these wares are common at Sheepen

but rare in the fortress/*colonia* (*CAR* **10**, 488–91). Timby highlighted the lack of early imports and reliance on local military organised production among the pottery related to the fortress levels at the Head Street site (Timby 2004, 64–8). In general terms, with its Gallo-Belgic wares and butt-beakers, the Stanway pottery reflects aspects of the assemblages recovered from Sheepen rather than the fortress/*colonia*. Given an apparently post-conquest date for the majority of the pottery at Stanway, this distinctive assemblage suggests that two different supply networks operated in the immediately post-conquest period, one related to the Roman military, and the other to the native population. The character of the pottery assemblage from Enclosure 5 suggests that this situation was ending when that material was deposited.

THE POTTERS' STAMPS ON *TERRA RUBRA*, *TERRA NIGRA* AND *TERRA NIGRA*-TYPE WARES (FIG. 145)

By Valery Rigby

In all, 29 stamps survived out of a possible total of 41 platters and cups; three are too fragmentary or illegible for any identification. Had all the stamps survived, the list would have been just two short of the total in the King Harry Lane cemetery (KHL; Stead and Rigby 1989) showing just how rich in Gallo-Belgic imports the Stanway burials are in comparison.

Twenty-one different dies were recognised. One die occurs twice in burial BF64, one occurs twice in the same enclosure in burial BF64 and the central chamber BF6, while the third die occurs in different enclosures, once in burial BF64 and three times in burial CF47. They may represent specific workshop production batches which were then dispatched together to Camulodunum, the main port of import from the Late Augustan to the Neronian period.

With well over 500 stamps, the Sheepen site at Camulodunum has the longest list of Gallo-Belgic stamps of any settlement in Europe and so was clearly an important market from the late Augustan period onwards. There are die-links with most of the major settlements, early forts and cemeteries in Gallia Belgica and Germania Inferior, demonstrating just how well Camulodunum was integrated into the market of the north-west Roman provinces. While the Stanway stamp list shows a fair degree of connection with the Continent, having die links to some 16 sites, there are surprisingly few parallels with its local settlement at Sheepen. Of 21 dies, only 9 (roughly 43%) are paralleled at Sheepen, while 12 dies (over half) are new to the area. A brief comparison with the King Harry Lane cemetery at Verulamium emphasises how unexpected the Stanway results are. At King Harry Lane, 18 of 26 dies (roughly two-thirds) are also recorded at Sheepen, yet there is no overlap with the Stanway die list. Elsewhere, parallels with Stanway are comparatively few: one die in two cremations at the Stansted Airport cemetery, Essex; another in a cremation at Milton Keynes, Bucks; four in the settlement at Puckeridge–Braughing, Hertfordshire; and one each at North Ferriby, Humberside; Bagendon, Gloucestershire; and Silchester, Hampshire.

The identifiable stamps can be classified as twelve literate names, five pattern marks, and nine illiterate and cursive copies. Most of the name dies have been previously recorded, and all of the names belong to known potters: they are on forms with the late Augustan or Tiberio–Neronian date ranges. In contrast, the new dies, most of the illiterate copies and patterns, are on forms introduced in the Claudian period, the exception being Stamp 1–2, which implies a major reorganisation of supplies sometime around A.D. 50. There is a methodological problem which will exaggerate the changes. Fragmentary and abraded names are much more easily recognised and assigned to previously recorded dies than copies and patterns.

Die studies of stamps in the King Harry Lane cemetery and in pit groups at Sheepen had already suggested the idea of batch production and distribution. The Stanway and Stansted Airport cemeteries have provided more evidence.

NAME STAMPS ON *TERRA NIGRA* AND *TERRA RUBRA* WARES (FIG. 145)

Acuto/Acutios/Acutus Die 2A2

Stamp 1 FIG. 145. **BF64.8**

ACVT Central stamp: double incised circle. Flanged cup: Cam 58. TN; pale grey-buff fine smooth matrix, patchy dark blue-grey surface. Polished inner surface to flange, faceted below flange. Decoration: double incised circle.

Stamp 2 Not illustrated. **BF64.9**

A[CVT] Central stamp: double incised circle. Flanged cup: Cam 58. TN; a pair to Stamp 1.
The die is recorded four times on TN, at Silchester, Hants and Bavay, Nord, France, on the same form, and centrally on a small platter at Puckeridge–Braughing, Hertfordshire (Potter and Trow 1988, 115). The Silchester example was found in a context stated to be no later than A.D. 60 (Boon 1969, 6). In Britain, the distribution of flanged cups of Cam 58 has a marked military bias to it, and is particularly associated with forts established beyond the Fosse Way, in the north, Wales and the south-west, in the period after the Boudican revolt of A.D. 60/1 (Rigby 1977).

The ACVT A-dies are the latest related group bearing versions of the name Acuto/Acutios/Acutus, in a cursive style, which were current A.D. 40–65 (A- and B- dies, *see* also below Stamp 3). The earliest version of the name is Acutus. It occurs on TR at the late Augustan fort at Haltern, and the production centre is likely to have been in the Marne-Vesle potteries, probably Rheims. The die-cutter used the formal style of letters, with serifs, within a border and the Roman form of the name. The style is so different that more than one craftsman must have been involved. While pottery production may have continued in the Acutus family, the original die-cutter did not continue after *c.* A.D. 15 at the latest, although production of TR may have continued there into the Claudio–Neronian period. There is evidence for a workshop at Trier using Die 2B1 *c.* A.D. 40 and continuing until *c.* A.D. 65. There may have been at least one other intermediate die-cutter working in the Tiberian or Tiberio–Claudian period.

The dating evidence for four related '2A-dies', in the same style and almost certainly cut by the same hand, and the closely related '2B-dies' begins with a stamp of Die 2B1 on a TN platter found in Grave 42, in the St Matthias cemetery 1904, Trier, with an *as* of Tiberius, A.D. 23–37 (Goethert-Polaschek 1985, Taf. 5, 61). The platter is a type which occurs at the Claudio-Neronian fort of Hofheim, and on its form and fabric should be a product of Gallo-Belgic potteries in Trier: it is not found in Britain (Ritterling 1913). In addition, there are two on TR cups of Cam 56 in Cemetery E at Nijmegen and the Hunnerberg cemetery, Netherlands. Cemetery E was dated A.D. 20–40 in the publication, but the end date is too early, and a more realistic date is *c.* A.D. 50 (Holwerda 1941). The remaining finds are on TR at Rheims, Marne, France, and TN at Bavay, Nord, and Montepreux, France, and Dalheim, Luxembourg. The form range suggests that Dies 2A were in use A.D. 40–65 and the production centre could have been Rheims or Trier.

Acutios/Acuto/Acutus Die 5B6

Stamp 3 FIG. 145. **CF47.5**

ACVTIOS Central stamp: one bordered rouletted wreath. Moulded platter: Cam 8. TN; fine grey-buff matrix; black surfaces. Crackled and laminated surfaces, traces of a polished finish on upper only. Decoration: one bordered rouletted wreath.

This is the first recorded example in Britain of the die. There are four examples on similar Cam 8 platters in TR in two Claudian burials at Lebach (Gerlach 1976), while at least five on similar platters in TR and TN were found in various early Roman cemeteries at Trier, Germany (Haffner 1971; 1974; Goethert-Polaschek 1985). A related Acutios die occurs radially on large TN platters at Mainz and Frankenthal, Germany and Bavay, Nord, France. The form range suggests that Dies 5B were in use A.D. 30–50, and the production centre was at Rheims or Trier.

Attissus Die 1B2

Stamp 4 FIG. 145. **BF6.8**

ATTISSV bordered. Central stamp. Moulded platter: Cam 7/8. TR1(C); fine-grained orange matrix; traces of a darker red slip; no finish survives. Geometric graffiti incised onto the upper and lower base surfaces.

Stamps from this die are fairly common and typically occur centrally on small platters in TR as at Bagendon, Gloucestershire (Clifford 1961), and more rarely radially on large platters as at Puckeridge–Braughing, Hertfordshire (Potter and Trow 1988, 115). Similar Cam 7/8 variants occur in burials on the

Continent, four in Cemetery E, Nijmegen (Holwerda 1941, nos 702–705), one in grave 67 at Hunenknepchen à Sampont, Hachy, Belgium (Noël 1968) and one at the Titelberg (Metzler 1977). On TN there are two central stamps at Strasbourg, Alsace, and one at Bavay, Nord, France.

The closely related Die 1B1 has been recorded on four platters in TR1(C) at Sheepen, where the most useful for dating is a large platter Cam 6, a relatively rare form, in the pre-conquest pit 136 (no. 12).

A potter Attissus was working in the Marne-Vesle potteries near Rheims in the late Augustan period, before A.D. 9, using A dies. Attissus B dies, however, in a different cursive style, appear to be later, being placed in graves between A.D. 25 and 50, so it seems likely that the B dies belong to a different generation of the Attissus family. One B die on TR is recorded at the early Roman pottery at Novaesium, Germany, possibly an indication that the potter moved there.

Canicos Die 3A4

Stamp 5 FIG. 145. **BF6.12**

CANICOS Central stamp. Moulded platter: Cam 8. TR1(C); smooth orange ware with argillaceous inclusions; darker red slip; polished upper, matt lower surfaces, slightly crackled.

The potter Canicos produced cups and platters in TR and TN using at least 13 different dies, most cut by the same die-cutter in the same cursive style, and 15 stamps have already been recorded at Camulodunum where this particular die occurs radially on large TN platters Cam 2 and 5; it also occurs at Puckeridge–Braughing, Hertfordshire (Potter and Trow 1988, 115) and Bavay, Nord, France. In 1924, a small TN platter Cam 8 stamped with a related die (3A5) was found in the Lexden cemetery with three other imports. While all the British finds in this style group, with the exception of the Stanway platter, are on TN, the continental finds split almost evenly between TR and TN. The production centre is likely to have been the Marne-Vesle potteries, A.D. 25–60.

Cicarus Die 1A1

Stamp 6 FIG. 145. **CF47.6**

CICARV Central stamp; one incised circle. Moulded platter: Cam 8. TN; brown fine-grained smooth matrix; crackled grey-black surfaces. Traces of polished finish on upper surface. Decoration: one incised circle.

The die is already recorded as a central and radial stamp on a large TN platter at Camulodunum (no. 70) and also at Puckeridge-Braughing (Potter and Trow 1988, 116). It occurs on large TR platters at the Claudian forts of Hofheim, Germany, and Dalheim, Luxembourg, and on large TR platters of Cam 5 in cremations at Hofheim and Köln, the former with three Claudio–Neronian vessels (Schoppa 1958, 156). A related die was used to stamp a TR cup of Cam 56 associated with a stamped samian vessel dated A.D. 60–75 in Grave 21 at Lebach (Gerlach 1976). The production centre is likely to be the Marne-Vesle potteries, *c* A.D. 40–65.

Dacovir Die 1A1

Stamp 7 FIG. 145. **BF6.6**

DACOVIR bordered. Central stamp. Concave moulded platter: Cam 7C. TR1(C); pale orange powdery matrix; crackled coral slip, no finish survives. There are concentric incised guide-circles on the underside for the application of the footring.

This is the first record of the potter in Britain. All previous finds have been on platters chiefly in TR. A similar variant occurs in a Tiberian grave in the St Matthias cemetery, Trier, and there is a second example from Trier (Goethert-Polaschek 1985). Fifteen stamps on TR have been recorded at Luxembourg Museum (no information about provenance). There is one on a TN platter from Bavay, Nord, France. The production centre is likely to be in the Marne-Vesle potteries *c.* B.C. 10–A.D. 30.

Eudo Die 1A1

Stamp 8 FIG. 145. **BF64.3**

II[UDO] bordered. Central stamp. Moulded platter: Cam 7/8. TN; white powdery matrix; metallic blue-grey surfaces. Severely spalled and laminated, traces of a polished upper surface.

Four stamps from this die occur at Camulodunum (no. 80), all on small TN platters, one Cam 8 and one Cam 7/8, also recorded once at North Ferriby, Humberside. The fabrics are varied despite the use of a single die, which suggests batch production. One was found in a Period I context and so could be a pre-conquest import. The date range of the platter forms is A.D. 20–65, and its presence in burial BF64 reduces this to perhaps A.D. 35–60. The source is likely to be the Marne-Vesle potteries.

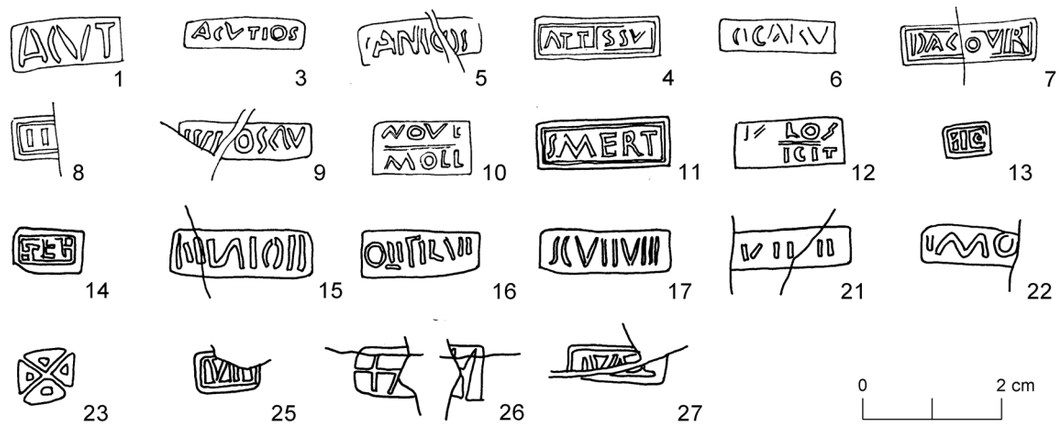


FIG. 145. Potters stamps on *terra rubra*, *terra nigra* and *terra nigra*-type wares (scale 1:1)

Jul(l)ios Die 2J1

Stamp 9 FIG. 145. **BF6.13**

IVLIOS AV(OTIS). Central stamp. Moulded platter: Cam 8. TN; buff fine-grained matrix; blue-black exterior shading to lighter blue-grey over the upper surface; traces of a polished finish overall.

The die is already recorded twice radially on large TN platters at Camulodunum, while the closely related Die 2J2 occurs three times.

Jul(l)ios is the most common name recorded on TN vessels. By 2005, no fewer than 24 dies, cut by at least 10 different die-cutters, were listed with contexts ranging from the late Augustan fort at Haltern to the Claudio-Neronian fort at Hofheim. Since then, finds from Gosbecks and Lake Farm, Dorset, have added three new double-line dies and extended the possible dating into the early Flavian period. It is unlikely that one potter survived to supply both Haltern and Hofheim. Moreover, the form range in TN includes flanged cups of Cam 58 and convex platters Cam 16 which were not common until after A.D. 50 and continued in production until *c.* A.D. 85, and in Britain are associated with Nero–Vespasianic military establishments (Rigby 1977). There are at least 46 stamps at Camulodunum/Sheepen, with at least one from the *colonia*, from a total of 59 for Britain, the find-spots including Baldock, Puckeridge-Braughing (2) and Verulamium/Prae Wood (2), Hertfordshire, Canterbury and Deal (2), Kent, Chichester, West Sussex, Cookham (2), Berkshire, Duston, Northamptonshire, and Lake Farm, Dorset. Since this is the most widely distributed name in Britain, its absence from the King Harry Lane cemetery, Verulamium, St Albans, Hertfordshire, is notable.

One die of Jul(l)ios was found at the Louvercy kiln site in the Marne-Vesle potteries, and this is the most likely source. Die 2J1 is one of the later dies, but is by no means the latest so it will have been in use between A.D. 25 and 60.

Novemollos Die 1A1

Stamp 10 FIG. 145. **CF47.9**

NOVE/MOLL two-lines. Central stamp; one in incised circle. Carinated cup Cam 56C. TN; fine-grained buff matrix; blue-black surfaces; abraded surfaces, traces of a polished finish on the inner.

A rare name recorded only on cups, at Mainz on TR (Geissner 1904, no. 322) and Bavay, Nord, France on TN. Manufactured between A.D. 50 and 75.

Smertuccos Die 4A2

Stamp 11 FIG. 145. **BF6.9**

SMERT(VCCOS) bordered. Central stamp. Moulded platter: Cam 7/8. TR1(C); fine orange ware; darker red slip, crackled and abraded so no finish survives.

Judging by the number of versions of the name, Smertuccos had a workshop producing TR on a large scale. This is a new die to add to the existing list of eight, cut in three different styles. In style, the Stanway stamp resembles two groups, dies A and C. One with the abbreviation SMERT, die 4C1, occurs only on TR platters and may have been used at the Rheims pottery (a stamp was found on the site of kilns excavated 1970–1). Stamps also occur on the concave platter, Cam 7, in Grave 5, dated Tiberian, at

Noyelles-Godault, Pas de Calais, France (Bastien and Demolon 1975), at the *oppidum* of Alésia (2), Côte d'Or, France, and in Luxembourg Museum.

Four other dies are already represented at Camulodunum. Typologically, the earliest is a full-length version of the name, a two-line stamp in formal style, die A, on a TR cup of Cam 53 which should pre-date A.D. 25, and also on a small platter found in a Period III–IV context (nos 135–6). Two at Puckeridge–Braughing, Hertfordshire, include another ligatured version of the name on a large platter in TR1(A), and therefore both should also pre-date A.D. 25. It is a rare occurrence for TR1(A) to be stamped.

The production centre is almost certainly Rheims, or the Marne-Vesle potteries, and the date of manufacture of the Stanway platter should be A.D. 10–25.

NAME FRAGMENTS (FIG. 145)

Stamp 12 FIG. 145. **CF115.1**

…LOS/[FI]ICIT or …COS/[FI]ICIT Central stamp: double incised circle. Flanged cup: Cam 58. TN; pale grey sandy matrix; blue-black abraded surfaces; polished inner surface extending to flange.

A new die from a literate Romanised potter who used the rare FIICIT(FECIT) on the lower line rather than more colloquial AVOTIS for 'made by'. The die is likely to belong to a known potter, ILLOS, LULLOS, or the occasional misspelled version of Jul(l)ios: IVLLOS, a long-lived workshop or possibly three potters using the same name (*see* above Stamp 8). Of these, the latter is perhaps the most likely, since a similar two-line die reading IVLIO/FECIT occurs at Lake Farm, Dorset, on a Cam 58 cup in TN. Jul(l)ios is also the most common name found on TN, and clearly at least one potter of that name was still working A.D. 50–75. CANICOS is unlikely because, although his workshop made TN and production continued into the Claudian period, his dies have not been recorded on Cam 58. The form and fabric suggest that the potter could have worked in the Marne-Vesle potteries between A.D. 40 and 75.

UNCERTAIN NAMES OR COPIES (FIG. 145)

Stamp 13 FIG. 145. **CF47.10**

HIC bordered or open AIC bordered. Central stamp: one incised circle. Flanged cup: Cam 58 (small). TR1(C); orange fine-grained matrix; darker slip extends from inner surface over flange. Crackled and laminated surfaces, no finish survives. Decoration: one incised circle.

Die 1B1

A new die which may be an abbreviation. The production centre is unknown. The cup was made between A.D. 50 and 70.

Stamp 14 FIG. 145. **BF6.20**

TER bordered: uncertain reading. Carinated cup: Cam 56 (small). TR1(C): light orange powdery ware; darker red slip; abraded surfaces but traces of a polished finish on the slip, smoothed exterior. Decoration: one groove on the outside, one incised circle on the base.

Die 1A1

An unassigned die which may be an abbreviation. One impression is already recorded at Camulodunum (no. 203), also on a TR cup. The production centre is unknown, but it will have been somewhere in the Marne-Vesle potteries, and manufacture took place between A.D. 15 and 70.

Stamp 15 FIG. 145. **CF47.7**

IIIVIIOII: reading uncertain. Central stamp: two incised circles. Offset platter: Cam 14. TN; white powdery matrix; patchy blue-grey surfaces. Polished upper surface; abraded lower, no finish survives. Decoration: two incised circles.

Die 2B1

The die and potter have not been identified. The production centre is unknown, but the platter was made between A.D. 50 and 75.

Stamp 16 FIG. 145. **CF47.8**

OILIILII: reading uncertain. Central stamp: one bordered rouletted wreath. Offset platter: Cam 14. TN; hard, fine-grained white matrix; patchy metallic blue-grey surfaces. Polished upper surface, matt lower. Decoration: two burnished circles 10 mm apart.

Die 1A1

The potter's name has not been identified, but the die was used to stamp a TN cup found at Courmelois, Kiln 2, in the Marne-Vesle potteries, a likely source for the Stanway platter (Tuffreau-Libre 1988, no. 15).

Courmelois is considered one of the later locations used by potters working in the Claudio–Neronian period. The form is one of the latest to be introduced, and was only made in TN, so the platter was made between A.D. 50 and 65.

Stamp 17 FIG. 145. **CF47.2**

SCVTTVSI/SCVTIVSI: reading uncertain. Central stamp: one bordered rouletted wreath. Moulded platter: Cam 7/8. TR1(C); orange fine matrix, with some large argillaceous inclusions causing spalling; darker slip. Polished upper surface; less glossy smoothed lower, crackled. Decoration: one very fine bordered rouletted wreath.

Stamp 18 **CF47.3**

SCVTTVSI / SCVTIVSI; reading uncertain. Central stamp; two burnished circles. Moulded platter: Cam 7/8. TR1(C).

Stamp 19 **CF47.4**

SCVTTVSI / SCVTIVSI; reading uncertain. Central stamp. Moulded platter: Cam 7/8. TR1(C); orange fine matrix, with some large argillaceous inclusions; darker slip, discoloured by smoke. Spalled and laminated surfaces, no finish survives. No decoration.

Stamp 20 **BF64.2**

SCVTTVSI/SCVTIVSI; reading uncertain. Central stamp. Moulded platter: Cam 7/8. TN; bluish-white matrix, with many dark grey argillaceous impurities; metallic blue-grey surfaces. Polished upper surface, matt lower; surfaces badly spalled due to impurities in the clay.

Die 1A1

An unassigned die, possibly Scuttusi or Scutiusi. The reading is uncertain and could be interpreted as SCVTTVSII or SCUTIVSI. In Britain the die is already represented once at Camulodunum (no. 253), and on a pair of platters in a cremation at Milton Keynes, Bucks (information from the Museum of London Specialist Services); and once at the Hunnerberg cemetery, Netherlands. The same die may have been used to stamp a platter found at Courmelois, Kiln 2, in the Marne-Vesle potteries, a possible source for all four platters (Tuffreau-Libre 1981, no. 11). The form and fabric suggest manufacture between A.D. 25 and 60 in the Marne-Vesle potteries, and since three of the four stack exactly, and the fourth is very close, they should have been made by the same hand in the same batch and despatched together to Camulodunum.

Stamp 21 FIG. 145. **BF64.5**

VII[]IS bordered. Central stamp: triple incised circle. Offset platter: Cam 14. TN; white fine-grained matrix; metallic blue-grey surfaces. Polished upper surface, matt lower. Decoration: triple incised circle.

The name has not been recognised and the die cannot be paralleled. Production centre unknown. The platter was made between A.D. 50 and 70.

Stamp 22 FIG. 145. **BF64.4**

IMO: reading uncertain. Central stamp. Offset platter: Cam 14. TN; pale buff fine-grained matrix; laminated and abraded patchy blue-grey surfaces. No finish survives. Decoration: double and pair of incised circles.

The die cannot be paralleled. Production centre unknown. The platter was made between A.D. 50 and 70.

PATTERN MARKS (FIG. 145)

Stamp 23 FIG. 145. **BF6.21**

'X with four spots'. Central stamp: one incised circle. Carinated cup: Cam 56C (small). TR1(C); orange matrix, darker slip; no finish survives.
Decoration: one incised circle.

Stamp 24 **BF64.6**

'X with four spots'. Central stamp: one incised circle. Carinated cup: Cam 56C (small). TN; fine-grained pale brown ware; patchy grey-black surfaces. Polished inner, faceted outer surface.

'X with four spots' Die 1A1

The die is represented in two burials, both in Enclosure 3, once each on TR and TN. It has already been recorded four times at Camulodunum (no. 222) on small cups in TN, while three similar cups were found in two cremations in the Stansted Airport cemetery, Essex (Havis and Brooks 2004, 200, no. 19).

All must have been in the same batch imported through Camulodunum and could have been among the first to be imported after Roman occupation.

There are also two TN cups in burials at Nijmegen in Cemeteries E and OH (Holwerda 1941, 175b). Other finds include Bavay, Nord, France, and Speyer (Speyer Museum 1103). Two stamps have been found at the Courmelois kilns in the Marne-Vesle potteries, and this is the likely source area, *c.* A.D. 25–60.

Stamp 25 FIG. 145. **BF64.7**

VII bordered. Central stamp. Hemispherical cup copying Ritterling 8; double groove on the exterior. TR1(C); orange fine-grained smooth ware; traces of a darker slip over interior and exterior, excluding underside of base. Polished finish.

Die 1A1

The only impression of this die to be recorded. It may be a an illiterate mark using I and V motifs, or it could be an abbreviation reading IN(..) or NI(..) (retrograde N). A close parallel which could be from the same die is illustrated among finds from Bavay, Nord, France.

The cup is of particular interest because it is a rare form, apparently copying the early samian hemispherical cup, Ritterling 8, and no others have definitely been identified in Britain. The production centre is unknown, but the piece is likely to be contemporary with its prototype and hence was made A.D. 40–65.

Stamp 26 FIG. 145. **BF6.15**

Mark: chequerboard motif, bordered. Central stamp: one bordered rouletted wreath. Moulded platter: Cam 8. Fine-grained white powdery matrix; pale blue-grey surfaces; traces of a polished finish on upper surface, lower surface matt. Decoration: bordered rouletted wreath. Graffito on the upper base: cursive letters.

The die cannot be paralleled. Production centre unknown. The platter was made between A.D. 25 and 65.

FRAGMENTS AND ILLEGIBLE IMPRESSIONS

Stamp 27 FIG. 145. **BF6.14**

Mark: VII[…] bordered. Central stamp. Moulded platter: Cam 8. TN; possibly TN1(A) with a slip on the upper surface; powdery white matrix, metallic blue-grey surfaces; darker-toned, polished upper surface, matt lower. Decoration: two incised circles.

The impression is too fragmentary for identification. The production centre is unknown. The platter was made between A.D. 25 and 65.

Stamp 28 **BF6.16**

Stamp edge, too fragmentary for identification. Central stamp: double incised circle. Moulded platter: Cam 8. TN; pale bluish white powdery matrix; patchy blue-grey surfaces; no finish survives. Decoration: pair of incised circles.

Neither the die nor the potter can be identified. Production centre unknown. The platter was made between A.D. 25 and 65.

Stamp 29 **CF47.11**

Central stamp. Illegible impression. Flanged cup: Cam 58. TR1(C): orange fine-grained matrix; darker slip extends from inner surface over flange. Crackled and laminated surfaces, no finish survives. Potter and production centre unknown, made between A.D. 50 and 75.

POTTERS' STAMPS ON *TERRA NIGRA*-TYPE WARES

Abuso Die 1A1

MVW 1 **BF24.7**

ABVSO, an abraded impression, the reading is not certain. Central stamp. Grooved platter: Cam 11 copy. MVW; blue-grey core; leached and eroded grey surfaces; no finish survives. Decoration: two double and a single incised circle.

MVW 2 **BF24.6**

ABVSO, an illegible impression identical to MVW1. Central stamp. Grooved platter: Cam 11 copy. MVW; blue-grey core; leached and eroded grey surfaces; no finish survives. Decoration: two double and a single incised circle.

Although the platters are different sizes, they were both stamped with the same die. The name has not been previously recorded. The quality of the potting techniques, intermediate between Iron Age and Roman, suggests that the production centre should be in the vicinity of Camulodunum where a number of literate names on platters considered to be from regional or local workshops have been recorded (*CAR* **10**, 219–22).

Bordered, illegible

MVW 3 and MVW 4 **BF24.9, BF24.10**

Bordered, illegible impressions. Central stamps. Flanged cups: Cam 58 copy. MVW; grey core; leached and eroded grey-buff surfaces. No finish survives.

The bordered impressions are illegible, but were made with the same die which is not Abuso Die 1A1. The similarity of the fabric, however, suggests they are from the same source as MVW1 and 2. One is an over-fired 'second' which could indicate that it was made in the vicinity of Camulodunum.

Illegible and incomplete

MVW 5 **BF24.8**

Illegible and incomplete impression. Central stamp. Grooved cup. MVW; an over-fired and distorted 'waster'; grey core; grey-buff surfaces. No finish survives.

The cup was recovered as two non-joining half sections, with fresh breaks so the stamp is both illegible and broken, and it is not possible to see if it definitely represents a third die used for mixed vesicular ware. Since in this case it is a distorted but still functioning 'waster', the source should be at Camulodunum.

Bordered and incomplete

MVW 6 **BF24.11**

[…]V bordered, incomplete and abraded impression. Central stamp. Offset platter: Cam 14 copy. MVW; hard-fired blue-grey matrix, with rough and abrasive gritty texture; eroded and leached surfaces, no finish survives. Decoration: one bordered radially combed wreath.

The impression may be incomplete, but it is different from the three dies recorded on mixed vesicular ware. A local source is likely. It could have been manufactured any time between A.D. 50 and 200.

Catulussius Die 1A1 or 1A2

SW 1 **CF403.1**

CATVL/LVSSI central stamp. Moulded platter: Cam 8 copy. SW; blue-grey matrix; dark brown-grey surfaces. Abraded, with traces of a burnished finish on the upper surface. Decoration: one burnished circle.

The impression is too light and abraded for certain identification. Four stamps are already recorded at Camulodunum all on the same moulded platter-form although in a variety of kiln-fired sand-tempered fabrics, so it is likely that the potter worked in the vicinity (*CAR* **10**, 222, LTC4–7). The size, proportion and typological detail of the 'copies' is such that they can only have been made by a potter trained in one of the Gallo-Belgic potteries in the Tiberio–Claudian period. If the source is in Britain, the potter migrated from Gallia Belgica in the Claudian period, in the wake of the Roman army, to exploit an expanding market and save costs.

Illegible

GTW 1 **BF24.4**

Broken and illegible impression. Central stamp. Plain platter: Cam 2 copy, Cam 21. GTW; under-fired, grey core, grey-brown surfaces; severely eroded so no finish survives.

GTW 2 **BF24.5**

Broken and illegible impression. Central stamp. Offset platter: Cam 14 copy. GTW; under-fired, grey core, buff under surface, grey surfaces. Eroded but traces of a burnished finish. Decoration: double incised circle at the wall junction, pair of doubles around the stamp.

The impressions were made by different dies, and they also differ in shape and proportion from dies used on other fabric groups. It is unusual for platters in GTW to be stamped with the maker's mark. For example, only two are stamped from a total of 59 found in the King Harry Lane cemetery.

THE AMPHORAS

By Paul R. Sealey

INTRODUCTION

Amphoras reached Stanway from the eve of the Roman invasion until the aftermath of the Boudican revolt. Only two forms are present: Dressel 2-4 wine amphoras and Beltrán I *salazones*, amphoras bottled with fish-sauce or salted fish (TABLE 43). There are none of the Dressel 20 amphoras that dominate amphora assemblages in Roman Britain from the start until the 3rd century A.D. Nor is there any sign of the less common types such as Richborough 527 and Cam 189 found at the nearby legionary fortress and *colonia*. It is clear from the unusual composition of the assemblage that the Stanway amphoras are a special group from an exceptional site.

Where a given amphora fabric has already been described in *The National Roman Fabric Reference Collection* (Tomber and Dore 1998), only its alphabetic code is given here for economy of presentation. Fabrics not present in the national collection are described more fully. No petrological analysis has been undertaken.

QUANTIFICATION (TABLE 43)

Following the precedents of reports on the élite graves at Lexden (Peacock 1971, 183; Williams 1986), Folly Lane (Niblett 1999, 44; Williams 1999, 193) and Clemency (Metzler *et al.* 1991, 46, 78), the Stanway amphoras were quantified by minimum vessel number count, supplemented by sherd counts and sherd weights to the nearest gramme where appropriate. Minimum vessel count is a calculation of the lowest number of complete amphoras the extant sherds could represent, and the results for Stanway are given in TABLE 43. Two *salazones* are present and nine Dressel 2-4 wine amphoras.

One of the *salazones* is the Dressel 8 in the Doctor's grave (Pot CF47.14). A second is represented by a Beltrán I handle stub from the Enclosure 4 ditch (Pot no. 127). It is evident that this is a second *salazon* because both the handles of the amphora in the Doctor's grave are present.

The position with the nine Dressel 2-4 amphoras is less straightforward. Leaving the warrior burial and chambers until later, there were two different Italian Dressel 2-4 amphoras from the mortuary enclosure BF32 and the enclosure ditch of Enclosure 5 (Pot nos 126 and 148). Both were in the standard Campanian Fabric CAM AM 2 but the presence of two vessels is indicated by significant differences in texture. Two more Dressel 2-4 amphoras from Enclosures 4 and 5 are in fabrics that cannot be assigned to a source. One came from the enclosure ditch of Enclosure 5; sherds from the other were retrieved from the enclosure ditch of Enclosure 4 and the ?mortuary enclosure CF43–6 in Enclosure 5 (Pot nos 128 and 146 and Pot no 149). A fifth Dressel 2-4 is represented by a Catalan amphora in a cream fabric from the pyre site in Enclosure 3 (Pot BF16.1). There were two more Dressel 2-4 in Chamber BF6, one in the red

TABLE 43: AMPHORAS FROM STANWAY BY MINIMUM VESSEL NUMBER COUNT

Amphora type	*Minimum number of vessels*
Dressel 2-4 (Italian black sand fabric)	1
Dressel 2-4 (Italian fabric CAM AM 2)	2
Dressel 2-4 (red fabric Catalan)	1
Dressel 2-4 (cream fabric Catalan)	1
Dressel 2-4 (source unknown)	4
Dressel 8 *salazon* (part of Beltrán I)	1
Beltrán I *salazon*	1

Catalan fabric (Pot BF6.22) and another in a fine fabric of unknown origin (Pot BF6.23). The eighth Dressel 2-4 is the Italian black sand amphora from the warrior burial (Pot BF64.15) and the ninth comprises the sherds from Chamber CF42 (Pot CF42.10).

What the writer deemed to be sherds from all three amphoras in Chambers BF6 and CF42 were present in other contexts (Pot nos 12, 145 and 147). Likewise a black sand sherd (Pot no. 13) from what might be the same amphora as the Dressel 2-4 in the warrior burial was present in the enclosure ditch of Enclosure 3. It should be emphasised that there were no joins between amphora sherds from different features and that attribution to the same vessel rests only on the congruence of fabric, wall thickness or diameter. Logic dictates that the amphora sherds in question could conceivably have come from different amphoras with identical fabrics and typologies. It also has to be borne in mind that no joins could be established for any other categories of pot between these two chambers and the warrior burial on the one hand, and other features at Stanway on the other. In view of this, it would be premature to use this aspect of the amphora assemblage to make further deductions about funerary practice. Nevertheless most of the actual Dressel 2-4 vessels from Chambers BF6 and CF42 must have ended up elsewhere because so little of them was present in their chambers.

AMPHORA TYPES AT STANWAY

Dressel 2-4 wine amphoras

When production of Dressel 1 ceased *c.* 10 B.C., the major wine amphora in Italy and the West became Dressel 2-4, with a significant minor contribution from a Catalan copy of Dressel 1 called Pascual 1, until Tiberius. Dressel 2-4 was made in Italy from the time of the *c.* 75–60 B.C. Madrague de Giens shipwreck (Hesnard 1977, 159, 162, 167, fig. 4; Liou and Pomey 1985, 564, for the date of the wreck), but did not become common until towards the end of the century. In the important amphora deposit from the House of the Porch at Ostia dated *c.* 50–25 B.C., Dressel 1 amphoras outnumber Dressel 2-4 by twenty-one to two (van der Werff 1986, 119), and it would seem that Dressel 2-4 was not widely produced in Italy until the last quarter of the 1st century B.C. This is when we find the first evidence for the form in Britain, in the Lexden tumulus (Foster 1986, 124; Williams 1986) and the Dorton grave (Williams 1983; Farley 1983, 289–90).

Production of the form in Italy lasted much longer than had previously been realised. Some potteries were still making Dressel 2-4 there as late as the early 3rd century A.D. (Freed 1989). Evidence for the export of Italian Dressel 2-4 that late has emerged from the study of two large dumps of these vessels from late 2nd- to early 3rd-century A.D. warehouses at Saint-Romain-en-Gal, Rhône (Desbat *et al.* 1990). Indeed, Italian Dressel 2-4 seems to have outlasted all the other western versions of the form. But although the form had a long history, its *floruit* came in the last decades B.C. and in the 1st century A.D.

Dressel 2-4 was produced widely in Italy and the western provinces. The only provincial Dressel 2-4 identified at Stanway are the two Catalan amphoras from Tarraconensis (FIG. 54, BF6.22–3). The very few painted inscriptions that specify the wines and *acetum* bottled in these Catalan amphoras have been listed and described elsewhere (Sealey 1985, 45–6). *Acetum* was vinegar; diluted with water it gave the non-alcoholic drink *posca*. The translations of *acetum* as sour wine so common in the English-speaking world are wrong (Tchernia 1986, 9–11). We now also have a painted inscription on a Catalan Dressel 2-4 specifying Aminean wine as the contents; it was a wine named after the parent grape variety rather than the place of origin (Liou 1993, fig. 2, 135 no. 8). The fourteen shipwrecks with Catalan Dressel 2-4 reviewed by Corsi-Sciallano and Liou all fall within a half century or so of each other down to Nero and point to a vigorous but short-lived economic current, one in which Stanway participated. Elsewhere at Colchester, Catalan wine accounted for 7.36 per cent of the wine drunk at the Sheepen site between A.D. 43 and 60 (Sealey 1985, 16), but exports of wine from Catalonia were in steep decline in the second half of the 1st century A.D. (Corsi-Sciallano and Liou 1985, 171–2).

The Italian Dressel 2-4 at Stanway include a vessel (FIG. 81, BF64.15) in the familiar black sand fabric found in both Dressel 1 and Dressel 2-4, and indeed now the mid-Roman

Campanian amphoras (Williams 1994, 218). The writer has also seen the fabric in one of the Dressel 21-22 amphoras from Colchester town centre (*CAR* **10**, fig. 3.2, no. 36). A topic that can usefully be aired here is the source region for this distinctive fabric. It has been assigned to Pompeii because some of the amphoras in the fabric were stamped by L. Eumachius, a resident of the town. He also stamped tiles there (Tchernia and Zevi 1972, 37, 40). French scholars call the fabric the *Eumachi* paste. Working independently, Peacock (1977, 153) reached the same conclusion. He said that bricks in a black sand fabric were common at Pompeii and Herculaneum, but not present in other towns in the Italian volcanic tract (but my own experience of the brickwork at Pompeii and Herculaneum is that the black sand fabric is actually rare there). Doubts have occasionally been raised about the exclusive attribution of the fabric to Pompeii and Herculaneum (Peña 1990, 655). The most serious are those of a French team (Hesnard *et al.* 1989, 36–49).

Hesnard and her colleagues undertook a programme of X-ray fluorescence to clarify the chemical composition of amphoras with a black sand fabric. The results showed that they could be divided into five groups. Fabrics 1–4 are quite different to Fabric 5 (the *Eumachi* group from Pompeii), and show that the production of black sand ceramics was not confined to the region of Vesuvius. These fabrics are called *faux-Eumachi* (counterfeit *Eumachi*) and are incorporated in their Group A. Fabric 5 is their Group B, the Pompeian *Eumachi* fabric. Tiles from Pompeii with Oscan and Latin stamps in a black sand fabric were analysed, and the results showed that (with two exceptions) they belonged to Group B, the Pompeian fabric. Analyses of Dressel 2-4 amphoras stamped by L Eumachius showed they also belonged to this group, the Pompeian fabric.

A number of Graeco-Italic and Dressel 1 amphoras in a black sand fabric were examined from six sites in Gaul and Spain, ranging in date from the 3rd to the 1st centuries B.C. Only 45 per cent of the black sand amphoras were the Pompeian Fabric 5, the remainder in the Group A Fabrics 1–4 had come from elsewhere.

To begin with, the importance of the *faux-Eumachi* groups increased with the passing of time. In contexts dated *c.* 250–175 B.C. at two sites in Gaul and Spain, all the Graeco-Italic black sand fabric amphoras are Pompeian. The *faux-Eumachi* groups make their début in the second half of the 2nd century B.C. and become more common than the Pompeian black sand fabric in the 1st century B.C. They represent four different production centres; they must be Italian because Dressel 1 is an Italian form, but the precise whereabouts of any *ateliers* are unknown. Eventually the true *Eumachi* black sand fabric from the Vesuvius region came back into its own. All the black sand Dressel 2-4 from a large assemblage of late 2nd- and early 3rd-century A.D. amphoras from Saint-Romain-en-Gal (Rhône) came from the Vesuvius region, showing that viticulture was revived there after the eruption of A.D. 79 (Desbat *et al.* 1990, 206, 212).

The implications of this research are unsettling, although it has been ignored in Britain and given only summary acknowledgement in European literature (Baudoux 1996, 33). There is a real possibility that at least half the black sand fabric amphoras reaching Britain are not from the Bay of Naples but from sources elsewhere in Italy. It would seem that these other source regions lie somewhere in southern Etruria or Latium (Peña 1990, 655).

Beltrán I *salazones*

The *salazon* amphoras produced along the coast of Baetica in Roman Spain make their first appearance in the *c.* 80–60 B.C. funerary enclosure at Clemency (Luxembourg). There the rim and body sherds of a Dressel 9 (part of Beltrán I) were securely stratified with Dressel 1 amphoras in the north-east of the funerary enclosure. The excavators were understandably surprised at its presence, but the vessel was not intrusive (Metzler *et al.* 1991, fig. 61, no. 1, 78). Otherwise the most important evidence for the early export of *salazones* from Baetica is the *c.* 50 B.C. Titan shipwreck, with its cargo of Dressel 12 (Beltrán III) amphoras (Tailliez 1961, figs 1 and 4, 185, 197; Parker 1992, 424–5), and the *c.* 50–30 B.C. wreck of Cap Béar C, where the bulk of the cargo was Dressel 1, Pascual 1, and Dressel 12 amphoras (Parker 1992, 97–8). The earliest *salazones* in Britain are invariably Dressel 9 (Peacock 1981, 202), a form that disappears

after Augustus (Baudoux 1996, 70). No grave in Britain has the association of a *salazon* and Dressel 1, and *salazones* do not seem to have reached here until the very end of the 1st century B.C. or the start of the 1st century A.D.

Views differ on the terminal date of Beltrán I. Panella (1973, 508) felt that Dressel forms 7-13 were too common in Flavian contexts at Ostia to be explained as residual material. A more conservative assessment comes from Martin-Kilcher (1994, 399) who was reluctant to envisage production of the form much beyond *c.* A.D. 50. My own feeling is that Beltrán I was replaced by Beltrán II in the decades A.D. 60–80, by — let us say — *c.* A.D. 75 (Sealey 1985, 84). The last definite shipwreck with the form is Ses Salines, where the form shared the hold with Dressel 20 amphoras. Stamped lead ingots show the ship sank in the reign of Vespasian (Parker 1992, 378–9).

The number of painted inscriptions with evidence for contents continues to grow and confirms the primacy of fish-sauce as the contents of the form (Ehmig 2003, 62–7). This high survival rate of inscriptions may be connected with the poorly understood surface treatment of these Baetican amphoras where they carry the inscription. An interesting new perspective on these jars has come from Masada, where research has shown that Baetican fish-sauces were kosher (because they were made from fish with scales) and so could be enjoyed by King Herod without troubling his conscience (Cotton *et al.* 1996).

The ancients had a quite different attitude to medicines than prevails today. They felt that if something was wholesome to eat or drink, then it was only natural that it should have therapeutic qualities as well. Thus the fish-sauces bottled in *salazon* amphoras were not just foodstuffs: they had medicinal uses as well. This is an important consideration at Stanway, where this particular *salazon* amphora was associated with surgical instruments: there is every likelihood that fish-sauce was used there not just in cuisine but in medicine as well.

Although *garum* and related sauces had been known in the Greek world from at least the 5th century B.C., it was not until the writings of Dioscorides in the 1st century A.D. that medical literature made reference to their uses in healing. Perhaps it was the scale of the trade in Spanish *salazones* then that led to their widespread use in medicine. *Garum* retained its medicinal uses until late antiquity and the Byzantine period. It was believed to cure conditions as diverse as headaches, diarrhoea and tuberculosis. Unhealthy states of mind such as depression and lethargy could also be treated. Gargling with *garum* was recommended for sores in the mouth. It was applied externally to treat skin conditions, bites and burns; it was also deemed useful when extracting weapons that had pierced the skin and so could have been used in conjunction with some of the surgical instruments in the Stanway grave. Occasionally *garum* made from a specific fish was held to be appropriate to a particular condition. As well as a medicine in its own right, *garum* could be added to medicinal preparations to make them more palatable and to achieve the right consistency. It also played a part in veterinary medicine (Curtis 1991, 27–37 with refs).

Apart from a Flavian Dressel 2-4 amphora found in London at Southwark that had come from Antibes in the south of France bottled with the fish-sauce *liquamen* (Hassall and Tomlin 1984, 344, no. 37, pls 27–8), Spain exercised a virtual monopoly over the supply of *salazones* to Britain in the early Roman period (Carreras Monfort 2000, 143) and dominated the markets in Gaul and the Rhineland until the 2nd century A.D. (Curtis 1991, 84).

AMPHORA CATALOGUE BY FEATURE

Warrior's burial BF64

BF64.15 FIG. 81. B983. Dressel 2-4. Italian amphora in a black sand fabric, CAM AM 1 (Tomber and Dore 1998).

What survives is the body from a short basal spike right up to a shoulder that curves steeply towards the neck. Shallow horizontal grooves about 20 mm apart on the exterior of the body give a wall 10.1 to 12.1 mm thick. Black stains on the exterior of the body were presumably caused in the same way as the stains on other amphoras from the site. Fractures at the top of the body and shoulder show no signs of abrasion after their formation. The body is restored from many joining sherds (with few gaps). We cannot tell if a complete amphora had been placed in the grave at the funeral — with the neck and rim

subsequently dislodged by plough damage or even by quarry machinery — or if only the body had originally been included in the grave (but see p. 172).

Doctor's burial CF47

CF47.14 FIG. 108. C904. Dressel 8 (Beltrán I) *salazon* (13,800 g) Fabric CAD AM (Tomber and Dore 1998). The sparse red-brown iron ore inclusions typical of this fabric group are here readily apparent in fractures, and show the vessel came from the Cadiz region. The capacity is 14.5 litres (measured with millet seed to where the uppermost part of the handle joins the neck). When complete the vessel would have held a little more, perhaps 15 litres.

Apart from the missing rim, the vessel is complete. The neck is narrower at the top than at the shoulder. The body is ovoid in section with thick walls and attains its maximum girth towards the lower end. There is a long and narrow hollow basal spike, with a rounded terminal and straight sides that widen out gently towards the body. At the top of the body, there is a short curved shoulder from which the handles rise more or less vertically. In section, the handles are oval, with a flat inner face. Along the length of the outer face, there is a low flat ridge in the centre of the handle that runs its entire length. It becomes more pronounced as it travels up the handle, and at the summit it is divided in two by a deep groove before it joins the neck. Handles of this kind are typical of Dressel 8, but are occasionally present on other *salazones* of the first half of the 1st century A.D. (Martin-Kilcher 1994, 396).

Since Zevi (1966, 229–46), it has been standard practice to amalgamate Dressel forms 7-11 as a single coherent group, linked by contents, date and origin. It used to be thought that Dressel had been more fastidious than he needed to be when he differentiated his forms 7-11. This changed with the discovery of a large group of intact amphoras dated *c.* A.D. 5 from La Longarina at Ostia. There vessels were found which corresponded exactly with Dressel forms 7-10 and 12 (Dressel 11 was not present) (Hesnard 1980, 146). Indeed, Hesnard was able to add two more closely related forms to the Dressel 7-11 family, which she called La Longarina 2 and 3. Since then, there has been an understandable move towards isolating the individual components of the Dressel 7-11 family, although this can only be done of course for more or less complete vessels like Stanway. Dressel 7-11 is included within Beltrán form I (Beltrán 1970, 388–420). Beltrán I is a useful term because it includes not just Dressel 7-11, but other related vessels that do not feature in the Dressel table of forms: Dressel 7-11 and Beltrán I are not synonyms or precise equivalents. But we still do not know why such a subtly differentiated suite of amphoras should have been thought necessary for vessels from the same region, bottled with the same contents. The Stanway vessel can be recognised as Dressel 8 on the basis of the length of its handles and spike (far greater than on Dressel forms 7 and 9-11), on the proportions of the body, and the (relatively) short and slender neck which tapers upwards towards the rim. In particular, the body reaches its maximum diameter more than half way down. This makes the Stanway amphora a classic Dressel form 8. Vessels like the Cam 186a type-specimen (Hawkes and Hull 1947, pl. 72) attain the maximum body girth midway between the shoulder and the basal spike and, although conforming to Dressel 8 in other respects, are at one remove from the vessel published by Dressel.

Thirteen painted inscriptions on Dressel 8 from Rome specify the contents as the fish-sauce *garum* (Zevi 1966, 243). Three more Dressel 8 amphoras are now known with painted inscriptions that name their contents. One was bottled with *liquamen* (a synonym for *garum*). The other two amphoras had *garum*; one of them is specified as containing the mackerel variety (Ehmig 1998, 19–20 with refs). There are painted inscriptions on two Beltrán II amphoras specifying the contents as wine, although that is no reason to predicate the same of Beltrán I. But evidence that might suggest wine was indeed a minor element in the contents of both categories of amphora has now come to light (Silvino *et al.* 2005).

Chamber BF6

BF6.22 FIG. 54. B147, B227 shoulder, B223 handle, base, B138, B157, B179, B202, B215. Dressel 2-4 amphora. 110 sherds (2,943 g, mean sherd weight 26.8 g). The fabric is the distinctive red paste with abundant white inclusions assigned to Catalonia, fabric code CAT AM (Tomber and Dore 1998).

To judge by the surviving sherds, its body had an external diameter of 370 mm; body sherds are some 12 mm thick. Three shoulder sherds are present; one has a thickening of the wall where the handle began. The handle itself is represented by two joining sherds with a figure-of-eight section made from the amalgamation of two straight rods of clay. The upper surface of the profile view is curved at the summit where it turns sharply through rather more than a right angle towards the (missing) neck. Towards the base, the handle thickens where it had been attached to the shoulder, showing that more or less the entire length is present. Another sherd comes from the base of the amphora, with a small and possibly truncated

button spike. Catalan bases on Dressel 2-4 (and more especially its predecessor, Pascual 1) are invariably long and sturdy spikes; short and slight terminals like this are rare (Miró i Canals 1988, fig. 21, nos 3 and 7, fig. 22, no. 10, 89 for some other examples). Nothing of the rim has survived. The average empty weight of the Catalan Dressel 2-4 amphoras from six of the shipwrecks catalogued by Corsi-Sciallano and Liou (1985, 19, 31, 46, 69, 77, 132) is 16.57 kg, so only about 18 per cent of the Stanway amphora found its way into the chamber. Very little survives of the white surface slip on the amphora. Surfaces are powdery and soft with hairline cracks, quite unlike the hard and smooth finish one expects of these vessels. Fractures are rounded and smooth, with no sign of the usual hackly surfaces found on a fresh break. The condition of the edges made it impossible to establish if joining sherds were present. A few sherds have jet black matter adhering to the inner and outer surfaces, and over the edges of fractures.

BF6.23 FIG. 54. B123 shoulder, B227 handle, B134, B147, B148. Dressel 2-4 amphora. 36 sherds (2,339 g, mean sherd weight 65 g). Fine light pink (5YR 7/4) fabric of untempered clay.

To judge by the surviving sherds, its body had an external diameter of 310 mm; body sherds are some 13 mm thick. There is a rounded junction where the body joins the shoulder; the shoulder rises steeply towards the neck, around the base of which there is a horizontal groove. A straight length of handle with a figure-of-eight (bifid) section is present. On the inside of the handle, there is a single thumb or finger-tip impression on each rod just below the point where the handle turns in towards the neck. Nothing of the rim and base has survived. The condition of the sherds is much like that of the Catalan amphora from the same chamber. In this case, the fabric is even more friable and powdery, and there are more hairline cracks on the surface. Many of the sherds also have a black deposit on the inner and outer surfaces that sometimes runs across the fracture. Fractures themselves are rounded and smooth. The condition of the edges made it impossible to establish if joining sherds were present. Graffito: **CΛII,** *i.e.* **GAII** (TABLE 45, FIG. 147**,** BF6.23), scratched on the shoulder.

Discussion of amphoras BF6.22 and BF6.23 from chamber BF6

The condition of both amphoras is very similar. Both are much altered from their original state (powdery surfaces, hairline cracks, rounded fractures and black deposits on sherd breaks and outer surfaces). Other pottery from the chamber is in the same condition. What caused this? The black deposits must have formed after the vessels had been broken because they run over sherd fractures. Similar deposits are present on amphora sherds from the *c.* 15–10 B.C. Lexden tumulus and Grave 241 at King Harry Lane (Stead and Rigby 1989, 334). At Lexden, scientific analysis showed the stains to have formed naturally in the ground after burial of the pottery (Foster 1986, 124). Bearing in mind the similar geology to Lexden, the Stanway stains presumably developed in the same way. Other aspects of the condition of the amphora sherds raised the possibility that they might be connected with trauma caused by exposure of the amphoras to the heat of a funeral pyre. But the hairline cracks and powdery surfaces of the sherds are replicated on other pottery from the site, including complete vessels from other chambers where exposure on a pyre and subsequent breakage had not taken place. Acidic soil conditions seem to be at the root of the problem. This would also account for the rounded sherd breaks, otherwise so suggestive of the abrasion that comes from a long sequence of disturbance and movement before incorporation in their final context. A similar phenomenon has been reported from the late 1st-century B.C. grave at Dorton. There it was claimed that some of the fractures on the amphoras had been smoothed by groundwater after burial (Farley 1983, 290). The writer has seen pyre-damaged amphora sherds from Iron Age contexts at the Elms Farm site at Heybridge in Essex (p. 305). At Elms Farm, the trauma was even more advanced than at Stanway. Comparison of the two groups of material leaves the writer of the opinion that the amphoras from chamber BF6 had not been exposed to a pyre and that their condition can be accounted for by hostile soil conditions.

Only a modest proportion of each amphora found its way into chamber BF6. In the case of the Catalan amphora, this was only about 18 per cent of the vessel by weight. No data on empty weights are available for the class of Dressel 2-4 amphora represented by the second vessel in the chamber, so a percentage cannot be established. It is striking that the sherd weights of both vessels are so similar: 2.943 kg for the Catalan, and 2.339 kg for its companion. When it is remembered that a complete and empty Dressel 2-4 weighs some 17 kg, this correspondence in weights might not be a coincidence. It suggests that at the funeral, it was deemed fitting to

deposit more or less equal quantities of each amphora in the chamber. My wife suggested that a mourner or mourners carried the same number of handfuls of sherds from each amphora to the chamber. It follows too that although sherds of both vessels were mixed indiscriminately in the actual chamber, they had been kept apart above ground at the funeral until they were broken.

Chamber CF42

CF42.10 Not illustrated. C758. Dressel 2-4. 10 sherds (not too much attention should be paid to the sherd count because the crumbly and friable character of the vessel has led to disintegration since excavation) (15 g). Fabric soft and powdery light yellow (10YR 8/6) fabric with sparse (less than 5 per cm²) well-sorted rounded and sub-rounded white and light grey inclusions <1 mm across.

Pyre-site BF1/BF16

BF16.1 Not illustrated. B70, B79 (burnt?), B82, B88 (burnt?), B127, B204. Dressel 2-4 amphora (144 g, average sherd weight of 12 g). Cream Catalan fabric (Williams 1981, 128; 1995, 306). To judge by the body sherds present, the amphora had an external diameter of 340 mm with walls 12.6 mm thick. A neck sherd 11 mm thick has an external diameter of 120 mm. The cylindrical body and thin wall show we are dealing with Dressel 2-4, rather than with the earlier Pascual 1 form. Two sherds have the black stains present on other amphoras from the site, caused by a chemical reaction after they had been buried (p. 302). Seven of the ten sherds have black and grey scorch and burn marks. These marks continue over fractures showing that exposure to the heat source took place at the time of breakage or afterwards, not before. In many cases the colour of the sherds has turned from cream to grey (5Y 7/1), suggesting intense heat.

?Mortuary enclosure BF32

Pot 126 Not illustrated. BF31, B386, B524. Dressel 2-4 amphora. 2 body sherds (79 g, average sherd weight of 39.5 g). Brick red fabric typical of much of Latium and Campania, fabric code CAM AM 2 (Tomber and Dore 1998).

The two sherds from this Italian vessel both have external diameters of 140 mm with walls 11.5 mm thick. The tight curve shows they came from the neck .

?Mortuary enclosure CF43-6

Pot 145 Not illustrated. CF44, C112 shoulder. Dressel 2-4. 3 sherds (90 g). Fabric in the distinctive red paste with abundant white inclusions assigned to Catalonia, fabric code CAT AM (Tomber and Dore 1998).

Pot 146 FIG. 144. CF45, C185 handle. Dressel 2-4. Handle (202 g). Fabric light yellow (10YR 8/4) with common (6–10 per cm²) sub-rounded and well-sorted white and grey inclusions <1 mm across. A straight length of handle with a shallow exterior groove. The right hand half of the exterior of the handle has a thumb or finger-tip impression towards the lower end of the sherd, possibly where pressure had been applied when the handle was luted on to the shoulder.

Pot 147 Not illustrated. CF45, C185. Dressel 2-4. 30 sherds (not too much attention should be paid to the sherd counts because the crumbly and friable character of the vessel has led to disintegration since excavation) (133 g). Fabric soft and powdery light yellow (10YR 8/6) fabric with sparse (less than 5 per cm²) well-sorted rounded and sub-rounded white and light grey inclusions <1 mm across.

Enclosure ditch of Enclosure 3

Pot 12 Not illustrated. BF4, B1117. Dressel 2-4 amphora. Neck sherd (5 g). Fine light pink (5YR 7/4) fabric of untempered clay.

Pot 13 Not illustrated. BF4, B1101. Dressel 2-4 amphora. Neck sherd (12 g). Italian amphora in a black sand fabric, CAM AM 1 (Tomber and Dore 1998).

Enclosure ditch of Enclosure 4

Pot 127 Not illustrated. BF39, B932 shoulder. Beltrán I *salazon* sherd (104 g). The amphora is represented by a single sherd in the fine light yellow-green paste with powdery surfaces typical of Baetican *salazon* amphoras. Although this sherd does not have the red-brown iron ore grains

of fabric code CAD AM (Tomber and Dore 1998, 87, pl. 64), it can be classified with it because the iron grains of the fabric are so sparse that even quite large sherds need not necessarily show them. The sherd has a wall 20 mm thick. The oval scar left where the handle was detached from the shoulder is plain to see. Attribution to a form is more difficult. The angle of the shoulder is not steep enough to be Beltrán II or even Dressel 11, and it is simplest to think of the vessel as Beltrán I.

Pot 128 FIG. 143. BF40, B948. Dressel 2-4. Short terminal spike (287 g). Fabric light yellow (10YR 8/4) with common (6–10 per cm²) sub-rounded and well-sorted white and grey inclusions <1 mm across.

Enclosure ditch of Enclosure 5

Pot 148 Not illustrated. CF4, C53. Italian Dressel 2-4 body sherd (51 g), with an external diameter of 380 mm and a wall thickness of 13.5 mm in fabric CAM AM 2 (Tomber and Dore 1998).

Pot 149 Not illustrated. CF2, C153. Dressel 2-4. One sherd (43 g) came from CF2, the north butt end of the ditch at the entrance. Fabric in a soft light brown fabric (7.5YR 7/6) with powdery surfaces. The inclusions are well-sorted sparse (<5 per cm²) white and dark grey grains <0.5 mm across.

DISCUSSION

There were two quite distinct ways of treating funerary amphoras at Stanway; they could be placed in the burial more or less intact, or as sherd material from a vessel smashed elsewhere.

Complete amphoras found in Late Iron Age and early Roman graves here and in north-east Gaul were put there empty: their contents had been decanted before the grave goods were arranged in the funerary pit. One says this because none has been recovered from a grave with a bung *in situ* sealing its contents. At least some bungs would have survived because some of the components of amphora stoppers were made of imperishable materials. At least one of the amphoras at Stanway had been placed in its grave intact, the Dressel 8 from the Doctor's burial (FIG. 108, CF47.14) Although the rim is missing, the fracture is recent and it had presumably been dislodged by quarry machinery. The Dressel 2-4 from the Warrior's burial is represented only by the body (FIG. 81, BF64.15); we do not know if the rest of the vessel had been placed in the grave (but see p. 172). Although the body has been restored from sherds, one feels confident it was intact at the funeral but that it had subsequently collapsed in the ground.

The condition of the amphoras from the chambers at Stanway is quite different. There the amphoras were represented by sherd material (as opposed to vessels which may have broken in the ground after burial). The vessels are amphoras BF6.22, BF6.23, and CF42.10, from chambers BF6 and CF42. All are Dressel 2-4. The quantity of amphora sherds from the single amphora in chamber CF42 was tiny. More sherds were recovered from the two amphoras in chamber BF6 but even there, only about a fifth of each vessel by weight was present (FIG. 54). Evidently the amphoras had been smashed elsewhere and only a selection of sherds cast in the chamber. The broad congruence of the sherd weights of the two amphoras shows this was not a haphazard operation. Although sherds of both pots were scattered together in the grave, the more or less equal quantities of each amphora by weight shows that the funerary ritual involved conveying much the same amount of each vessel to the grave pit. Other objects in both chambers had also been thoroughly broken.

The first Iron Age grave to be discovered with smashed amphoras was the Lexden Tumulus (Foster 1986, 124; Williams 1986), but the possibility of ancient disturbance to the grave as well as the lack of comparanda discouraged investigation of the implications at the time. Not until the King Harry Lane cemetery (Williams 1989) was it realised that amphoras could be placed in Late Iron Age graves in the form of sherd material from vessels broken elsewhere. The treatment of smashed amphoras at King Harry Lane differs from the Lexden Tumulus and Stanway chambers BF6 and CF42, and indeed Folly Lane at Verulamium (Niblett 1999, 44; Williams 1999), in that the other grave goods at King Harry Lane were hardly ever broken.

The smashed amphora sherds in chambers BF6 and CF42 resonate with the still grander funerals at the Lexden Tumulus and Folly Lane, for there too the amphoras had been broken before burial. In the present state of knowledge, the Lexden Tumulus and Folly Lane graves

bear every appearance of the very pinnacle of society, with Stanway at one or two removes. A social gradient between Stanway and Folly Lane can even be seen in the wine amphoras. At Folly Lane, they are all Italian, whereas at Stanway some had been drawn from the provinces. After Nero, wine amphoras seldom feature as grave goods in Britain. When they do, it can be as little more than a convenient lid or container for the other grave goods.

We have already seen that the contents of amphoras retrieved from early graves in Britain had apparently been decanted and consumed beforehand. There is no evidence that the near complete *salazon* from the Doctor's grave or the Dressel 2-4 amphora body from the warrior burial at Stanway were old vessels that might have seen secondary use once they had been emptied. Such evidence is of necessity unavailable for the smashed amphoras from Chambers BF6 and CF42. It is theoretically possible that any of the amphoras from the Stanway graves and chambers had reached the site empty and that the consumption of their contents had taken place elsewhere. This is why the four amphoras from the enclosure ditches that could not have come from vessels found in the funerary chambers or burials are important. There is no evidence in the late Iron Age at Stanway for domestic settlement: the entire *raison d'être* of the chambers and their enclosures is funerary. Yet these four amphoras show eating and drinking taking place there, and taking place in some style with imported wines and fish-sauces. It lends weight to the suspicion that the amphoras from the graves had seen the consumption of their contents on site, and not somewhere else. Stanway provides clear evidence from late Iron Age and early Roman Britain for funeral feasts at a cemetery.

Sherds from one of the Stanway amphoras had been exposed to intense heat. The vessel in question is a Catalan wine jar from the pyre site BF16 in Enclosure 3. None of the other Stanway amphoras shows signs of trauma from combustion. The incorporation of amphoras in pyres is unusual in late Iron Age and early Roman Britain. It is only certainly attested in Iron Age contexts at the Elms Farm site at Heybridge (Essex) (Sealey forthcoming b). Amphoras that had also been exposed to a pyre are attested at Verulamium in a conquest-period context. There the fill of the *c.* A.D. 35–40/45 Grave 447 at King Harry Lane had a burnt Dressel 20 sherd, although it might conceivably have been intrusive (Williams 1989, 116). The evidence from the high-status *c.* A.D. 55 funeral at Folly Lane is unambiguous because many of the Dressel 2-4 sherds from the burial pit and mortuary chamber were burnt.

THE SAMIAN (TABLE 44)

By G.B. Dannell

The small amount of samian ware found at Stanway is in keeping with the site's date and native character but is nevertheless a remarkable collection for its period. Most vessels are South Gaulish but there is also a single piece of Italian Arretine (TABLE 44).

Three of the burials contained samian. A minimum of five plain vessels, two cups and three platters, came from chamber BF6. All are represented by fragments, and further fragments from the feature could not be allocated to one of these items and may come from other unidentified vessels. Cup BF6.1 can be dated by a stamp of Silvanus to the Tiberian period, and the other items in the chamber are Tiberio–Claudian (BF6.2–5; p. 123). The Doctor's burial contained a complete decorated serving bowl (FIG. 108, CF47.1; p. 213) that dates to the A.D. 40s, and a complete plain Claudian cup was deposited in the Warrior's burial (FIG. 81, BF64.1; p. 173).

The remainder of the plain vessels came from Enclosures 4 and 5 and may be associated with the feasting that accompanied the funerary rites. Part of an Augusto–Tiberian Arretine platter (Pot 121; p. 95) came from the east ditch BF30 of the pyre-site BF32 in Enclosure 4 and this vessel may have been an heirloom of some considerable age when deposited. A partial cup and three partial platters came from BF40/CF5, the east ditch of Enclosure 4 (Pots 122–5; p. 80), and one partial platter from CF3, the south ditch of Enclosure 5 (Pot 144; p. 84). Three of these five vessels are Claudian or probably Claudian, and the other two need not be any later.

TABLE 44: PLAIN SAMIAN

Vessel	*Context nos*	*Context*	*Form*	*Date*	*Source*	*Comments*
Enclosure 3						
BF6.1	B164/157	chamber BF6	cup: Ritt. 5 (2)	Tiberian	SG	B164 stamped Silvani, with 'A' graffito under base; fragments, most of vessel present
BF6.2	B68/132	chamber BF6	cup: Ritt. 5	Tib.–Claud.	SG	fragments, large part of vessel present
BF6.3	B150/157/198	chamber BF6	platter: Drag. 17	Tib.–Claud.	SG	fragments, large part of vessel present
BF6.4	B140/214	chamber BF6	platter: Ritt. 1	Tib.–Claud.	SG	graffito under base; fragments, large part of vessel present.
BF6.5	B148/151/214	chamber BF6	platter: Loeschcke 1a	Tib.–Claud.	SG	profile as Hawkes and Hull 1947, pl 39, 2a; fragments, large part of vessel present
BF6 misc.	B98; B138; B147; B161; B179	chamber BF6	-	-	SG	no identifiable fragments
BF64.1	B1024	Warrior's burial BF64	cup: Drag. 33	Claudian	SG	stamped by Primus
Enclosure 4						
Pot 121	B586/BL38, F30	pyre-site ditch BF32	platter	Aug.–Tib.	Arezzo	
Pot 122	B950	encl. ditch BF40	cup	Pre-Flavian	SG	
Pot 123	B964	encl. ditch BF40	platter	Claudian?	SG	
Pot 124	B1196/1197	encl. ditch BF40	Drag. 15/17	Claudian	SG	two sherds probably from same vessel
Pot 125	C1380	encl. ditch CF5 (BF40)	platter: Drag. 17	Claudian?	SG	a small version
Enclosure 5						
Pot 144	C1400	encl. ditch CF3	cup: Drag. 33?	1st century	SG	

The overall picture of supply at Sheepen is complicated by the number of vessels of Tiberian date deposited in post-conquest levels, some perhaps originally owned by native Britons before the conquest, others brought to Britain among the personal effects of army officers or the household goods of the early colonists and Gaulish artisans and traders moving to Britain to take advantage of the new markets. Nevertheless, it has long been established that a quantity of Arretine and South Gaulish wares reached Camulodunum in the pre-conquest period (Hawkes and Hull 1947, 168–91; Dannell 1985), and it is from these imports that the Arretine platter and the vessels in BF6 and CF47, at the least, would have been drawn. All would have been seen as rare and desirable items of service, the decorated bowl in particular. It is quite conceivable that some products of Claudian date also reached Camulodunum before the conquest or very soon afterwards (Hawkes and Hull 1947, 177; Dannell 1985). Even in the A.D. 40s and early 50s samian ware vessels would have been seen as high-status objects in a contemporary native British milieu. After the conquest considerable numbers of vessels were in use in the fortress and early *colonia* and at Sheepen (the latter assemblage influenced by that site's close proximity to the Roman establishments), but, in strong contrast, only nine miles away at Ardleigh the earliest samian ware consisted of South Gaulish Neronian vessels (Dickinson 1999), while in the Late Iron Age and early Roman cemeteries at Stansted samian

vessels only began to be deposited as grave goods in the later 1st century A.D. (Wallace 2004, 239). Compared to these two sites the Stanway samian appears both striking and unusual for its period, a reflection of early access to continental products.

Decorated samian

CF47.1 FIG. 108. C900. Dragendorff form 29. South Gaulish. **OFI/CANTI** Cantus Die 6a. Date: *c.* A.D. 35–50, and probably from the end of that period. This die was often used on Dragendorff 29. Cantus (if only one potter) is purported to have stamped ware from A.D. 20–60 (Polak 2000, 196). However, the majority of his output must stop by *c.* A.D. 50, and a *floruit* of 30 years should be seen as a maximum. He is represented among the vessels burnt in a kiln disaster at La Graufesenque, known as 'The Fosse Cirratus', although not there stamping decorated vessels. This find shows Cantus as a worker of the later Tiberian period. The current piece has Claudio–Neronian features in the panels of the upper zone. These are not present in Fosse Cirratus, but the dog, O. 1970, is on a bowl fragment there, in a medallion. The crowded lower zone retains the style of earlier pieces, but is consistent with the later date. Cantus is one of the few potters to have made Drag. 29 with ovolo decoration (Fiches 1978, fig. 4.7 from d'Ensérune). Date: *c.* A.D. 35–50, and probably from the end of that period (*see also* Dickinson on p. 213).

THE GRAFFITI FROM CHAMBER BF6 (FIGS 146–7; TABLES 45–6)

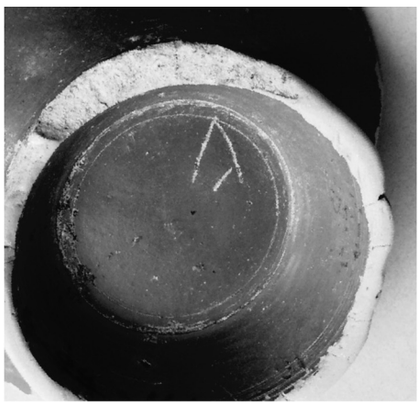
By Paul R. Sealey

INTRODUCTION (TABLE 45)

The only graffiti from Stanway are those from the funerary chamber BF6, where seven pots have marks scratched on them. The readings of the graffiti are those of M.W.C. Hassall (Tomlin and Hassall 2003, 372, nos 15–18). TABLE 45 and FIGURES 146–7 give a full listing and drawings of the graffiti. Bearing in mind the date of the chamber (*i.e. c.* A.D. 35–45/50), they represent an interesting addition to the slender corpus of early writing from Britain.

TABLE 45: THE GRAFFITI AT STANWAY BASED ON TOMLIN AND HASSALL 2003, 372, NOS 15–18. THEY ARE ALL ON SHERDS FROM CHAMBER BF6 IN ENCLOSURE 3

Pot no.	*Find nos*	*Context*	*Pot type*	*Pot date*	*Comments*
BF6.1	B164	chamber floor	Ritt 5 samian cup	Tiberian	The graffito A was cut after firing underneath the base within the footring.
BF6.4	B140	backfill overlying chamber floor	Ritt 1 samian platter	Tib.–Claud.	The sherd appears to carry two superimposed graffiti cut after firing underneath the base within the footring: (a) X. (b) SES, perhaps Ses(tius).
BF6.15	B150, B151	chamber floor	Cam 8 TN platter	A.D. 25–60	A graffito cut after firing on the upper surface perhaps reads: CAII, Gaii. '(Property) of Gaius'. The reading of 'A' is not certain.
BF6.23	B147	backfill overlying chamber floor	Dressel 2-4 amphora	75 B.C.–A.D. 200	A graffito probably cut after firing on a sherd from the shoulder reads: CΛII, Gaii. '(Property) of Gaius'. The first letter is 'C', not 'G'.
BF6.6	B90, B131	chamber floor	Cam 7C TR platter	A.D. 15–40	A straight line, probably cut before firing underneath the base within the footring.
BF6.8	B140, B151	floor and backfill of chamber	Cam 7/8 TR platter	A.D. 25–50	A 'grid' design on the upper surface. X+V (a six-pointed star) underneath the base within the footring. Both cut after firing.
BF6.13	B138	backfill overlying chamber floor	Cam 8 TN platter	A.D. 25–60	X (cross), cut after firing on the upper surface.



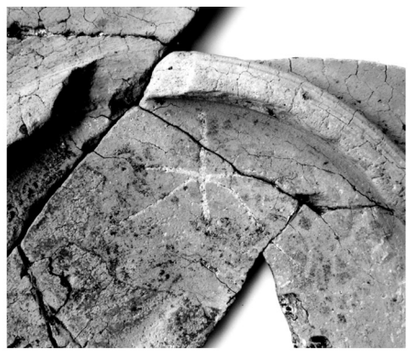
BF6.1

BF6.4

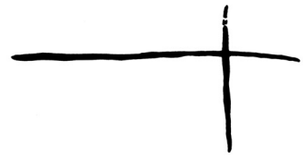
BF6.6

BF6.8

FIG. 146. Graffiti on pottery vessels from the chamber BF6: Pots BF6.1, 4, 6 and 8 (upper surface) (scale 1:1)

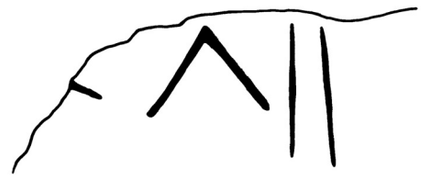


BF6.8



BF6.13

BF6.15



BF6.23

FIG. 147. Graffiti on pottery vessels from the chamber BF6: Pots BF6.8 (base), 13, 15 and 23 (scale 1:1)

The markings discussed here are quite distinct from the straight lines on the upper surfaces which Dr P.A. Tyers pointed out to me are cut marks from the consumption of food on the platters. Four of the graffiti are certainly letters (FIG. 146, BF6.1, BF6.4; FIG. 147, BF6.15, BF6.23). At best the other four can only be described as quasi-alphabetic; one is simply a straight line that might even have been cut before firing. The common denominator among the quasi-alphabetic graffiti is a cross; it is also present on the vessel with the SES graffito (BF6.4). Crosses are ubiquitous in the Roman period. They cannot all be the number ten or a letter of the alphabet; some are presumably ownership marks (Hassall 1982, 55). The Stanway graffiti include the earliest on an amphora from Britain and the first certain instances of the genitive case, indicating possession.

THE STANWAY GRAFFITI IN CONTEXT (TABLE 46)

Graffiti from Iron Age Britain are described in the appendix (pp. 313–14); imported pots inscribed before firing are not listed. Early graffiti from the major late Iron Age site of Elms Farm at Heybridge (Essex) have not been included because their context dates have yet to be finalised (Tomlin and Hassall 2001, 394).

Graffiti are not the earliest examples of writing generated in Britain; that honour falls to coin legends. The first are coins with single and double letters struck south of the Thames in the middle of the 1st century B.C. (Williams 2003a, 5–6). Rather later in the same part of the country, coins appear bearing the name COMMIOS from *c.* 30 B.C. (Bean 2000, 116–19). About the same time as the COMMIOS legends, we find the first graffiti north of the Thames from the Welwyn B (Hertfordshire) grave, where two Italian silver drinking cups have writing scratched on the underside of their pedestal feet. The grave itself has a Dressel 1 amphora but no imported table crockery, suggesting a date before *c.* 25 B.C. when crockery imports began (Rigby and Freestone 1997, 58). Welwyn has the only Iron Age graffiti on metalwork; all the others are on pottery. None of these other graffiti are definitely 1st-century B.C. in date, although two of the Puckeridge–Braughing examples come from contexts that span the period *c.* 15 B.C.–A.D. 20. If we take late Augustan to mean later than *c.* A.D. 1, then 24 of the 30 Iron Age graffiti listed in the appendix (80%) are 1st century A.D. in date. Evidently writing on domestic vessels began falteringly in the last decades B.C. but greatly increased in the forty years before the invasion.

Quantified details of the materials and pottery bearing Iron Age graffiti are given in TABLE 46. Nearly a quarter of the graffiti are on local vessels, including a storage jar from Puckeridge–Braughing. The rest are on imported tablewares. Half are on Arretine, and a further 16 per cent on Gallo-Belgic products. Much the same is true of Roman Britain where most ceramic graffiti are on tablewares, especially imported finewares (Evans 1988, 199, 202). The position of the graffito on the pot is not always recorded, but 12 of the 30 are on the undersides of vessels, where they would normally have been out of sight. That equates to 40 per cent and tallies exactly with the percentage of samian vessels from Roman Britain with graffiti from within the footstand (*RIB* 2, fasc. 7, 3). The only case ending certainly attested on the Iron Age graffiti is the nominative GRAECVS and MIIVS from Puckeridge–Braughing. There is no certain evidence of the genitive case, because the COMMVNIS graffito from Sandwich could be nominative or genitive. MIIVS means 'my' or 'mine' and, despite the lack of evidence for the genitive, the writing of names on these pots is best interpreted as statements of ownership. It was presumably done not so much from fear of theft but to reclaim possessions after a communal meal. Such declarations of ownership were a thoroughly Roman practice, widespread later in Roman Britain (and elsewhere of course) (*RIB* 2, fasc. 7, 5). It could not have evolved spontaneously in Iron Age Britain, and the graffiti in part at least must be the handiwork of 'Romans' resident in Iron Age Britain. This conclusion is borne out by two of the names, GRAECVS from Puckeridge–Braughing and COMMVNIS from Sandwich. Presumably these foreigners were the agents of Roman merchant houses that traded with pre-conquest Britain. GRAECVS may have been a slave or freedman of such an enterprise (*RIB* 2, fasc. 8, no. 2503.271).

TABLE 46: IRON AGE GRAFFITI BY VESSEL TYPE (STANWAY EXCLUDED)

Vessel type	*Number of graffiti and site*	*Totals*	*Percentages*
silver cup	Welwyn B grave (2)	2	7
Arretine	Puckeridge–Braughing (2) Colchester Sheepen (12) Fishbourne (1)	15	50
terra rubra	Puckeridge–Braughing (1) Colchester Sheepen (1)	2	7
terra nigra	Puckeridge–Braughing (1) King Harry Lane (1) Sandwich (1)	3	10
local *terra rubra* copy	Silchester (1)	1	3
other local wares	Puckeridge–Braughing (2) King Harry Lane (1) Canterbury (4)	7	23
total		**30**	

The geographical distribution of Iron Age graffiti is limited. In terms of political geography, they are confined to the Atrebates, Cantiaci, Catuvellauni and Trinovantes. Coin legends were used by outlying kingdoms such as the Corieltavi and Iceni, but there we have no graffiti to supplement the numismatic evidence for literacy. In such states, Latin should be thought of as exclusively the language of the mint, with — as yet — no hint of a wider diffusion of literacy in society. Apart from Sandwich and the Welwyn grave, Iron Age graffiti are confined to sites at the summit of the settlement hierarchy, to places with coin mints and other places invested with status.

It only remains to point out that further evidence for literacy in the Iron Age comes from finds of styli. Puckeridge–Braughing had two iron ones in Augustan contexts after *c.* 20 B.C. and three bone styli of 1st-century B.C. form from Augusto–Tiberian contexts (Jackson 1988b, 74 nos 55 and 57; Trow 1988, 159; Greep 2002). Two more iron styli were found at Iron Age Silchester in contexts dated *c.* 15 B.C.–A.D. 40/50 (Richards 2000, 360, fig. 172, 373).

THE SIGNIFICANCE OF THE DUAL NAMES AT STANWAY

Two names seem to be attested among the Stanway graffiti, Gaius and Sestius. There are no Gaulish personal names beginning with the element SES (Evans 1967), so it is possible that both names are Roman, the former a *praenomen* (forename) and the latter a *nomen* (family name). Although it is conceivable that both refer to the same individual — a Gaius Sestius — it is first worth considering the possibility that two different people are attested because of the implications for funerary practice.

The cremation grave of an adult at Baldock (Hertfordshire) dated *c.* A.D. 40–65 had pots with two different personal names. Both these graffiti are on samian; one reads MELENIO, the other, X VATILA (Stead and Rigby 1986, 71–2; Hassall 1986). The late Augustan cremation grave of an adult female in the King Harry Lane cemetery (Hertfordshire) had a local *tazza* with the graffito ANDOC, a male name (Stead and Rigby 1989, 202). Taken at face value, not all these pots can have originally belonged to the deceased. It has been suggested that such inscribed pots were not the possessions of the deceased, but donations brought to the funeral by mourners. Developing his idea that grave goods were donations by family members, Millett (1993, 266, 275–7) has argued that the decline in the number of grave goods with time at the King Harry Lane cemetery reflects the social dislocation of newcomers to the Verlamion settlement through geographical separation from their families in the decades before the Roman invasion. This overlooks the inheritance or donation of pots bearing graffiti in the lifetime of the individual eventually cremated with them: a Roman cremation pot at Colchester apparently had two successive owners (*RIB* 2, fasc. 8, no. 2503.157), and several graffiti on

samian ware from Roman Britain suggest successive owners (*RIB* 2, fasc. 7, 1–2). Nor is it immediately obvious why grave goods should be confined to the family of the deceased, as opposed to friends or companions unconnected by ties of blood. The Latin of the graffiti is also at odds with the donation hypothesis. Not only are Iron Age coin legends written in the Latin alphabet, they also show some understanding of the Latin language (Creighton 2000, 171; Williams 2003a, 9; 2003b, 146–7). Were pots with graffiti donations at the funeral, the case ending of the name would be the dative, signifying 'to' or 'for' the person specified, but that case is not definitely attested in the examples cited here. Otherwise the only case ending attested on graffiti from a funerary context is the genitive (indicating possession or ownership) of the two Gaius graffiti from Stanway. In other words, the Stanway graffiti lend no support to the Millett thesis. The simplest — and indeed the preferable — explanation is that the pots naming Gaius and Sestius were acquired by the deceased of funerary chamber BF6 from people of that name in his or her lifetime.

But it is still worth considering the implications if the names on the pots were actually those of the deceased. One would have expected him or her to have had a Celtic name (taking 'Celtic' as a technical term to refer to the language spoken by Britons, without prejudice to their ethnicity). Gaius and Sestius of course are Roman names and we would need to explain how someone bearing such names was cremated at Stanway. Claudius banned *peregrini* (free adults in the empire who were not Roman citizens) from adopting a Roman family name (*nomen*) (Suetonius, *Divus Claudius*, 25.3). If the funeral took place after the invasion of A.D. 43, we might be dealing with just such a *peregrinus* before the legislation came into force. Nor did people granted citizenship by Claudius have to assume the same family name as the emperor (Hurley 2001, 174, citing Cassius Dio 60.17.7) so the deceased could have been a Sestius rather than a Claudius (had he been granted citizenship after A.D. 43). Perhaps the deceased was a Briton whose taste for things Roman led him to adopt a foreign name. That something like this could have happened in the Iron Age is suggested by the puzzling legend AGR on some rare silver issues and a gold quarter-stater of Cunobelin (de Jersey 2001, 15–16, 31–2). G. de la Bédoyère suggested the legend stands for the Roman *cognomen* Agrippa (de Jersey 2002), although it might instead be the (rare) Gaulish name Agriccos or Agrecius (Sills 2003).

Standing aside from these intricacies of nomenclature, there is no reason to think the Stanway pots with personal names were donated by mourners at the funeral. The simplest explanation is that they had been acquired by the deceased in his or her lifetime from one or two people with a Roman name. But we cannot entirely rule out the possibility that the names were those of the deceased himself, and that he was a Gaius Sestius. A Roman would hardly have been laid to rest at Stanway and there is the intriguing — if unlikely — possibility that the deceased was a Briton who had assumed the name Gaius Sestius out of enthusiasm for things Roman on the eve of the invasion or in the conquest period.

LITERACY, IDENTITY AND POWER

Stanway helps elucidate who actually scratched these early graffiti from Britain. Literacy was an exotic skill introduced here through contact with the mainland of Europe. It is clear from COMMVNIS of Sandwich and GRAECVS of Puckeridge–Braughing that some Iron Age graffiti were the work of what we might nowadays call resident aliens, quite possibly merchants — or their agents — who traded with Britain, like those attested in the graffiti from the Magdalensberg in Austria before the Roman conquest of the region (Egger 1961). Indeed it is difficult to prove that any given graffito was the work of an Iron Age Briton if it comes from a settlement site (Hawkes and Hull 1947, 285). This is why the graffiti on the silver cups from Welwyn are important because there is no reason to think the deceased was anything other than a wealthy local potentate. In other words, the first graffiti from Britain were the work of élite natives as well as guests from overseas. Stanway was a cemetery for Britons, and chamber BF6 with its graffiti was not created for a Roman merchant venturer but for a native aristocrat. Even if the Stanway graffiti with Roman names were gifts to a Briton in his or her lifetime, their inclusion in the grave implies some comprehension of literacy by a native.

The presence of at least four literate graffiti in the Stanway chamber shows that writing had been important to the individual commemorated. But why? Although literacy was not a prerequisite of statehood in temperate Europe (Woolf 1994, 94), it is clear from coin legends alone that local dynasts were prepared to use this novel skill for their own purposes. It is quite conceivable that the more advanced tribal administrations in late Iron Age Britain had a literate secretariat: the adult cremated in the Inkwell burial adjacent to chamber BF6 might have been just such a trusted functionary. It is all too easy for us nowadays to forget how miraculous writing would have appeared to communities in the past that were pre-literate, like those of Iron Age Britain (Creighton 2000, 165–6). Knowledge is power, and literacy can be a part of that equation. No doubt this was not lost on élites of the kind cremated at Stanway. One consequence of the partial adoption of literacy in Britain will have been a widening of the gulf between élites and the rank and file of the population. Indeed that may well have been some of its attraction for dynasts and their aristocratic retinues, even if it aggravated the tensions suspected between secular rulers and a Druid priesthood that would not commit its teachings to writing (Creighton 1995, 297; Webster 1999, 12). The presence of so many graffiti in the Stanway chamber makes a statement: the deceased was élite not only by virtue of wealth or birth, but also through his or her comprehension of the new skill of literacy.

APPENDIX: GRAFFITI FROM IRON AGE BRITAIN

Puckeridge–Braughing, Gatesbury Track (Hertfordshire). The graffito on the shoulder of a native storage vessel reads CIINATIN... or CINATA… It was stratified in the lowest fill of Pit F49 with local copies of a Gallo-Belgic butt-beaker (hence after *c.* 15 B.C.) and was sealed by a level with late Augustan *terra rubra* to give a date of *c.* 15 B.C.–A.D. 15 for the graffito. The graffito is a masculine or feminine version of the Celtic name Cen(n)atus (Partridge 1980, 117; *RIB* 2, fasc. 8, no. 2503.225).

Puckeridge-Braughing, Skeleton Green (Hertfordshire). Five graffiti of Iron Age date were recovered (Partridge 1982).

1. GRAECVS (the Latin adjective meaning 'Greek') on the underside of a *terra rubra* platter from a context dated *c.* A.D. 15–25. This Graecus was possibly a slave or freedman of a Roman merchant who traded with Britain (*RIB* 2, fasc. 8, no. 2503.271).
2. MIIVS on the underside of an Arretine platter from a context dated *c.* A.D. 30–40. In some forms of Latin cursive II was used for E (Allen 1980, 120), so MIIVS can be read as MEVS (the Latin adjective meaning 'my' or 'mine') (*RIB* 2, fasc. 8, no. 2504.47).
3. TE on the underside of an Arretine platter from a context dated *c.* 10 B.C.–A.D. 20 (*RIB* 2, fasc. 7, no. 2501.746).
4. SE on the underside of the base of 'a small coarseware jar' from a context dated *c.* A.D. 15–25 (*RIB* 2, fasc. 8, no. 2504.48).
5. *TE* on the underside of the base of a *terra nigra* platter from a Roman period context but deemed to be pre-conquest because of the identity of style with the other TE graffito (*RIB* 2, fasc. 8, no. 2504.49).

Canterbury, Whitehall Road (Kent). Four graffiti were recovered from Iron Age contexts dated A.D. 15-43 (Wilson 1987, fig. 79, nos 2–5, 208).

1. NVX (with reversed N) on a local jar (*RIB* 2, fasc. 8, no. 2503.566).
2. H on a local copy of a butt-beaker.
3. XXI on a local cup.
4. H on a local cup.

Colchester, Sheepen (Essex). There were twelve Arretine vessels with graffiti. Three were stratified in late Iron Age contexts, after *c.* A.D. 5. The others are unstratified or from early Roman contexts, but there can be little doubt their graffiti were cut in the Iron Age. The clearest read AR, M, SEV II, VAT, VE, SI, A and VISI (Hawkes and Hull 1947, 284–5). V.A. Rigby kindly drew my attention to another (unpublished) Iron Age graffito from the 1930–39 excavations at Sheepen on a *terra rubra* platter stamped by Attissus, and read as SA…I. It was stratified in an early Roman context, but can be added to the corpus of Iron Age graffiti because Attissus was an Augustan potter (Hawkes and Hull 1947, 209 no. 45, pl. 45 for the stamp; Timby 2000, 203 for the date).

Fishbourne Palace (West Sussex). An Arretine cup with the letters TV scratched on its base came from the old ground surface just south of a ditch with pottery dated *c* 10 B.C.–A.D. 25 in the primary fill (Manley and Rudkin 2005, 91, 94).

Silchester (Hampshire). What is apparently a local copy of a *terra rubra* beaker has a graffito in Greek letters on the base, XΦA. It was one of a group of ten pots buried in the bottom of Pit 9 in Insula XXXV 'on the eve of the Roman invasion' (St John Hope 1908, fig. 7 bottom right; May 1916, 185 no. 3, pl. 76; Boon 1969, 34 n. 6; *RIB* 2, fasc. 8, no. 2503.93).

Verlamion, King Harry Lane (Hertfordshire). Grave 123 has a late Augustan–Tiberian central Gaulish *terra nigra* platter with the graffito RX (Stead and Rigby 1989, fig. 55, 202, 303, 306). Grave 322 includes late Augustan imported pottery and a grog-tempered local *tazza* with the graffito ANDOC. The name is male but the cremated bones are female (*ibid.*, fig. 55, 202, 354, 356).

Welwyn B Grave (Hertfordshire). Two Italian silver drinking cups have graffiti on the underside of their pedestal feet, read by the writer as ACI II and ACSTIII, with the ST ligatured. It has been suggested that the inscriptions begin with the abbreviated name of the vessel (*acetabulum*) and that what follows is their capacity or weight (Wright 1964, 180, no. 15; *RIB* 2, fasc. 2, nos 2414.30–31). But the capacity and weight proposed are wrong for the cups, and in any case the Latin name for drinking cups like these was *cantharus*, not *acetabulum* (Hilgers 1969 *s.v. cantharus* and *acetabulum*) so the graffiti need not have been written before the arrival of the cups in Britain.

Sandwich, Archer's Low Farm (Kent). A late Augustan central Gaulish *terra nigra* platter from the lower fill of a ditch with immediately pre-conquest pottery bears the graffito COMMVNIS. Communis was a common Roman personal name (*cognomen*), especially in Gallia Narbonensis and Italy (Hassall and Tomlin 1993, 317, no. 9).

THE BROOCHES (TABLE 47)

By Nina Crummy

TABLE 47 shows the brooches found in the funerary contexts. One came from an isolated pit with pyre debris dating to the 1st century B.C., the rest were from mid 1st-century A.D. burials in Enclosures 3 and 5.

TABLE 47: BROOCHES FROM ENCLOSURES 1–5

Encl.	*Feature*	*Brooch type*	*Context*	*SF*	*Alloy*	*Notes*
–	CF7.2	boss-on-bow	C44	198	brass	pre-conquest import
3	BF64.19	Nertomarus	B1032	340	brass	pre-/post-conquest import
	BF64.20	Nertomarus	B–	382	brass	pre-/post-conquest import
3	BF67.3	Hod Hill variant	B1071	329	brass/gunmetal	post-conquest import
5	CF47.17	Rearhook	C942	40	leaded bronze	British, made from *c.* A.D. 40
	CF47.15	Langton Down	C982	79i	gunmetal	pre-conquest import
5	CF72.5	Keyhole Rosette	C410	7	brass	?post-conquest import
	CF72.6	Hod Hill	C408	6	leaded gunmetal	post-conquest import
	CF72.10	star-shaped plate	C406	5	brass	post-conquest import
	CF72.9	lozenge-shaped plate	C414/421	8/11	brass	post-conquest import
	CF72.7	circular lugged plate	C416	9	brass	post-conquest import
	CF72.8	circular lugged plate	C418	10	(brass)	post-conquest import

BOSS-ON-BOW BROOCH (KNOTENFIBEL)

CF7.2 FIG. 75. SF198. C44

The brooch fragment from CF7 was found in an isolated pit with pyre debris beyond the south-east corner of Enclosure 5. The brooch, with the boss set just below a downwards turn from the head (FIG. 75, CF47.2), is of a form found in Britain in burials of the Aylesford culture, both singly and in pairs, in silver, copper alloy and iron (Almgren 1923, no. 65; Feugère 1985, type 8; Birchall 1964; 1965; Stead 1971; 1976; 1984; Montague 1997, 92–3). Pairs have also been found in hoards, such as those in silver from Le Câtillon de Haut, Jersey (Fitzpatrick and Megaw 1987, pl. 17a), and in gold from near Winchester, Hampshire (Hill *et al.* 2004).

Stead (1976, 408) noted that north of the Thames the finds of *Knotenfibeln* clustered about the trade route provided by the Icknield Way, and some recent finds from, for example, Shillington, Bedfordshire (unpublished British Museum Treasure Report 2001) and Trumpington, Cambridge (Crummy 2002) bear this observation out. They are, however, far more widespread than Stead suggested. There are two iron ones further away from the Icknield Way at the King Harry Lane cemetery, Verulamium (Stead and Rigby 1989, 96, R1–2), and others from Foxholes Farm, near Hertford (Mackreth 1989b, fig. 76, 1–2). There are also several examples along the Essex and south Suffolk coast: one from Maldon Hall Farm, Maldon (Lavender 1991, fig. 4, 1), four from Elms Farm, Heybridge (Crummy forthcoming b), this brooch from Stanway, one from Colchester town centre, residual in a medieval robber trench (*CAR* **2**, fig. 2, 16), two fragments from Sheepen that were not published in Hawkes and Hull 1947 because they inconveniently pre-dated the supposed start date for the site of *c.* 5 B.C. (Hull forthcoming, Type 19, nos 0248–9), and one from Burgh, Suffolk (Olivier 1988a, fig. 9, 1). The Maldon Hall Farm brooch is silver, one of the Elms Farm brooches is iron, the rest of the coastal group are copper alloy. The Colchester town centre brooch is one of the very few Iron Age objects of that date from that area, which seems to have seen little activity until the founding of the Roman fortress in *c.* A.D. 44. The retrieval of boss-on-bow brooches from sites close to the estuaries of the Colne, Blackwater and Deben points to ports of entry for the brooches, and both Camulodunum and Elms Farm received other brooch imports in the 1st century A.D. However, there is also a possibility that some of the boss-on-bow brooches, particularly those made of copper alloy or iron, may be local copies.

The Stanway and Colchester town centre brooches fall firmly into the main group of *Knotenfibeln*. The form has generally been dated to the second half of the 1st century B.C. (Stead 1976, 412; Feugère 1985, 238), but recent revisions of the overall dating of the La Tène period on the Continent have placed some examples as appearing as early as the last quarter of the 2nd century B.C. (Gebhard 1991, 94, groups 10–12), and a general start date of *c.* 100 B.C. has been proposed (Colin 1998, 39; Müller and Maute 2000, 51). At Westhampnett a date range of *c.* 90–50 B.C. was preferred, though not conclusively proven (Fitzpatrick 1997, 204), and it has been suggested that the closing date should be set at *c.* 25–20 B.C. (Fitzpatrick and Megaw 1987, 437; Colin 1998, 39). However, an iron example occurs in a Phase 3 grave at the King Harry Lane cemetery (Stead and Rigby 1989, fig. 50, 1), dated to *c.* A.D. 40–60 in the site report, but to *c.* A.D. 35–50/5 by Mackreth (1994, 288). The King Harry Lane brooch may be an heirloom, but it has an elaborately fretted catchplate, high button, inferior chord, and large expanded head, all of which could be taken as indicators of a date late in the series. It is closely similar to an iron brooch from a cremation at Hitchin (Stead 1976, fig. 3, 4).

There is no reason to suppose that the Stanway brooch was particularly old when buried, and the crispness of its moulding suggests it is not a late derivative. It compares well with the silver brooches from Great Chesterford in form and execution (Fox 1958, pl. 406; Krämer 1971, Taf. 24) and is very likely an imported piece contemporary with the main run of the type, *i.e.* dated broadly to *c.* 100–25 B.C. Mackreth (1995, 964) suggests that examples with the button set high up on the bow, as here, are later than those where it is close to the middle, and the inferior chord also places it later than those with superior chord (though the forms overlapped). The Great Chesterford and Westhampnett brooches all have a superior chord. These stylistic considerations therefore permit a date late in the range to be postulated for this brooch, probably *c.* 60–25/20 B.C., although the occurrence of similar characteristics on the King Harry Lane iron brooch may imply that a later date is not wholly improbable.

LANGTON DOWN AND NERTOMARUS BROOCHES

CF47.15 FIG. 109. SF79i. C982

BF64.19 FIG. 83. SF340. B1032

BF64.20 FIG. 83. SF382. B–

The Langton Down brooch from the Doctor's burial is of a standard form with a rounded head and a spring-cover that is plain apart from a rectangular frame defined by slight grooves (FIG.

109, CF47.15). Although the end is missing, at 37 mm long it probably falls into Camulodunum Type XIIB, which is found in Period 1 and later contexts at Sheepen (Hawkes and Hull 1947, 317–19), placing it broadly in the first half of the 1st century A.D. In Gaul it is Feugère's Type 14b1b, dated at the widest from Augustus to Nero (1985, 262–7).

No Langton Down brooches have been recovered from the area of the Roman fortress at Colchester, nor from the early colony. They are, however, well represented at Sheepen, and also occur in the Lexden cemetery (Hawkes and Hull 1947, 317–19; Bayley and Butcher 1985, nos 13–16; Hull 1942, 59–61). A brooch from the Botanic Gardens (now Castle Road and Roman Road) is from within the walled area of the town but some distance outside that of the fortress, its annexe, and the pre-Boudican colony (Wire, *Diary* 22/5/1852; *CAR* **6**, fig. 2.11). At Hod Hill they only occur in pre-conquest contexts (Brailsford 1962, 8, fig. 7, C29), and they are also absent from London, which does not seem to date to much before *c.* A.D. 50. In Britain, therefore, their ownership appears to be restricted to the pre-conquest indigenous peoples, with a strong indication that their importation ceased altogether in A.D. 43, those found in post-conquest contexts being the pieces in use at that date, and most being deposited by *c.* A.D. 50.

At least one of the two brooches in the Warrior's burial is stamped by the maker Nertomarus, after whom the type is named (FIG. 83, BF64.19). It is characterised by a bow of complex section, and a pattern of trilobate and frond-like motifs on the spring-cover. The second brooch is much decayed but is the same form and may also have been a product of the same maker (FIG. 83, BF64.20). There are five brooches with Nertomarus stamps from the Continent, and eight other maker's names are known, most of Celtic origin (Behrens 1950, 3; Feugère 1985, 265). Examples of this form found on the Continent are concentrated in eastern central France and the west of Switzerland, and it may be a product of the Treveri (Behrens 1950, 5; Feugère 1985, 265). They date broadly to the first half of the 1st century A.D., with the stratified examples from Augst mainly concentrated in Claudian contexts (Riha 1979, Type 4.3.1; Riha 1994, 86; Feugère 1985, Type 14b2).

The number of Nertomarus brooches from Britain from dated contexts is very limited. Those from Sheepen and Baldock are unstratified (Hawkes and Hull 1947, pl. 95, 107; Stead and Rigby 1986, fig. 45, 86; 1989, 95, J1), and an example from Elms Farm, Heybridge, is also unstratified (Crummy forthcoming b). There is one from a late Claudian context at Bagendon (Hull 1961, fig. 32, 5), and one from Fishbourne is dated as pre-Flavian (Hull 1971, fig. 38, 28). One example from King Harry Lane comes from a Phase 3 grave (Stead and Rigby 1989, J2), dated *c.* A.D. 40–60, or *c.* 35–50/55 by Mackreth's suggested revisions (1994, 288). The only other stamped example from Britain, and the only one in a primary context with vertical stratigraphy to confirm its date of deposition, came from the gully of a Late Iron Age round-house at Piddington, Northamptonshire. The feature probably pre-dates a Roman military phase of occupation that began *c.* A.D. 44 (Mackreth 1989a, 24, fig. 15, 7; R. Friendship-Taylor, pers. comm.). Though the dating evidence thus offered is limited, the brooches from Piddington and King Harry Lane suggest that Britain may not have been receiving Nertomarus brooches until just before the invasion. This coincides with its Claudian *floruit* at Augst. A range of *c.* A.D. 40 to 50/55 is therefore suggested for the Stanway pair.

REARHOOK BROOCH

CF47.17 FIG. 109. SF40. C942

The Rearhook brooch from the Doctor's burial is a well-made and early example of this British form (FIG. 109, CF47.17). The method of attaching the spring to the main body of the brooch by a rearward-facing hook seems to have been an Icenian innovation, supported by the large number of these brooches from Norfolk (*e.g.* Brown 1986, nos 60–87; Mackreth 1992, 122–3), although they are also widespread across southern Britain. The mechanism, which is essentially weak, may have been simply strengthened by a blob of solder at the back of the left wing, where the corrosion products are slightly thicker. This method of attaching the spring to the wing and so reinforcing the rearward-facing hook has been found on a brooch from Thetford (*ibid.*, 122, fig. 112, 12).

The brooch is particularly distinctive for the zigzag decoration on the edge of the catchplate, and for three annulets incised on each side of the head. The former places it among a small number of similarly decorated brooches, generally of high quality (pp. 215–16). The annulets are unparalleled and, as they were added freehand to the brooch after casting, may be imbued with some symbolic meaning.

The catchplate suggests that this brooch belongs early in the series, *i.e.* in the A.D. 40s. It has two large perforations, the upper triangular, the lower a thick L-shape, similar to that found on catchplates with elaborately fretted or stepped cut-outs, *e.g.* those of Colchester brooches (Hawkes and Hull 1947, pl. 89, 7, pl. 90, 14).

HOD HILL AND HOD HILL VARIANT BROOCHES

BF67.3 FIG. 97. SF329. B1071
CF72.6 FIG. 129. SF6. C408

Hod Hill brooches arrived in Britain in large numbers with the Roman army in A.D. 43, and appear to have died out by *c.* A.D. 60/5. They seem to have proved popular with the native population and two Hod Hills were found in Phase 3 graves at King Harry Lane (Stead and Rigby 1989, 96). The presence of individual examples is therefore not necessarily an indicator of a Roman military presence, although in quantity, and when set against the numbers of other forms, it may be. For example, at Elms Farm, Heybridge, Essex, Hod Hills formed 14 per cent of the total assemblage of post-conquest pre-Flavian types, even though no specifically military activity was detected on the site. This compares to 30 per cent at Puckeridge–Braughing, where the high number of Hod Hill brooches was used as possible evidence for a military presence (Crummy forthcoming b; Olivier 1988b, 52). Equally, they are not necessarily an indicator of male gender, as CF72 is almost certainly the burial place of a female.

The Hod Hill variant from the Inkwell burial is of unusual form, closely similar to that of sprung strongly profiled brooches (FIG. 97, BF67.3). The Hod Hill from the Brooches burial is also of rare style, with lugs at the base of a triangular bow with strong central rib (FIG. 129, CF72.6). A practically identical brooch was found at Baldock, Hertfordshire, in an unstratified context (Stead and Rigby 1986, fig. 47, 116). Both brooches are probably Claudian (Feugère 1985, 331, 335, Type 23d1).

Both these brooches are therefore quite distinctive and unusual forms, rather than part of the general run of Hod Hills. They can almost certainly be viewed as trade goods imported some time after the conquest, rather than militaria.

KEYHOLE ROSETTE BROOCH

CF72.5 FIG. 129. SF7. C410

This variant of the Keyhole Rosette brooch is small, with two lines of knurling flanked by slight ridges down the foot, and a catchplate pierced by a single round hole (FIG. 129, CF72.5). A repoussé-decorated plate was fixed to the plain circular bow by a cup-shaped copper-alloy rivet, in which was a pellet of opaque red glass. Solder may also have been used as reinforcement where the plate and disc-bow met at the circumference.

There are a number of variants of Keyhole Rosette brooches, and, in attempting to establish a close date range for this brooch, only brooches of exactly the same form have been used. Where the plate and/or the stud are missing, the size, the foot and catchplate, and the plain circular disc-bow are generally sufficient identification. The form occurs at Augst (Riha 1979, Type 4.7.2; Riha 1994, 94).

In Britain the numbers of these brooches are small and the distribution is quite wide, but there are concentrations at Camulodunum (six with this example), and Bagendon (three). There is one definite example at King Harry Lane, and possibly two more, but the latter are unillustrated and cannot therefore be assigned with certainty to this variety.

The King Harry Lane brooch comes from a Phase 2 (*c.* A.D. 30–50/5) grave, and so may have been imported before the conquest (Stead and Rigby 1989, fig. 49, G1). If Mackreth's proposed revision of the King Harry Lane phasing is accepted, then Phase 2 dates *c.* A.D. 20–40, which

would make a pre-conquest date for the type certain (Mackreth 1994, 287–8). There is one from Bancroft, Buckinghamshire, in a grave with both pre- and post-conquest pottery, and another from a pit at Dragonby, Lincolnshire, also with pre- and post-conquest pottery (Mackreth 1994, fig. 132, 17; Olivier 1996, fig. 11.6, 61). The Bancroft cremation also contained three other brooches, a Colchester, another Rosette of a more standard form, and a Langton Down (Mackreth 1994, fig. 131, 1, fig. 132, 16, fig. 133, 20), making the grave both characteristically native and unlikely to post-date A.D. 50, although not necessarily before A.D. 43.

Five brooches of this form have been found at Sheepen, all in post-conquest contexts. One is from a feature dated *c.* A.D. 44–48, two from a floor dated *c.* A.D. 49–60/1, and two from undated but post-conquest levels (Bayley and Butcher 1985, nos 22–3; Hawkes and Hull 1947, Type XI, 316, pl. 94, 80–81, and an unillustrated example). The picture is similar at Bagendon, with two from Claudian contexts and one from a context dated to late in the range *c.* A.D. 20/25–*c.* 43/45, but that also produced a Claudian plate brooch (Hull 1961, nos 29–31).

Given the association of a brooch of this variety in CF72 with five post-conquest imports, it seems possible that this particular form of Keyhole Rosette was also not imported until after A.D. 43, in which case Mackreth's suggested redating of King Harry Lane Phase 2 to *c.* A.D. 20–40 would be inappropriate for graves containing brooches of this style. The small size of the brooch is in itself an indication that it belongs late in the series, just as the thin metal of the circular bow indicates a mid 1st-century date, and the use of a spring-cover places it before *c.* A.D. 50 at the latest. Moreover, the low numbers of this type recovered from Britain compared to other Keyhole Rosette variants, such as those with repoussé-decorated plates ornamented with anthropomorphic and zoomorphic scenes (*e.g. CAR* **6**, fig. 6.1, 2), suggests that it was not long-lived. In size and quality, it is clearly linked to the hinged plate brooch Keyhole Rosettes (*e.g.* Hattatt 1987, fig. 72, 632), which have a wide spread within the province and probably replaced it.

The metal has a similar quality to that of the Claudian plate brooches in this grave, raising the possibility that this specific form of Keyhole Rosette is from the same workshop.

LOZENGE- AND STAR-SHAPED PLATE BROOCHES

CF72.9 FIG. 129. SF8/11. C414/421
CF72.10 FIG. 129. SF5. C406

These two brooches came from CF72 and may have been used as a pair. Both are post-conquest imports, and are of Claudian to early Neronian date.

The star-shaped brooch (FIG. 129, CF72.10) is the more common form of the two, occurring along the German Limes and in Pannonia (Simpson 2000, 41), and in the areas of early occupation in Britain. Some have amber glass, others blue. There are examples from Colchester (*CAR* **2**, fig. 14, 77), Richborough (Henderson 1949, pl. 25, 10), Baldock (Stead and Rigby 1986, fig. 49, 146), and Hacheston (Plouviez 2005, fig. 67, 164), and Hattatt illustrates an example found 'in Britain' (1987, 1011). The type is well represented at Augst, perhaps indicating the place of manufacture, where Riha dates it to *c.* A.D. 40–60 (1979, nos 1569–76; 1994, 157, Tabelle 198).

The lozenge-shaped brooch (FIG. 129, CF72.9) is rare, and from Britain the only other example is one from Canterbury, with a green glass boss (Hull forthcoming, no. 1463). A better preserved example from Augst has a top-plate decorated with a pyramid of raised dots in each angle (Riha 1994, 158, Taf. 41, 2807). A lozenge-shaped base-plate from Sheepen has one corner rolled over to form a hinge, and so is unlikely to be of this type (Hawkes and Hull 1947, pl. 98, 182).

LUGGED CIRCULAR PLATE BROOCHES

CF72.7 FIG. 129. SF9. C416
CF72.8 FIG. 129. SF10. C418

As with the star- and lozenge-shaped brooches above, these two plate brooches from the Brooches burial may have been used as a pair. They have the traces of a small riveted setting in

the centre, and probably originally had six lugs around the outside, though only one now survives on one of the brooches. They belong to Feugère's Type 24a and Riha's Type 7.2.1, and have two bands of knurled decoration on the margin, rather than the more common central round knurled recess (Feugère 1985, 337; Riha 1994, 151–3). The type centres on the Claudian period, but Feugère offers a broader date range of *c.* A.D. 30/40–60/70 (Feugère 1985, 344; Riha 1994, 152, Tabelle 186).

No exact parallel to these two brooches is known from Britain, though there are a few examples with the central recess, chiefly from Colchester. There are two from Sheepen (Hawkes and Hull 1947, pl. 98, 179, and one other uncatalogued), and one from the early colony (*CAR* **2**, fig. 14, 84), and one from Dragonby (Olivier 1996, fig. 11.12, 123). The illustrated Sheepen brooch came from a Period III context (*c.* 43/4–48), and that from the town centre is in post-Boudican make-up, probably residual. The Dragonby brooch and the unpublished Sheepen brooch are unstratified.

DISCUSSION

The *Knotenfibel* stands alone in this assemblage, both in its location outside any enclosure and in its early date. Inside the enclosures, no brooches were found in any of the chambers, but two were found in each richly furnished burial (BF64, CF47), one in BF67, and six in CF72. Of these brooches, only the Rearhook brooch from CF47 is British-made, the others are all continental imports. This is reflected in the alloys used to make them. The Nertomarus brooches and the plate brooches are all brass, one Hod Hill is brass or gunmetal, the other leaded gunmetal, while the Rearhook is of leaded bronze (p. 337). The Rearhook has decoration on the catchplate that defines it as of particularly high quality, and it has annular marks on the sides of the head, applied after casting, which may relate to the identity of its owner.

The imported brooches fall into two principal groups; those of types imported before the invasion of A.D. 43, and those of types introduced at or soon after that date. In the former group belong the Langton Down brooch from the Doctor's burial CF47 and the Nertomarus brooches from the Warrior's burial BF64, and in the latter group the Hod Hill from the Inkwell burial BF67 and the plate brooches from the Brooches burial CF72. It is uncertain into which group the Keyhole Rosette from CF72 should fall, but its direct association with five post-conquest brooches suggests it is of similar date. There is therefore a difference in brooch selection between the richly furnished graves and the other two less well-furnished graves. Given the contrast in the quantity and quality of the other grave goods from the Warrior's and Doctor's burials compared to those from the Inkwell and Brooches burials, it is perhaps not surprising that the latter pair might have brooches that are different in some way from those in the former. That the difference lies in their being post-conquest appears to suggest, at face value, that they are later. However, only a few years, if any, need separate the date of manufacture of the brooches in the two groups, and all could have been deposited round about the same time. Even if the importation of Langton Downs and all other spring-cover brooches ceased instantly at the conquest, those in use would have continued to be worn. Neither the Langton Down from CF47 nor the Nertomarus brooches from BF64 need therefore have been more than ten years old when buried and they might have been much less, *i.e.* they may not be much older than the post-conquest imports.

Rather than commercial availability, more complex factors associated with identity may well have been at play in the selection of brooches for deposition. The Warrior and Doctor may have been older than the people buried in the Inkwell and Brooches grave, and therefore had brooches acquired at an earlier date. Alternatively, the spring-cover brooches (the older imported technology) and the British Rearhook brooch (the indigenous, but probably not immediately local, technology) may have been more highly valued than the hinged bow and plate brooches (the new imported technology) of the post-conquest period.

The only brooch from Stanway that can be said to be a common type in this area is the Langton Down, and it has already been noted above (p. 316) that none have been found inside the fortress or early colony, which alone provides an important distinction between the Stanway

brooch assemblage and that from the two Roman establishments. As the other Stanway brooch types are in general rare, or at best comparatively rare on any site, then any differences between the the two assemblages can better be defined by approaching the situation from the opposite side. Here the distinction is clear. The imported Claudio–Neronian brooch types dominating the assemblages from the fortress and early town are Hod Hills with lugged bows (as *CAR* **2**, Types 61–3), Aucissas and Nauheim Derivatives, and these brooches are all absent from Stanway (Hawkes and Hull 1947, Types VII, XVII–XVIII; Bayley and Butcher 1985).

The Sheepen brooch assemblage does provide parallels for some of the uncommon brooches found at Stanway, but it also contains large numbers of brooches of the same types as those found in the fortress/*colonia* and it was obviously strongly influenced by its proximity to the implanted Roman establishments. In contrast, the overall impression given by the Stanway assemblage is that it contains brooches of distinctive and even idiosyncratic character, and that it is unaffected by the types used in large numbers in the fortress and early town.

Another important distinction between Sheepen and Stanway, and between the early town and Stanway, is the absence of Colchester B derivative brooches from the burials at the latter (Hawkes and Hull 1947, Type IV, 36–41; *CAR* **2**, Type 92). This type probably began to be produced *c.* A.D. 50, as examples are present in the *colonia* but not the fortress. It is a two-piece form developed from the indigenous one-piece Colchester type and is common throughout the region. As these brooches varied in size and elaboration their absence could well be attributed not to a lack of style or distinction but to date, and could be taken to imply that the enclosures at Stanway had ceased to be used for burials by *c.* A.D. 50/5.

THE METAL VESSELS

By Nina Crummy

Complete copper-alloy vessels were found in the Warrior's burial BF64 and the Doctor's burial CF47, and a fragment of one came from Chamber BF6. A jug and handled basin (FIG. 87, BF64.25–26) were found in the Warrior's burial and a third vessel in this grave may be represented by fragment FIG. 88, BF64.27, a saucepan and a spouted strainer bowl came from the Doctor's burial (FIGS 112–13, CF47.21–22), and the spout from a spouted bowl (FIG. 55, BF6.25), which may perhaps also have been fitted with a strainer-plate, from BF6. The spout in BF6 is best seen in the light of the bowl from CF47 and is consequently discussed last in this section.

The current trend in theoretical archaeology is to make no assumptions about gender on the basis of grave goods, and to question any such assumptions made in the field. Were such a trend to be followed here, where the analysis of the human bone provides no evidence for sex, we would reach an unproductive stasis in interpretation. Instead, I propose here that the metal vessels from Stanway add to the evidence for determining the gender of the people with whom they were buried. The weapons in the Warrior's burial point to the grave being that of a male, and artefact deposition patterns support this view (Sealey forthcoming a). The Welwyn-type male graves of this region usually contain wine amphoras and associated serving and drinking vessels to allow feasting to continue beyond the grave (Stead 1967; Cunliffe 1991, 510), and, as it can be no coincidence that the three graves at Stanway with metal vessels also contained amphoras (pp. 300–2), it seems that the possession of metal vessels was chiefly, if not solely, the preserve of high-ranking males among this group of people in Late Iron Age and early Roman Camulodunum. (Metal vessels were also buried in the closely contemporary high-status female graves at Birdlip, Gloucestershire, and Portesham, Dorset (Bellows 1881; Fitzpatrick 1996), but this does not detract from their interpretation as male equipment at Stanway, as different practices no doubt existed between the tribes.)

That metal vessels were confined to male graves at Stanway was no doubt a factor of their use in the Roman and La Tène traditions of formal dining and feasting. The jug and handled basin in the Warrior's burial made up a set used in the formal hand-washing ceremony that

preceded dining, and the saucepan in the Doctor's burial would have been used for the preparation of wine-based warm drinks to accompany formal meals. The two spouted bowls would also have been used in the preparation of similar concoctions, but, as they belong to La Tène vessel-types, the drinks need not have been wine-based.

VESSELS FROM THE WARRIOR'S BURIAL

The imported vessels found at Stanway represent not only the trade with the Continent that made them available for acquisition, if it was trade and not gift-exchange or travel abroad that led to their arrival here, but also the wider influence on manners and drinking customs exerted on south-east Britain by contact with the Gallo-Roman world, and the spread of Roman decorative art. In much the same way as the obverse and reverse images of coins conveyed propaganda for the issuer (*e.g.* Creighton 2000), these vessels introduce the idea that decoration can convey messages about both the function of the vessel and the character of the owner.

The jug in BF64 has a lion motif on the handle and the basin has a ram's head handle (FIG. 87, BF64.25–26). The iconography of the lion, a beast which can have been seen by few Britons, may have been deliberately chosen by, or given to, the man buried in BF64 both as a symbol of strength and as an exotic image. Similarly, although the ram's head handled basin is a long-lived type that occurs in considerable numbers on the Continent and is quite well represented even in Britain, in the context of this grave the ram may be seen not just as a sacrificial animal but also as a symbol of male sexual potency.

Both vessels are of composite manufacture and the choice of alloys was appropriate to the manufacturing techniques used on each section. The upper and lower parts of the body of the jug were made separately, both from a bronze containing a small quantity of lead. The pieces were then brazed together and the join disguised by a pair of grooves. The handle was cast in a leaded bronze and soldered to the body, probably with a lead-tin solder. The basin's body and handle were cast separately in a leaded bronze and then soldered together with a lead-tin solder (p. 335). The composite nature of these vessels bears upon the interpretation of the spouted bowls from BF6 and CF47 (*see* below).

Both basin and jug have parallels spread widely across the Empire, although chiefly concentrated in Italy and particularly well represented at Pompeii, where the unique circumstances of survival hint at the huge numbers that must have been manufactured for so many to have been recovered from just one town (Nuber 1972, 192, 196–7; Tassinari 1993, vol. 1, 40–42, 58–60). Both the Stanway vessels are likely to be early examples of their types and of Italian manufacture, and they are therefore yet another case of imported items on the site that pre-date the time of their burial by some years.

For Britain Nuber listed five jugs of Type E with lion handle plus lion's paw on the escutcheon from graves or hoards, from Santon, Thornborough Barrow, Shefford, Bartlow Hill 3, and Bartlow Hill 5, and five complete basins of Type E, one each from Shefford, Biggleswade and Bartlow Hill 4, and two from Welshpool (Nuber 1972, 210–11; Moore 1973, 158–9). Several ram's head handles have also been found in Britain disassociated from the body of their basin, and often in contexts much later than the period of manufacture (*e.g.* Brailsford 1962, pl. 10, A132; Waugh and Goodburn 1972, fig. 44, 148, fig. 45, 149; Moore 1973, 158–9; Cool and Philo 1998, fig. 36, 476). More have been found since Nuber was working, and the numbers of ram's head handles from Britain is now close to 40 (D. Webb, pers. comm.).

Slight variations are usual between individually cast/wrought vessels of these forms, but the Santon and Thornborough Barrow jugs are certainly close parallels to BF64.25, differing only in a few minor details (Eggers 1966, Abb. 37, b, Abb. 38, a). Similarly, the profile of the basins found in Britain can vary considerably and need not precisely parallel that of BF64.26, which is, in any case, difficult to establish precisely because of its damaged state on recovery and uneven restoration.

Textile fragments found on the jug probably came from a garment deposited in the grave (p. 347), but there is some possibility that they may derive from a cloth used for drying the hands after washing. The Bartlow Hills burials provided excellent conditions for the

preservation of organic materials, and the jug in Bartlow Hill 7 had been placed in the grave standing on a basin with a handle of unusual form (Gage 1840, 3, pl. 2), with both vessels covered, either wrapped or draped, in cloth. Gage notes that a handled basin from a grave at Chatham Downs, Kent, was also found with traces of textile upon it, while flax fibres were found on one of the Welshpool basins (Boon 1961, 24). Near to the Bartlow Hill 7 service lay what were identified at the time as pieces of sponge, later exhibited to the Society of Antiquaries of London when Gage read his paper before them in 1838 (Gage 1840, 5). This provides corroboration of the ritual function identified by Nuber for these services, in which both host and guests washed their hands in clean falling water before a meal, a usage which can be dated back to at least the Homeric age:

> *A maid came with a precious golden ewer and poured water for them above its silver basin. She drew to their side a gleaming table and on it the matronly housekeeper arranged her store of bread and many prepared dishes, making an eager grace of all the hospitality.* (Homer, *Odyssey*, trans. T.E. Lawrence, 1.136–8)

Placed in this context, the textiles associated with the Stanway jug might well be considered as drying cloths. However, although they were close to each other within the burial, the jug and handled basin in BF64 were not found in direct association. The jug was placed on a *terra nigra* dish (BF64.5), and the basin stood on an oak board, possibly a tray or platter (BF64.37; TABLE 63, B1019/B1033). This might imply that although this set of vessels was a prized possession conferring status upon its owner, it was not necessarily used in the manner conventional to Roman formal dining.

VESSELS FROM THE DOCTOR'S BURIAL

While the decorative elements of the jug and handled basin in BF64 are suggestive of the character of their owner, the handle of the saucepan in CF47 (FIG. 112, CF47.21) makes a direct statement about the vessel's function. It is decorated with a *thyrsus*, the ivy-entwined, pine-cone-tipped wand carried by Bacchus, the god of wine, and saucepans of this type were used to prepare hot wine concoctions served at formal meals and feasts. The decoration is typical of pans made in Gaul (Eggers 1951, Type 137; den Boesterd 1956, 6–7, no. 13.11; Bennett and Young 1981, 42; Tassinari 1993, Type G2100, vol. 1, 52, 55, vol. 2, 98–108).

The end of the handle is in the shape of a disc with a lunate suspension hole and typological studies of saucepan handles place this form later in the series than those with swan's-head and fan-shaped handles, and earlier than those with a circular hole in the handle (Bosanquet 1936, 144; den Boesterd 1956, xxx; Bennett and Young 1981, 41–2). British finds of complete pans with lunate holes (but with less elaborate decoration) come from the Stanfordbury A burial, Bedfordshire, the bronzesmith's hoard at Glyndyfrdwy, Clwyd, and the Oulton hoard, Suffolk (Eggers 1966, Abb. 7, 29a, Abb. 20, 19b, Abb. 26, 45a; Stead 1967, 55). There is also a fragment of a similar handle from Hod Hill, Dorset (Eggers 1966, Abb. 8, 9c; Brailsford 1962, fig. 5, A134). All four differ from the Stanway bowl in having a very plain *thyrsus* or central linear motif, and three of them have a spray of radiating lines terminating in ring-and-dot 'eyes' within the circular terminal. On the Glyndyfrdwy handle the place of the spray is taken by a stamp. The plain *thyrsus* and spray design is attributed to southern Italy and is well represented in eruption levels at Pompeii, although a Flavian date for their manufacture need not necessarily be assumed as many of those vessels are likely to have been in use for some decades before the disaster (Radnóti 1938, 49; Tassinari 1975, 26; 1993, vol. 2, 98–9, 101, 103). Indeed, the Stanfordbury A burial probably dates to around the period of the conquest and also contained a pair of fire dogs and samian vessels (Stead 1967, 47, 55) and there is therefore a strong likelihood that such pans could have reached Britain in the period immediately before the conquest. The base of the Stanway pan is much scoured from cleaning and therefore saw considerable use before it was buried, which again argues for a pre-conquest date for its arrival in Britain. As there is no reason to suppose that the typological features of the handles occur later on Gaulish pans than on those of Italian manufacture, a date before A.D. 50 for the pan

would also accord well with both the brooches in the burial (pp. 315–17). A closely similar vessel from Nijmegen, Holland, came from a cemetery area broadly dated to A.D. 1–70 (den Boesterd 1956, 6–7, no. 13.11).

There is, however, some possibility that CF47.21 may be later, as to a large extent the date of the Stanway vessel also depends upon the date of introduction of pans with round-holed handles, which itself depends upon the date when the Capuan bronzesmith Publius Cipius Polybius was working. Some writers argue for a Flavian date (Bosanquet 1936, 44; Radnóti 1938, 52), others perhaps for late Neronian–Flavian (Bennett and Young 1981, 43), others for very late Claudian/Neronian–Flavian (Eggers 1966, 73), and others for Claudian–Neronian (den Boesterd 1956, 8; McPeake and Moore 1978, 333). The one certainty from these various suggestions is that pans with a lunate hole in the handle pre-date the Flavian period, which is the latest possible period when round-holed handles were introduced.

There are two other factors that make dating CF47.21 difficult. First, pans themselves survived in use, or at least above ground, for a long time; the Glyndyfrdwy smith's hoard alone contains pans with three handle types: swan's head, fan-shaped, and round with lunate hole. Second, the various forms were produced over a long period; swan's head handles, for example, may have been in production from the late Augustan to Claudian periods (Bennett and Young 1981, 42). Therefore the broadest date range that can be be offered for the Stanway pan is probably later Tiberian to Neronian, but the most likely is A.D. 30–50.

The other vessel in CF47 is a spouted strainer bowl with carinated body (FIG. 113, CF47.22). Like the jug and handled basin in BF64, it is a composite object, made up of the body, a handle fixed opposite a spout, an internal vertical strainer-plate behind the spout which served to remove herbs, spices, or other solid matter from a liquid, a spill-plate fixed horizontally to the rim behind the spout and above the strainer-plate to prevent liquid splashing out when the vessel was tilted for pouring, and three cast peltate feet.

The vessel body was spun from bronze; the sides are bellied below the carination, and angled flat above it. Holes were cut into the finished body where the spout and handle were to be attached. The handle, spout and feet were cast from leaded bronze and the spill-plate and strainer-plate were wrought from bronze; all were soldered into position on the body to produce the finished article (FIG. 113; pp. 335–6). In terms of metalworking technique, this combination of using wrought metal for the vessel body, strainer- and spill-plates, but casting the stouter elements and soldering them on, parallels the method of manufacture of the jug BF64.25 and allows the most appropriate alloy to be used for each element.

The cast pieces are in good condition, but the sheet-metal elements, the bowl and the two plates, are not. The bowl and spill-plate have shattered, and the collapse of the bowl caused the strainer-plate to crumple (FIG. 125). Some areas of the central part of the spill-plate, which is very thin, have either disintegrated completely while buried or were missing when the bowl was deposited.

The latter may be possible as the vessel appears to have seen considerable use before being deposited. One of the original handle attachments has been replaced, one foot is slightly damaged, and part of the edge of the strainer-plate appears to have come loose and been soldered back into position. The wear and repairs to the vessel suggest that it was of some antiquity when buried, but instead it may simply have been quite delicate because of its manufacture from such thin metal.

The lower edge of the mouth of the spout is much thinner than the top, but, as it seems unlikely that the frequent pouring of liquid would wear down metal, this feature may be integral to the casting; if it is the result of use-wear, then hard scouring is likely to be the cause. The excavations at Sheepen in the 1930s recovered a spout of similar form, although different size, from a period VI pit (A6), *c.* A.D. 61–65, and fragments from a failed casting of another were found in a context belonging to periods III–IV, *c.* A.D. 43/4–61. (The objects were identified in the site report as helmet crest holders (Hawkes and Hull 1947, 336, pl. 102, 1).) A strainer bowl from Brandon, Suffolk, also has a similar spout (mentioned in Sealey 1999, 121, but otherwise unpublished), and it is possible to see a stylistic link, although distant, between the angular

form of the Stanway spout's aperture and the gaping jaws of a fish-head spout on a strainer-bowl from Felmersham, Bedfordshire (Watson 1949, pl. 5, a–b). The Sheepen spouts therefore place the CF47 strainer bowl in the immediately pre-conquest or immediately post-conquest periods and, together with that from Brandon, point to local manufacture.

There are also two identical handles to that on CF47.22, one in eastern Britain and one in north-western France. The British find is from Baldock, but is not attached to a vessel and lacks even its means of attachment. It was found in a context dated A.D. 180–200 and is certainly residual (Stead and Rigby 1986, fig. 58, 368). The other handle is fitted to a carinated strainer bowl, very similar to that from Stanway, found at Blain, Loire-Atlantique, at the bottom of a well which was backfilled in the mid 1st century A.D. (S. Corson, pers. comm.). The Blain handle is attached by two simple clips similar to that on one side of the Stanway handle. The vessel is the only spouted and carinated strainer-bowl known from France, but its location, very close to the Loire estuary, parallels the distribution pattern of cosmetic pestle-and-mortar sets, objects peculiar to Britain of which the only example to come from France was found at Thérouanne, close to the coast in Pas de Calais (Jackson 1985; 1993a; Jackson and Thuillier 1999). In both cases they can be presumed to have been taken to Gaul by British travellers or migrants. The spout of the Blain bowl does not fit the body well, and has been attached to it by a thick application of lead-tin solder. It is not a direct parallel to that from Stanway but could be seen as of the same general type, *i.e.* angular, not zoomorphic, and very protuberant.

A third handle, from a strainer bowl found at Crownthorpe, Norfolk, is almost identical to that on CF47.22 but has a bar across the top (Norwich Castle Museum, unpublished). A fragment of sheet metal has been wrapped around this bar and passed through the rim to attach the handle to the bowl. Such poor craftsmanship conflicts with the quality of the bowl itself and must be a repair. The spout of the Crownthorpe bowl is different to that from Stanway, but is also not zoomorphic. The bowl is considered to be part of a vessel hoard.

A more elaborately shaped handle from Silchester should also be added to this group. It is generally like those from Stanway, Baldock and Blain, and is more or less contemporary with them, coming from a context phased to the period *c.* A.D. 50–80/5. It differs, however, in several details: the upper bars slope inwards, it has mouldings in the centre of the middle section, and down-curving projections on each side. The latter, and every angle of the side elements, are knobbed (Boon 2000, fig. 157, 38, fig. 158). Like that from Baldock, this handle is a loose find and lacks its means of attachment.

The spill-plates on strainer bowls all differ in details of form and decoration, although again the Crownthorpe plate is closest to that from Stanway. An interesting connection can also be drawn to two plates from one of the Birdlip burials, which mirror the way in which on the CF47.22 plate there is no attempt to interrelate the mouldings along its straight edge and those along its curved edge at the point of junction (Green 1949, pl. 25). The similarities between these items, and the use of linear mouldings and bosses to form the decoration (*see* AF48), provide yet more evidence to set the manufacture of the bowl firmly in a British La Tène tradition.

Similarly, no two strainer-plate designs are exactly the same, but again the Crownthorpe plate can be presumed to have been made by the same hand. It is extremely close to that from Stanway in design, with only some difference on the central panel.

The parallels for the various elements given above and the concentration of these carinated strainer bowls in eastern Britain argue strongly for an origin for CF47.22 in eastern Britain, and this can be narrowed down to the territory of the Catuvellauni and Trinovantes as they also occur in pottery, a rounded form CAM 322 and a carinated form CAM 323, most examples of which come from Hertfordshire and Essex. The ceramic forms occur especially frequently in and around Camulodunum, and they appear to be principally post-conquest in date (Hawkes and Hull 1947, fig. 50, 8; Niblett 1985, fig. 33, 2; Sealey 1999, 119–24). Within the last few years examples have also been found further to the west, notably one at the legionary fortress at Alchester, two in a metal vessel hoard at Kingston Deverill, Wiltshire, and one in a hoard of glass and metal vessels from Chettle, Dorset (E. Sauer, pers. comm.; Worrell 2006, 460–2). Like

that from Blain, these western finds were no doubt intimately bound up with the events of the period from the conquest to the Boudican revolt, a supposition reinforced by their contexts.

In connection with a group of three, or possibly four, ceramic strainer bowls found in a pit at Ardleigh, near Colchester, Sealey gives as the precursor of the rounded CAM 322 form the rounded metal bowls from Welwyn Garden City and Felmersham, and another from Leg Piekarski, Poland, while the carinated form CAM 323 is clearly derived from the carinated metal bowls from Stanway, Brandon and Crownthorpe (*ibid.*, 121). He notes attempts by some specialists to demonstrate that the bowls themselves were of continental origin and were merely adapted for use in Britain by the addition of a spill-plate, strainer-plate, spout and handle. This idea is largely based upon the suggestion that the late 1st-century B.C. Welwyn Garden City bowl was a plain continental import adapted in Britain for use as a strainer (Stead 1967, 25; Reinert 1995, 50), making the elements added to the vessel body fully secondary in that they were intended to alter the functional use of the bowl. Based on the poor fit of the Blain spout, it too has been interpreted as a secondary addition (S. Corson, pers. comm.). Supporting evidence for secondary adaptation was seen in the occurrence of peltate feet on metal strainer bowls, as similar fittings can be found on continental vessels such as jugs, bowls, colanders and handled basins, *e.g.* Lethbridge 1953, pl VII; Tassinari 1975, pl. 28, 144–6; 1993, 128; Feugère 1981, fig. 14, 62, 68; Rérolle 1999, fig. 36; Sedlmayer 1999, Taf. 51; Le Cloirec 2001, fig. 24, 162–5.

Even if the early Welwyn vessel were itself adapted, there is little evidence to support the notion of secondary adaptation for the mid 1st-century A.D. vessels. There are no carinated bowls of exactly similar form either without or with a handle and spout among the large published collections of vessels from Pompeii, France, Britain, Holland, Pannonia, and Noricum (Tassinari 1993; 1975; Eggers 1951; 1966; den Boesterd 1956; Radnóti 1938; Sedlmayer 1999). There seems to be no reason to suppose that the metal form is anything other than Catuvellaunian/Trinovantian in origin, and the Sheepen spouts support manufacture of at least some examples in Camulodunum itself. The question of the feet can be dismissed, as the feet on the continental vessels are more extended and curvilinear, as well as generally smaller and more delicate, than those on the British bowls, which are stout and of compact form. In other words, the feet on the Stanway bowl may copy the continental practice of attaching feet to the underside of vessels, but they have a style of their own. Moreover, it has already been pointed out above that vessels are often composite items, with different sections made of different alloys and then brazed or soldered together. Just as there is no question but that the handle of the jug BF64.25 is an integral part of its design, the same is undoubtedly true of the various elements of the strainer bowls. The fittings on the Blain bowl were perceived as secondary because there is some discrepancy between the curvature of the spout and that of the bowl, and a large, perhaps excessive, amount of solder has been used to achieve a solid join, but the difference is quite minor and is not sufficient reason for such an interpretation. Similarly, the fact that a hole was cut in the body of each vessel to allow the spout to function does not mean that the spout is evidence of secondary usage. It is simply easiest to make the bowl without giving consideration to the hole, and then cut it later. Indeed, the method of attachment of the Crownthorpe handle, which certainly appears crude in contrast to the rest of the bowl, is all that suggests that it was a secondary, rather than standard, addition, but the repairs to the Stanway bowl point to the likelihood of the Crownthorpe handle also having been repaired, and neatly so, by utilising the same perforation through the rim as the original fitting, which was probably a clip like those on the Blain and Stanway handles.

The saucepan CF47.21 in the Doctor's grave can be firmly associated with the preparation of wine-based drinks, but the use of the spouted strainer bowl CF47.22 is less easily defined. From its position in the grave pit among the other household vessels, we might expect it to be classed among them, and to have been used to prepare drinks to accompany a formal meal or feast, while the strainer-plate points to the addition of solids to add flavour to the liquid (Petrovszky 1993, 135). The Welwyn Garden City strainer bowl supports this view as it was found with a silver cup, a copper-alloy serving dish, and an array of ceramic cups, plates, wine

amphoras, beakers and flagons, and it is intriguing to see how the Welwyn bowl lay somewhat apart from the other vessels in the grave pit, propped on its side among the remains of a game board (Stead 1967, fig. 4). Its separation from the service reflects its unique use within the Welwyn assemblage for preparing, rather than serving or consuming, drinks, and it is similarly divorced from the liquid storage vessels, the flagons and amphoras.

Reinert suggests that the drink prepared in strainer bowls is unlikely to be wine-based (1995, 49), and the non-Roman origin of the vessels supports this, as does the presence in CF47 of the saucepan used for the preparation of hot wine concoctions, although it is fair to state that duplication of function is not impossible, only unlikely. Sealey has put forward the suggestion that strainer bowls were used for either Celtic beer or mead, or both, with herbal teas a possible third alternative (1999, 122–3). The majority of strainer bowls may have been used for one or all of these drinks at various times, but the absence of butt-beakers from the Doctor's grave militates against the use of CF47.22 for beer, although not of mead-based drinks or herbal teas, which would have been consumed in smaller quantities. It is possible that the vessel form developed not to allow a specific drink to be made, but rather to strain *any* flavoured drink or other infusion. It is therefore not inconceivable that wine-based drinks were heated in CF47.21, and then passed through CF47.22 to remove the solids used to flavour them. Whatever the use to which the Doctor's strainer bowl was put during most of its life, the analysis of a plug of solid matter recovered from CF47.22 shows that the final drink prepared in it seems to have been medicinal (pp. 397–8).

THE VESSEL SPOUT IN CHAMBER BF6

The cast spout BF6.25 (FIG. 55) is also from a bowl. Its style suggests a continental origin, and the long flanking volutes are reminiscent of those found on the nozzles of ceramic lamps of Loeschcke's Type 1 (1919, Taf 1, 1A–C). Spouts of generally similar form, but longer, open and with different detailing on the volutes, have been found at the Magdalensberg, Austria, at Prag-Bubeneč, Czech Republic, and from the Seine in France (Sedlmayer 1999, 94, Taf. 41, 1, Abb. 17; Reinert 1995, Abb. 4, 2, Abb. 5, 1). There is no equivalent on Italian bronze vessels. The spout from Prag-Bubeneč was attached to a hemispherical bowl which Reinert associates with the strainer-bowl from the Welwyn Garden City grave and with other spouted bowls, most of which lack spill- or strainer-plates. An association can also be seen with a zoomorphic spout from Grave B at Hellingen, Germany, the ears or horns of which take the place of the volutes (*ibid.*, Abb. 1–2). The Hellingen grave is dated to the mid 1st century A.D., and the spout was found in association with part of a handled bowl and a handled colander-like strainer. The Magdalensberg spout dates to the late A.D. 40s at the latest, as the settlement on the hill was abandoned when the new *municipium* of Virunum was built in the valley below it at that period.

This limited evidence suggests that the vessel to which BF6.25 belonged was a product of a workshop in southern Noricum or on the Danube in the Tiberian or early Claudian period. Used to prepare warm drinks or infusions, it may not have been fitted with a strainer-plate but instead paired with a colander to allow any solid flavourings to be removed before serving. Like so many other objects from the chambers at Stanway, the spout represents only a small part of the original whole, be that a strainer bowl or a bowl and colander set. Its parallels and likely source imply that it was used in a feasting tradition that had its roots outside the sphere of Roman influence.

CONCLUSIONS

Most of the metal vessels from the burials are imported, testifying to the very wide range of trade contacts enjoyed by Camulodunum in the late A.D. 30s and 40s. It is quite possible that all the imports are of immediately pre-conquest date, and none need post-date the late 40s. The strainer bowl in CF47 is the only local product but, most probably made at Sheepen in the A.D. 40s, it is closely contemporary with the imports.

ANALYSIS OF THE CURRENCY BARS, GRAVE GOODS AND PYRE DEBRIS
(TABLES 48–52)

By Sarah Paynter

METHODS

The two currency bars from the ditch of the Middle Iron Age enclosure and some of the copper-alloy and glass objects from the burials and other features were examined and analysed in order to characterise the materials and methods used in their construction. Metallographic examination of a sample taken from one of the currency bars enabled the iron alloy to be identified and energy dispersive spectroscopy (EDS) was used to analyse remnants of slag in the sample. A non-destructive technique, X-ray fluorescence spectrometry (XRF), was used to analyse the surface of the glass and copper-alloy objects. However, as this technique analyses only the surface of an artefact, when this is weathered or corroded the results must be interpreted with caution, as they may not be representative of the unaltered metal or glass beneath. Glass is susceptible to attack by water and the surface becomes depleted in certain oxides, particularly soda, and relatively enriched in others, particularly silica (Henderson and Warren 1981). Copper and its alloys are prone to corrosion, for example, zinc tends to be removed preferentially from brasses by 'dezincification', tin-rich corrosion crusts are often formed on high-tin bronzes, and copper ions from a corroding object can be transported and deposited elsewhere (Cronyn 1990). Also, corrosion products can incorporate elements such as chlorine or phosphorus, drawn from the surrounding environment (other elements such as carbon and hydrogen may also be present but are not detectable by XRF). Full details of the methods and standards used, and the results, are included in English Heritage Centre for Archaeology Report 72/2002 and have been deposited with the site archive.

CURRENCY BARS (TABLE 48)

The currency bars (CF6.1–2) were unusual both in terms of their easterly location in Britain and their good preservation. One (CF6.1) was complete, with a length of 542 mm including the socket and a maximum width of 52 mm. The weight of the bar (before cleaning) was 984 g. The second bar (CF6.2) was in three fragments, having broken twice at the socketed end. It was approximately 564 mm long and the maximum width was 62 mm. Although longer than the other bar, its weight was similar at 976 g. The breaks on CF6.2 allow the changing cross-section along the length to be viewed. Each bar started with a flat end, continuing into a socket formed by folding both sides of the bar up at right angles. As the socket continued, the right-angled edges of the fold become rounded so that the bar was C-shaped in cross section. The bar formed a slim, flat neck and then broadened to its maximum width before tapering at the other end. In shape the bars are similar to two recovered from Ely, categorised as plough-share bars due to their form. They had leaf-shaped blades, long U-shaped sockets and similar lengths and

TABLE 48: ANALYTICAL RESULTS FOR THE SLAG INCLUSIONS IN THE FRAGMENTED CURRENCY BAR CF6.2, AS DETERMINED BY EDS, NORMALISED WT%

Analyses	Na_2O	MgO	Al_2O_3	SiO_2	P_2O_5	SO_3	K_2O	CaO	TiO_2	MnO	FeO
	0.52	0.50	5.72	23.24	5.27	0.41	1.75	4.47	0.25	0.78	56.94
	0.62	0.89	8.25	29.95	2.34	0.18	2.26	4.19	0.30	0.95	49.90
	0.85	0.61	5.56	19.24	4.17	0.26	1.34	3.53	0.24	0.54	63.54
	0.63	0.89	8.00	30.15	3.52	0.25	2.21	4.51	0.26	1.02	48.46
	0.59	0.65	6.69	25.03	4.65	0.30	1.94	4.56	0.22	0.85	54.37
Average	0.64	0.71	6.85	25.52	3.99	0.28	1.90	4.25	0.26	0.83	54.64

widths to the Stanway bars (Crew 1994). However, the Stanway bars are heavier by 250 g and the broken Stanway bar has well-defined right angles to the sides of the socket at one point along its length.

The date, form, and use of the currency bars are discussed in detail on pages 33–6 by R. Hingley. Although the currency bars in one group or hoard often have similar weights, as do the two Stanway bars, bars of different types tend to have different weights. It is unlikely that the weight was regulated intentionally but rather that it was determined by the smelting and smithing practices of the producer. The dimensions and weights of the bars are therefore likely to be characteristic of the producer.

A small V-shaped section was taken from the broken bar, examined metallographically and found to be pure iron (also known as plain iron or ferrite). At the edge of the sample the microstructure was distorted compared to the rest of the section as a result of the bar having been 'upset'. Upsetting involved turning the bar onto its side and striking it to obtain a flat edge, correcting the rounded edges that tended to develop on the bar during smithing (C. Salter, pers. comm.). The process produced a slight lip at the edge of the bar, which, unusually, has been preserved on the Stanway examples and suggests that they were skilfully made. Elongated strings of slag were observed running across the width of the bar in the metallographic section showing that the metal had been worked considerably. Some of these slag inclusions were analysed using a scanning electron microscope with attached EDS analytical facility and the results are given in TABLE 48.

These results can be compared with analyses of the slag inclusions in bars from Danebury, Hampshire, Gretton, Northamptonshire, and Beckford, Worcestershire (Hedges and Salter 1979). The combination of raised phosphorus, sulphur and manganese in the Stanway bar distinguishes it from the previously analysed artefacts suggesting that the Stanway examples do not originate from the same source as any of these other bars. However, the uniqueness of the composition of slag inclusions in iron artefacts from different sources has yet to be established, since the dataset of published analyses available for comparison is still small. The compositional consistency of slag inclusions within bars of similar origin is also unknown. Further analysis of the inclusions in the Stanway bar, using the sample already taken but different techniques, might detect elements present in very small amounts and would characterise the bar more fully.

GLASS OBJECTS (TABLES 49–50)

Ancient glasses were produced by reacting silica, which has a high melting point, with compounds that acted as fluxes, enabling a glass to be formed and worked at accessible temperatures (about 1000° C). The alkali oxides, soda (Na_2O) and potash (K_2O), are effective fluxes and can be derived from plant ashes or mineral sources. The ratio of soda to potash, and the concentration of other compounds present, such as magnesia and lime, varies depending on whether a mineral or plant ash source of fluxes was used, and if the latter, the type and origins of the plant. Henderson (1988) and Hartmann *et al.* (1997) have identified glasses from *c.* 14th-century B.C. to 2nd-century A.D. contexts in Europe that were produced using plant ash fluxes. These glasses consequently contain varying amounts of potash, magnesia and lime in addition to soda. However, no plant ash glass was identified among the objects from Stanway. The great majority of glass from Iron Age and Roman Europe contains large amounts of soda (typically 15–20 wt%) and some lime (about 7 wt%) but little magnesia (0.5–1 wt%) or potash (about 0.5 wt%). This composition suggests that a relatively pure source of soda was used to make the glass, probably a soda-rich mineral such as the evaporitic deposit from Egypt known as natron (Freestone *et al.* 2000). This type of glass is known as soda-lime-silicate glass (Henderson 1988).

From about the 2nd or 1st century B.C., glass compositions are also characterised by small amounts of manganese oxide, to decolourise the glass, whereas earlier glass typically contained antimony oxide as a decolouriser (Hartmann *et al.* 1997; Sayre and Smith 1961; Henderson 1985). In addition, some yellow, or more rarely white, Iron Age European glass objects contain tin colourant compounds instead of the antimony colourant compounds used in glass produced within the Roman Empire (Biek and Bayley 1979).

Glass is susceptible to attack by water and the surface of archaeological material is often weathered. Some of the glass components are leached out, and the weathered surface becomes depleted in certain oxides, particularly soda, and relatively enriched in others, particularly silica. Henderson and Warren (1981) analysed a soda-lime-silicate Iron Age glass bead at different depths from the surface and found that soda was depleted, and potash was slightly enhanced, in the weathered surface layers.

Results

Recent research on glass in the Roman period has developed the model that glass was produced at a number of primary production centres and then transported to workshops where it was shaped into objects (Freestone *et al.* 2000). The glass used to produce the majority of Iron Age glass objects was probably produced within the Roman Empire, although glass workers outside the Empire also shaped glass objects and occasionally coloured the glass themselves. All of the glass from Stanway was found to be of the soda-lime-silicate type, typical of European Iron Age and Roman glass, containing colourants and decolourisers that were also typical.

In the glass objects from Stanway (TABLE 49) manganese oxide was used as a decolouriser and the white glass was opacified with calcium antimonate. Yellow glass from Stanway was opacified with lead antimonate; no examples of the use of lead stannate, a colourant used in regions outside the Roman Empire, were found (Henderson 1991). Traces of zinc and lead were occasionally detected and probably entered the glass as contaminants in the colourants. Dark blue glass was produced by the addition of very small amounts of the strong colourant cobalt oxide, although copper oxide (also a blue colourant) was frequently detected as well. Both the blue glass brooch settings from CF72 were lighter in colour than the game counters and also contained manganese (TABLE 50, CF72.9–10). Significant quantities of iron oxide were occasionally detected in the cobalt blue glasses, as is often the case, since the cobalt-rich minerals used as colourants also contained varying concentrations of iron, although in some instances iron oxide may also have been intentionally added. In other studies, Iron Age beads have been grouped according to the ratio of cobalt oxide to iron oxide in the glass (Henderson 1991) but none of the beads described in the literature contained such high quantities of iron oxide (in excess of 10 wt%) as detected in the surfaces of the eight dark blue counters from BF64 at Stanway (BF64.28). The two lighter blue counters in the same set proved to be of a different composition, containing much less iron oxide, and so are from a different 'batch' or maker and may be replacements (TABLE 49). The glass of the blue counters from CF47 (CF47.19b) was opacified with calcium antimonite and so differed in composition to both types of blue counter from BF64.

Of all the glass objects, the large blue and white bead from BF64 (BF64.22) had the most unusual composition. The blue glass was coloured predominantly by cobalt oxide and small amounts of manganese oxide were also detected. The white glass was opacified by calcium antimonate and decolourised by several per cent of manganese oxide, and also contained in excess of 20 wt% lead oxide. The presence of lead oxide is atypical of the majority of white glasses of this date, as demonstrated by the compositions of the other white glass objects from Stanway, including the white gaming counters and the white decoration on the stud heads, which do not contain lead. Generally white glass opacified with calcium antimonate has a soda-lime-silicate glass composition with only an increased concentration of antimony clearly distinguishing it from transparent glass.

However, the presence of lead oxide in calcium antimonate opacified white glasses is common among Roman cameo glass vessels and to a lesser extent among mosaic glass vessels and cameo glass plaques or discs. Nearly all of the Roman cameo vessels in the British Museum, including the Portland vase (possibly late 1st century B.C.) and the Auldjo jug, were found to have high concentrations of lead oxide in the white glass decoration. The white glass in some of the cameo plates and plaques, although less than half of the number analysed, also contained lead oxide (Bimson and Freestone 1983; Freestone 1990). Similar results have been obtained in studies of other collections (Mommsen *et al.* 1997; Mass *et al.* 1998). Cameo glass

TABLE 49: RESULTS SUMMARY FOR GLASS OBJECTS (see also TABLE 50 for glass brooch settings)

Enc.	*Context*	*Feat.*	*Objects*	*Description*	*Results*
3	B1015	BF64	BF64.28	10 blue counters (2 lighter in colour than the others)	darker blue counters contained in excess of 10 wt% iron oxide, responsible for the darker colour, about 0.11% cobalt oxide and some copper oxide; cobalt oxide was the dominant blue colourant; lighter blue counters contained much less iron oxide and a little less cobalt oxide
5	C597	CF42	CF42.14	1 dark blue translucent counter	contained a small amount of cobalt oxide (the dominant colourant), some copper oxide, and a high concentration (~4 wt%) of manganese oxide
5	C1001–13	CF47	CF47.19a	13 opaque white counters	opacified by calcium antimonate
5	C1014–26	CF47	CF47.19b	13 opaque blue counters	opacified by calcium antimonate; blue colour dominated by up to 0.1 wt% cobalt oxide, although some copper oxide also detected
3	B1022	BF64	BF64.22	large translucent blue bead with white flecks	blue glass coloured by cobalt oxide, and some manganese oxide also detected; white glass opacified by calcium antimonate, decolourised by manganese oxide, and also contained more than 20 wt% of lead oxide
4	B322	BF24	BF24.24, SF 147	pale green spacer bead	likely to be faience rather than glass; copper oxide coloured glaze; surface too weathered to determine type of flux used
4	B606	BF24	BF24.24, SF 251	dark transparent green long barrel bead	coloured by copper oxide; magnesia level slightly higher than typical; no lead detected
4	B383	BF24	BF24.24, SF 255	hexagonal transparent blue-green glass cylinder bead	manganese decolourised
5	C630	CF42	CF42.16a	translucent blue and opaque white glass stud head	blue glass contained high levels of manganese and iron, coloured predominantly by cobalt; copper and zinc also detected; magnesia content slightly higher than typical
5	C723	CF42	CF42.16b	opaque blue stud head with opaque white spiral (top) and twisted opaque yellow and colourless spiral (bottom)	blue glass contained calcium antimonate opacifier and cobalt oxide blue colourant, with some copper oxide; yellow glass coloured by lead antimonate; white glass opacified by calcium antimonate; colourless glass decolourised by manganese oxide
5	C751	CF42	CF42.16c	translucent blue glass stud head with twisted opaque white and colourless cord and opaque yellow spiral at top	blue glass coloured by cobalt oxide with somecopper and traces of zinc and lead detected; yellow glass coloured by lead antimonate; white glass opacified by calcium antimonate;colourless glass was decolourised by manganese oxide
5	C403	CF72	CF72.11	large translucent blue bead with twisted opaque yellow and transparent brown cord	blue glass coloured by cobalt oxide but also contained some copper; yellow glass coloured by lead antimonate; brownish glass coloured by manganese oxide

was made during two periods, the blue and white variety in the early empire from about 25 B.C. to A.D. 50–60 (ribbon mosaic glass is also contemporary), and a variety with a colourless background sometime between the mid 3rd and 4th centuries (Henderson 1996; Whitehouse 1991; 1997). The presence of lead oxide in the white glass reduced its melting point and hardness and so facilitated the cutting of the design.

The Stanway bead was probably formed by dabbing small blobs of heated white glass onto the blue glass bead and then marvering them into its surface; a thin strand of white glass can be seen connecting two of the white blobs. The distortion of the white decoration indicates that the glass was stretched after the white decoration had been applied, and enlarging the diameter of the bead would have produced the effect seen. The white glass blobs contain small bubbles, particularly around the edges. Marvering blobs, spirals or cords of different coloured glass into the surface of a glass object was a common method of glass decoration and was successful with typical soda-lime-silicate glasses: the large, annular, cord-decorated bead (TABLE 49, CF72.11) from Stanway is an example. Therefore the addition of lead oxide to the white glass in this large blue and white bead was not necessary to facilitate the production process.

Very few other examples of high lead, calcium antimonate opacified, white Iron Age glass have been identified. Lead was detected in a blue and white bead with cable decoration from Hayling Island, Hampshire, dated to around A.D. 50 or earlier (Bayley *et al.* forthcoming, bead 731). This was described as a baroque example, of British origin, without exact parallel. Henderson and Warren (1981) detected 20 wt% lead and some antimony oxide in the white decoration of a glass bead of Guido's class 1 (II) from an Iron Age context at Glastonbury lake village. The Stanway bead is most similar to Guido's Group 1 beads (*see* pp.178–9) but they are not widespread, rarely blue and white, and none have been analysed (Guido 1978, 59–60). Since the composition and appearance of the Stanway bead seems to be without exact known parallel, it may be a relatively local imitation, produced sometime between *c.* 25 B.C. and A.D. 50 in a workshop outside the Roman Empire, perhaps using glass derived from a Roman cameo or mosaic glass object.

COPPER-ALLOY OBJECTS (TABLES 50–2)

Copper is a soft ductile metal that can be alloyed with other metals, such as tin, zinc or lead, in order to produce an alloy with a particular colour, hardness, malleability or casting fluidity. The terms used in this report to describe different archaeological alloys are based on established definitions (Bayley and Butcher 1991). Bronze is an alloy of predominantly copper and tin. Tin levels were usually in the range of 5–12 wt% and objects containing more than about 5 wt% of tin have been described as bronze. Brass is an alloy of predominantly copper and zinc, normally with between about 10 wt% to 25% zinc. In this report, objects containing more than about 5 wt% of zinc have been described as brass. Objects from Stanway containing tin and zinc each at more than about 5 wt% have been described as gunmetal, a modern term also used to describe archaeological copper alloys with significant amounts of both tin and zinc. Lead can be added to any of these alloys and Stanway objects containing more than about 5 wt% of lead have been described as leaded. The addition of lead to alloys improved the quality of castings but was detrimental if the metal was to be worked or gilded. In this report, alloys containing less than about 5 wt% of total additions have been called impure copper. If several per cent of an element was detected, it was recorded as a 'small amount' and less than 1 wt% as a 'trace'.

There are considerable differences between the types of copper alloys used in Britain before the Late Iron Age compared to those used in Late Iron Age and Roman Britain. In the Early and Middle Iron Age bronze was the main alloy used. The lead content of Iron Age alloys was generally low, although larger, more intricate, castings occasionally contained moderate amounts of lead. However, in the Roman period many objects contained lead in low levels and some contained large amounts of up to 40 wt% (Dungworth 1996). Relatively high levels of the impurity arsenic have also been found in Iron Age copper alloys, but Roman alloys rarely contained more than 0.1 wt% arsenic.

TABLE 50: RESULTS SUMMARY OF THE METAL OBJECTS AND GLASS BROOCH SETTINGS FROM BF64, BF67, CF7, CF42, CF47, CF72 AND CF115

Enc.	*Context*	*Feat.*	*Object*	*Description*	*Results*
3	B1006	BF64	BF64.23	shield boss	iron base-plate, bronze sheet, leaded bronze knob
3	B1019	BF64	BF64.26	handled basin	leaded bronze, with less lead in the body, which also contained a small amount of zinc and traces of antimony and arsenic
3	B1020	BF64	BF64.25	jug	upper and lower sections both bronze; handle leaded bronze with traces of antimony
3	B1016	BF64	BF64.29, SF 316	game board handle	tinned brass
3	B992	BF64	BF64.29, SF 319	game board corner binding	likely to be brass, with small amounts of tin and lead also detected
3	B1060	BF64	BF64.29, SF 348	game board hinged fitting	likely to be brass, with small amounts of lead and tin also detected; rivet also brass
3	B1032	BF64	BF64.19	Nertomarus brooch	probably brass, with small amounts of tin and lead also detected; surface concentration of zinc may have been depleted by corrosion; no tinning found
3	B –	BF64	BF64.20	Nertomarus brooch	in very poor condition but probably brass, plus up to 5 wt% lead and with a small amount of tin; the zinc concentration on one fragment is likely to have been reduced by corrosion; spring is brass; the associated curved fragment is brass, plus a small amount of lead
3	B1021	BF64	BF64.21	arm-ring	impure copper, with a small amount of zinc and traces of lead and arsenic detected
3	B1071	BF67	BF67.3	Hod Hill variant brooch	likely to be brass or possibly gunmetal (small amounts of tin and zinc were detected but the zinc at the surface may have been reduced); pin is impure copper; large areas of the front of the brooch were tinned; the head was a solid casting drilled to take the iron axial bar
-	C44	CF7	CF7.2	boss-on-bow brooch	brass, with a small amount of tin and a trace of lead
5	C671	CF42	CF42.15	spoon	?impure copper, but lead and tin occasionally detected in high concentrations, particularly in a protrusion at the base of the handle; no silver
5	C901	CF47	CF47.21	saucepan	bronze, with tinning visible on the inner surface
5	C969	CF47	CF47.22, SF67	strainer bowl foot	leaded bronze, tinned on front, lead-tin solder on back
5	C970	CF47	CF47.22, SF68	strainer bowl foot	leaded bronze, tinned on front, lead-tin solder on back
5	C972	CF47	CF47.22, SF70	strainer bowl foot	leaded bronze, tinned on front, lead-tin solder on back
5	C978	CF47	CF47.22, SF76	strainer bowl body	bronze with trace of lead; lead-tin solder attached the spout and feet to the body
5	C902 etc.	CF47	CF47.22, SF14 etc	strainer bowl strainer-plate strainer bowl spill-plate	bronze with a trace of lead; solder around the edge was rich in lead and tin bronze, with a small amount of lead; front surface tinned; lead-tin solder present on the back

Enc.	*Context*	*Feat.*	*Object*	*Description*	*Results*
				spout	leaded bronze, probably tinned
				handle	leaded bronze, tinned on front; ring-headed rivet is bronze with a small amount of lead; strip rivet is brass and probably a repair
5	C998	CF47	CF47.20, SF94	game board corner binding	brass
5	C999	CF47	CF47.20, SF95	game board hinged fitting	brass or gunmetal hinge and pin, as small amounts of zinc and tin were detected but the zinc may have been depleted by corrosion (trace of lead)
5	C1049	CF47	CF47.25, SF135	stud from tray	bronze with a small amount of lead; lead-tin solder on underside
5	C1041	CF47	CF47.25, SF159	sheet from tray	bronze
5	C1030	CF47	CF47.23, SF126	short rod	brass
5	C1085	CF47	CF47.24, SF142	rebated ring	leaded bronze with a small amount of zinc; the very high levels of tin occasionally detected may be due to corrosion, since no tinning was observed; high levels of arsenic detected
5	C1086	CF47	CF47.24, SF143	plain ring	leaded bronze with a small amount of zinc; the very high levels of tin occasionally detected may be due to corrosion, since no tinning was observed
5	C982	CF47	CF47.15 + 16	Langton Down brooch, + ring fragment	gunmetal (more zinc than tin), with an impure copper pin; ring fragment bronze (plus a small amount of lead) and the level of tin detected was very high, probably due to poor preservation
5	C942	CF47	CF47.17	Rearhook brooch	leaded bronze with a small amount of zinc; stripes of tinning; pin is brass; no solder for reinforcing the spring attachment was accessible behind the side-wings
5	C410	CF72	CF72.5	Keyhole plate brooch with red glass stud	brass, although the amount of zinc detected is slightly low, probably as a result of corrosion, and it also contained a small amount of lead; tinned on the front and back, apart from the centre of the bow, which would have been covered by the missing repoussé-decorated plate; as no solder was detected in the centre of the bow, the red glass stud probably secured the plate; the pin and the cup holding the glass stud are impure copper; red glass contained over 30 wt% lead oxide, 7 wt% copper oxide and also antimony oxide, consistent with other 'sealing wax' red Iron Age and Roman enamels (Stapleton *et al.* 1999), coloured by small crystals of copper and/or cuprite (Cu_2O)
5	C408	CF72	CF72.6	Hod Hill brooch	leaded gunmetal, containing more zinc than tin, with parcel tinning; pin is impure copper; an iron axial bar secured the pin
5	C416	CF72	CF72.7	circular lugged plate brooch	brass with small amounts of tin and lead varyingly detected; a high concentration of tin (and some lead) was detected in the centre of the brooch front, probably the remains of solder used to secure a decorative central setting

TABLE 50: (CONT'D)

Enc.	*Context*	*Feat.*	*Object*	*Description*	*Results*
5	C414	CF72	CF72.9	lozenge-shaped plate brooch with blue glass setting	brass with a small amount of tin and a trace of lead; pin is impure copper; elevated levels of tin, likely to be the remains of lead-tin solder, were detected on the front of the brooch except in the centre, where the glass setting was located; there was a circular rim of thicker solder around the tin-free region; a copper alloy sheet would originally have covered the entire brooch, attached with solder, with a hole for the setting to protrude through; blue glass coloured by cobalt and copper oxides, and also contained manganese; it had a red area on the base that was compositionally similar except that more copper and lower alkali levels were detected in that area, it may be that the glass was heated on the brooch to set it in place, and the concentration of copper in the glass increased where it was in contact with the metal (as there was little oxygen available in the region between the brooch and glass the red colourant Cu_2O formed in the glass on the base of the setting)
5	CF406	CF72	CF72.10	star-shaped plate brooch with blue glass setting	brass, with some tin and a small amount of lead varyingly detected; the blue glass centre of the brooch contained manganese and was coloured mainly by cobalt with some copper; it was fixed to the brooch by lead-tin solder, as a high concentration of lead oxide was detected on the back of the glass centre and lead-tin solder covered the front of the brooch where the missing repoussé-decorated sheet was attached
5	C88	CF115	CF115.4	?mirror fragment	leaded bronze

The earliest date for the regular production of brass in the Roman Empire is 25 B.C. (Dungworth 1996). Objects made from brass began to appear in southern Britain from the early 1st century A.D. (Bayley 1988), mostly brooches of both imported and British-made types (Stead 1975; Bayley 1984; Stead and Rigby 1986, 122–3), but there is no evidence for the actual manufacture of the alloy itself in Britain until the decades following the Roman conquest, when there was a great increase in the amount of brass being used (Bayley 1990). Brass was not regularly produced prior to the Roman period because of the difficulties associated with extracting the volatile metal zinc from its ore. Roman brass was made by the cementation process, which involved heating copper, charcoal and either zinc carbonate or zinc oxide in a lidded crucible (Bayley *et al.* 2001). Gunmetal was used and may have been produced by mixing scrap bronze and brass (Dungworth 1996). However, neither leaded brass nor leaded copper were normally used in Roman times and unalloyed copper was used only in certain applications (Bayley 1988).

Results

A large number of copper-alloy objects from Stanway were analysed from burials, chambers, and ?mortuary enclosures. Unusual objects, or complex items formed from several

components, are discussed individually below, followed by summaries of the results for the remaining objects.

Shield boss, BF64.23: The boss was constructed from three parts; a cast leaded bronze knob, a bronze plate (also containing a small amount of lead) and finally an iron sheet under-layer (TABLE 50).

Jug, BF64.25: The jug was constructed from three parts; the handle, the top of the jug with spout and the rounded lower body of the jug (TABLE 50). The handle was cast and was a leaded bronze with traces of antimony. The handle was probably attached using lead-tin solder, as some was visible where the handle was attached to the jug, although this area was not accessible for analysis. The top half of the jug, including the spout, was bronze and a small amount of lead was detected. This section of the jug was cast and not subsequently worked, since small dendrites (branching crystals that form as the molten metal cools) could be seen on the surface using a binocular light microscope. The metal was approximately 5 mm thick at the spout. The rounded lower body of the jug was bronze, containing only a small amount of lead, and was only 1 mm thick in places. This section of the jug was probably wrought although no uncorroded metal was visible to examine for evidence of dendrites or tool marks. No tinning or silvering was observed or detected analytically although it was not possible to analyse the internal surfaces of the item. Molten metal had been applied to the join between the top and bottom halves of the jug, in three areas on the inside. From its appearance and hardness, this metal was probably copper alloy rather than solder. No signs of the join could be discerned on the outside of the jug where it was disguised by two parallel decorative grooves. The join was probably an overlapping, rather than butt, type but since it was still intact it was not possible to establish this conclusively.

Handled basin, BF64.26: Only a few areas of the basin could be accessed for XRF analysis because of the shape and size of the object. However, examination with a binocular light microscope suggested that no surface decoration, such as tinning, silvering or inlay, was present. The basin was made from two parts; a leaded bronze handle (with a small amount of zinc) and a leaded bronze body (TABLE 50). The lead content of the body was considerably lower than that of the handle and a small amount of zinc and traces of antimony and arsenic were also detected in the former. Both the basin and handle had been cast and not subsequently worked, as characteristic, distinctively shaped dendritic crystals were visible on the surface. The two parts had been soldered together with lead-tin solder.

Saucepan, CF47.21: The remains of tinning were visible on the inside surface of the saucepan (TABLE 50). Owing to the large size it proved possible to analyse only a small fragment of the handle, which had broken from the object; this proved to be of bronze, with no lead detected. As the object was cast in one piece, the analysis of the fragment is likely to be representative of the whole. Saucepans of this type were cast in moulds using the lost wax process. The characteristic grooves on the base of this type of object were turned in the wax model around which the mould was formed, rather than being cut into the metal object once cast (Poulsen 1995).

Strainer bowl, CF47.22: The strainer bowl was a composite object constructed from several parts; three feet, a handle, a strainer-plate, a spout, a spill-plate and the strainer body itself (TABLE 50; *see* FIG. 113). The feet, spout and handle were all cast from leaded bronze and were tinned. The handle was attached to the body using two rivets: the ring-headed stud rivet was bronze and likely to be original whereas the folded strip fastening was brass and probably a repair. The bowl itself was wrought from bronze and the sheet metal was less than 1 mm thick, although the rim lip had a maximum thickness of about 2 mm. A hole was cut in the sheet metal where the spout was to be positioned and then the spout was soldered in place with lead-tin solder. The feet were also attached to the strainer body using a lead-tin solder, as elevated levels of lead and tin were detected on the base of the feet and in certain areas on the outer surface of the strainer body. The strainer-plate was wrought bronze and holes had been punched in the

sheet metal to form an elaborate pattern. The spill-plate, which was attached to the bowl using lead-tin solder, was also wrought bronze and tinned on one surface. In several areas there was a grey/green patination on the outer surface of the strainer body, where elevated levels of tin were detected, but this was probably a result of corrosion rather than tinning. The strainer would have had a highly decorative appearance when complete. The spout, handle, spill-plate and feet, which would have been silver-coloured as a result of tinning, would have contrasted with the bronze-coloured bowl.

There were occasional grey areas on the inside surface of the strainer where increased concentrations of tin and/or lead were detected. However, these patches were commonly adjacent to lines of lead-tin solder and may have resulted from the corrosion of the solder rather than being evidence of tinning. Although copper-alloy vessels used for food preparation were frequently tinned to inhibit the dissolution of copper in the food (*see* the saucepan above), the strainer was unlikely to have held liquids for significant periods and therefore tinning may not have been required. Elevated levels of tin were also detected in the region of faint, silver-coloured, roughly semi-circular and circular marks on fragments of the bowl. These marks may have been the remains of soldered joints, as they had a distinct shape, but because of the severely fragmented condition of the bowl, it was not obvious whether the strainer-plate might have been attached to the fragments concerned.

No clear marks were visible on the outer surface of the strainer body but fine, parallel, annular scratches, following the circumference of the bowl, were visible on the inside of the body. These marks may have resulted from the finishing and polishing of the object, possibly using a pole lathe (Craddock and Lang 1983). In other areas with more awkward contours, also inside the strainer body, fine striations were visible running in a perpendicular direction to the annular marks previously described. These striations were present near the rim, where they continued to a depth of 50 mm into the bowl, on the base and also around the edges of the strainer-plate, and may have resulted from hand-finishing in these areas.

The strainer was crushed and fragmented when found but it was not possible to discern conclusively from examination of the strainer whether it was crushed prior to, or during, burial. The strainer body and strainer-plate were constructed from very thin, wrought bronze sheet, and so are unlikely to have been able to withstand the heavy loads that might be exerted by burial. Originally, the strainer would have collapsed by bending and folding, as was observed in one large rim fragment and the straining plate. Later, as the metal corroded post-burial, brittle fracture and fragmenting of the strainer would be anticipated, and this was observed on many fragments. Some components of the strainer showed signs of heavy wear, for example the strainer-plate was incomplete and the spout was abraded.

Rods, CF47.23: Only one of the four copper-alloy rods from CF47 was analysed as the larger rods would not fit into the XRF sample chamber (TABLE 50). It was found to be brass, and as all the rods were a similar colour it is likely that they all had a similar composition. Four iron rods were also recovered although these were not examined.

Spoon, CF42.15: The spoon is badly corroded and therefore the results are difficult to interpret; it may be of impure copper (TABLE 50). The surface was probably tinned, although no evidence for this survives. A protrusion at the base of the handle was particularly rich in lead and tin, and, as this is probably not part of the spoon (N. Crummy, pers. comm.), it may be some lead-tin alloy or corrosion product deposited from another object.

Possible mirror fragment, CF115.4: It cannot be conclusively determined without sampling whether this leaded bronze object was a mirror because of its poor condition (TABLE 50). However, the tin content on one side, which was dark and smooth, was considerably higher than on the other, and this is consistent with a type of Roman mirror made from a low-tin bronze (containing up to about 10% tin and a few per cent of lead) and tinned on one surface (Meeks 1995). Other mirrors were made from speculum, a high-tin bronze (approx 22 wt% tin).

Brooches: The analytical results for the brooches are summarised in TABLE 50. The results are all consistent with previous analyses of these brooch types (*e.g.* Bayley 1986; Bayley and

Butcher 1997; 2004). The imported brooches are brass or probably brass, apart from the Langton Down from CF47 which is of gunmetal, and the British-made Rearhook is a leaded bronze. The pins are frequently of impure copper, which is suitable for drawing out as wire and easily wound to form the spring.

Other grave deposits: A wide range of alloys is represented among the other grave goods. The arm-ring from BF64 is of impure copper, which is malleable and so suited to the method of manufacture of this object. The cast fittings from the game boards in BF64 and CF47 are of brass, as are the corner-bindings, and the drop-handle from the board in BF64 was tinned. The binding from the board fragment in the chamber BF6 is also brass (TABLE 51). Both types of ring found in CF47 were of leaded bronze, though high levels of arsenic were detected in the rebated one. The ring fragment found with the Langton Down brooch in the same grave was of bronze (TABLE 50).

TABLE 51: RESULTS SUMMARY OF THE METAL OBJECTS FROM ENCLOSURE 3 CHAMBER BF6, THE PYRE-SITE BF1/F16 AND PIT BF17

Context	*Feature*	*Object*	*Description*	*Results*
B77	BF6	BF6.24	pedestal	leaded bronze, with lead-tin solder detected on top; attached fragment appears to be leaded copper although this would be unusual
B159	BF6	BF6.25	spout	leaded bronze
B226	BF6	BF6.26, SF146	game board binding	likely to be brass, small amounts of tin and lead varyingly detected, particularly on the rivet, which may indicate that solder was used
B194	BF6	BF6.27	harness fitting	likely to be brass, with a small amount of lead
B67	BF6	BF6.29	strap-plate/ stiffener and burnt fragments	?strap-plate probably brass although high levels of lead and tin in some areas may indicate the presence of solder; other analysed fragments were bronze (1) and leaded bronze (3)
B164	BF6	BF6.31	strip fragments	leaded bronze
B180	BF6	BF6.32	cylinder	lead and copper present
B158	BF6	SF109	burnt fragments	2 fragments analysed, both bronze
B75	BF1	BF1.2	fitting	likely to be brass, with zinc and lead detected; separate lump of metal is leaded bronze
B81	BF1	BF1.3	many burnt frags incl. small studs	3 analysed; leaded bronze and bronze
B87	BF1/L6	BL6.2	fitting and 2 droplets	impure copper
B83	BF16/L5	BF16.2	belt-plate/stiffener	bronze, with small amount of lead
B25	–	SF82	stud	lead and copper detected
B155	BF17	BF17.2	dome headed boss	likely to be brass, with small amount of lead

TABLE 52: RESULTS SUMMARY OF THE METAL OBJECTS FROM THE CONTEXTS ASSOCIATED WITH THE ?MORTUARY ENCLOSURE BF32 IN ENCLOSURE 4

Context	*Feature*	*Object*	*Description*	*Results*
B531	BF28	BF28.1	plaque	likely to be brass, with trace of lead
B540	BF28	SF152	dribble and fragment	copper, lead, tin and large quantities of silver
B750	BF42	BF42.1	strip	likely to be brass, with small amount of lead
B734	BL41/ F42	BF42.2	fitting	likely to be brass, with small amount of lead
B646	BF42	SF 221	sheet fragments	4 analysed; all bronze with varying tin levels
B701	BF42	SF 219	fragments	impure copper
B750	BF42	SF 232	dribbles and pellets	2 analysed; one is leaded bronze; a small amount of zinc was detected in the other

Enclosure 3 chamber BF6, pyre-site BF1/BF16 and pit BF17: A number of copper-alloy objects and fragments from the chamber BF6 and the features and layers clustered in the same area were analysed and the results are summarised in TABLE 51. Several of the items are brass, or probably brass, which suits the identification of some of the pieces, such as the harness fitting from BF6, as Roman cavalry equipment (Bayley 1985; 1992).

Enclosure 4 ?mortuary enclosure BF32 and pit BF42: Several of the heat-affected objects from the ?mortuary enclosures and a charcoal-lined pit filled with burnt copper-alloy debris in Enclosure 4 also proved to be brass (TABLE 52). The fragments from B540 F28 (SF 152) were atypical as they contained large concentrations of silver (up to ~37 wt%) in addition to copper, tin and lead. It can be no coincidence that the only silver objects in the Stanway assemblage, a pair of collars probably from a brooch chain, came from BF24, the chamber in this enclosure.

CONCLUSIONS

The majority of the glass objects from the funerary enclosures were made from soda-lime-silicate glass, and a mineral source of alkali fluxes, such as natron, was probably used in the production of the glass. The glasses frequently contained significant quantities of manganese oxide and made use of antimony-based, rather than tin-based, colourants. These observations, consistent with other glass objects from Late Iron Age and Roman contexts, suggest that the glass used to produce the artefacts originated in the Roman Empire, although glass workers outside the Roman Empire may then have shaped the glass into objects. The white glass used to decorate one large blue bead was found to have a lead-rich composition typical of Roman cameo and mosaic glass.

The majority of the copper-alloy objects from the enclosures were made from bronze or leaded bronze. The exceptions were many of the brooches, assorted small fittings, game board fittings, and the rods from CF47, which were all brass. The repair on the strainer handle was also brass. The application of brass fittings to the game boards may suggest that they were imported. The dominance of bronze and leaded bronze in the assemblage is not unexpected. The occurrence of leaded bronze increased at this time (Northover 1989), as it was used for both imported and British-made items. There was also a great increase in brass objects in Britain following the conquest, but they tend to be imported military fittings and brooches (Bayley 1988). Roman vessels are normally bronze or leaded bronze; brass is only used for a few wrought vessel types.

THE IRON AGE AND ROMAN COINS (FIG. 148)

By John A. Davies

Seven coins were recovered from the Stanway excavations. They are all bronze issues. Five are Iron Age and two Roman. All can be dated within the period A.D. 10–68. Four of the Iron Age coins have been identified. One (AF17.1) comes from the ditch of Enclosure 1, three (CF5.1, BF39.2, BF39.3) from the ditch of Enclosure 4, and the last (BF30.3) from the ditch of the ?mortuary enclosure BF32 in Enclosure 4. BF30.3 is a type from Cunobelin's Middle Bronze series, dated from A.D. 10–20. All of the rest are Cunobelin's Late Bronze types, similarly dated from A.D. 20–43.

The two Roman coins came from Enclosure 5. Both are unusual types of bronze *aes*. The earlier of the two is an irregular *as* of the emperor Claudius (CF96.1). Irregular Claudian issues are not found on all Romano-British sites. They are largely found at places with a mid 1st-century military association, such as the *coloniae*, forts and routeways of this period. They can be found in profusion at military sites. The major assemblage of Claudian bronze coins from the Colchester town centre excavations between 1971–79 has been studied and published in its entirety (Kenyon 1987; 1992).

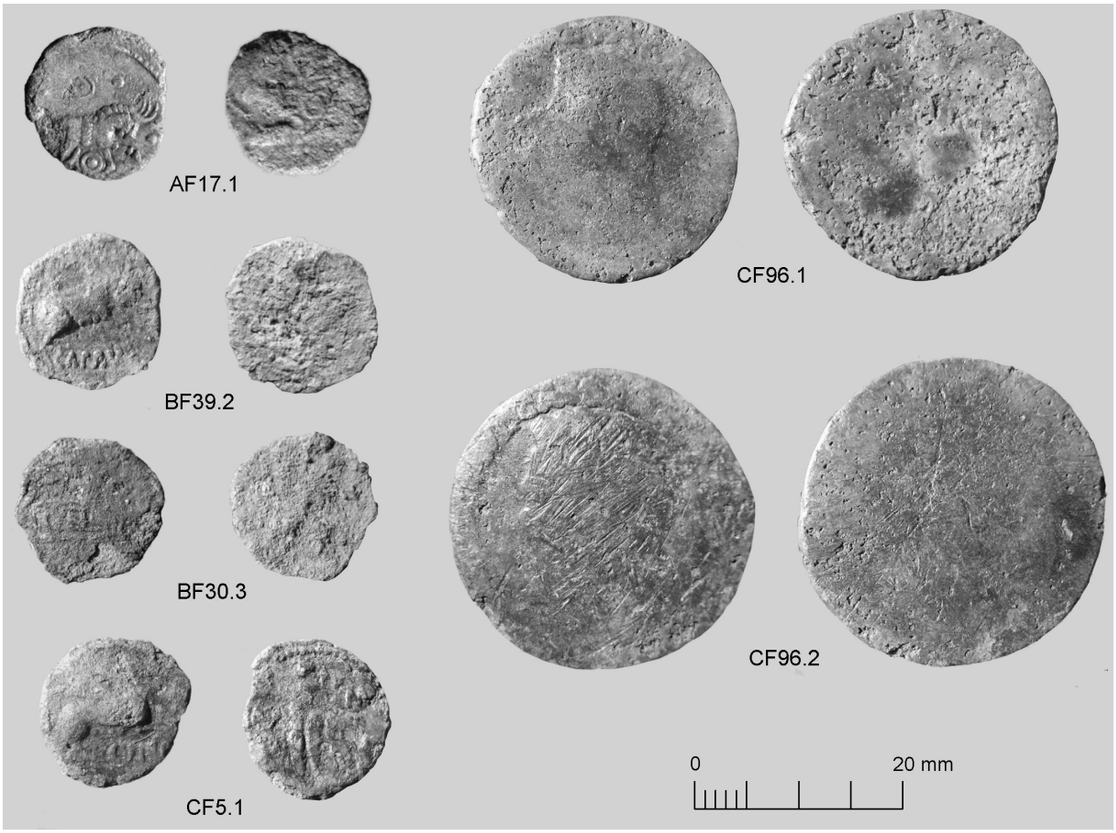


FIG. 148. Coins: AF17.1 (Enclosure 1 ditch), CF5.1 and BF39.2 (Enclosure 4 ditch), BF30.3 (the ?mortuary enclosure in Enclosure 4), CF96.1–2 (from Enclosure 5 slot or trench) (scale 1.5:1)

The other Roman coin (CF96.2) is a regular *as* of the emperor Nero. This coin is largely illegible (FIG. 148). In fact, it is the nature of the wear exhibited that makes this coin so unusual. The obverse has been heavily rubbed, with very little relief remaining. The reverse is even more heavily worn and is almost flat. This degree of wear is exceedingly unusual. It is clear from coin-hoard evidence that Roman coins of the Augustan coinage system, such as this, could stay in circulation for long periods of time. They could sometimes circulate for many decades. However, such coins do not exhibit the type of wear from normal circulation seen on this example. The very flat surfaces, especially as seen on the reverse, suggest that this coin may have been deliberately rubbed flat.

Examples of deliberately defacing the coinage of specific Roman emperors after their death have been recorded. However, in such instances, cut marks or evidence of rubbing are found on the emperors' portrait, where an attempt has been made to deface or remove his image. On the Stanway *as*, the portrait has not been specifically targeted and the reverse has suffered more than the obverse. However, Roman coins with this degree of wear are exceptionally rare. Elsewhere in East Anglia, a small group of bronze 4th-century *folles* was excavated at the temple of Sawbench, Hockwold cum Wilton, Norfolk. These had been worn almost flat on their reverse faces (unpublished, deposited with Norwich Castle Museum). It has been speculated that these coins had been deliberately rubbed smooth for an unknown purpose within the temple.

In conclusion, the Neronian *as* from Stanway does appear to have been rubbed flat for a specific purpose rather than worn smooth through normal circulation. This wear could have been the result of a functional use. Perhaps it was used as a washer between two surfaces. It is unlikely that the defacement was a deliberate comment aimed at the emperor Nero as the portrait would have been targeted. However, it is possible that the unusual wear could be associated with a ritual or symbolic practice, as yet undefined.

Catalogue

Iron Age coins (FIG. 148)

AF17.1 SF106. A589. Middle fill of northern arm of enclosure ditch of Enclosure 1. Cunobelin A.D. 20–43. AE unit. 1.09 g. 14 mm. Obv: Romanised bust right. Illegible legend: —0— . Rev: Bull butting right. Ring-and-pellet motifs above and below bull. As Van Arsdell 2095-1.
BF30.3 BF30/1. SF173, B538 BL21. Junction of northern and eastern arms of the ditch of ?mortuary enclosure BF32 in Enclosure 4. Cunobelin A.D. 10–20. AE unit. 1.18 g. 14 mm. Obv: Corroded and chipped. Writing in 2 lines, in tablet. —0— . Rev: Illegible. As Van Arsdell 1977-1.
BF39.2 SF287. B931. Middle fill of northern part of eastern arm of enclosure ditch of Enclosure 4. Cunobelin A.D. 20–43. AE unit. 1.10 g. 15 mm. Obv: Sphinx right. CVNO below. Rev: Perseus left. CAM to side. Van Arsdell 2109-1.
BF39.3 Not illustrated. SF384. B1165. Middle fill of northern part of eastern arm of enclosure ditch of Enclosure 4. Unidentified (missing).
CF5.1 SF205. C5. CF5/CL6. Upper fill of southern part of eastern arm of enclosure ditch of Enclosure 4. Cunobelin A.D. 20–43. AE unit. 1.47 g. 15 mm. Obv: Corroded. [Head of Janus.]. Rev: Sow right. CAMV in tablet below. Van Arsdell 2105-1.

Roman coins

CF96.1 SF197. C171. Upper part of slot CF96 in Enclosure 5. Claudius A.D. 50–60. Irregular *as*. 7.14 g. 25 mm. 160 degrees. Obv: [TI CLAVDIVS CA]ESAR AVG [PM TR P IMP]. Rev: S-C]; Minerva right. As RIC 1: 100.
CF96.2 SF203. C162. Upper part of slot CF96 in Enclosure 5. Nero A.D. 64–8. *As*. 9.83 g. 29 mm. Obv: Bust left. Surface heavily rubbed and relief worn away. Rev: Illegible. Surface rubbed completely flat.

THE GLASS VESSELS (FIG. 149; TABLES 53–4)

By H.E.M. Cool

INTRODUCTION

The glass vessels found at the Stanway site are an important addition to our knowledge of Roman glass in 1st-century Britain. As will be discussed below (report submitted in 2002), there are grounds for thinking that many may have been imported prior to the conquest in A.D. 43, a period when glass vessels were very rare within Britain (Price 1996). They are also important within an international context because one of them (BF64.16) appears to be an unusual survival of a large early blown bowl. As such, it has a useful contribution to make to our understanding of the capabilities of the early glass-blowers.

THE VESSEL TYPES PRESENT (FIG. 149; TABLES 53–4)

Ten vessels have been identified, which collectively represent a range of types. There is one very large blown bowl (FIG. 83, BF64.16; p. 176), a smaller cast polychrome bowl (FIG. 73, CF42.11; p. 156), a *pyxis* (FIG. 129, CF72.4; p. 258), and six unguent bottles (FIG. 83, BF64.17–18; p. 176; FIG. 63, BF24.23; p. 140; FIG. 73, CF42.12 and CF42.13 (not illustrated); p. 156; and CF115.3 (not illustrated); p. 261). There is also one fragment from a blown polychrome vessel of unknown form (FIG. 30, BF4.1; p. 73).

The amber bowl BF64.16 from the Warrior's burial is a remarkable vessel as it is unusually large, measuring a quarter of a metre in diameter and 125 mm in height (FIGS 83, 149). This is exceptional, as may be judged by comparing it to the rim diameters of the two commonest relatively deep bowl forms in use during the mid to late 1st century in Colchester (*CAR* **8**, 15–26, 94–9). The data are given in TABLE 53. As can be seen, although bowls of a comparable rim diameter have occasionally been found, they are rare and the average diameter is much smaller.

The diagnostic features of the bowl apart from its size are a rolled rim, linear wheel-cut decoration and base formed by a separately blown paraison. The form is not one that features

TABLE 53: SUMMARY OF THE RIM DIAMETERS OF PILLAR-MOULDED AND TUBULAR-RIMMED BOWLS FROM COLCHESTER (source *CAR* **8**; measurements in mm)

Bowl type	*No.*	*Minimum*	*1st quartile*	*3rd quartile*	*Maximum*	*Mean*
pillar-moulded	46	105	140	200	230	167
tubular-rimmed	29	100	140	188	270	165

in standard typologies such as those of Isings (1957) and Goethert-Polaschek (1977). Shallow bowls with similar blown paraison bases are known from contexts of the first half of the 1st century A.D. Ones with both tubular and fire-rounded rims were found buried in a room in the Atrium Publicum at Cosa, destroyed by the collapse of a wall of the Forum Basilica in *c.* A.D. 40–45 (Grose 1973, 38 nos 9–10, fig. 3). On the basis of fragments that were accumulating between 37/36 B.C. and the first decade of the 1st century A.D. in a drain in the Regia, Grose (1977, 20) has suggested that the form may have been in use by early in the 1st century A.D. at the latest. Clearly the Stanway bowl is not precisely paralleled by these Italian dishes as they are shallower, of smaller diameter, and do not appear to have been made of amber glass. They do, however, show that vertically sided open vessels with distinctive paraison bases were being used in Italy in the early to mid 1st century A.D., if not earlier.

Thanks to the Boudican uprising in A.D. 60/1, Colchester has one of the largest and best-documented collections of glass vessels belonging to the period A.D. 43–60/1 from anywhere in the Empire. It is very noticeable that neither at Sheepen (Harden 1947; Charlesworth 1985) nor at the town-centre sites (*CAR* **8**) are there any rim or base fragments that could be related to vessels similar to the Stanway bowl. The same is true in other vessel glass assemblages from good closed contexts relating to the A.D. 40s, 50s and 60s such as the Dutch fort of Valkenburg (van Lith 1978–9). Given this and the Italian evidence, it seems most likely that this was a pre-conquest import as it is difficult to see how the form could have escaped notice if it was being made in the mid 1st century. An interesting question arises, however, as to how many years prior to the conquest this particular vessel may have been made and when it arrived in Britain.

With a unique object as this vessel currently appears to be, such questions are difficult to answer, but the intriguing possibility exists that this may be an early blown vessel of a type that has puzzled glass scholarship for some time. The invention of glass-blowing is generally thought to have taken place in the mid 1st century B.C. and to have initially been concerned with blowing small flasks (*see* for example Israeli 1991; Grose 1977, 25). It was clearly a technology that spread rapidly as, within a century, blown vessels of a wide variety of forms are found throughout the Empire, and there are many different glass-blowing centres. Blown glass had many advantages, one of which was that, in comparison to the early casting techniques, the vessels could easily be transparent. This was a property that was much appreciated and it was exploited by painters decorating walls in the fantasy scenes of the Second Pompeian style, especially those of the later developments of the style which may broadly be dated mid 1st century B.C. to the early reign of Augustus (*c.* 15 B.C.) (Ling 1991, 23).

From the outset, these paintings include depictions of large transparent glass bowls, often containing fruit, a good example of this being the bowl on the east wall of Room 23 in the villa of the Poppaei at Oplontis believed to have been painted *c.* 50–40 B.C. (Ling 1991, 29, fig. 25; Naumann-Steckner 1999, 25, fig. 1). Given the size of the fruit depicted, these bowls are likely to have had a rim diameter of 200–250 mm (Naumann-Steckner 1991, 87). The archaeological record has so far not produced any evidence that large glass bowls such as these existed so soon after the invention of blowing, and the status of these depictions has been questioned. Grose (1977, 28) cautiously concludes that these vessels may indeed be depictions of blown glass bowls and that people were familiar with at least the idea of blown glass at the time. Naumann-Steckner, noting the absence of contemporary examples of the actual bowls, prefers to see them as a hybrid invention by the painters, taking the form of silver vessels but rendering them in glass to exploit the possibility of depicting transparency (Naumann-Steckner 1991, 88; 1999, 27). It is undoubtedly the case, however, that when other glass vessels are depicted they can be

FIG. 149. The amber glass bowl BF64.16 from the Warrior's burial

paralleled by actual examples (cf. Naumann-Steckner 1991, pl. 22). It may also be relevant that a study of the bronze vessels in the wall paintings has concluded that throughout the different painting styles, the vessels depicted match the contemporary forms actually in use (Riz 1990, 41).

Although the Naumann-Steckner hypothesis may be correct, the possibility that large blown bowls were in existence by the later 1st century B.C. cannot be excluded, and there is the intriguing possibility that the Stanway bowl may be an example of one. It is interesting to note that, several times, cylindrical bowls with outflaring rims not dissimilar in shape to BF64.16 are depicted in wall paintings thought to have been painted in the 20s B.C. and possibly a little later at, for example, the House of Augustus on the Palatine in Rome (Naumann-Stecker 1991, 88), in the Villa Farnesina, also in Rome (Nauman-Steckner 1999, 28, fig. 6), and in a tomb in Morlupo in Etruria (Naumann-Steckner 1991, pl. 24a; 1999, 28, fig. 7). These seem to have small ball-like feet, a most unusual feature for glass, but they are clearly transparent and are large enough to have several unguent bottles and toilet implements placed in them. Of relevance to the Stanway bowl is the fact that the best-preserved one, that from Morlupo, clearly shows two lines on the upper body and one on the lower body, possibly depicting the sort of wheel-cut lines that can be seen on BF64.16. Again, the parallel is not an exact one but might hint that the Stanway bowl could have been made in the late 1st century B.C.

An early date might also explain one of the insecurities in technique it demonstrates. Roman glass-blowers of the 1st century A.D. were probably some of the most competent that ever existed, but in this vessel the base was attached to the body rather incompetently. Large air bubbles were trapped between the two paraisons. This was such a problem that when the fragments were first excavated, it was thought that two vessels were present as some of the base paraison fragments had split away from the body along the line of the joint. It is not difficult to imagine that this sort of problem might be expected when people were experimenting with a new technology, exploring its possibilities and working at the limit of their technical capabilities.

If the hypothesis that the vessel was the product of the early Italian glass-blowing industry is correct, then it could have been half a century old when deposited. Is this feasible? The bowl

certainly gives every appearance of having been carefully curated. It was found fragmented and as reconstructed is not complete, but the missing fragments are small and, given the nature of the excavation of this deposit, it seems most likely that it was deposited as a complete vessel and the missing fragments were overlooked during excavation. It was found placed within a wooden box with iron fittings which appears to have been the most substantial of any of the wooden boxes found in the cemetery. The only other pre-conquest glass bowl from a grave in southern England is the ribbed bowl from the Hertford Heath burial, and this too shows a considerable longevity. The burial is thought to belong to the first half of the 1st century B.C., probably before *c.* 20 B.C., but the bowl itself is thought to have been made prior to 70 B.C. (Price 1996).

The other bowl from Stanway is a cast polychrome bowl in blue, white and yellow (FIG. 73, CF42.11) from the chamber in Enclosure 5 (CF42). This was clearly not placed in the grave as a whole vessel since only a handful of fragments survive. These are sufficient, however, to show that, when complete, this would not have been an example of either of the standard polychrome bowl forms at Colchester, *i.e.* the pillar-moulded bowl (*CAR* **8**, 17–19, nos 1–5) and the shallow convex bowl (*ibid.*, 27–8, fig. 2.9, no. 189). In CF42.11, the side of the vessel is much more vertical and the base is flat. These features suggest that the original may have been more like what Grose has called a deep hemispherical bowl (Grose 1989, 259, figs 147–8), although the vessels tend to have slightly straighter sides than this name suggests.

Many cast polychrome vessels from Britain are represented only by small fragments and, although it is possible to distinguish between pillar-moulded bowls and the others because of the distinctive surface finish of the former, it is not always possible to identify the precise type from which the unribbed fragments came. The latter belong to Grose's Family IV of mosaic vessels for which a broad date of the late 1st century B.C. to *c.* A.D. 50 is appropriate (Grose 1989, 257). Of those from British sites that can be identified as far as form goes, most belong either to the carinated forms or to the shallow convex bowls. This perhaps suggests that the less common forms such as the deep hemispherical bowl had gone out of common use by the time of the conquest. As with BF64.16, the lack of any similar rim and base fragments in the pre-Boudican contexts at Colchester or other contemporary deposits in Britain might suggest that CF42.11 too could have been a pre-conquest import.

The other cast polychrome vessel (FIG. 129, CF72.4) also belongs to this family of vessels (Grose 1989, 259). It is the bottom part of a *pyxis* which, in its present state, is undamaged apart from a chipped rim. This chipping was perhaps the result of a long period of use as, when complete, the vessel would have had a lid which fitted over the rim and rested on the rebated edge. It was found in the Brooches burial CF72 in Enclosure 5. Such vessels were also made in monochrome glass and in gold band glass. In no colour were they ever common, and very few of those extant have any details of their provenance recorded. The discovery of this example at Stanway is therefore an important addition to the corpus.

Those with a context suggest that they were primarily in use in Italy and the Mediterranean areas of the western empire. A monochrome blue example was found in a Claudian cremation burial at Nîmes, France (Foy and Nenna 2001, 129–30, 163–11). A polychrome example with three different cane patterns set in a purple matrix is said to have been found in a tomb in the locality of Amolara in Adria, Italy (Bonomi 1996, 197, no. 447, pl. 4), and a translucent blue one is said to have been found at Cumae, Italy, with a gold band vessel, presumably in another grave (Goldstein 1979, 142, no. 293). A virtually complete purple, yellow and white marbled example is also known from Apt, France (Foy and Nenna 2001, 161, no. 225). A late 1st-century B.C. to early 1st-century A.D. date seems most likely for their manufacture. Even allowing for the fact that they are a rare form, their normal absence from mid 1st-century A.D. site assemblages suggests that most are likely to have gone out of use prior to the middle of the century. In Britain, other than the Stanway example, the only one known with certainty is represented by three body and base fragments of a gold band example from contexts of *c.* A.D. 50–75 at Fishbourne (Harden and Price 1971, 326, nos 8–10, fig. 137, pl. 25). The possibility that the Stanway example was another pre-conquest import is thus a strong one.

The closest parallel to the Stanway *pyxis* appears to be an unprovenanced yellow/brown one with opaque white marbling once in the Oppenländer collection (Von Saldern *et al.* 1974, 123, no. 330). This has a polished band below the lid seating just as the Stanway one has, and an origin in the same workshop might be suspected.

Although CF72.4 and the fragments from Fishbourne are the only examples of this form with a secure archaeological provenance in Britain, a third example is reputed to have been found at Sheepen with a small polychrome cast cup. (These were shown to the Colchester Archaeological Trust in 1978 by Mr Horace Calver, and photographs and drawings were made at the time. My comments are based on the illustrations kindly made available to me by the Trust.) This *pyxis* has white marbling in a dark purple ground, similar to the unprovenanced ones in the Corning Museum of Glass, New York State, USA (Goldstein 1979, 192, no. 518) and the Toledo Museum of Art, Ohio, USA (Grose 1989, 335, no. 587). It appears to have a polished band below the rebated rim and a shallow ground out-channel on the lower body like the Stanway example. It too was missing its lid and the rim was chipped. The small cup was hemispherical with a small base ring and possibly vertical rim. It appears to have been made with opaque white chips in a coloured ground, but it is so heavily weathered that the colour was not apparent.

From photographs, both pieces appear heavily weathered, with patches of thick iridescence noticeable on the *pyxis*. In my experience, iridescence such as this is rarely encountered on the Roman glass from either the town-centre sites in Colchester or those at Sheepen or here at Stanway. The similarity of the 'Sheepen *pyxis*' to that now recovered from Stanway does, however, suggest that the Sheepen group could well be the remains of another early to mid 1st-century grave. Given that such vessels were the expensive packaging of no doubt expensive cosmetics (Foy and Nenna 2001, 161), these two vessels cast an interesting sidelight on the both the purchasing power and the interest in cosmetics of the local élite in the first half of the 1st century A.D.

The other vessels whose form can be identified also suggest an interest in cosmetics and fragrant oils as they are all small unguent bottles. Of particular importance is FIG. 63, BF24.23 from the chamber BF24 in Enclosure 4. This is an example of an amphora-shaped unguent bottle (Isings Form 9) with a distinctive carination at the shoulder and pointed base that makes it easy to identify from the extant fragments. Isings (1957, 27) notes examples in Tiberian to Claudian contexts, and to these can be added that in the cremation burial of a juvenile of 7 to 13 years at Wederath-Belginium, near Trier (Goethert 1989, 276, e) which may be dated after A.D. 37 from a coin it contained. This does not appear to be a form present in post-conquest deposits in Britain, and so appears to have gone out of use by that time. As noted, the shoulder and base fragments are very distinctive and, had the form still been in use by the conquest, it might have been expected to have been recognised among the large numbers of unguent bottles recovered from both the town-centre sites at Colchester and in the early cremation burials.

The importance of this piece lies in the fact that it is the equivalent of cheap and cheerful packaging for its contents which, based on the deposits on the interior of the Wederath one, are thought to have been rouge. Although it is possible to imagine a cosmetics container such as the *pyxis* being curated after the contents had been used, this seems unlikely to have been the case for BF24.23. Such flasks are made of very thin glass. Rough handling or over-enthusiastic use of a toilet implement used to extract the rouge must often have resulted in breakages even before the contents were used up. The presence of such a vessel in BF24 must strongly suggest that the burial was made prior to the conquest or, at the very latest, at the time of the conquest.

The commonest unguent bottle form at Stanway is the tubular unguent bottle of Isings form 8. There are two examples (FIG. 83, BF64.17–18) from the Warrior's burial BF64 in Enclosure 3 and one (CF115.3) from the Mirror burial CF115 in Enclosure 5. This is the dominant unguent bottle type of the mid 1st century A.D. both in Britain and elsewhere in the Empire, going out of use in the Flavian period (*CAR* **8**, 159). Evidence from continental sites makes it clear they were in use as early as the reign of Tiberius (Isings 1957, 24).

Two other unguent bottles (CF42.12–13) are represented by fragments in the chamber CF42. CF42.12 (FIG. 73) would appear to have had a slightly more convex-curved body than is usual in the tubular form and may have come from a small globular example of Isings Form 6.

TABLE 54: A COMPARISON OF THE COLOURS OF THE STANWAY UNGUENT BOTTLES WITH THOSE OF TUBULAR UNGUENT BOTTLES AT VARIOUS MID 1ST-CENTURY SITES IN BRITAIN

(Sources. Stanway: this volume; Sheepen: Colchester Museums stores, including material in Harden 1947 and Charlesworth 1985 but predominantly unpublished; Colchester: *CAR* **8**, 387–8 excluding no. 1236; Kingsholm: Price and Cool 1985, 48 nos 39 and 39b, 52 nos 69–84c; Usk: Manning *et al.* 1995, 175 nos 84–91)

Colour	*Stanway*	*Sheepen*	*Colchester*	*Kingsholm*	*Usk*
Blue/green	4	53	32	21	35
Blue	1	1	–	–	–
Yellow/brown	1	–	–	–	–
Light green	–	1	–	–	–
Yellow/green	–	–	–	2	–

On the Continent, this is an early to mid 1st-century form, and it is not often one that is noted in post-conquest assemblages in Britain. The fragments forming CF42.13 are too small to be diagnostic and the precise shape is unknown.

Both at Sheepen and in the town-centre sites, small unguent bottles of the tubular form are very common finds as they also are in the early cemeteries around the town (May 1930, pls 76.7, 79.29, 81.48, and 52 etc.). Despite this, however, taken as a whole the group from Stanway does show some unusual features. Normally these vessels are made in blue/green glass and by far the majority from mid 1st-century Romano-British sites are that colour. Other colours do occur but are rare. At Stanway, however, one out of the three tubular examples definitely present, is coloured (BF64.17), and if all the unguent bottles are included then two out of six are. How unusual this is can be seen from TABLE 54 in which tubular unguent bottles from other mid 1st-century sites are tabulated. As well as those from Sheepen and the Colchester town-centre sites, two sites where occupation centred on the late A.D. 50s and 60s have also been included. As the data was mostly collected and/or published prior to the development of EVE measures for glass, the quantification unit is a modified fragment count, *i.e.* multiple fragments obviously from the same vessel have been counted as one. Clearly the Stanway unguent bottles are not a typical cross-section of those available after the conquest. Either special selection was being undertaken, or possibly they too may reflect a pre-conquest origin as in the case of BF24.23.

The final vessel from Stanway is represented only by a body fragment from the terminal of the ditch BF4 of Enclosure 3 (FIG. 30, BF4.1). It came from a yellow/brown vessel decorated with opaque white marvered spots. Vessels decorated in this way are not uncommon on Claudian and Neronian sites in Britain (*CAR* **8**, 59) with a few examples surviving into the Flavian period (Caruana 1992, 67, no. 5, fig. 10). On the Continent, they are clearly in use during the Tiberian period as may be seen from examples such as the amphorisk found in a grave of that date in the cemetery of Branca, Locarno, Switzerland (Simonett 1941, 115, Abb. 95). As this body fragment is so small, it is not possible to date it more closely than the Tiberian to mid Flavian period.

THE USE OF GLASS IN THE CEMETERY

Glass vessels were used in two different ways in the cemetery. They appear to have been used during the funeral ceremonies (BF64.17–18, BF24.23, CF42.12–14, CF115.3) and to have been placed entire as grave goods (BF64.16, CF72.4). They may also have featured in rituals that went on in the cemetery either at the time of the initial funeral, or perhaps later (BF4.1). One way in which they do not appear to have been used, or, to be precise, for which there is no evidence, is as pyre goods, as none of the fragments show any evidence of being distorted or shattered by heat.

Of the vessels used during the funeral ceremonies, most were presumably present merely as containers and it is their contents that are likely to have been important in the ceremonies. It

does not take much imagination to envision the person whose remains were placed in the chamber BF24 being made-up with the rouge in the amphora-shaped unguent bottle BF24.23, perhaps in an attempt to banish the pallor of death while the body was being displayed prior to being placed on the pyre. It is normally assumed that the tubular unguent bottles held oil, possibly perfumed. The contents of the ones found at Stanway might have been used either to anoint the corpse to prepare it for burning, or perhaps to have been poured over the ashes when the pyre had died down. In no case was it felt important to include all of the fragments from the vessels in the burial pits, and in most cases the majority of the fragments must have been disposed of elsewhere.

The polychrome bowl CF42.14 was also present only as a small number of fragments and presumably should be seen as serving a similar purpose to the ceramic tablewares which were also possibly used during the funeral and then smashed and incorporated to a greater or lesser extent in the burial pits or chambers.

The amber bowl and the *pyxis*, by contrast, were placed entire in the grave. Given that none of the other objects in the Warrior's burial appear to have been broken when deposited in the grave, and that it was stored in a box, it seems very probable that the amber bowl was also intact when buried. It is considerably fragmented but there is no one point from which the damage radiates out, as might be expected if it had been hit to break it.

It is useful to compare the use of glass vessels at Stanway with that in other 1st-century burials at Colchester. The most obvious difference is that elsewhere glass vessels were often used as pyre goods. The early discoveries of urned cremation burials around the town frequently included fragments of melted glass which, where the form they originally took can be ascertained, were tubular unguent bottles (*see* for example May 1930, 255 Grave 9/30, no. 188–9, 260, Grave 29/47 273–4 etc.). Sometimes both melted and unmelted but complete unguent bottles were included (*see* for example May 1930, 265 Grave 44/26, nos 155–7). Other forms of glass vessel were rare and tend, where present, to be complete flasks as in the famous Child's Grave, which contained the pipeclay figurines and also unguent bottles that had been fused in the pyre (May 1930, 252, Grave 3/124, nos 1139–40 and 1142; *see* also Eckardt 1999). Only in two cremation burials at Sheepen do glass tablewares seem to feature as parts of the grave goods in two Claudio–Neronian cremation burials (Charlesworth 1985, mf. 1 A5–A8). The glass vessels do, therefore, seem to have been used in a very different way in the burials around the town and the burials at Stanway and Sheepen. Presumably this reflects differing practices between the native élites at the latter and the soldier/colonists of the town.

CONCLUSIONS

The overwhelming impression gained from the Stanway glass vessels is how very different they are to the vessels from the Colchester town-centre sites and cemeteries. Even when a type is common in both areas, as in the case of the tubular unguent bottles, the Stanway vessels show unusual features with regards to colour. To a certain extent this difference is also true when the Stanway vessels are compared to the glass from Sheepen. At the latter site, more pre-conquest glass was found than in the town centre (*see* for example Harden 1947, 293, no. 1–2, pl. 87), but, within an empire-wide perspective, the Stanway vessels are rarer forms than the ones found there. The vessels at Stanway also seem to have been used in the funeral ritual in a different way to how glass vessels are used in the cemeteries immediately around the *colonia*. Everything points to the people buried at Stanway being very different fom those living in the Roman town.

From the point of view of the glass, much of this could be explained by the burials taking place prior to the conquest, although clearly this does not accord with the other finds from many of them. Perhaps what we are looking at is a group of prestige goods entering the country prior to the conquest and becoming part of the possessions of an élite family. This interpretation should not be pressed too far, however. As already noted, long curation of some items such as the amber bowl and the *pyxis* is not difficult to imagine. When it comes to curation of vessels that are essentially packaging, such as the unguent bottle BF24.23, then that would be puzzling.

TEXTILES

By John Peter Wild

THE DATA

Warrior's burial BF64

A single textile was represented in the grave (or several identical textiles). The weave was a medium fine 2/2 diamond twill, probably of wool: the diamond could be recognised on, but not drafted from, a photograph taken in the laboratory at an early stage of conservation.

System 1, presumed warp, Z-spun, 15–20 threads per cm.
System 2, presumed weft, weaker S-spun, 15–20 threads per cm.

The surface may have had a nap and was heavily felted. The fabric was much degraded. Its yarns had been preserved because the bacteria which would normally have destroyed them were poisoned by the mineral salts leaching from the copper-alloy objects to which they now adhere.

Textile remains were recorded as follows:

a) On the copper-alloy brooch (BF64.19) traces were noted in soil attached to the head, and inside the head and bow there are two patches of about 5 × 5 mm.
b) Adhering to the body of the copper-alloy jug (BF64.25) was an area of cloth measuring approximately 30 × 15 mm, and further traces on the shoulder, on the outside of the neck, beneath (and probably over) the trefoil spout and on the outer surface of the handle (approx. 2 cm^2).
c) On the copper-alloy gaming-board junction binding (BF64.29) were two patches of 5 × 5 mm and one of 10 × 10 mm.
d) Inside the bronze-lined iron shield boss (BF64.23a) were possible traces of cloth.
e) On a second copper-alloy brooch (BF64.20), minute traces of a striped fabric containing S-spun yarns in one system can be made out.

The fragments of diamond twill probably came from a cloak (or conceivably a blanket) (BF64.36) of excellent quality which once had a soft raised nap. The position of the areas of surviving textile on the jug (BF64.25) suggests that the garment had been spread over it in the burial, but the traces of cloth on the two brooches (some 1.50 m apart) were on their undersides (*see* p. 172).

On the inner surface of the shield boss (BF64.23a) was a very short length of plied cord, about 2 mm thick. It was S-plied from two strands which themselves appear to have a Z-twist. There was a hint that the strands themselves had been made by plying, but the spin-direction of the sub-strands (if any) was obscure. The cord was associated with textile fabric, possibly even as a corded starting or finishing border in the warp. This is, however, speculation.

Doctor's burial CF47

The principal textile (CF47.40) present in the grave can be characterised as a fine 2/2 twill in wool.

System 1, presumed warp, Z-spun, 20–25 threads per cm.
System 2, presumed weft, medium S-spun, approximately 25 threads per cm.

In a very small (approximately 1 cm^2) fragment of cloth (C943), now detached, but originally associated with a copper-alloy brooch (CF47.17), the Z-spun system appeared to be 'purple' in colour, whilst the S-spun threads showed no colour. The colour contrast between the two systems was clear, especially in the best-preserved area, and was probably not just an accident of survival. It might represent the vestiges of a check or striped pattern or be a uniform decorative effect across the whole textile. Too little survived for dye analysis.

Contrasting spin-directions in warp and weft are characteristic of diamond twills in Iron Age and Roman Europe, and there is accordingly a strong probability that the textile in the Doctor's burial was also a diamond twill, although no weave reversal can now be observed. One cannot, however, completely rule out the possibility that it was a plain or even spin-patterned 2/2 twill.

Textile remains were noted on many of the metal objects within the presumed wooden chest in the western sector of the burial pit (FIGS 102–3). Fabric in contact with iron objects was mineralised, while that in contact with copper-alloy objects retained more of its original substance. In many cases, the surviving traces of textile material yielded no useful information beyond the fact that it had existed. On some items, however, the weave could be identified and measurements taken, as follows:

a) On the iron handled needle from the medical *instrumentarium* (CF47.35) there was a small patch (approx. 2 cm²) of fine 2/2 twill (Z/S, 20–25/approx 25 per cm). Scanning electron microscopy by N.D. Meeks and C.R. Cartwright (p. 350; FIG. 150) has demonstrated that the twill was of wool.
b) On the iron hook (CF47.30) about 2 cm² of the same fine twill survived as a flat sheet. That, too, proved to be of wool (p. 350).
c) On the shaft of an iron scalpel (CF47.26) there were traces of twill.
d) On the broken iron handled needle (CF47.34), about 3 cm² of twill were visible together with an approximately 10 mm length of loose Z-spun yarn.
e) On an iron scalpel (CF47.27), tiny patches (the largest approx. 2 cm²) of mineralised (replaced) twill were noted, but no detail was discernible.
f) On an iron handled needle (CF47.36), mineralised fibres were visible, but no weave structure.
g) All of the iron rods stacked near the northern corner of the burial pit showed traces of replaced textile, but the only significant remains, a patch of twill measuring 4 cm² in total, were on rod CF47.23b.
h) On the copper-alloy brooch CF47.16, a length (approx. 2 mm) of slightly Z-twisted stiff off-white yarn was preserved. It resembled flax, but was not scientifically identified.
i) On two of the copper-alloy rings (CF47.24f and CF47.24g), the leather strap passing through the rings appeared to have been secured with yarn, now heavily degraded. The fibre diameters suggest that it was wool.

The nature of the original textile and its function in life and death are hard to define. It was probably a light rectangular cloak (CF47.40) of some pretension. The precise location of the surviving remains on each object was carefully plotted by the excavators (FIGS 102–3) who noted in particular whether the textile material clung to the underside, the upper side or both sides of the artefacts as they lay in the grave. Textile-bearing objects were distributed over an area of approximately 1.20 × 0.65 m, equivalent to the entire floor area of the presumed compartment at the western end of the burial pit. On balance, it seems likely that individual items were not deliberately wrapped in pieces of cloth (although that practice is attested elsewhere, *i.e.* Burns *et al.* 1996, 109, fig. 75a, b), because, on the handled needle CF47.35 and on the iron hook CF47.30, the mineralised fabric formed a flat sheet. Rather, half of the cloak may have been spread out over the floor of the pit but after the gaming board, counters, and cremated remains had been laid out (*see* p. 207), while the other half was folded over the top. That, however, is just an hypothesis.

Brooches burial CF72

Textile remains were recorded on three brooches in the cremation burial CF72. They were also noted on a knife blade and in a sample associated with a fourth brooch. They are as follows:

a) On a brass circular plate brooch (CF72.7), traces of a fine Z/S 2/2 twill, presumably of wool, were visible on the back around the pin, that is, on the lower side of the brooch as it lay in

the ground. No measurement was possible, but a thread count of at least 25 × 25 threads per cm was apparent.

b) On another brass circular plate brooch (CF72.8), there were slight remains of a ?wool fabric on the pin and of associated wool yarns attached to the back of the brooch plate. They could have belonged to the same or a similar fabric to that on brooch CF47.7 above.

c) On the brass Keyhole Rosette brooch (CF72.5), there were traces of fibrous matter on the back and fragments of ?wool fibres on the front between head and spring.

d) The faint vestiges of textile on the iron knife blade (CF72.13) were not seen by the present author, nor was the material associated with a fourth brooch (CF72.6).

The only textile (CF72.15) to be positively identified in the grave is a fine 2/2 twill with a Z-spun (?warp) and an S-spun (?weft) system and a count of about 25 × 25 threads per cm in both. It was probably, but not necessarily, diamond twill. Whether the objects were individually wrapped in cloth or simply placed on or under cloth (possibly a cloak) is not self-evident from the position of the textile remains.

DISCUSSION

The textiles in all three burials are of 2/2 twill, with one thread system (probably the warp) Z-spun, the other (probably the weft) S-spun. They are comparatively light in weight, with a relatively high thread count per cm (from 15–20/15–20 to approx. 25/approx. 25 per cm). The cloth in the Warrior's burial can be seen to be a diamond twill; the other two textiles are also likely to have been diamond twills. That in the Warrior's burial seems to have had a nap; that in the Doctor's burial had 'purple' warp coupled with apparently undyed weft. All three twills were almost certainly of wool, but only for the twill in the Doctor's burial has that been proven.

The formal date of the three burials containing textiles hovers around the year of the Claudian invasion or shortly afterwards. Whatever the date of deposition, however, it is likely that the twills were woven in Britain prior to the invasion. They illustrate the growing popularity of twill and in particular of the sophisticated, subtly decorative, diamond twill in north-west Europe during the later pre-Roman Iron Age and the early Roman period (Wild and Bender Jørgensen 1988, 80–1; Bender Jørgensen 1992, 124–5, 133–5; Wild 2002, 20).

At present, finds of Iron Age textiles are concentrated by accident of survival in the La Tène cemeteries of the Yorkshire Wolds: there are few elsewhere (Crowfoot 1991; Bender Jørgensen 1992, 19–20, 198–9). Although 2/2 twill is well represented there (including Z/S twill), too little usually survives for the weave reversals indicative of diamond twill to be recorded. One remarkable find, however, from Burton Fleming (BF20) combines a Z/S diamond twill ground weave with elaborate borders in which alternating bands of 4 Z-spun and 4 S-spun yarns succeed registers of diamond twill carrying panels of simple embroidery (Crowfoot 1991, 120, fig. 79 A–C, 125). It is reminiscent of — but at the same time distinct from — the *Prachtmanteln*, 'cloaks for display', worn by aristocratic warriors in central Europe during the later Hallstatt period (Wild and Bender Jørgensen 1988, 85 with references) and in northern Europe during the Roman Iron Age (Schlabow 1976, 63–5, Abb. 116–19, Farbtab I). Yet the latter are considerably coarser than the Stanway twills. In fact, the best parallels for the fine weaves and light weights at Stanway are to be found among the fragments of military clothing from the late Flavian–Trajanic forts at Vindolanda. A number of the published pieces are closely comparable (Wild 1977, 23 no. 46, 24 no. 47); many of equal quality from the more recent excavations there remain to be published. Clothing was supplied to the garrison by weavers working in the British Iron Age tradition; 'personal imports', material on the backs of soldiers in Batavian and Tungrian units deployed to Vindolanda, came largely from the Lower Rhineland and northern Gaul where similar early weaving traditions prevailed (Wild 1993, 65–6).

The ostensibly 'purple' thread system (?warp) in the twill from the Doctor's burial can be interpreted in various ways, already mentioned above. Worth noting for comparison's sake is the lichen-dyed purple check fabric from Vindolanda (Taylor 1983, 118 no. 10/53; Wild 1977, 7–8 no. 10). The Thorsberg *Prachtmantel* of about A.D. 200 had a check pattern achieved with woad (Schlabow 1976, 63–5).

Textiles played a significant role in late prehistoric funerary practice. In the grave chamber within the Hallstatt tumulus at Hochdorf near Stuttgart, for example, not only was the chieftain laid to rest with an exceptionally high-quality wardrobe and furnishings (including wall-hangings), but each element within the chamber was carefully wrapped in cloth for its protection (Banck-Burgess 1999, 18–32, Abb. 4). The graves of the later Iron Age aristocracy of southern Britain were more modestly furnished, but almost certainly less modestly than the meagre archaeological evidence now reveals. The initial reconstruction of the lying-in-state of the local magnate in the Folly Lane *Fürstengrab* at Verulamium (Selkirk 1992, 487) is only marginally less stark than the more colourful reconstruction published later (Niblett 1999, frontispiece). For the arguably royal burial at Lexden (*c.* 15–5 B.C.), the only sign of rich furnishings are clusters of spun-gold thread of unusual fineness which may once have belonged to a gold-and-purple textile, perhaps a soft furnishing rather than a garment (Foster 1986, 92–5, pl. 21; Wild 1970, 132 H15; Wild 2002, 18). The Stanway textiles are of a different order, but match that of the other grave goods and presumably the standing of the deceased.

A SCIENTIFIC EXAMINATION OF THE TEXTILE IMPRESSIONS IN IRON CORROSION PRODUCTS ON SURGICAL INSTRUMENTS CF47.30 AND CF47.35 (FIG. 150)

By N.D. Meeks and C.R. Cartwright, Department of Scientific Research, The British Museum

Two iron instruments, CF47.30 (double-ended retractor; FIG. 120; p. 240) and CF47.35 (handled needle; FIG. 122; p. 242), with the impressions of what appear to be textile fibres in the rust-coloured corrosion products, were submitted for examination to establish the type of fibre or textile. Because of the importance of preserving the material *in situ*, no samples were taken. Thus, the corroded objects were examined directly by scanning electron microscopy (SEM), which combines high magnification and good depth of focus for clear image recording. Areas of interest were located by observation in the SEM, first at low magnification and then at high magnification, to record in detail the physical characteristics of the fibre structures for identification.

Both objects have regions on the surface, visible at low magnification (FIG. 150a), where there is evidence of a geometric texture that has the appearance of textile within the corrosion products. Where the friable corrosion products have fractured through and some surface material has been lost, this has exposed patterns of holes that take the form of the original textile fibres (FIG. 150b). The first observation is that in many cases the original fibres have disappeared, and in their place are left almost perfect negative impressions of the outer surfaces of the fibres. In some places the fibre impressions are seen in bundles that formed original threads and, where broken through transversely, show the fibres were round in section (FIG. 150c). In other areas the thread structures are fractured longitudinally (FIG. 150d). In a few places, the threads are crossed and this indicates that they were originally woven (FIGS 150b and e), although the actual weave was never clearly seen.

At high magnification, the hollow fibre moulds have clearly defined impressions of thick scales that are characteristic of wool, and this is particularly clear where the hollow tubes have been broken longitudinally (FIGS 150f–g). The scales are similar to those of Roman period sheep's wool published by Cork *et al.* (1997). The fibres range in diameter between 20 and 40 microns with a mean around 30 microns.

Thus, the solid matrix of iron corrosion products and textile fibre impressions show that the instruments were buried in close proximity to a woollen cloth. During burial the iron corroded and impregnated the textile, no doubt accelerated by the presence of sulphur in the wool. Iron corrosion products have a much larger volume than the original metal and consequently have expanded to fully surround the textile, entombing the wool fibres in a solid matrix. This occurred before the fibres themselves had been consumed by aerobic bacterial action, which has subsequently left impressions of the wool fibres as hollow tubes, with clear impressions of the characteristic scales from the original woollen fibres.

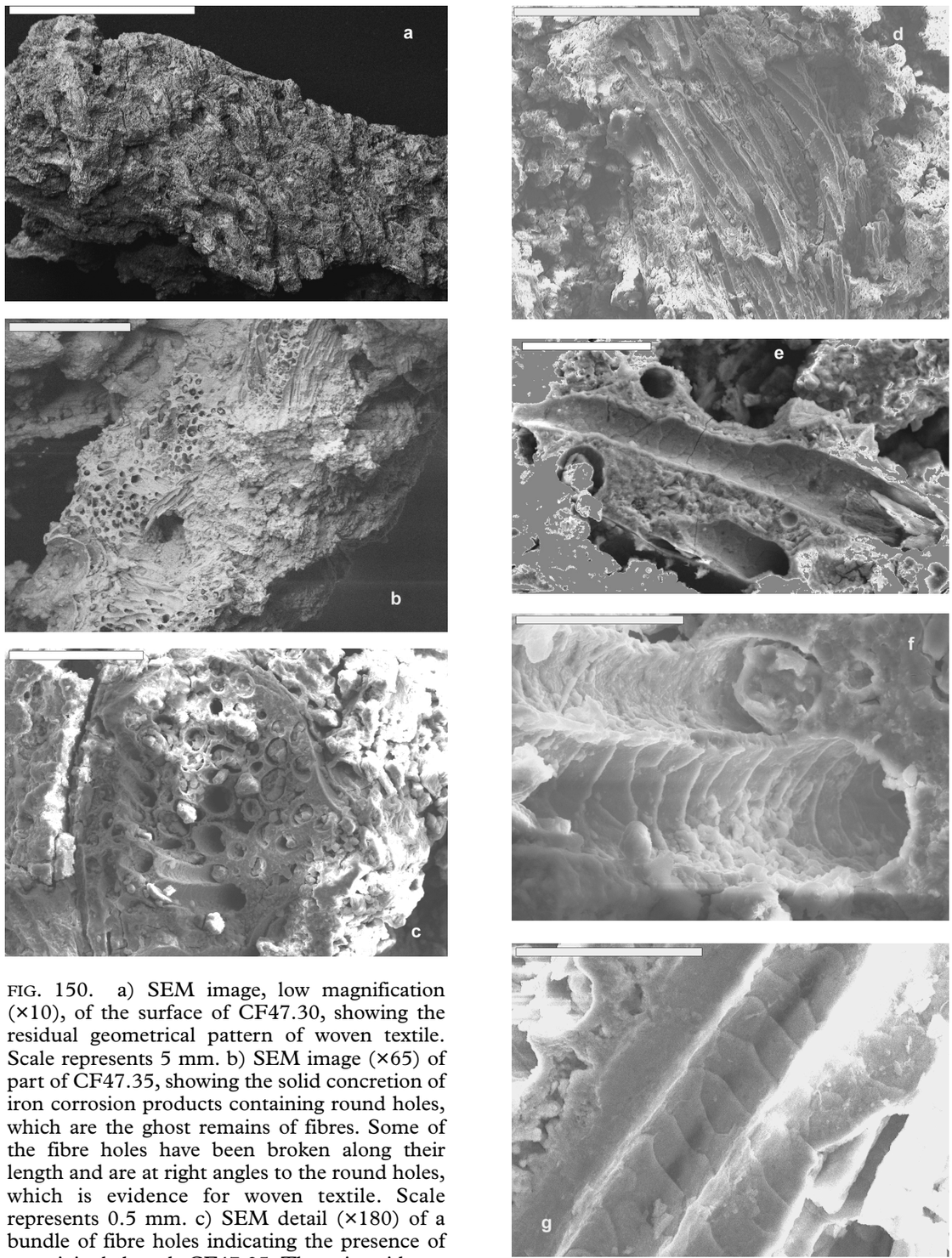


FIG. 150. a) SEM image, low magnification (×10), of the surface of CF47.30, showing the residual geometrical pattern of woven textile. Scale represents 5 mm. b) SEM image (×65) of part of CF47.35, showing the solid concretion of iron corrosion products containing round holes, which are the ghost remains of fibres. Some of the fibre holes have been broken along their length and are at right angles to the round holes, which is evidence for woven textile. Scale represents 0.5 mm. c) SEM detail (×180) of a bundle of fibre holes indicating the presence of an original thread, CF47.35. There is evidence of residual fibres in some holes. Scale represents 0.2 mm. d) SEM detail (×100) of fibre holes broken longitudinally, CF47.30. The close packing of the fibres indicates a thread. Scale represents 0.5 mm. e) SEM detail (×350) of an area where the fibres cross at right angles, indicating a woven textile. Note the wool scales moulded into the tubular wall, CF47.35. Scale represents 0.1 mm. f) SEM oblique view detail (×900) of two fibre holes broken longitudinally, showing the characteristic moulded scale marks of wool in the tube walls, CF47.35. Scale represents 0.05 mm. g) SEM detail (×1000) of wool scale marks moulded into the tubular wall of iron corrosion products, CF47.35. Scale represents 0.05 mm. Images reproduced courtesy of the Dept of Scientific Research, British Museum

The two instruments have similar concretions of iron corrosion products, which have preserved the evidence of wool fibres in the form of hollow tubes that clearly show the original surface scales of the wool. There is some evidence of a textile from the manner in which the fibres form bundles which appear to be threads, some of which lie at right angles to one another, indicating a weave. Thus, the evidence is for a woollen cloth, possibly used to wrap the instruments before burial.

THE GAMING BOARD IN CF47: THE REMAINS AS FOUND, POSSIBLE RECONSTRUCTIONS AND POST-DEPOSITIONAL MOVEMENTS

(FIGS 100, 105–6, 124, 151–4)

By Philip Crummy

The board and the gaming counters (CF47.19–20) are described here as orientated in FIGURE 151, so that the north end is referred to as 'right', the west side as 'top', and so on. The counters are referenced according to the scheme on the same figure.

AS FOUND (FIGS 105–6, 151–2)

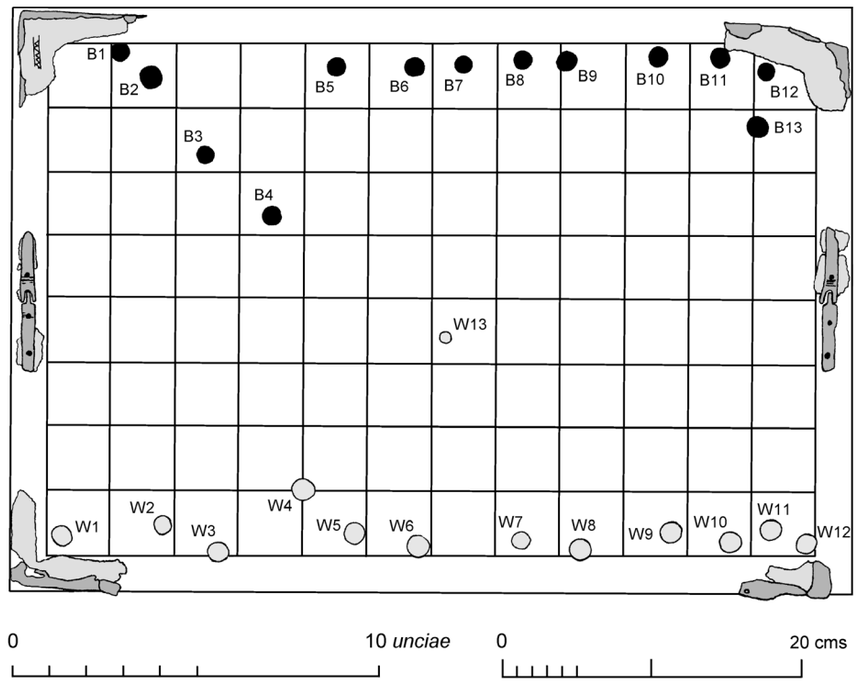
The wood at the top left-hand corner of the board was well preserved and appears to show that, like the gaming board in the Warrior's burial, the playing surface was recessed so as to create a raised lip around the edge of the board. The lip was moulded and decorated with an incised band of chevron pattern (CF47.20a; p. 220). As will become clear, the lip is a significant feature in terms of our interpretations, since it appears to have prevented the glass gaming counters from slipping off the board after they had been set out in their 'playing' positions.

Twenty-six glass counters (CF47.19a–CF47.19b) had been placed on the board. Most of the counters lay close to the long sides of the board, with blue and white facing each other as if for a game. A few of the counters lay well away from the sides of the board, suggesting that a few preliminary moves had been made. However, these pieces may have moved for reasons which will be discussed below.

The counters lay with the curved face upwards except for one blue one (B13) which was inverted. All the counters are much the same size, except for one white counter (W13) which is markedly smaller than the others. This counter lay close to the centre of the board. A small quantity of human cremated bone had been tipped out over the left-hand side of the board. The central white counter W13 was covered by the bone, as were B4 and possibly B3, but the other counters were left clear. Three rods were then placed, partly overlapping the board. One of the large iron rods (CF47.23c) was positioned so that the flat end was near the centre and the shaft avoided any counters (FIG. 105). It looks in plan as if the rod was deliberately put to one side of the small white counter, but this is probably just a coincidence since, by this time, the counter would have been obscured by the cremated bone. The other two rods were round the other way, and seem to have been laid in the burial pit as a pair (FIG. 106). One was iron (CF47.23a) and the other copper alloy (CF47.23e). Ten of the surgical instruments were then placed on the board, and the others were spread around three of its sides (FIG. 106). Those on the board consisted of three handled needles (CF47.34, CF47.35, and CF47.36), a double hook (CF47.31), a scoop probe (CF47.37), forceps (CF47.32), a combined sharp and blunt hook (CF47.29), an unidentified instrument (CF47.38), a scalpel (CF47.26), and a saw (CF47.28) which was in pieces by this stage. The instruments around the board consisted of a scalpel (CF47.27), forceps (CF47.33), a combined sharp and blunt hook (CF47.30), and a knife (CF47.39).

DIMENSIONS AND PROPORTIONS OF THE BOARD (FIGS 151, 153)

The board measures approximately 385 by 565 mm, which is close to a ratio of 2:3. If, as the counters seem to indicate, there were twelve squares along the length of the board, then its proportions suggest that there were eight squares across its width. Interestingly, an 8 × 12 grid of squares each measuring exactly 1.75 *unciae* across seems to accord with the positions of the



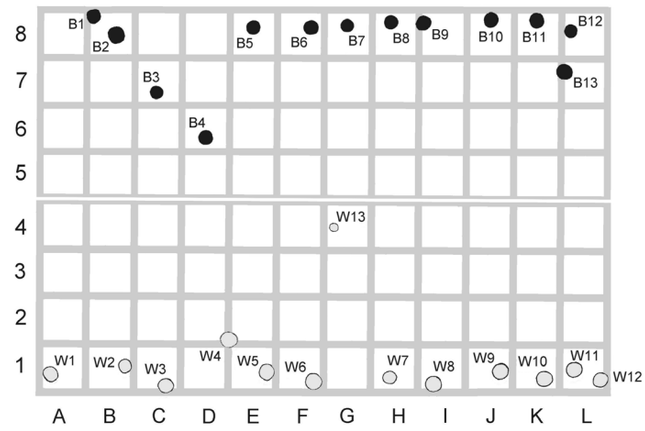


FIG. 151. Above: The counters and the remains of the gaming board in relation to a hypothetical 8 × 12 grid of 13/4 *unciae* squares. Below: The layout of the counters in relation to the same grid after allowing for a slight gap between the two halves of the board when folded out

pieces and corners very neatly (FIG. 151, above). (The distance in the reconstruction between the edge of the grid and the edge of the board is assumed to have been one *uncia*. This assumption seems likely in view of the position and sizes of the hinges and corner pieces, but there is no certainty.) Enough survives of the top left-hand corner of the board to suggest that the edges of such a grid as this must have been very close to, if not hard up against, the lip.

The reconstruction takes as its starting point the pins in the hinges, and assumes that they aligned with the longitudinal centre-line of the postulated grid. It looks from the reconstruction as if three or so of the white counters would have overlapped the edge of the grid suggesting that the grid needs to be moved away from them by a few millimetres. However, this would mean that the centre-line of the grid would not have aligned correctly with the hinges. Instead, it may be that there was a gap of a few millimetres between the two halves of the board when it was opened out, and this could explain the apparent imbalance (FIG. 151, below).

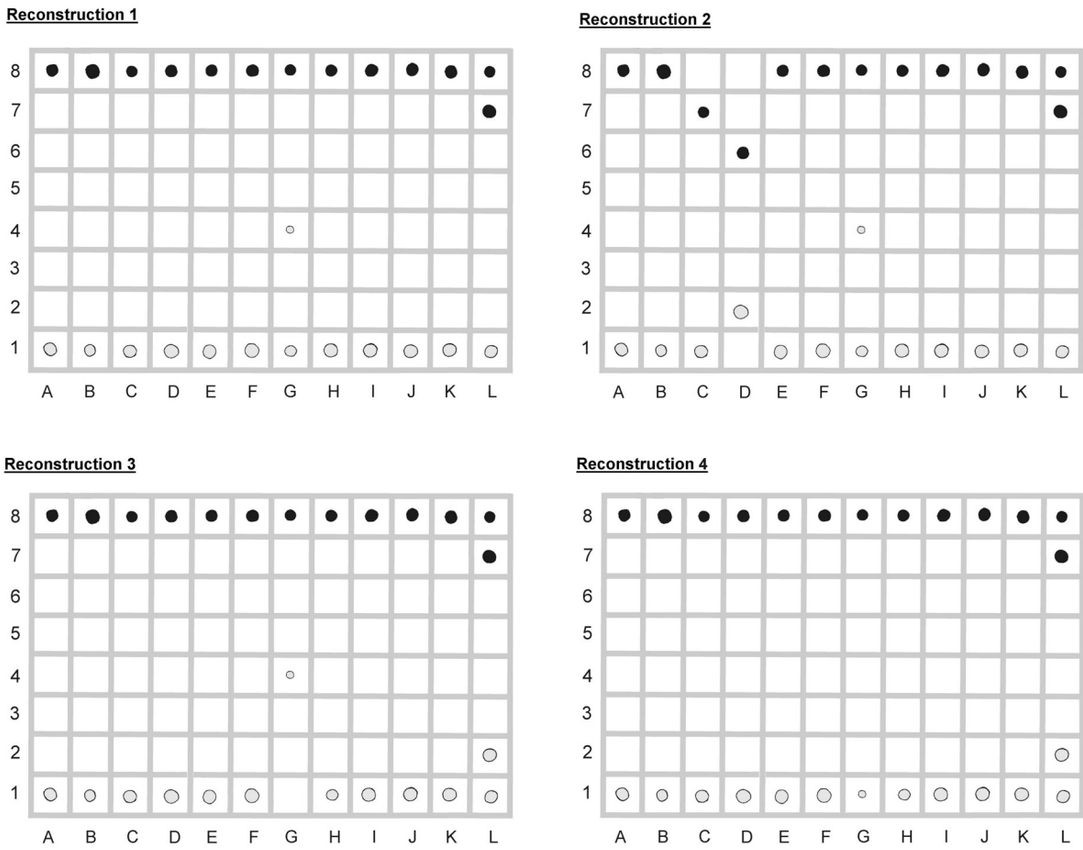


FIG. 152. Four possible arrangements of the counters on an 8 × 12 grid of squares before any post-depositional movements had taken place

Dr Schädler also believes that the inclusion of a thirteenth anomalous piece in each set of counters introduces the possibility that the playing surface had been marked with either a grid of 9 × 13 squares (despite his reservation about the existence of latticed rectangular boards) or a grid of lines providing a 9 × 13 grid of intersections. (The counters could have been placed in the middle of the squares or at the intersections of lines.) A hypothetical grid of 9 × 13 squares is shown in FIGURE 153. The length of the grid here has been taken to equal 21 *unciae* (as in the 8 × 12 grid), but the widths of the squares produced by such a grid (*i.e.* $1^{8}/_{13}$ *unciae*) would have been awkward to mark out when the board was being made unlike the much more practical 1¾ *unciae* wide squares needed for the 8 × 12 grid. A grid of 9 × 13 lines need not be so problematic, although the difficulty of having to divide up an area into thirteen equal parts still applies. A grid at intervals of $1^{5}/_{8}$ *unciae* was used to construct the grid shown on FIGURE 153 below. There is nothing about the board which suggests that the grid was laid out on this basis: it is just that a grid of this size sits fairly nicely in the space formed by the hinges and corner pieces and this would get around the problem of division into thirteen parts. However, divisions based on 13 lines or 13 squares cannot produce grids which fit the board as well as the 8 × 12 grid, and the post-depositional movement would need to have been much greater than with the 8 × 12 grid to explain the final positions of the counters. With the 9 × 13 squares (FIG. 153, above), seven or eight of the blue counters (B1, B6–B12, and ?B13) need to have moved into the adjacent square on the right, and eight of the white counters (W4–W11) need to have done the same. With the 8 × 12 grid on the other hand, the movements would have been much less with only five whites (W7–W11) and one blue (B1) needing to jump squares. Greater post-depositional movement required by a 9 × 13 grid does not in itself rule out such an arrangement, but it does add weight to the view that the 8 × 12 grid is the most likely layout.

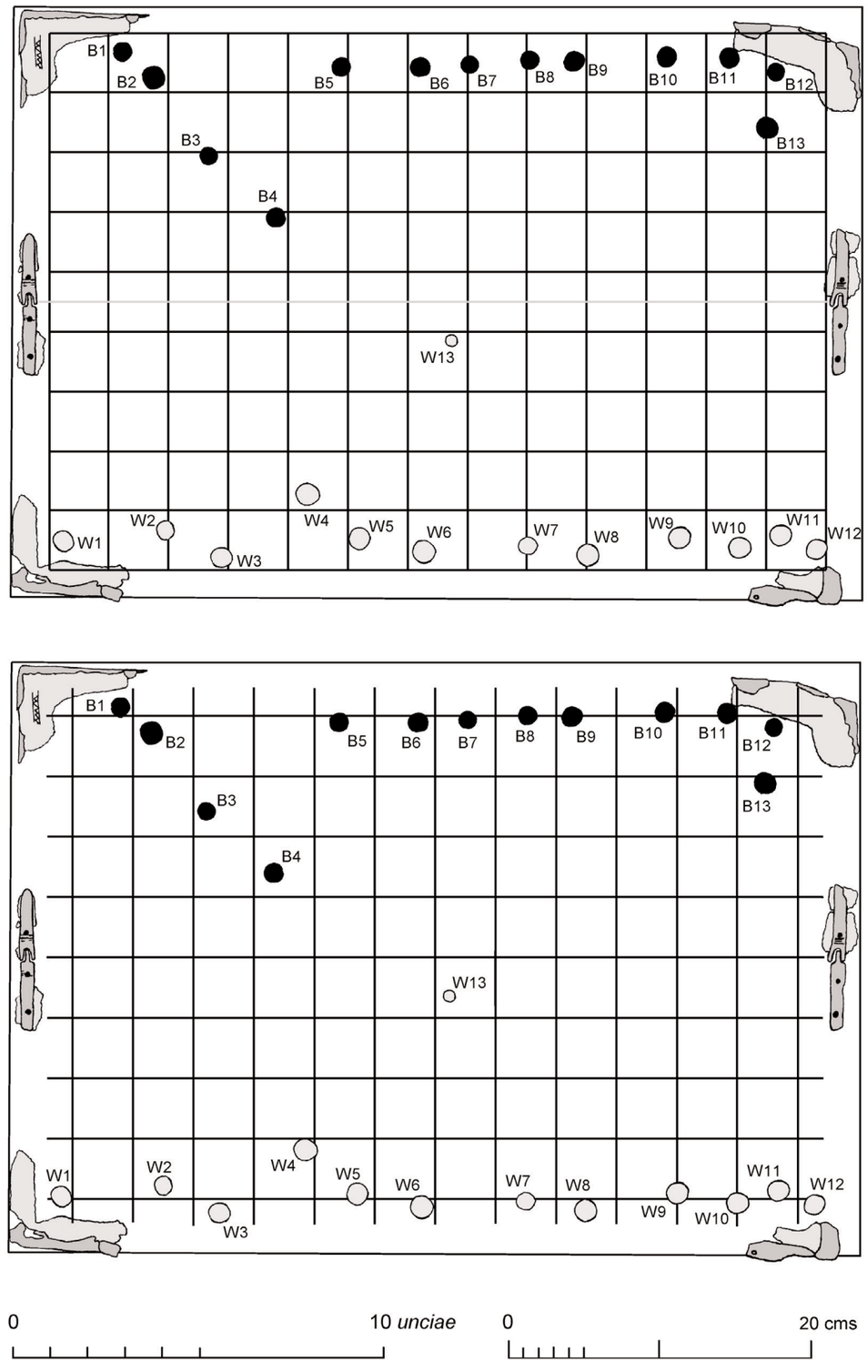


FIG. 153. Above: The counters and the remains of the gaming board in relation to a hypothetical 9 × 13 grid of squares whose width (left to right) is equal to the width of the hypothetical 8 × 12 grid shown in FIG. 151. Below: The remains of the gaming board as found in relation to a hypothetical 9 × 13 grid of lines exactly 15/8 *unciae* apart

POST-DEPOSITIONAL MOVEMENTS OF BOARD AND PIECES (FIGS 100, 124, 151)

The distribution of the counters and their relationships to the putative grid suggest that there was significant movement of the pieces after they were set out on the board and any moves made. If we are to reconstruct the original layout of the counters, we need to identify and discuss the ways in which the counters might have subsequently moved. In these considerations, it is important to bear in mind the sequence in which the items were laid on the board. The spatial relationships between the rods and the surgical instruments show that the rods must have been placed on the board before the instruments, and the placing of the instruments and rods must post-date the deposit of cremated bone because some of them lay on top of fragments of bone. In short, the order of deposition on the board was as follows: the counters, the cremated bone, the three rods, and the surgical instruments. (The sequence is discussed further on p. 207.)

The post-depositional movements are most apparent in the positions of the white counters (FIG. 151). These pieces are bunched to the right of the board, with W2, W3, W4, W5, W6, W9, W10 and W12 all seeming to have moved to the right. The blue counters fit the grid much better and show much less evidence of displacement. Only one (B1) can be said to have clearly moved. Two others (B9 and B12) may also have shifted a little, although they still might be in their original positions if the pieces were not carefully centred on their squares when they were set out. The relatively limited movement of the blue counters may be because something was placed on top of them, such as clothing, which reduced the chances of subsequent lateral movement. Conceivably, all but B1 of the blue counters could have been covered in this way.

Four possible mechanisms can be postulated to explain the movements. They are described in order of likelihood, starting with the greatest.

a) movements when the grave goods and cremated bone were being deposited

The board could have been accidentally jolted as other items were being laid on it. This seems a likely explanation for the bunching of the white pieces. A sharp knock horizontally at the bottom right-hand side of the board could have made the white pieces slide sideways towards the right. (In reality, the board would have moved to the left, but the counters would tend to stay still.) Also some of the counters could have been moved accidentally as items were being laid on the board. The advanced positions of B3 and B4 might in reality be a consequence of the two counters being dragged across the board when the cremated bone was being deposited on it.

b) movements when the burial pit was being backfilled

The crushed vessels at the other end of the grave seem to show that the burial rite involved stamping or jumping on the burial cover at a very early stage in the backfilling process, if not immediately before it started (p. 212). Vibration caused by these actions could have caused the counters to move. Also, the throwing of soil on top of the burial cover during the early stage of the backfilling might have had the same effect, particularly if the gaming board was in a void.

c) vertical movements as the board decayed

All the counters must have moved vertically downwards as the wooden board decayed to nothing. The floor of the burial pit would not have been flat. It would have been irregular with many little depressions and bumps because of the high gravel content in the natural. The vertical distance dropped by each of the counters would have been equal to the thickness of the board plus the depth of any depression immediately underneath it. The movement must have been very slow, maybe lasting several centuries.

The gaming board is likely to have been buried in a void which was created by a wooden cover over the burial (p. 207). If the void survived long enough, then there may also have been some lateral movement of the counters and fittings as the rotting wood cracked, shrank, curled and distorted. If there was no void, then sideways movement caused by the decaying board would have been minimal, because the material above the counters and board would have dropped as the counters dropped and so continued to hold them in place.

d) movements when the grave was being archaeologically excavated

We need to consider if some or parts of the apparent movements are not real, but a product of the process of excavation and recording. The gaming board and everything on it was uncovered very carefully over a period of a few weeks. The white counters could be confused with pieces of gravel as they were being uncovered, so the excavation had to proceed slowly, and care was taken not to disturb any of the counters so that an accurate and reliable record could be made of their positions in the ground. Lisa Hepi, helped by David Burnand, managed to complete the task with great skill and patience. The recorded positions of the counters and the metal fittings of the board have since been carefully checked against the sequence of photographs taken throughout their excavation, and no significant variations have been found. We are therefore confident that FIGURE 151 represents a reliable record of the relative positions of the counters and fittings.

The only problem is the top left-hand corner of the board. This was the first corner to be uncovered, and it was removed for conservation almost as soon as it was found. Had this not happened, then we probably would not have known about the band of chevron pattern on the lip of the board. However, its removal introduced an uncertainty about the precise position of the corner in relation to everything else. On a few occasions, the corner was put back in the grave for photography, but it was difficult to do this accurately, as a careful comparison of FIGURES 100 and 126 shows.

THE INVERTED COUNTER B13

The counter B13 was the only one which lay upside down. It was carefully and slowly uncovered with a small brush, and we are certain that the counter was not accidentally turned over during the excavation. Thus in antiquity either the counter had been deliberately placed upside down on the board or, somehow, it flipped over by chance. The former explanation seems the more likely by far. The counter is unlikely to have turned upside down as the board rotted. The process of decay would have been too gradual and even to allow a sufficiently deep cavity to develop under the counter to the extent that the counter could have tipped down and flipped over. If the counter ended up inverted by chance, then it probably rolled off and under the board when the objects were being laid on it. Perhaps the jolt which moved the white counters to the right was violent enough to send B13 off the board or flip it upside down on the board. The same jolt could also have moved B1 to the right, but, as mentioned above, the other blue counters were hardly affected by such a jolt because they were held in place by something organic laid on top of them.

Curiously, B13 was the last counter to be found, but this fact cannot be taken to imply that it had been under the board. Presumably, having its curved side downwards, the counter settled neatly into a depression in the floor directly under it after the board had rotted away completely, which is why it seemed to be the lowest of the counters.

LAYOUT OF THE GAME BASED ON AN 8 × 12 GRID OF SQUARES (FIGS 106, 152)

Broadly, four reconstructions of the positions of the counters prior to any post-depositional movements can be offered on the basis that the board had been marked out with an 8 × 12 grid of squares (FIG. 152). For these four reconstructions, each player is taken to have had twelve standard pieces plus one of different rank. White's thirteenth piece (W13) is differentiated by its size, whereas Blue's thirteenth piece (B13), being the same size as the others, had to be inverted.

In Reconstructions 1 and 2, it is assumed that each player laid out twelve pieces along their starting ranks, and each chose where to place their thirteenth piece, *i.e.* W13 on G4 and B13 on L7. Reconstruction 2 is a development of Reconstruction 1 in that a few opening moves in a game are supposed, *i.e.* B4 to D6, W4 to D2, and B3 to C7. (The first and last moves are interchangeable.) Reconstruction 3 is like Reconstruction 1, except that it has the virtue of needing less post-depositional movement to account for the bunching of the white counters.

Reconstruction 4 supposes that W13 was accidentally moved from G1 to G4, presumably when other objects were being deposited in the grave but before or during the deposition of the cremated bone. Such an exceptionally large movement might be possible, because W13 is the lightest of the counters, and any accidental movement which involved a knock could have resulted in this counter moving farther than any of the others. Nevertheless, Reconstruction 4 does not seem likely, because i) the magnitude of the assumed post-depositional movement of W13 seems to be too great when compared with the others, ii) the direction of the movement is not shared by others, and iii) it seems too much of a coincidence that the post-depositional movement of W13 turned out to be along File G.

Reconstructions 1, 3 and 4 all require B3 and B4 to have moved accidentally. Since these counters are unlikely to have moved much horizontally after the deposition of the bone, then the most likely occasion for the movement was when the bone was deposited.

The final position of W11 militates against Reconstructions 3 and 4, and favours Reconstructions 1 and 2 instead. This is because the counter does not seem to be far enough into the board, but is on a level with W9.

It is noticeable how the ends of three of the instruments (*i.e.* the combined sharp and blunt hook CF47.29, the copper-alloy forceps CF47.32, and the scoop probe CF47.37) lie between blue counters without making contact with them (FIG. 106). This seems to suggest that the board was not knocked hard after the instruments were placed on top of it.

In conclusion, it is clear that the counters were arranged in an order on the board which was not random, but post-depositional movements have obscured the layout to such a degree that it can now be only tentatively reconstructed and to a limited extent. Assuming an 8 × 12 grid, the most likely reconstructions seem to be Reconstructions 1 and 2, with Reconstruction 1 having the edge on 2, but it must be allowed that other reconstructions are possible of which Reconstructions 3 and 4 are perhaps the two most obvious. The nature and time of the post-depositional movements are obscure and the evidence is ambivalent. However, it would appear that most of the largest of them took place before or during the deposition of the cremated bone.

LAYOUT OF THE GAME BASED ON A 9 × 13 GRID OF SQUARES OR LINES (FIG. 154)

Two alternative layouts are presented in FIGURE 154 for a grid of 9 × 13 squares. These seem to be the simplest and most likely, but other permutations are possible involving B3, B4, and W13. (The diagram only shows squares but the pattern of counters on the intersections of a 9 × 13 grid of lines would of course be the same.) As already explained, a layout based on a 9 × 13 grid does not seem very likely. This is because a grid of this nature does not lend itself easily to the size and shape of the board as indicated by the positions of the hinges and corner pieces, and it would imply greater post-depositional movements than with an 8 × 12 grid. However, Dr Schädler makes the case that a 9 × 13 grid would be a realistic possibility when the evidence is viewed from the perspective of the current knowledge and understanding of ancient games especially in western Europe and the Roman world (pp. 361–2).

IDENTIFICATION OF THE GAME

On pages 365–75, Ulrich Schädler considers the possible identification of the game which could have been played on the board and concludes that the most likely answer is not *ludus latrunculorum* or any other Roman import but an early form of the game which appears later in Ireland as *fidhcheall* and in Wales as *gwyddbwyll*. He highlights the rectangular shape of the board, the relatively low number of counters in relation to its size, and the inclusion in each side of a thirteenth piece apparently of different rank as features combining to present problems with the identification of the game or games which could be played on it. Dr Schädler contends that rectangular gaming boards of the Roman period appear more likely to have been for the game of *XII scripta* than for *ludus latrunculorum*. Unlike *XII scripta*, *ludus latrunculorum* needed a grid of squares, but the boards were generally square in shape or at least close to it, and the ratio of counters to squares was much higher than appears to have been the case with the Stanway board (assuming it to have been latticed).

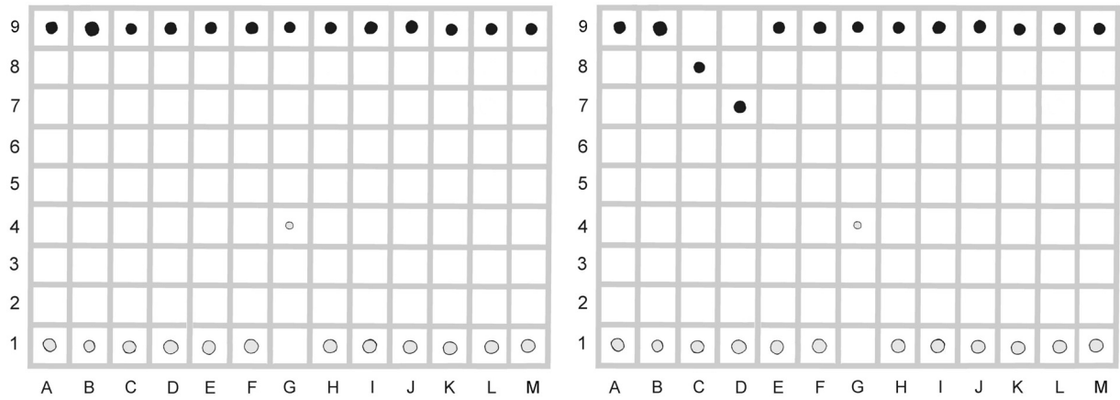


FIG. 154. Two possible arrangements of the counters on an 9 × 13 grid of squares before any post-depositional movements had taken place

Dr Schädler also makes the point that, as far as can be gauged, rectangular boards like the one in the Doctor's burial, with its width to length ratio of about 2:3 or more, were not latticed. However, all three boards which he cites from Britain as having measurable dimensions (*i.e.* the Doctor's burial at Stanway, Grave 117 at King Harry Lane (Stead and Rigby 1989, 109) and Burial 6 at Baldock (Stead and Rigby 1986, 68–9)) are likely to have been broadly of the same type and may even be from the same workshop, thereby opening up the possibility that they represent a type of board and game not recognised before. Although these boards were not identical (they did not all have metal corner pieces and handles), various features bind them together as a group, *i.e.* a) all three were hinged, b) at least two (Stanway and Baldock) were made of maple, the wood of the third being unidentified, c) Baldock and Stanway were very similar in size and shape, and King Harry Lane could have been the same (same length as the other two but of indeterminate width), and d) leather traces were found on the boards at Stanway and King Harry Lane. All three were found in the territory of the Catuvellauni (and we include Camulodunum in this), although this relatively tight distribution might simply be the result of chance. Thus the three boards, plus those in the Warrior's burial and in Chamber BF6 (pp. 126, 186–90) and the possible board in Grave 309 at King Harry Lane (Stead and Rigby 1989, 109–10, figs 108, 152), could have been part of a distinctive British body of artefacts linked to a specific game popular among a group of Britons in the south-east of the country with strong connections with the nearby Romanised Continent. The case for *fidhcheall* needs to be balanced against the fact that Roman counters and boards in the possession of Romanised Britons provides strong evidence in favour of the playing of a Roman game of some sort.

THE DOCTOR'S GAME — NEW LIGHT ON THE HISTORY OF ANCIENT BOARD GAMES (TABLES 55–6)

By Ulrich Schädler

THE BOARD

To judge from the position of the metal corners and hinges, the game board found in the Doctor's burial was a rectangular wooden board of approximately 385 × 565 mm, which was to be folded thanks to the hinges in the middle of the short sides. In contrast to some other gaming boards, it had no handle.

Gaming boards with metal fittings, sometimes provided with a handle, have come to light at Stanway itself as well as at various other places, as follows.

1) The Warrior's burial in Enclosure 3 produced counters and the remains of another gaming board. The board consisted of two parts, but, in contrast to the Doctor's board, the Warrior's

one was not to be folded (at least no metal hinges were found) and had two identical copper-alloy handles (BF64.29a and BF64.29b). The handles are characterised by grooves, a bead between discs in the centre, and recurved terminals each capped by a boss (for comparisons, *see* Allason-Jones 1988, 167, fig. 79, 78; Allason-Jones and Miket 1984, 164, cat. 3.413; Bushe-Fox 1928, pl. 21, fig. 1, 45; Hawkes and Hull 1947, pl. 100, 3; Riha 2001, pl. 8, no. 99, 28–30 with footnote 57).

2) At Baldock, the late Flavian burial no. 6 produced two metal hinges, which were found open lying parallel to each other at a distance of 520 mm. A bronze drop-handle was found near the centre of the presumed third edge of the wooden board to which the hinges once belonged (Stead and Rigby 1986, 63ff, no. 13, 14, 16, figs 28, 30). From the position of the handle relative to the presumed centre of the board given by the hinges, it can be inferred that the board had rectangular proportions with a width of about 400 mm, whereas the length must have been slightly more than 560 mm (distance of the hinges plus their width of 20 mm and 14 mm respectively). These proportions are very close if not identical to those of the game-board in the Doctor's burial at Stanway measuring approximately 385 × 565 mm. Although joints of meat covered what was once the wooden board at Baldock, it is unlikely that the board was used as a tray as suggested by the excavators, since hinges to fold a board and only one handle would not make much sense for a tray. Presumably the metal fittings belonged to a game-board.
3) Bronze corner fittings are also known from Heiligenhafen, Germany (Krüger 1982, 242, fig. 47.3–5). Remains of the corner fittings of a wooden board, 58 white and black glass gaming counters, all upside down, and one die were found placed on the legs of the deceased.
4) In a rich Germanic 'Fürstengrab' of the 3rd century A.D. at Gommern (Elbe), Germany, 24 dark glass counters, metal corners, and the handle of a game-board came to light (Fröhlich 2001, 158s). Unfortunately, they were irregularly dispersed over a limited area.
5) At Neudorf-Bornstein, Germany, several wooden boards in graves dating to the 3rd and 4th centuries have been detected. In grave no. 4 (Schäfer 1968, 49 with fig.), three boards lay one above the other. One board was easily recognisable from the wooden remains with four metal corners still in position showing that the board was rectangular and measured approximately 440 × 760 mm. (Information kindly provided by Ingo Gabriel, Schleswig.) Of a second board, only two metal corner fittings at a distance of approximately 600 mm were found. Between the limits of this board and the former, there were 24 black and 18 white glass counters. Their arrangement suggests that they were not disposed on one of the two boards mentioned, but on a third. A few counters lay in a row, while most of them were scattered irregularly over the ground. It therefore seems that the pieces had been disturbed later. A small bronze handle belonged to one of the boards.
6) The remains of a board with pieces were also found in grave 7 (Schäfer 1968, 57, fig. 12). The rectangular board measured 360 × 440 mm. (Information kindly provided by Ingo Gabriel, Schleswig.) It had bronze corners and a bronze handle. Twenty-six glass counters (18 blue, 3 green, 2 brown and 3 white) were lying on the board in somewhat irregular rows.
7) At Lullingstone, a wooden board with bronze angle pieces dated to the 4th century appears to have been 470 mm square (Meates 1979, 129–30, pl. 24).
8) At the Viking-age site of Birka, Sweden, the iron fittings of three boards survived (Arbmann 1940, grave 58B, 205, no. 624, 886). The board in grave no. 886 (*hnefatafl*) had a raised rim (*ibid.*, pl. 146, 1a), similar to the game board for *XII scripta*/*alea* found at Qustul (Schädler 1995, 80).
9) A game-board with two handles — one at each of the long sides — is also known from Ephesus, where a *XII scripta*/*alea*-board measuring 390 × 490 mm (without handles) was carved into a marble table plate from one of the 'Hanghäuser'. The gaming table represents the only game-board ever found in a Roman house. It dates to before the middle of the 3rd century, when the roof of the building collapsed. The engraving suggests a wooden board with the two omega-shaped metal handles fixed by two nails to the outer sides of the board. The gaming table is kept in the museum at Selçuk.

THE BOARD — 8 BY 12 SQUARES?

The general proportions of the board as indicated by the metal fittings and the position of the counters in more or less regular rows along the long edges of the board suggested a preliminary reconstruction of the playing surface as one with 8 by 12 squares (pp. 352–3). But much too easily, one may be caught in the trap of a circular argument. Neither is the position of the pieces an *a priori* indication for the design of the board, since we do not know if they were placed in any position relative to the board or game. As an example for a purely decorative positioning of the counters, compare the find from Leuna (*see* below). Nor can the fact that one white counter is much smaller than the others and one blue counter turned upside down *a priori* be taken as an argument for 12 squares, since the assumption that these two counters are extra pieces is not established beyond doubt and depends on presumed rules of the unknown game.

First of all, we do not know if the board did have an orthogonal grid at all. During the Doctor's lifetime, *i.e.* the first half of the 1st century A.D., different designs of game-boards existed in the ancient world. It may suffice to draw attention to the Roman *XII scripta*/*alea*-boards (Schädler 1995), the Greek 5-lines-boards consisting of parallel lines (Schädler 1999), or the presumed Roman game-board from Augst (Schädler 2002a) with a totally different layout.

A fairly large number of ancient gaming boards with orthogonal grids has come to light all over the Graeco-Roman world, many of which are from Roman Britain. Without listing all the known boards of this type, it can be observed that complete ones normally have 7 × 7, 7 × 8, 9 × 9, or 9 × 10 squares, and very often 8 × 8 squares (Schädler 1994, 50). A board with 11 × 12 squares incised into the surface of a former architectural marble block can be seen in the sanctuary of Hera on the island of Samos, and a further board with 8 × 8 squares of unknown date has been uncovered in the northern cryptoportico of the agora at ancient Smyrna (Izmir). Depictions of real game-boards may be added. A terracotta group dating to the 1st century in the National Museum at Athens shows two persons playing a game on a board with 6 × 7 squares (Bursian 1855, 55–6; Michaelis 1863; Richter 1887, 100–3, figs 48–9; Schädler 1994, 51 with fig. on p. 53). A terracotta model of a similar board with 6 × 7 squares and 17 pieces in two colours was found by Flinders Petrie in a grave dating to the Roman period in the Egyptian Fayyum (Petrie 1927, 55 pl. 48, no. 177; Schädler 2002b, 98, fig. 1).

With these last objects having been found in the Greek east, the game depicted was presumably the game πόλ(ε)ιζ ('city' or 'cities') mentioned by Pollux (*Onomastikon* IX 98) in the 2nd century A.D., a game with the same interception method of capture as the Roman *ludus latrunculorum* and therefore supposedly more or less identical with this last (Schädler 2002b, 99). The finds clearly demonstrate that the counters were placed in the squares and not on the points of intersection of the lines. This is also indicated by Pollux, who says that the game πόλ(ε)ιζ 'has fields bounded by lines', as well as by Varro (*De lingua latina*, 10, 12) who compares a declination table (with six columns for singular and plural in all the three genders and six lines for the cases) to a gaming board for *ludus latrunculorum*. We can therefore conclude that at least those two ancient board games were played on the squares.

Having said this, the first observation to be made is that the proportions of latticed game-boards are usually square or close to square, *i.e.* n:n or n:n+1 where n is the number of squares in rank and file. On the other hand, a 1:1 ratio of squares does not automatically imply that the proportions of the board itself were square too. A board with 8 × 8 squares from Chedworth, for example, measures 254 × 178 mm (*Trans. Bristol Glos. Arch. Soc.* 45, 1923, 285). Many game-boards, especially those carved into pavements or roof tiles, exhibit decidedly rectangular 'squares'. However, it seems that with gaming-boards of finer workmanship, such as the marble board formerly at Zurich (May 1991, 175, fig. 169), care was taken to create square fields. Therefore the assumption that, if there was an orthogonal grid of lines on the Doctor's board, these lines created squares of equal length and width is plausible, although not as obvious as it seems at first sight. On the other hand the assumption of square fields would lead to an unusual and hitherto unique ratio of the game-board of 2n:3n or n:n+4 squares in rank and file.

The general proportions of the Doctor's board measuring approximately 385 × 565 mm, giving a ratio of width to length of 0.68, are more consistent with Roman *XII scripta/alea*-boards, composed of three parallel rows of two groups of six spaces. Gaming boards of this type are normally rectangular, usually with a ratio of width to length of about 2:3. Two examples among many others may be quoted relating to boards from Damous-al-Kharita (Tunisia), measuring 490 × 720 mm and 470 × 660 mm respectively, thus giving proportions of 0.68 and 0.71 respectively (Delattre 1911, 12). A board in the Roman catacombs of St Tecla measures 460 × 620 mm (Ferrua 1964, 3, n. 133), and therefore has a ratio of 0.74. At Ephesus, a board carefully incised into a marble block measures approximately 550 × 815 mm including the raised rim, giving a ratio of 0.67 (Börker and Merkelbach 1979, 226, n. 536). The famous board from Trier (Horn 1989, 154) measures 420 × 700 mm with a ratio of 0.6. And a board scratched into the pavement of the Tower of the Winds at Athens (Schädler 1995) measures approximately 370 × 600 mm, *i.e.* a ratio of 0.61. The well-known board for beginners from Ostia (*CIL* XIV 5317) measures roughly 180 × 290 mm, and has therefore a proportion of 0.62. There are also some boards which are close to square, such as the board from Holt, Denbighshire (Austin 1938, 250), measuring 432 × 486 mm (0.88), and a few others with even more elongated proportions, such as the board from Porta Portese in the British Museum measuring 370 × 820 mm (Austin 1938, 250; May 1991, 178, fig. 175).

What might argue against a reconstruction of the Doctor's board as a board for *XII scripta/alea* is the number of pieces, since that game was played with 15 black and 15 white counters. Moreover it was played with dice, which have not been found in the Doctor's burial. And finally the position of the pieces on the board does not correspond to the layout of the game, since we have pieces in the middle of both long sides, exactly where the *XII scripta/alea* boards have an ornament dividing the twelve spaces of each row into groups of six. However, all the three arguments are not convincing enough to discard the possibility completely: the number of gaming counters might not represent a complete set. As a matter of fact, complete sets of counters have been found only in rare and exceptional cases (*see* below concerning the problem of complete sets). At Leuna for example, 59 counters have been found together with a board bearing a grid of lines on one side and a *XII scripta/alea*-pattern on the other – nearly twice the number of counters needed to play *XII scripta/alea*, and nonetheless obviously incomplete. Dice, normally made of bone and often very small, may have decayed. Also, the pieces may have been placed just along the edges of the board and not on regular fields.

Secondly, a closer look at the position of the counters demonstrates that they do not lie as orderly as it may seem at a first glance. In fact, there must have been considerable movement of the pieces after their initial laying out on the board (*see* above). It is the number and position of the counters in particular which may make the reconstruction of a game played with twice 13 pieces on 8 × 12 squares questionable. There are definitely 13 pieces on both sides of the board. With only 12 squares in one direction and an assumed starting position of 12 pieces in a row, one piece would have to be placed in front of the others. But since 12 is an even number, there would not be a natural place for it, such as a central column. The 13th piece would always come to be placed on an undefined field. The difference between 12 and 13 places in a row is not just quantitative. An odd number of places would create a central column, which is absent on even-numbered boards. On the other hand, the small white counter was placed centrally such that it was flanked by six white pieces, which makes it possible if not likely that the board had 13 spaces in longitudinal direction. Therefore we should take the possibility into account that, if the board did have an orthogonal grid of lines, the counters were placed either on squares formed by a grid of 9 × 13 (FIG. 153, above) rather than 8 × 12 lines or on the intersections of a 9 × 13 grid of lines (FIG. 153, below). Yet another possible explanation would of course be that the counters did not belong to the game-board on the side of the board they were placed upon, but perhaps to a game depicted on the reverse side. Game-boards with two different games on both sides are known from various written sources as well as from archaeological finds.

THE POSITION OF THE COUNTERS — A STARTING POSITION?

The more or less orderly alignment of almost all the counters along the opposite edges of the game-board with only very few exceptions raises the question whether or not the position of the pieces represents the start of a game with only a few moves being already made (Parlett 1999, 236). However, we must be careful in interpreting the layout of the pieces on the board. The interpretation of the position of the counters as a starting position requires some previous assumptions: one has to assume that the person who set out the counters on the board had a particular game in mind when doing so, that he knew that game, and that the number of pieces represents a complete set of counters necessary for it. We have no clues to answer any of these questions. The intention of placing the counters in rows could have been simply to create an orderly arrangement instead of throwing all the counters randomly on to the surface. In grave III/1926 at Leuna, Germany, for example, the pieces were laid out in an ornamental pattern completely independent from the game-board. To judge from one square still preserved at the time of excavation, it could be concluded that the upper side of the board had an orthogonal grid with 13 squares in one direction. Twenty-six out of 30 white and 29 dark stones had been set out in alternate groups of three black or white pieces along one edge and the two adjacent corners of the board to make 18 in a row (Schulz 1953, 22, fig. 37, 28ff). The position of the counters may thus have no relation at all to the game proper.

Several counters on the Doctor's game-board do not stand in line with the others. This may be either because they have been moved or the result of a hard push against the board or by the deposition of the cremated bone or other grave goods. If they were placed like this on purpose, one would raise the question why more than one move has been executed. Assuming that the rook's move was applied, Black would have moved twice (with B3 and B4). If the pieces moved only one square at a time, Black would have had three moves (B3 from C8 to C7, B4 from D8 to D7, and from D7 to D6), and White according to the reconstruction preferred three (FIG. 152: Reconstructions 1 and 3) or even four times (FIG. 152: Reconstruction 2).

Finally, as a more general reflection it can be observed that the experience with chess and draughts sometimes leads to the premature assumption that a board game would naturally require a starting position. This is not the case. According to our knowledge, the board games known in antiquity only rarely had a starting position. The literary sources never describe any such arrangement. Only the ancient Greek board game conventionally called '*pente grammai*' ('five lines'), according to depictions on Greek vases, Etruscan mirrors and a terracotta model at Copenhagen, seems to have had one, in that all the pieces were placed on the opposite ends of the parallel lines (Schädler 1998, 16–17; Schädler 1999, 42). No such initial position is known from Roman board games. It has often been taken for granted that *ludus latrunculorum* had a starting position in opposite lines, but especially in the light of *Laus Pisonis*, the most detailed description of the game dating to the 1st century A.D., this assumption can be ruled out with a fair degree of plausibility (cf. Schädler 1994, 52). The author of *Laus Pisonis* describes the beginning of the game with the following words: '*callidiore modo tabula variatur aperta calculus*...', translated by Roland Austin (1935, 30) as 'cunningly the pieces are disposed on the open board'. All six words in this short phrase strongly speak against a fixed initial arrangement and in favour of the possibility for the players to choose where to place the pieces: '*callidiore modo*', '*variatur calculus*' and '*tabula aperta*'. A standard position of counters with equal strength does certainly not offer the possibility to place the pieces in an 'intelligent way' (*callidiore modo*). Moreover the term '*variatur*' clearly means 'distribute' and not 'arrange pieces in a straight line or order'. And finally the 'open board' (*tabula aperta*) does not refer to a folding board opened, but indicates that the playing area was empty at the start. To understand better the meaning of the phrase quoted above, we have to follow yet another line of argument, *i.e.* that the aim of the author is to show Piso's qualities and that the purpose of the passage dealing with the board game is to emphasise Piso's ability as a military leader. This is the reason why the game is described in terms of military terminology, comparing the game to a real battle. According to the literary sources dealing with strategy in ancient Greek and Roman times, the first phase of a battle consisted of arranging the troops. The general was free to arrange his

troops according to the circumstances in which he found himself (the enemy's weapons, the strength and position of the enemy's army, the topography of the battle site, the weather, etc.). The arrangement of the phalanxes, legions, cavalry, or auxiliary units before the battle started was a constant and most important part of Greek and Roman warfare, and is therefore always mentioned in the ancient texts such as Arrian's report about Alexander's campaigns, Caesar's *de Bello Gallico*, and Frontinus' *Strategemata*. It was by the clever positioning of the troops that the general was able to demonstrate his strategic skills, and often the sources underline the fact that the initial arrangement of the army proved decisive in the battle. The readers of *Laus Pisonis* found the expected description of this initial formation in the phrase '*callidiore modo tabula variatur aperta calculus*...' quoted above. Therefore it seems obvious that in the *latrunculi* game the players had the choice of placing their pieces deliberately on the open board, without any obligation to arrange them in opposite lines. Such a starting position in rows would anyway lead to a boring initial phase of the game, where the pieces move towards each other without anything of interest happening. Moreover, capture by enclosing an enemy piece from two sides would hardly work this way. Hence it is likely that the game proper started when all the pieces had been placed, just as supposed by R.C. Bell (1979, 82) in analogy to the North African game of Seega or Kharbga.

From a historical point of view, the introduction of starting positions in ancient board games was a development which seems to be connected with a desire to accelerate games. This tendency can be observed not only in ancient Rome where, for example, the number of dice used in *XII scripta* was raised from two to three between the 3rd and 5th centuries (Schädler 1995). Most successful was the reduction of the number of rows from three to two and the introduction of the starting position still applied in modern backgammon. According to literary sources, it was invented in Persia about the same time, reducing the length of the track compared to the Roman game, where all the pieces had to be entered on the board first. The desire for more dynamic board games is still omnipresent in the book of games commissioned by the Spanish king Alfonso from 1283 (Schädler and Calvo 2006), where dice are explicitly introduced into chess to make it faster, before the new queen's and bishop's moves were invented with the same effect shortly before 1500. A second motivation for the introduction of a starting position into board games may have been the invention of a special piece, such as the king in the *tafl*-games (*see* below), which rather automatically leads to the question where to put it if not in the centre.

B13 AND W13 — TWO EXTRA COUNTERS?

All the counters are relatively equal in size. Therefore the smaller white piece (W13) standing close to the centre of the board is striking. It is possible that it was a replacement for a counter of normal size which had been lost. On the other hand, one blue counter (B13) has been found turned upside down, which raises the question if this was deliberately done in order to compensate for the absence of a similarly smaller blue counter. After a thorough re-examination of the excavation process and the documentation, it can be excluded with a fair degree of plausibility that the counter flipped over during excavation or as a consequence of the deterioration of the wooden surface it was placed on. But nevertheless it remains a possibility that the person who placed the counters on the board turned over this one blue piece intending to create a blue equivalent to the small white piece, in the absence of a blue counter of different size or shape. Based on this assumption, the question arises whether or not these two pieces might have played a special role in the game.

There are several arguments against this hypothesis. First of all, the position of the blue counter B13 as found seems somewhat accidental. It has been found at the corner of the board, whereas the small white counter W13 was placed exactly in the centre of the white side. Therefore one cannot ascribe a special function to that inverted blue counter without making assumptions about the way the game was played, by inventing a rule that the players could choose where to place the special piece after having set out the other pieces on to the first row of squares.

Secondly, ancient Greek or Roman board games with an extra piece are not known. Several authors assumed that the terms *latrones*, *bellatores*, *milites* or *latrunculi* used by Roman poets to designate the counters of *ludus latrunculorum* indicated gaming stones of different function (Becq de Fouquières 1869, 429s, 435; Marquardt and Mau 1886, 856; Decker 1972, 19; May 1991, 174), an assumption already convincingly rejected (Blümner 1911, 415; Lamer 1927, col. 1928; Owen 1967, 255). The differentiation in terminology is due to the poetic character of the sources, with the poets aiming at avoiding a repetition of words (Schädler 2003). A good comparison in this respect may be Seneca's *Apocolocyntosis* (15, 1), where the author uses *alea*, *talus* (*i.e.* the knucklebone) and *tessera* as synonyms for the cubic die in one and the same short poem of eight verses about the emperor Claudius playing at dice in the underworld.

These observations would lead to three possible conclusions.

1) Neither piece had a special function in the game, *i.e.* the blue counter was inverted by chance and the small white one is a reserve piece.
2) Both pieces had a special function; if so, the game is probably not a Roman game, but was to be played with Roman material, which would explain the absence of especially designed extra pieces and the *ad hoc* improvisation.
3) Only the small white counter served as a special piece, so that we are dealing with an asymmetrical board game: 13 blue counters against 12 + 1 white counters. If so, the game is probably not a Roman game since, with the only possible exception of a presumed gaming board at Augst (Schädler 2002a), no asymmetrical board games are known from the ancient Roman world.

THE GAME — PRELIMINARY CONCLUSIONS (TABLES 55–6)

'*Owing to the meagre and vague character of the evidence, the student who would elucidate the nature of the various board games … must tread warily. Not only is the evidence slight and ambiguous but it is sometimes contradictory. However some possibilities and probabilities can be shown, and a few impossibilities likewise.*' This statement by Eóin MacWhite (1946, 25) with regard to ancient Irish board games also holds true for the study of ancient board games in general. Taking into account that there are no certainties, and the lack of detailed information and unambiguous evidence prevents us from getting in touch with the object of our research and keeps us at a certain distance, I would like to present the following reflections.

The overall proportions of the Doctor's board correspond fairly well with ancient Roman *XII scripta/alea* boards. With these boards having three parallel rows of 12 spaces, it would be difficult to imagine any particular relationship between the 13 counters on each side – *i.e.* two counters less than necessary to play the game – and the layout of the board. As regards the white counters, one might imagine that they have been placed on regular spaces with the small white piece on the central ornament that such boards usually have. On the other hand, the position of the pieces and their more or less uniform distances relative to each other seem to speak in favour of an orthogonal grid of lines, assuming the counters were set out on regular places of the game-board. If so, the number and distances of the counters in relation to the overall proportions of the board and the fact that the latter was a work of craftsmanship and not just a game spontaneously scratched into a flat surface, suggest a grid of 8 × 12 or 9 × 13 squares of equal length and width. This ratio of squares does not find any parallels among ancient Roman game boards, with only one possible exception: the board from Leuna obviously had 13 squares in one direction and, given the *XII scripta/alea* board on the reverse side and the usual rectangular proportion of these boards, perhaps 9, 10 or 11 in the other. Assuming the counters represent a complete set, their number (13 on both sides) suggests that the game was played on the intersections of the 9 × 13 lines of a board with 8 × 12 squares or on a board with 9 × 13 squares, although we cannot definitely ascertain if the counters were placed on the cells or on the points of intersection. It is the fact that on both the blue and the white sides, there are two pieces bunched in the corner (W11 and W12, B12 and B13) which suggests that by some means the board moved slightly to the left during the burial rite, and consequently the pieces on it moved to the right, where the

TABLE 55: SETS OF GAMING COUNTERS ASSOCIATED WITH CREMATION AND INHUMATION BURIALS IN BRITAIN (after Cotton 2001a–b). Grave type: crem. cremation, inhum. inhumation, (m) male (f) female

Site	*No. of counters*	*Mat.*	*Grave*	*Date*	*Main reference*
Welwyn Garden City, Herts	24 (4 × 6)	glass	crem. (m)	*c.* 10 B.C.	Stead 1967, 14–19
King Harry Lane, Verulamium, Herts	21 (10 decorated, 11 plain)	bone	crem.	A.D. 1–40	Stead and Rigby 1989, 108, fig. 137
Stanway, Colchester, Essex ('Warrior's burial')	20	glass	crem. (m)	*c.* A.D. 43–50	pp. 186–90
Stanway, Colchester, Essex ('Doctor's burial')	26 (2 × 13)	glass	crem. (?m)	*c.* A.D. 43–50	pp. 217–20
Alton, Hants	19	glass	crem. (?m)	A.D. 45–65	Millett 1986, 43, 53–6
Litton Cheney, Dorset	20 (2 × 10)	chalk/ pottery	inhum. (m)	mid 1st	Bailey 1967, 156–9
St Martin's-le-Grand, London	?	bone	crem.	?mid 1st	RCHM 1928, 154
King Harry Lane, Verulamium, Herts	22	glass	crem. (m)	A.D. 80–90	Niblett 1990, 412–13
Grange Road, Winchester, Hants	18 (2 blue, 4 black, 12 white)	glass	crem. (?f)	A.D. 85–95	Biddle 1967, 243
The Looe, Ewell, Surrey	10	bone/ pottery	crem. (m)	late 1st–early 2nd	Cotton 2001b
Old Kent Road, London	26	bone	crem.	late 1st–early 2nd	R. Jackson, pers. comm.
Mansell Street, London	24	glass	inhum.	late 1st–early 2nd	A. Wardle, pers. comm.
Old Newton, Suffolk	10	glass	crem.	late 1st–early 2nd	Philpott 1991, 185
Colchester, Essex	24 + 3 cubic dice	glass	crem.	early–mid 2nd	May 1930, 275, Joslin Grave group 81 a–b/94
Elsenham, Essex	19	glass/ bone	crem.	mid 2nd	C. Johns, pers. comm.
Victoria Road, Winchester. Hants	29	bone	crem.	mid–late 2nd	Rees *et al.* forthcoming
Ospringe, Kent	24 (12 white, 4 black, 4 yellow, 1 blue, 1 green + 2 dice)	glass/ bone	crem.	late 2nd	Whiting 1925, 95
Trentholme Drive, York	46 (12 with graffiti)	bone	crem. (m)	late 2nd	Wenham 1968, 97 no. 46
St Pancras, Chichester, W Sussex	25/6	bone	crem.	A.D. 150–200	Down and Rule 1971, 83, fig. 5.15
Elms Farm, Heybridge. Essex	14	bone	crem. (child)	2nd	Atkinson and Preston 1998, 28
St Pancras, Chichester, W Sussex	23	bone	crem.	3rd	Down and Rule 1971, 83, fig. 5.15
Holgate Bridge, York	20 +	bone	inhum. (child)	?3rd–4th	RCHM 1962, 101
Lullingstone, Kent	30 (15 white, 15 brown)	glass	inhum. (m)	late 3rd–4th	Meates 1987, 123–5, 139–42 no. 391
Lankhills, Winchester, Hants	26	glass	inhum.	late 4th	Clarke 1979, 251–4

TABLE 56: SETS/GROUPS OF GAMING COUNTERS FROM NON-FUNERARY CONTEXTS (after Cotton 2001a–b)

Site	*No.*	*Material*	*Context*	*Date*	*Main reference*
Skeleton Green, Herts	4 pegs	bone	well	*c.* 10 B.C.–A.D. 20	Partridge 1981, 61, fig. 26
Tooley Street, Southwark, London	12	bone	floor	late 1st–early 2nd	Sheldon 1974, 100, fig. 47
Caerleon, Gwent	28	bone/glass	drain	late 1st–early 2nd	Zienkiewicz 1986, 155–6, 202–7
Castleford, Yorks	18	bone/glass	floor	late 1st–early 2nd	Cool and Philo 1998, 362
Brecon Gaer, Powys	8	bone	drain	early 2nd	Wheeler 1926, 120
Corbridge, Northumberland	54	glass	box	early 2nd	Allason-Jones and Bishop 1988, 82
Caerleon, Gwent	40	bone/glass	drain	late 2nd–early 3rd	Zienkiewicz 1986, 155–6, 202–7
Ravenglass, Cumbria	126	bone/glass	floor	late 2nd–early 3rd	Potter 1979, 75–87
Church Street, York	45	bone/glass/pottery	sewer	late 2nd–early 3rd	MacGregor 1976, 2–4, 21–2
Corbridge, Northumberland	20	bone	road	?	RIB 2, fasc. 3, no. 2440
Balkerne Lane, Colchester, Essex	12	bone	pit	1st–4th	*CAR* **2**, 91, fig. 94

rim of the board prevented the pieces close to the right-hand corner of the board falling off it. A reconstruction of a grid of 9 × 13 squares fits more closely with this scenario, since all the pieces appear to have moved to the right, whereas on a grid of 8 × 12 squares most of the white counters but only a few of the blue appear to have shifted. What argues against a grid of 9 × 13 squares is the fact that the two halves of the folding board would meet in the middle of the central row of squares, which does not seem very practical.

Concerning a presumed particular function of the small white and the inverted blue counter, no definite conclusion can be reached. The assumption that the small white counter served as an extra piece seems plausible. Although in asymmetrical board games the number of pieces on one side usually exceeds by far the number of pieces on the other, its position in the centre of the white counters argues in favour of this hypothesis. A remarkable find from the King Harry Lane site at Verulamium may further strengthen this suggestion. In burial no. 249, dating to the first half of the 1st century and therefore contemporary with the Doctor's lifetime, 21 gaming pieces in the shape of pegs were found, 11 of which were plain while 10 had decorated heads. Moreover, one of the decorated pieces is further distinguished by a dot in a circle (Stead and Rigby 1989, 108, 339, fig. 137). The excavators assumed that one piece of the decorated group is missing from a complete set of twice eleven counters. The find suggests that the pegs belonged to an asymmetrical board game with 9 + 1 or 10 + 1 pieces on one side and 11 on the other, played on a board with holes, similar to the Viking-age game boards from Ballinderry (Hencken 1933; Hencken 1937; Sterckx 1970, 604, with bibliography and fig. 1) and Knockanboy (Simpson 1972).

However, neither of the other possibilities for the small white and the inverted blue counters can be discarded with certainty (*i.e.* that both counters served as an extra piece, or that neither of the counters served as an extra piece, with the former being less likely). The question as to whether or not counters B13 and/or W13 served a special function in the game seems to be linked to the interpretation of the position of the pieces as a starting position. From what has been said above, it seems that the introduction of an extra piece rather automatically leads to a starting position (as attested for the *tafl*-games), whereas a game with undifferentiated counters such as *ludus latrunculorum* would not necessarily require an initial arrangement.

Other finds of gaming counters from graves of Roman Britain provide no help (TABLES 55–6 generously provided by Jon Cotton of the Museum of London; Cotton 2001a–b): the numbers of counters and the distribution of colours differ enormously. The difference in numbers may result from the fact that distinguishing between glass gaming counters and pieces of stone during excavation may sometimes be difficult, so that not all the counters may have been identified. Another reason may be that it was not the intention of the people who arranged the grave goods to lay down 'complete' sets of counters, but just the counters possessed by the buried person. One has to consider the everyday culture of play at the time. With so many game-boards being scratched into the pavements of public places, it is obvious that anyone wanting to play had to bring his own dice and counters, which had to be sufficient in number to play different games. With three counters one could play three men's morris, with fifteen a game of *XII scripta* was possible and seventeen counters, for example, made sure that there were still enough in case a counter got lost, or stuck between two slabs of the pavement. The expectation of finding complete sets of counters seems to be strongly influenced by the modern market in boxed games. A set of counters can only be complete with regard to the standard of one particular game.

It may, on the contrary, have even been the intention to lay down incomplete sets of counters. As has been observed with the much later finds of gaming counters in Germanic graves, there are reasons to believe that here the pieces have been deliberately reduced in number: in several instances there are one or two counters fewer on one side. To quote a few examples: in grave III/1926 at Leuna, Germany, 30 white and 29 dark stones have been found (Schulz 1953, 22, fig. 37, 28ff). Fragments of 26 or 27 white counters and between 25 and 27 multicoloured ones have been uncovered in a male grave at Emersleben, Germany (Schulz 1952, 108, 131). In a female burial (grave I) at Sackrau (Zakrzów), Poland, 19 white and 20 black counters came to light (Kosinna 1922, 125; compare Schulz 1953, 64: 18 and 19 counters), while in another grave at the same site (grave III) 14 greenish-white and 15 black counters have been excavated (Schulz 1952, 132). And among the grave goods of a burial at Vallöby, Sweden, there were 31 black and 29 white counters (Schulz 1952, 132; Schulz 1953, 64).

A possible explanation for these unequal sets of counters could, of course, be that the counters belonged to an asymmetric game such as the *tafl*-games, with one player having an extra piece. But the finds quoted above did not contain specially designed extra pieces (such as the king in the *tafl*-games). Moreover, as will be shown below, not one of the numerous sets for the game of *hnefatafl* found in the Viking-age graves at Birka seems to be complete according to the rules given by the literary sources. It is therefore possible that the number of counters has been reduced on purpose to remove the games from secular use, in the same way other grave goods were often deliberately destroyed.

A SUGGESTION FOR A SCENARIO AND THE GAME

With regard to the possible identification of the board game in the Doctor's burial, attention has focused on the *ludus latrunculorum*. However, this is simply because it is the only Roman board game known that was played with counters on a latticed board. Nevertheless, a closer look at the evidence comparing the archaeological evidence from Stanway with what literary and archaeological sources tell us about the *ludus latrunculorum* shows that this assumption can be ruled out with a fair degree of confidence. Since we cannot definitely be sure either about the special function of the small white and the inverted blue counters or the starting position, there are two major arguments:

1) The *ludus latrunculorum* was played on a more or less square board with a ratio of squares of n:n or n:n+1. The proportions of the board in the Doctor's burial suggest a more rectangular gaming area of n:n+4 squares.
2) The interception method of capture applied in the *ludus latrunculorum* requires more pieces than twice 12 or 13 on a board with at least 96 (8 × 12), if not 117 (9 × 13) squares. Even on the small terracotta models of games in course of play (*i.e.* with less than the complete number of counters on the board) quoted above, there are relatively more pieces per square

left on the board: one calculates 2.47 squares/counter on the model in the Petrie Museum, 3.5 squares per counter on the little board in Athens, whereas the Stanway board would have 3.69 squares/counter with a board of 8 × 12 and even 4.5 with a board of 9 × 13. The Malayan game of *sodok-apit*, where the same interception method of capture as in the *ludus latrunculorum* is applied, is played on a draughts board with 16 pieces on both sides (Samusah 1932, 130), *i.e.* 2.00 squares/counter. Therefore it seems rather unlikely that the Doctor played at the Roman *ludus latrunculorum*.

Philip Crummy described in detail how the counters must have moved significantly on the board after their initial set up. A possible explanation for this would be a hard knock against the right-hand side of the board during the deposition of the grave goods (pp. 356–7). If a grid of 8 × 12 squares is assumed, the white pieces appear to have shifted while the blue counters remained more or less in position, a fact that requires explanation. Reconstructing 13 squares on the long sides of the board would provide a more consistent picture, with nearly all the pieces having shifted slightly to the right. On the right-hand side of the corner, the raised rim of the board stopped the counters from slipping off the board, which would explain the clustering of the pieces in both the corners. Is it possible that B13 was pushed against the raised lip of the board and turned around? As the photograph reveals (FIG. 124), the counters which seem to have been moved intentionally as in a game towards the centre of the board are in the same area where the cremated bone was subsequently deposited. It may, therefore, have been during the deposition of the cremated bone that these pieces were dragged across the board. This does not seem to hold true for the small white counter, W13. Despite its small size, it seems rather unlikely that the counter could have been shifted so far. Its position close to the centre of the board suggests instead that it was placed on the central space of a 9 × 13 board right from the beginning. This position, with six white counters on either side, compared to the rather accidental position of the inverted blue counter B13 on the one hand and the remarkable find from Verulamium on the other would argue for the assumption that the piece served as an extra piece of the white party and placed in the centre of the board, and that the game was to be played by 12 + 1 white counters against 13 blue pieces.

A game like this is not known from Roman sources, nor is — as already observed — a rectangular game-board with 8 × 12 or 9 × 13 lines or squares. One may raise the question therefore whether we are facing not a Roman but a Celtic board game. Given the typically Roman glass counters, the possible Roman system of measurements used in the design of the board, and finally the degree to which the members of the local upper class were already Romanised in the early years of Roman presence in Britain, one would perhaps expect the game to be Roman. Nonetheless, a closer look at what we know about board games in Iron Age Britain may be fruitful.

ANCIENT CELTIC BOARD GAMES

Our knowledge of ancient Celtic board games is even more limited than that concerning Roman games. That there was an indigenous tradition of board games is strongly suggested by the exceptional find from Welwyn Garden City. In a rich grave dating to the last quarter of the 1st century B.C., four groups of six glass counters in four different colours as well as six fragments of glass beads and bracelets with worn edges, which apparently were used as dice in the game, came to light (Stead 1967, 14–18, fig. 10; Harden *et al.* 1968, 35, n. 42). The counters do strikingly resemble much older Celtic military helmets (*see* Feugère 1994, 23). If this is a complete set of counters, it would suggest a game for four players. This would be the oldest four-handed board game in Europe, since all other ancient board games are for two players only. One exception might be the 'game of twice the 20-squares' found in ancient Egypt, which consists of two boards of the game of 20 squares (Pusch 1977), and therefore might perhaps have been played by four players.

More can be said about another group of board games known from archaeological as well as literary Scandinavian and British sources, *i.e.* the so-called *tafl*-games. By combining a

description by Carl von Linnée in 1732 of the game *tablut* played by the Saami of Lapland with various literary sources, it has been possible to establish that the games variously called *tafl*, *hnefatafl*, *tawl-bwrdd*, *brandubh*, and *tablut* all belonged to one family of asymmetrical board games popular during the Viking period and the early middle ages in Scandinavia and Britain (Murray 1913, 445–6; 1952, 55; Articus 1983; Sterckx 1970; Parlett 1999, 196ff; Helmfrid 2000). These games were played on latticed boards with an odd number of places in both directions *(i.e.* 7 × 7, 11 × 11, 13 × 13, 15 × 15 or 19 × 19 cells or lines). The two players had unequal forces at their disposition: one large group of attackers tried to capture the king-piece, initially placed on the central square or intersection of the board. The king's defenders are outnumbered by the attackers 2:1. As in the *ludus latrunculorum*, a piece was captured when enclosed from two sides. As to the use of dice in the game, never mentioned in the sources, the term *tawl-bwrdd* has created some confusion, since it has been suggested that the term, which can be translated as 'throw-board', is connected with the throwing of dice (D.P.F. 1860, appendix E, li; Bell 1979, 2, 44). A closer look at the meanings of the noun *tawl* and the verb *tawlu* (Owen 1803) though reveals that the 'throwing' is unlikely to refer to the rolling of dice but to the counters thrown off, taken off, and put aside from the board when captured. It is a board for a game where captured pieces are thrown off, so that *tawl-bwrdd* may be more adequately translated as 'throw-off-board'.

Among the most important archaeological evidence connected with the *tafl*-games, wooden and stone gaming boards as well as counters may be mentioned. A gaming board from the Gokstad ship dating to the 9th century has a nine men's morris on one side of the board, while the other side has an orthogonal grid of probably 13 × 13 squares, of which 13 squares in one direction, but only 4 in the other are preserved. Two wooden gaming boards with holes for counters in the shape of pegs (Hencken 1937, 158, fig. 26b, 165) have been found at Ballinderry in Ireland. While one of the boards is only partly preserved (Hencken 1937, 149), the other one is broken but complete. It shows 7 × 7 holes, the central hole and the holes in the four corners marked by a circle and quarter-circles respectively (Hencken 1933, pl. 1; 1937, 135, 175ff, pl. 25; Murray 1952, 59, fig. 23), a feature to be compared to an engraving of a gaming board on a rune stone from Ockelbo, Sweden. Probably dating to the later 10th century (Hencken 1933, 93), it is now kept in the National Museum of Ireland in Dublin. Most significant is a find from Knowth, Ireland (Eogan 1974, 68–70, 76–80), from a double inhumation grave dated 'perhaps not later than the middle of the millennium', *i.e.* about A.D. 500. Here 13 bone pegs for a game board with holes such as the Ballinderry board and three long dice numbered 3-5-4-6 came to light. The type of long dice is, according to Krüger, typical for the Celtic *oppida* on the Continent and Germanic sites (Krüger 1982, 187), thus demonstrating that the British Isles were 'ludographically' connected with the Iron Age Continent. Also from Ireland comes a similar board found at Knockanboy, which is perhaps even earlier in date than the board from Ballinderry, but appears to be lost (Simpson 1972, 63–4). The drawing by J. Bleakly dated 25/26 March 1838 shows 7 × 8 peg-holes, but this may be due to the sketchy character of the drawing. Comparable boards with 7 × 7 lines and the central intersection marked by a circle have been found carved in stone at the 9th-century Viking settlement of Buckquoy on the Orkney Islands (Sterckx 1973, 675–89). One of the boards (*ibid.*, figs 1–2, pl. 3) apparently was used as a teaching board where, by drawing circles on the intersections and retracing the lines, somebody tried to explain that the pieces had to be placed on the intersections and not on the squares. A fragment of a wooden board of 15 × 15 squares dating to the 10th century has come to light at Coppergate, York (Hall 1984, 114). Toftanes Eysturoy, Faroes, produced a board with 13 × 13 squares, which is also dated to the 10th century and kept in the Foroya Fornminnissavn at Torshavn (Roesdahl and Wilson 1992, 311). At Trondheim, Norway, more than one half of a board dated to the 12th century was discovered (McLees 1990, 80–1, pl. 11; Roesdahl and Wilson 1992, 378), which is kept in the Vitenskapsmuseet; it has 11 × 11 squares, of which the central square and the 2nd and 3rd squares from the edges in the 6th column and line were marked by a cross. The reverse side bears a nine-men's morris. Also from Trondheim comes a wooden fragment with three

incomplete rows of at least ten squares (McLees 1990, 81, pl. 12). From late Viking-age Norway comes a board with 13 × 13 squares found at Bergen, Tyskebryggen, with the 4th, the 7th (centre), and the 10th squares of the central row marked by a cross (Articus 1983, 95, fig. 11). A set of gaming pieces made of walrus bone and ivory, including a king piece made of bronze, has been found in a rich grave at Oldenburg, Germany, dating to the middle of the 10th century (Gabriel 1985, 207–15). Many of the 10th-century graves at the important Viking-age settlement on the island of Björkö, Sweden, produced a considerable amount of gaming equipment. Among the sets of counters which, to judge from the existence of a distinctive piece and two different groups of counters, most clearly belonged to *tafl*, those from the following graves may be mentioned: grave no. 523 contained a king piece and 5 and 14 men all made of glass, which were originally deposited in a leather bag (Arbmann 1940/43, 157–60 pl. 148.1). The king-piece found in grave no. 524 is distinguished by crossed grooves imitating a helmet (*ibid.*, 160, pl. 149.1), while the king in grave no. 624 has a hat of gilded bronze (*ibid.*, 205–7 pl. 149.3, 150.6). The extraordinarily rich burial no. 581 of a man with two horses produced an Arabic coin struck under caliph al Muktadir (301–20 H = A.D. 913–33) and a set consisting of a king-piece, six defenders, and 20 assailants, together with three cubic dice (*ibid.*, 188–90, fig. 143, pl. 147.3). The set found in grave no. 750 consisted of 17 pieces of light-blue-green glass and eight of opaque dark green glass plus a dark green larger piece fashioned like a man with a head (*ibid.*, 147, 271). In grave no 986, a pawn-shaped king with six decorated and ten undecorated men were found (*ibid.*, 412, pl. 150.2, 6). The gaming equipment found in a chamber grave (no. 644) with a double inhumation of a woman and a man is unusual, and roughly dated by a Samanid coin struck for Nasr ibn Ahmad in the year 308 H, *i.e.* A.D. 920–1 (*ibid.*, 221–6, figs 182, 183, pl. 148.2). Apart from three long dice, the set consisted of two nearly identical king-pieces with 20 glass counters of the same manufacture as the pieces in grave no. 523. Numerous other finds of single gaming stones, king pieces or incomplete sets shed no more light on the nature and history of the game.

Among the most important literary sources (*see* Murray 1952, 61; Sterckx 1970) is a document dating to the 10th century in Oxford, conventionally called *alea evangelii*, containing in particular a drawing of a board of 19 × 19 intersections (Bell 1979, 80, fig. 68, and pl. 5), where 48 black stones attacked 24 white ones and the *primarius vir*. *Tawl-bwrdd* is frequently mentioned in the 'Ancient Laws of Wales' ascribed to the king Howell Dda (10th century) although, according to Murray, not older than the middle of the 13th century. It demonstrates that 8 men defended the king against 16 white attackers. A description of *tawl-bwrdd* and a drawing of a board with 11 × 11 squares can also be found in a Welsh manuscript by Robert ap Ifan from 1587 (Welsh National Library, Peniarth ms 158, p. 4) — the latest reference to the game in Britain. It may be interesting to note that none of the sets of *tafl*-counters found in the Birka graves correspond with the number of pieces mentioned in these literary sources, nor are there twice the number of attackers in relation to the number of pieces on the king's side. The variability of the numbers of counters at Birka would lead to two possible explanations: either the number of pieces varied depending on convention or nearly all the sets are incomplete. The presence in some of the burials of dice, not mentioned in the literary sources, does not indicate that the *tafl*-game was played with dice but that, in addition to the counters for the *tafl*-game, dice to play dice-games were themselves offered to the dead.

The family of *tafl*-games has hitherto mostly been connected with the Scandinavian peoples, who would have introduced it to Britain during the Viking age. When and where this group of games originated is unknown. Archaeological evidence to corroborate Murray's statement, that the *tafl*-games were 'already played by the Scandinavian peoples before A.D. 400' (Murray 1952, 56), *i.e.* in the Roman Iron Age, is rare. To judge from their exceptional size and shape, some of the glass counters found at Lundeborg, Denmark, may have been used as king pieces in *hnefatafl* (Michaelsen 1992, 46–8; 2002, 73), but they date no earlier than the 3rd century. It is of note that none of the Germanic sites which provided game-boards, dice, and counters, studied by Krüger, has produced any evidence for counters with a special function required for the *tafl*-games (Krüger 1982, 161). Kosinna's interpretation as a gaming piece of a cone-shaped

bronze object from Kommerau (Komorow, Poland) dating to the 3rd century (Kosinna 1922, 122, 127, figs 15, 15a) has been rejected by Krüger (1982, 139, 224, fig. 29.8).

On the other hand, an earlier date for the game is suggested by its affinities to Roman games, in particular to the *ludus latrunculorum*. The capturing method of enclosure common to both games seems to indicate that the latter exhibited a certain influence on the *tafl*-games. Moreover the name *tafl* derives from the Latin *tabula* meaning '(gaming)board' or 'counter'. Finally, the fact that the boards from Vimose (*c.* A.D. 400) (Engelhardt 1869, 11, pl. 3.9–11; Schulz 1953, 64, fig. 75.1–3; Krüger 1982, 222, fig. 10.7–10; Michaelsen 2002, figs 3, 14) and from Leuna (3rd century A.D.) bear a *XII scripta*/*alea* on one side (Schulz 1953, 65, fig. 76; Krüger 1982, 233, fig. 38.10–11) clearly demonstrates a close connection between the Germanic and the Roman world of board games. In fact, the central ornament of the outer row of the board from Leuna, consisting of one half of a six-petalled rosette inscribed in a semi-circle with its ends scrolled to the inside (Schulz 1953, 29, fig. 56), finds close parallels in several game-boards from all over the Roman empire. For the semi-circle, compare boards from Damous al-Karita (Delattre 1909, 375; 1911, 12ff, fig. on p. 13; Schädler 1995, 88, fig. 7b) and Rome (Ferrua 1964, 17, fig. 7m; 1948, pl. 4.7). For the three-leaves motif in a semicircle, *see* for example a game-board found near Porta Portese in Rome now kept in the British Museum (Austin 1938, 251, figs 2 and 3; May 1991, 178, n. 283, fig. 175), a board in the Roman catacombs (Ferrua 1964, 17, fig. 7n) and a carefully executed gaming-table at Aphrodisias (Roueché 1989, 110, pl. 16, n. 69). The indication of the houses through circles divided into two groups by a larger semi-circle, as executed on one of the boards from Vimose, was very popular, especially in the eastern part of the Roman empire. No less than nine such game-boards can be seen on the steps of the stadium at Aphrodisias. Their exact location is as follows:

1 northern part of east curve, 1st segment after curve
2 eastern part of north side, 3rd step from above
3 western part of north side, 5th segment from west, 2nd step from above
4 western part of north side, 5th segment from west, 2nd step from above (another one)
5 north side, 4th segment from west
6 north side, 3rd segment from west, 2nd step from above
7 north side, 2nd segment from west, 4th step from above
8 south side, 5th segment from east, uppermost step
9 south side, 2nd segment from east, uppermost step.

Three other gaming boards of the type can be seen at Ephesus, two on a threshold in the street between the theatre and the stadium, and another one in the street of the *curetes*, close to the *nymphaeum* of Trajan.

There are several parallels for the houses marked by semi-circles, as on the second board from Vimose: a board found at Avenches, Switzerland (May 1991, 181, no. 284, fig. 177), and a board from the theatre at Leptis Magna, Libya (Caputo 1987, 121, no. 4, 122, no. B, pl. 94.4). The triangular ornament in the semi-circle finds a close analogy on a late antique gaming-board in the portico of the agora at Perge, Turkey (Mansel 1975, 79 and fig. 43 on p. 81).

Thus there are good reasons to believe that the *XII scripta*/*alea*-boards as well as the latticed boards from Vimose are imported boards of Roman manufacture.

Although the latticed board from Vimose is often quoted by authors dealing with the *tafl*-games, it is not clear which game was played on the board. In particular, only one side of the board is preserved completely, showing that there were 19 lines or 18 squares in one direction. Some authors have questioned the figure of 18 squares, but with the diagonally cut joints of the frame being preserved on both sides of the fragment, there can be no doubt that the preserved edge represents the first complete row of 18 squares. Since the outermost lines appear to be too close to the rim, it seems that the board should be regarded as consisting of squares rather than a grid of lines. With 18 squares in one direction, the board cannot have been used for a game of the *tafl*-type, which required an odd number of cells or lines. On the other hand, grids of 18

squares in one direction are hitherto without parallel in the Roman world, which makes it rather unlikely that the board was used for *ludus latrunculorum*. Moreover, the usual assumption, that the board consisted of 19 × 19 lines or 18 × 18 squares, ignores the possibility that the fragment shows the reverse side of one of the *XII scripta*/*alea*-boards. With these boards usually being rectangular, a square shape for the orthogonal grid of lines or squares could definitely be ruled out. The same holds true for Leuna, where, although the board has an odd number of squares (13) in one direction, the fact that its reverse side was prepared for *XII scripta*/*alea* makes a square grid of lines or squares unlikely. Moreover, no special piece was found among the uniform white and dark glass counters. Nor have Roman *latrunculi*-boards with 13 squares in one direction hitherto come to light. So we have to reckon with yet another board game played in Roman times with uniform counters on a rectangular grid of (an odd number of?) lines or squares. The fact that the *XII scripta*/*alea* on one side is a Roman game does not automatically imply that the game on the reverse side was a Roman game as well. Given the prestige as status symbols of board games (*see* below) on the one hand and Roman imports on the other, there are reasons to believe that such 'Roman' gaming boards may have been manufactured especially for Germanic (or Celtic) clients, and may therefore have been equipped with a Roman game on one side and an indigenous game on the other. The same may, *mutatis mutandis*, hold true for the Doctor's game board.

A possible candidate for the game we are looking for would be an ancient board game called *fidhcheall* or *ficheall* in Ireland and *gwyddbwyll* (*gwyzbwyll*) in Wales (MacWhite 1946, 25–35; Murray 1952, 34; Nuti 2001). According to the literary sources, it was played on a rectangular board by two players with equal forces of undifferentiated counters, and may therefore be regarded as a closer relative of the Roman *ludus latrunculorum*. Most interesting in the context of the present discussion is the statement in Cormac's Glossary (O'Donovan and Stokes 1868) that 'it is a different person who wins every other time', a statement confirmed by other sources as well (Nuti 2001, 25, 27). While MacWhite (1946, 33) expressed his irritation concerning this piece of evidence which appeared to him to be incompatible with the statement that the forces were equal, Sterckx (1970, 600) was led to infer that one side obviously had a certain advantage. Recently Nuti observed that the game is often mentioned in tales and episodes about a king being challenged by another person, and argued that '*anche un eventuale medesimo numero di pedine per entrambi i giocatori non implica necessariamente che in un gioco non vi sia una pedina che svolga un ruolo centrale; specificamente, un pezzo accostabile alla figura del re*' ('also a possible equal number of pawns for both players does not necessarily imply that in a game one pawn does not play a central role; specifically, a piece approximating to the figure of the king') (Nuti 2001, 27).

It seems to me that in the light of the finds from King Harry Lane and Stanway, those seemingly contradictory statements in the literary sources make sense, inasmuch as they describe an asymmetrical board game, where one of the otherwise equal forces was distinguished by a special piece.

CONCLUSIONS

The evidence from the Doctor's burial at Stanway is not as self-evident as it might seem at first glance. In fact it is difficult to interpret the remains of the game board and the number and position of the blue and white counters on it without making assumptions on games and their rules and of people, their knowledge of games and the intentions they had when they placed the game into the grave. To judge from the rectangular form of the wooden board alone, which seems to be of Roman manufacture, one would expect the game to be a *XII scripta*. No Roman board game played on a rectangular latticed board is known to have existed in the 1st century A.D., neither from archaeological nor literary sources. If so, the twice 13 pieces would neither represent a complete set of counters for this game nor would their position on the board have a closer connection with the game, nor would the small white counter and the inverted blue one have had a special function. This would not at all contradict the interpretation, since these assumptions are absolutely consistent with what has been observed in numerous other places.

But since our knowledge of ancient board games is rather limited, and the findspot is located in an area of cross-cultural interchange, the possibility exists that the game was a Celto-Roman hybrid. In fact, in Britain an independent tradition of board games existed long before the Roman presence. And from contemporary archaeological as well as later literary sources, we learn of an asymmetrical board game with a special piece on one side, called *fidhcheall* or *gwyddbwyll* in later Irish and Welsh sources. It was played on a latticed board with an odd number of spaces. This game seems to be similar to or a kind of predecessor of the Scandinavian *hnefatafl*. In the light of the asymmetrical sets of gaming pegs including one special piece found at Verulamium, it seems not impossible that, also in the Doctor's game at Stanway, the white party of 13 counters was distinguished by such a special piece. Moreover, the more or less regular arrangement of the counters seems to speak in favour of a board with an orthogonal grid of lines and squares. Therefore it may not be completely absurd to say that the Doctor's game possibly testifies to such an asymmetrical 'special piece game' as early as the Augustan age in Britain. Both suggestions — the *XII scripta* and the latticed gaming surfaces – need not necessarily exclude each other. In fact double-sided gaming boards existed at the time, and the board from Leuna with a *XII scripta* on one and a latticed board of 13 × 9, 10, or 11 squares on the reverse side, would offer an excellent yet much later parallel.

It is a world-wide phenomenon that in ancient civilisations board games were used not only as symbols of wealth and fortune, but apparently also of virtue. Gaming boards, dice, and counters often belong to the repertoire of grave goods in burials, especially of members of the upper classes. In direct relation to the wealth of the burial, these games often appear as luxury goods, elaborate and artistic products of skilled craftsmanship, often made of prestigious materials. Examples may be quoted of the Royal game of Ur (Woolley 1934), the well-known gaming tables in the grave of Tut'Ankhamun (Tait 1982), the fine wooden board game from the graves of the kings of Meroë in Qustul (Emery and Kirwan 1938, 345ff, fig. 111, pl. 87; Emery 1948, 46, pl. 8, 32; Horn 1989, 152, figs 16–18), as well as the games found in rich burials in ancient China such as the *Liubo* in the grave of emperor Zhao Mo from 122 B.C. (Prüch 1998; Röllicke 1999, 26, no. 9). In the Viking-age burials at Birka (Sweden), glass gaming stones mainly belonged to those who were distinguished members of the society, as evidenced by far-reaching contacts documented by Arabic coins. Board games were also found in Germanic *Fürstengräbern* such as those at Gommern (Fröhlich 2001, 158) and Leuna. Generally speaking these games can be explained in that they symbolise a peaceful and carefree (after)life not only of the wealthy but also of the brave. Already in Greek archaic vase paintings depicting the heroes Ajax and Achilleus playing *pente grammai* (Schädler 1999, 40ff), the idea seems to be inherent that bravery and play belong together. Particularly in ancient Rome, the focus obviously lies on the virtues of the players. Several hexagrams of Roman game boards for *XII scripta*/*alea* demonstrate that bravery in warfare was looked on as the prerequisite for peace and public wealth and consequently the possibility of playing with neither fear nor sorrow (Schädler 1995, 80; 1996, 72): VIRTVS IMPERI HOSTES VINCTI LVDANT ROMANI (Ihm 1890, 238, no. 49; Huelsen 1904, 143, n. 1), HOSTES VICTOS ITALIA GAVDET [LVDI]TE ROMANI (Huelsen 1904, 143, no. 2; Ferrua 1948, 33, no. 79), PARTHI OCCISI BR[I]TT[O] VICTVS LVDIT[E R]OMANI (Huelsen 1904, 142; Ferrua 1948, 33, no. 80) and ... ... [GENTES] PACATE [LVDIT]E ROMANI (Ihm 1890; 238, no. 50; Huelsen 1904, 143, no. 3). On a pyrgus dating to the 4th century from Froitzheim (Germany), one reads PICTOS VICTOS HOSTIS DELETA LVDITE SECVRI (Horn 1989, 139ff esp. 146). Finally, a hitherto unpublished *XII scripta*/*alea*-board incised into the pavement of the palaestra of the Petronii in the summer baths at Thuburbo Maius (Tunisia) may be mentioned, reading: PATRIA SANCTA FACIAS UTMEOS SALVOS VIDEAM. These mottoes allude to the bravery of the members of the society and the virtues of the political system they were part of, which guaranteed peace and wealth as a pre-condition for people passing their time by playing games instead of struggling for daily survival. Although this interpretation refers to Roman board games, especially of the 3rd and 4th centuries, it may also hold true for neighbouring peoples. It is certainly not coincidence that *XII scripta*/*alea*-boards in particular have been found in Germanic contexts (Vimose, Leuna).

However, later British sources such as the Ancient Laws of Wales demonstrate that, in Britain, board games had a prominent role in the installation in office of dignitaries, inasmuch as they were used as insignia (Forbes 1860). When admitted to his office, a chancellor in Wales received a gold ring, a harp and a game from the king, which he was expected to preserve for the rest of his life. A judge of court received playing pieces made of sea-animal bone from the king and a gold ring from the queen, which he likewise was expected never to sell or give away (Forbes 1860). Possibly the feature from Welwyn Garden City must be seen in the same context. Apart from the extraordinary glass gaming pieces in the burial which, to judge from the presence of imported Roman silver and bronze vessels, belonged to a high-ranking personage, iron fittings were found which probably had served for a carefully executed repair of a wooden gaming board (Stead 1967, 31–6, figs 20, 21). This would be an early archaeological reference for the particular role of board games as status symbols in Iron Age and Roman Britain.

THE SALT BRIQUETAGE (FIGS 35–6; TABLES 57–8)

By Nina Crummy

DESCRIPTION (TABLES 57–8)

The ditches of the ?mortuary enclosures in Enclosures 4 and 5 produced several sherds of briquetage from rectangular troughs used in the Late Iron Age and early Roman periods in the production of sea-salt at 'red hill' sites on the Essex coast. Further fragments came from the southern arm of the main eastern ditch of Enclosure 4. The contextual information of the briquetage is summarised in TABLE 57, together with the sherd count and total weight per context. The following two fragments are illustrated.

BF30.2 FIG. 35. BL21 B283. ?Mortuary enclosure ditch, Enclosure 4. Rim sherd from the corner of a rectangular vessel. The knife-trimmed rim has sagged downwards from the corner. Surviving height 76 mm, maximum thickness 31 mm. Weight 223 g.
CF44.1 FIG. 36. C140. ?Mortuary enclosure ditch, Enclosure 5. Large wall sherd. Surviving height 115 mm, 23 mm thick. Weight 223 g.

The fabric of all but one of these sherds is typical of the Type A briquetage found in north-east Essex, usually about 19 mm thick, sometimes much greater, and with much vegetable tempering (Rodwell 1979, 149–53; Fawn *et al.* 1990, 11). The surfaces are in general oxidised, but several have some reduction on one face and in the core. Surviving rims have been knife-trimmed, and one has been thumb-pressed. One sherd is only 11.5 mm thick and has rather less vegetable tempering. It has fired to a regular brown colour throughout. This piece belongs to Type B, production of which centres on the red hills to the south of the county, around Canvey Island. It is rarely found in north-east Essex.

The 29 recovered sherds had a total weight of 1343 g. Few of the sherds were abraded, and only one markedly so. As deposited (several pieces are friable and have broken at excavation or later), the average sherd weight is 46.3 g, which is substantially greater than that recorded at some other Essex sites (TABLE 58), although individual sherds from elsewhere in the county have equalled the largest here (Sealey 1995, 66, fig. 2) and both weight and sherd count are rarely given in the majority of reports. The low level of abrasion and the high average sherd weight together suggest that the majority of the vessels from which these pieces derive were broken not long before being deposited in the ditches.

DISCUSSION

Made from coastal alluvium mixed with much chopped vegetable matter, large quantities of vessel briquetage are found at the Essex salt-production sites, red hills, together with settling tanks, hearths, and hearth furniture such as firebars and pedestals (Fawn *et al.* 1990, 69). The

TABLE 57: THE SALT BRIQUETAGE — SUMMARY OF THE EVIDENCE

Context	*Context description and date*	*Sherds*	*Total wt (g)*	*Comments*
Ditch of Enclosure 4				
B964 BF40	east ditch, LIA/ER	8	315	1 corner sherd (?2), 1 small piece abraded
B970 BF40	east ditch, LIA/ER	2	142	
?Mortuary enclosure BF32				
B283 BF30 (BL23)	east ditch, Enclosure 4, LIA/ER	1	223	BF30.2 fig. 35; rim and corner of rectangular trough, possibly the same vessel as B1130
B501 BF30 (BL21)	east ditch, Enclosure 4,LIA/ER	6	64	knife-trimmed and thumb-pressed rim sherd; also corner sherd
B586 BF30 (BL38)	east ditch, Enclosure 4, LIA/ER	2	42	one very abraded, one rim/corner
B385 BF31, BL31	north ditch, Enclosure 4, LIA/ER	1	12	thin Type B sherd
B1130 BF31	north ditch, Enclosure 4, LIA/ER	1	143	knife-trimmed rim of thick-walled vessel; possibly the same as B283
?Mortuary enclosure CF43-6				
C112 CF44, Sx 1	east ditch, Enclosure 5, LIA/ER	3	96	slightly abraded
C140 CF44, Sx 3	east ditch, Enclosure 5, LIA/ER	1	223	CF44.1 fig. 36
C141, CF45, Sx 2	south ditch, Enclosure 5, LIA/ER	1	71	slightly abraded; weight includes some charcoal adhering to inner surface
C182 CF45, Sx 3	south ditch, Enclosure 5, LIA/ER	1	8	
C183 CF43	south ditch, Enclosure 5, LIA/ER	2	4	

TABLE 58: AVERAGE SHERD WEIGHT OF SALT BRIQUETAGE FROM SOME ESSEX SITES

Site	*No. of sherds*	*Total weight (g)*	*Average weight (g)*	*Reference*
Stanway	29	1,343.0	46.3	–
Ardleigh	281	5,891.0	21.0	Major 1999, 157
Burnham-on-Crouch (1991)	20	421.5	21.0	Sealey 1995, 65
Burnham-on-Crouch (1992)	8	250.0	31.0	Sealey 1995, 65

peak period of salt-making activity on these sites is generally Late Iron Age to early Roman, and it has been argued that the *oppidum* of Camulodunum owed some of its pre-eminence to trade in this valuable commodity (Rodwell 1979, 159–60). The river Colne was probably tidal as far as Sheepen, and the recovery there of briquetage vessels and hearth furniture has led to suggestions that salt production took place not only along the coast but also within the *oppidum* itself (Hawkes and Hull 1947, 346–7; Niblett 1985, 23). However, fragments of both vessels and hearth furniture are increasingly being recognised on inland sites, making the Sheepen material less likely to be evidence of production. The inland finds have long been the subject of study, and the find spot most distant from the coast may be Baldock, Hertfordshire (Rodwell 1979; Rigby and Foster 1986, 188; Barford 1990, 79–80; Sealey 1995).

Rodwell suggested two possible methods for the material to travel inland: first, that salt was traded in the vessels in which it was made, and second, that salt production may have been a seasonal occupation, providing a link between inland and coastal sites and a means whereby hearth furniture might travel as well as vessels (Rodwell 1979, 159–60, 172). In discussing briquetage from Kelvedon, Eddy added that raw salt-cakes might be acquired at the coast to be refined inland (Eddy 1982, 26).

Suggestions have also been made, to some extent based on the rural nature of many of the inland find-spots and the dearth of briquetage from inside the *colonia* at Colchester, that broken

briquetage was traded in its own right, perhaps to be used as salt-licks for livestock (Barford 1990, 79). These ideas have been refuted by Sealey (1995, 68–9), and are certainly unlikely to explain the presence of this material at Stanway, where there is no evidence for either domestic occupation or animal husbandry contemporary with the funerary use of the site.

The concentration of the briquetage sherds at Stanway in the ditches of the ?mortuary enclosure in Enclosures 4 and 5, and the adjacent east ditch of Enclosure 4, suggests that the most likely source for the fragments is the activity that took place in both ?mortuary enclosures. If the burial rite associated with the chambers included a prolonged period when the body was exposed, the preserving qualities of salt may have been a useful aid in absorbing body fluids and minimising putrefaction. Alternatively, briquetage fragments may be interpreted as evidence for feasting in the enclosures. The availability of salt may have been an important feature of a high-status meal, and it is also possible that briquetage vessels were used as containers for fish preserved in salt, a likely secondary product of the red hills (Hawkes and Hull 1947, 347; Fawn *et al.* 1990, 33), which could have been included in the food taken to a funerary feast. The wider potential for domestic reuse of the vessels once emptied of their original contents should also be considered. The presence of the south Essex Type B sherd may imply the import of fish from the Thames to Camulodunum, or perhaps a gift of salt for the funeral feast. Finally, and most speculatively, salt may also have been related to some other part of the burial rite. In the Roman world, sacrificial animals were sprinkled with wine and *mola salsa,* a bread of flour and salt made specifically for that purpose (Sandys 1910, 157–8), and a similar ritual is not inconceivable in the Late Iron Age/early Roman transition period in Camulodunum.

THE ENVIRONMENTAL AND FAUNAL REMAINS

THE CREMATED HUMAN REMAINS

By S.A. Mays

Of the contexts yielding cremated human bone, seven were *in situ* cremation burials (AF18, BF64, BF67, CF47, CF72, CF403, and presumably CF115). In addition, cremated remains were recovered from two pyre-sites (BF16 and BF32), there were two pits containing redeposited cremation debris (AF48 and CF7), scatters of cremated human bone in three of the chambers (AF25, BF6 and BF24), and small clusters or scatters of bone in places in the enclosure ditches of Enclosure 2 (CF6, CF415) and Enclosure 3 (BF46). None of these contexts produced evidence for the cremation of more than a single body. Ten of the groups appeared to be adult, the rest being indeterminate. In only one instance could sex be inferred, *i.e.* the probable female in AF18. The Warrior's burial (BF64) yielded an unburnt fragment of what appears to be a human juvenile long-bone. The fragment lay about 0.5 m from the burnt bone burial and thus must presumably be residual.

Burnt animal bone was found in close association with cremated human bone in one of the chambers (AF25) and at the pyre-site BF16.

Cremation of an adult corpse yields about 2 kg of bone (studies cited in Wahl 1982). Using this as a guide, it is clear that all the cremation burials from Stanway are substantially incomplete, the greatest weight of bone (639.7 g) coming from AF18, and the least (3.4 g) from AF48. Damage to the cremations by later activities is clearly an important factor contributing to the loss of bone but, above all, the nature of the context and the funerary rite itself are likely to have determined how much of the cremated material ended up in its place of burial (p. 433). Inevitable losses of bone during recovery, and destruction of bone during its long sojourn in the soil, should also not be forgotten.

All the cremated bone is predominantly neutral white in colour. Shipman *et al.* (1984) demonstrate that bone colour may be used as a very approximate guide to firing temperature; the appearance of the Stanway remains suggests thorough, even firing with temperatures in

excess of 940°C. The uniformity of the colouration of the bone fragments from most burials may indicate uniformity of firing, although the possibility that less well-fired fragments may have failed to survive the aggressive Stanway soils should not be forgotten. In a few instances fragments were found with white outer surfaces but with black broken and internal surfaces. This suggests that in these cases firing was of insufficient duration for the full heat of the pyre to penetrate the bone completely.

Context **AF18** (A247), Late Iron Age urned cremation burial in Enclosure 1; A247 consists of the lower fill of the urn.
Recovery The fill of the pot was wet-sieved through a 1 mm mesh and the bone recovered from the residue by hand.
Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean	*maximum*	
Skull	29.5	10	30	40
Post-cranial and unidentified	610.2	4	60	10,000
Total	639.7			10,040

Included in identified elements. Fragments of skull vault, mandible (including genial tubercles), the head of a rib, fibula, acetabulum and indeterminate long-bones.
Colour Mainly neutral white, some grey (for example endocranial surfaces of many skull vault fragments).
Sex Probably female (based on robusticity of cranial and post-cranial bones).
Age Adult.
Notes Also recovered was 17.1 g of sieved residue containing fine gravels and very small fragments of cremated bone.

Context. **AF22** (A388, A461), Middle Iron Age pit in Enclosure 2.
Recovery The fill was wet-sieved through a 1 mm mesh and the bone recovered from the residue by hand.
Material

weight (g)	*fragment size (mm)*		*approximate fragment count*
	mean	*maximum*	
1.1	5	10	40

Colours White.
Sex Unknown.
Age Unknown.

Context. **AF25** (A463, A509, A512, A528), Late Iron Age chamber in Enclosure 1.
Recovery Hand-recovered on site.
Material

weight (g)	*fragment size (mm)*		*approximate fragment count*
	mean	*maximum*	
11.8	18	32	38

Included in identified elements. Fragments of indeterminate long-bones.
Colours Neutral white.
Sex Unknown.
Age Unknown.
Notes A522, also from AF25, included three fragments of unburnt bone (0.1 g). Although the skeletal elements present could not be identified, this bone is probably human. A512 also included 5.4 g of burnt animal bone (cattle/horse teeth) and A528 similarly contained a little burnt animal bone including a pig molar. Firmly adhering soil precluded weighing this material. (*See* animal bone report, pp. 382–3.)

Context **AF48** (A536), Late Iron Age pit with cremation-related debris in Enclosure 1.
Recovery Hand-recovered on site.
Material

weight (g)	*fragment size (mm)*		*approximate fragment count*
	mean	*maximum*	
3.4	12	32	6

Colours Neutral white.
Sex Unknown.
Age Adult.

Context **BF6** (B68, B92, B97, B103, B153, B157, B162, B196, B208), Late Iron Age/early Roman chamber in Enclosure 3.
Recovery Hand-recovered on site, although contexts B157, B162 and B196 were also dry-sieved through a 10 mm mesh on site.

Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean	*maximum*	
Skull	5.5	16	25	8
Post-cranial and unidentified	39.5	14	43	122
Total	45.0			130

Included in identified elements. Fragments of skull vault and indeterminate long-bones.
Colours Neutral white.
Sex Unknown.
Age Adult.

Context **BF24**, Early Roman burial chamber in Enclosure 4.
Recovery Hand-recovered on site.

Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean		*maximum*
Skull	12.3	12	32	12
Post-cranial and unidentified	50.2	12	47	148
Total	62.5			160

Included in identified elements. Fragments of skull vault and indeterminate long-bones.
Colours Neutral white.
Sex Unknown.
Age Adult.

Context **BF30** (B522), eastern ditch of Late Iron Age/early Roman pyre-site BF32 in Enclosure 4.
Recovery Hand-recovered on site.

Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean	*maximum*	
	0.1	5	14	10

Colours Neutral white.
Sex Unknown.
Age Unknown.

Context **BF64** (B1052, B1077, B1078, B1090), 'Warrior's burial' in Enclosure 3.
Recovery Hand-recovered on site.

Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean	*maximum*	
Skull	2.4	4	5	10
Post-cranial and unidentified	135.1	8	28	790
Total	137.5			800

Colours Neutral white.
Sex Unknown.
Age Adult.
Notes Also from BF64 but not included in the above figures are the following four fragments: B1040, a fragment of unburnt bone, 0.4 g, probably from a juvenile long-bone; B1171, three fragments of burnt human bone, 0.5 g, recovered from spoil heap associated with BF64.

Context **BF67** (B1004, B1010, B1042, B1045, B1047, B1067, B1068), early Roman 'Inkwell burial' in Enclosure 3.
Recovery Hand-recovered on site.

Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean	*maximum*	
Skull	3.8	5	10	10
Post-cranial and unidentified	221.8	4	40	990
Total	225.6			1000

Colours Mainly, neutral white, some fragments have black endosteal and broken surfaces.
Sex Unknown.
Age Adult.

Context **BF16** (BL5: B72, B73, B88), upper fill of Late Iron Age/early Roman pyre-site BF16, adjacent to chamber BF6 in Enclosure 3.
Recovery Hand-recovered on site, although contexts B72 and B73 were also dry-sieved through a 10 mm mesh on site.

Material

weight (g)	*fragment size (mm)*		*approximate fragment count*
	mean	*maximum*	
13.4	8	23	162

Included in identified elements. Fragments of fibula.
Colours Neutral white, grey.
Sex Unknown.
Age Unknown.
Notes Some of these fragments seem to be (unidentifiable) animal bone.

Context **BF16** (BL7: B69, B204), lower fill of Late Iron Age/early Roman pyre-site BF16, adjacent to chamber BF6 in Enclosure 3.
Recovery Hand-recovered on site and the contexts were then dry-sieved through a 10 mm mesh on site.

Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean	*maximum*	
Skull		-		
Post-cranial and unidentified	1.2	-	23	2
Total	1.2			2

Colours Neutral white.
Sex Unknown.
Age Unknown.
Related contexts **B30** (3.1 g) and **B38** (0.5 g): unstratified material found when cleaning between BF6 and BF16 in Enclosure 3. Probably from BF16.

Context **CF7** (CL14: C28; CL14: C49), Late Iron Age pyre-related pit, outside Enclosure 5.
Recovery Hand-recovered on site.

Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean	*maximum*	
Skull	7.3	20	30	10
Post-cranial and unidentified	48.5	6	45	500
Total	55.8			510

Colours Neutral white.
Sex Unknown.
Age Adult.

Context **CF47** (C916, C983), Late Iron Age/early Roman 'Doctor's burial' in Enclosure 5.
Recovery Hand-recovered on site.

Material

weight (g)	*fragment size (mm)*		*approximate fragment count*
	mean	*maximum*	
158.1	3	40	300

Colours Mainly neutral white, some grey.

Sex Unknown.
Age Unknown.
Notes Also recovered was 154.4 g of sieved residue containing fine gravel and many very small fragments of cremated bone.

Context **CF72** (C407, C419, C420, C422), early Roman 'Brooches burial' in Enclosure 5.
Recovery Hand-recovered on site.
Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean	*maximum*	
Skull	0.7	4	6	2
Post-cranial and unidentified	73.0	4	40	158
Total	73.7			160

Colours Neutral white, some grey, some broken surfaces black.
Sex Unknown.
Age Adult.
Notes Also recovered was 220.3 g of sieved residue containing fine gravel and many very small fragments of cremated bone.

Context **CF403** (C1412, C1427, C1428), early Roman unurned cremation burial in Enclosure 5.
Recovery Hand-recovered on site.
Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean	*maximum*	
Skull	8.4	10	28	3
Post-cranial and unidentified	158.6	4	30	522
Total	167.0			525

Colours Neutral white.
Sex Unknown.
Age Adult.
Notes Also recovered was 216.6 g of sieved residue containing fine gravel and many very small fragments of cremated bone.

Context. **CF415** (CL178: C1474), small ?Late Iron Age pit cut into the fill of the ditch of Enclosure 2 (CF6).
Recovery Hand-recovered on site.
Material

	weight (g)	*fragment size (mm)*		*approximate fragment count*
		mean	*maximum*	
Skull	9.1	10	15	10
Post-cranial and unidentified	21.8	4	27	40
Total	30.9			50

Colours Neutral white.
Sex Unknown.
Age Adult.

In addition to the above, a few fragments of burnt bone were recovered from each of the following contexts.

AF30: undated pit in Enclosure 1 but probably Early Iron Age or earlier: <0.1 g (could be human or animal).
BF42: a small pit which appears to have been part of the ?mortuary enclosure BF32 in Enclosure 4: <0.1 g (probably or certainly human).
BF46: a small charcoal-filled scoop (BF46) cutting the upper fill of the ditch of Enclosure 3 (BF5): 0.1 g (could be human or animal).
CF6: upper fill of the ditch of Enclosure 2): 3.3 g (probably human).
CF115: early Roman disturbed cremation burial in Enclosure 5: 1.0 g (could be human or animal although the context suggests the former).
CF169: Middle Iron Age pit in Enclosure 2: 0.6 g (could be human or animal).

THE FAUNAL REMAINS (TABLE 59)

By Alec Wade

The excavations produced a small, highly fragmented assemblage of animal bone consisting of over 484 pieces weighing a total of approximately 0.5 kg (TABLE 59). The remains were recovered from a variety of features including enclosure ditches, pits and burials. These dated from the Middle Iron Age, Late Iron Age and early Roman periods. Survival conditions were extremely poor and fragments from teeth, generally the most enduring of skeletal elements, dominated much of the assemblage. Many pieces had been burnt.

Tooth fragments (perhaps cattle) were recovered from the Enclosure 1 ditch AF31 of Late Iron Age date. Chambers AF25, BF6, and CF42, of Late Iron Age to early Roman date, also produced fragments of tooth. Chamber AF25 yielded burnt tooth fragments of a pig and a large mammal. Two very small amorphous bone fragments also from this feature were of a texture and density suggestive of human bone (though reliability for this is very low). Chamber BF6 contained elements of at least three teeth, probably horse molars, which may have been subject to burning. These may have been upper teeth, suggesting that at least part of the maxilla or skull was also originally present. Chamber CF42 produced dozens of small fragments from at least five or six horse upper molars. These fragments were in extremely poor condition and may also have been burnt. Several lumps of very degraded bone were recovered in association with the tooth fragments, suggesting that at least part of the maxilla, skull or lower jaw was also originally present (as in chamber BF6). Middle Iron Age pit CF250 also produced tooth fragments, perhaps from cattle.

Other features that contained animal bone included Enclosure 2 ditch CF6, pyre-site BF1/BF16 and the Warrior's burial BF64. Middle Iron Age ditch CF6 produced a quantity of tooth fragments, probably sheep or goat. A small quantity of burnt animal bone including a ?sheep carpal and a fragment of canid mandible was recovered from the pyre-site BF1/BF16. As well as some unidentifiable mammal bone, the Warrior's burial BF64 produced part of a sheep or goat molar and fragments of cattle tooth.

Near complete rabbit skeletons were recovered from Enclosure 4 ditch BF40 and from a natural feature BF192 nearby. The good condition of the bone supports the conclusion that these were relatively recent animals that had burrowed into earlier deposits.

A NOTE ON TEETH AND MANDIBLE FRAGMENTS

By Anthony J. Legge

The material is poorly preserved and has suffered a great deal of post-depositional erosion. Most of the specimens are teeth or fragments of teeth and these consist of little more than a shell of enamel from which all of the dentine has been removed by the action of soil acids. There need be no significance in the fact that the fragments are mostly horse teeth; the skeleton of this animal is notably robust and it may simply have survived the best.

Chamber BF6, B97

Upper left molars of an equid, probably from the horse, *Equus caballus*. Two more complete specimens are from the middle of the tooth row (probably P^3 and P^4). The size of these teeth is indicative of an animal of moderate size which would be described now as a 'pony'. There are numerous fragments of the enamel from other horse teeth, very likely to have been a tooth row from one animal, but probably not an entire horse skull. From the height of the enamel part remaining, it can be said that the equid was neither young nor old.

Pyre-site BF1/BF16, BL7, B204

Fragment of right canid mandible, edentate, broken through socket of canine and premolar 3. Has the sockets of premolars 1 and 2. The bone is white and calcined from burning. This is probably a fragment of dog mandible from an animal of quite small size (bigger than a lap dog, smaller than a labrador). Rather close-spaced tooth sockets suggest a fairly short-faced animal.

Chamber CF42, C756

Many fragments of equid molar, probably horse. These include four upper right premolars or molars. The remaining fragments represent at least one and probably two further teeth, likely to be from the same tooth row, so that this was probably whole when discarded.

TABLE 59: FAUNAL REMAINS

Feature	*Context*	*Finds number*	*Weight (g)*	*Description*
AF25	Chamber	A512	4	4 fragments of tooth enamel in poor condition, large mammal, probably burnt, and 2 unidentified fragments.
AF25	Chamber	A522	1	3 amorphous bone fragments. Very light weight and texture suggestive of human bone but reliability is low.
AF25	Chamber	A528	4	A fragment of pig molar, burnt.
AF31	Enclosure ditch	A445	1	14 fragments of tooth enamel in very poor condition (cattle?), probably burnt.
BF1	Pyre-site	B79, BL6	1	A few fragments of burnt animal bone, including a ?sheep carpal.
BF6	Chamber	B97	102	64+ tooth fragments, probably horse. Mostly enamel flakes in very poor condition but including parts of at least 3 upper molars, probably burnt (see separate note)
BF16	Pyre-site	B204, BL7	0.6	Fragment of right canid mandible, burnt (see separate note)
BF40	Enclosure ditch	B1157	27.3	Approximately 70 pieces of rabbit bone from a single individual. Material is in poor condition and presumably intrusive in the LIA/ERB context.
BF64	Warrior's burial	B1132	6	2 fragments of large mammal bone (unidentifiable) and a fragment of a lower sheep or goat molar. From spoil heap.
BF64	Warrior's burial	B1172	1	2 fragments of tooth, probably cattle. From spoil heap.
BF192	Pit	B1182	90	100+ pieces of bone from at least 2 mature rabbits. Mainly skull, mandible and limb bones.
CF4	Enclosure ditch	C1424	1	Damaged small mammal (rabbit-sized) vertebra. Probably intrusive.
CF6	Enclosure ditch	C55, CL29	4	Approximately 33 fragments and flakes of tooth enamel, large mammal.
CF6	Enclosure ditch	C1295,	8	Approximately 14 larger fragments of tooth enamel, probably sheep or goat, in CL126 very poor condition plus many smaller flakes. May have been burned.
CF42	Chamber	C756	178	Approximately 150+ fragments and enamel flakes from 5 or 6 horse teeth, mostly upper molars, in very poor condition and probably burnt (see separate note). Very degraded pieces of maxilla/mandible may also be present (246g of degraded material).
CF250	Pit	C1391, CL175	4	Approximately 17 fragments of tooth enamel in very poor condition, large mammal.
U/S	U/S	A15	1	A fragment of a large-sized bird coracoid (immature).
U/S	U/S	A45	4	A fragment of large mammal rib which has been chopped or sawn through.

THE PLANT MACROFOSSILS (TABLES 60–1)

By Peter Murphy and Val Fryer

Excavation and sampling were intermittent (related to phases of commercial gravel extraction), and there was no overall defined sampling strategy for the site. However, the majority of feature fills consisted of very clean sandy gravel, and sampling was therefore focused on deposits that appeared to contain concentrations of charred plant material. Subsequent sample treatment reflects changing practice in the 1990s: the samples collected before 1992 were fully quantified despite the low densities of material, whereas those examined later were assessed, but were not thought to merit quantification. A report on thirteen bulk samples collected up to 1992 was prepared by one of us (Murphy 1992). Later, 33 further bulk samples were rapidly appraised by Val Fryer, who subsequently assessed fourteen of them in detail (Fryer, unpublished). This report presents a synthesis of the two reports.

Charred plant material was separated by water flotation, using 0.5 mm collecting meshes throughout. Up until 1992, machine flotation was employed; thereafter manual flotation. The non-floating residues were wet-sieved on a 0.5 mm mesh, and small artefacts and cremated bone fragments >2 mm were separated. The dried flots were examined under a binocular microscope at magnifications of up to ×16. Nomenclature follows Stace 1997. The results are given in TABLES 60–1.

Samples from pits certainly or possibly dated to the Late Neolithic or Early Iron Age (TABLE 60) included charcoal, charred nutshell fragments of hazel (*Corylus avellana*), and fruitstones of hawthorn (*Crataegus monogyna*) and sloe (*Prunus spinosa*). There were no charred remains of cereals or arable weeds.

Bulk samples from Middle Iron Age pits, mainly in Enclosure 2 (TABLE 61), included low densities of charred cereal grains and chaff, of emmer (*Triticum dicoccum*), spelt (*Triticum spelta*), and barley (including six-row barley, *Hordeum vulgare*). Remains of oats (*Avena*) were also present, but the material did not show features that would have permitted identification to a wild or cultivated species. Fruits and seeds of arable weeds, particularly fat hen (*Chenopodium album*) and brome grass (*Bromus* sp.) were associated. There were a few remains of wetland plants, with hazel nutshell fragments. Charcoal occurred in variable quantities, together with other indeterminate charred plant macrofossils, and charred and vitrified material thought to be mainly of plant origin. Unburnt bone had not survived, but small scraps of burnt/cremated bone were noted. The material from these samples is thought to indicate settlement activity. The small coal fragments present are likely to be intrusive, relating to 19th-/20th-century steam ploughing.

The remaining samples were from contexts associated with burials or their enclosures (TABLE 61). Within Enclosure 3, the pyre deposit BF16/BL5 (B72) included wood charcoal with charred fragments of indeterminate tubers, rhizomes and monocotyledonous stem fragments, moss stem fragments and fruits and seeds of heath grass (*Danthonia decumbens*) and the herb blinks (*Montia fontana*). This points to damp, partly flushed, acid grassland, presumably growing locally on leached gravel-based soils. Assemblages of grassland plants and rhizomatous material commonly occur in Bronze Age cremation deposits (*e.g.* Murphy 1990a), but have also been reported from another Late Iron Age 'pyre-pit' at Baldock, Hertfordshire (Murphy 1990b). Possible interpretations are that the charred plant material represents plants uprooted for kindling or vegetation charred *in situ* beneath a pyre. Additionally, Dr Allan Hall (pers. comm.) raised the possibility that the material might represent charred residues from burnt turves. Turf as a component of grave fills is evidenced at Stanway and Folly Lane, Verulamium (Wiltshire 1999). It seems to have been commonly associated with high-status burials of this period. It might also have been used as a material for pyre construction. A somewhat similar assemblage of charcoal with rhizomatous material came from the ?cremation pit CF415 (CL178) cutting the enclosure ditch of Enclosure 2, although there were no identifiable seeds nor stem fragments in this sample (TABLE 61).

A sample from chamber BF6 (B129) in Enclosure 3 was from planking in the chamber (p. 117). It included some small charcoal fragments, but most of the material recovered by

flotation comprised black to reddish-brown wood fragments preserved by ferrimanganiferous replacement. This material was not charred. Charcoal fragments were present, but at a density which represents the 'background scatter' of charcoal to be expected in any archaeological context. Preservation was mainly due to impregnation with minerals leached down through the gravel fill of the chamber pit.

Samples from Enclosure 5 were from the shaft CF23 (CL122 and CL123) and the pit CF66 (CL74/5) which cut into the fill of the enclosure ditch of Enclosure 5 (TABLE 61). Charred cereal and crop plant remains were present, but at exceedingly low densities. Reliable interpretation is impossible. The consistent presence of charred fruits and nuts of trees and shrubs is unusual. These include hawthorn (*Crataegus monogyna*), sloe (*Prunus spinosa*), bullace (*Prunus domestica* subsp. *insititia*) and oak (*Quercus* sp.). Charred indeterminate buds were also present, together with wood charcoal. The remains of trees and shrubs were not abundant, yet it is rare to find charred remains of such plants at all in samples from Late Iron Age and Roman settlements. A simple functional interpretation might be that this material represents charred residues from bonfires after hedge trimming. However, given the nature of the site, and also that only three samples were examined from Enclosure 5, yet all three included fruits and nuts of trees and shrubs, some special significance might reasonably be attached to this material.

TABLE 60: PLANT MACROFOSSILS AND OTHER REMAINS FROM LATE NEOLITHIC AND ?EARLY IRON AGE CONTEXTS
(× = 1–10 specimens; ×× = 11–100 specimens; ××× = 100+ specimens)

	Late Neolithic		**?Early Iron Age**	
Feature no.	AF16	AF16	AF30	AF30
Find no.	A113	A208	A432	A460
Context type	pit		pit	
Enclosure	n of E1	n E1	1	1
Trees and shrubs				
Corylus avellana L.				3(d)
Crataegus monogyna Jacq.				3
P. spinosa L.				1
Charcoal	×××	××	×	×××
Heathland plants				
Indeterminate seeds etc.				1
Other material				
Cremated/burnt bone			×	
Sample volume (litres)	10.5	9.5	13	7.5
% flot sorted	25	50	100	25

TABLE 61: CHARRED PLANT MACROFOSSILS AND OTHER REMAINS FROM MIDDLE IRON AGE TO LATE

	Middle Iron Age								
Feature no.	*AF22*	*AF22*	*AF27*	*AF38*	*AF56*	*CF21*	*CF21*	*CF168*	*CF169*
Layer no.						*CL28*	*CL28*		
Find no.	*A388*	*A461*	*A419*	*A508*	*A577*				
Context type	*pit*		*pit*	*pit*	*pit*	*pit*		*pit*	*pit*
Enclosure	*2*	*2*	*1*	*2*	*1*	*2*	*2*	*2*	*2*
Cereals									
Triticum dicoccum Schubl. (gb)	2			1		x	×	×	
Triticum dicoccum Schubl. (spf)	1								
Triticum spelta L (gb)	3			1				×	
Triticum spelta L (spf)								×	
Triticum spp. (ca)	19			3	6	××	×	×	×
Triticum spp. (gb)	17					××		×	×
Triticum spp. (spb)	11							×	
Hordeum vulgare L. (ca)					4(a)				
Hordeum spp. (ca)	3			2		×	×		cf
Hordeum/Secale (rn)						×	×	××	
Cereal indet. (ca. fr.)	×	×		×	×	×	×	×	×
Cereal indet. (ca)	28			6	6	×	×	××	×
Cereal/large Poaceae (cn)		1			1	×			
Dryland herbs (weeds/grassland)									
Asteraceae indet.									
Atriplex sp.						×			
Avena sp. (a. fr)	×					××		×	
Avena sp. (ca)	13			4	1	××	×	×	
Avena sp. (fb)							××	××	
Avena/Bromus	6			4	1				
Brassicaceae indet.							×		
Bromus mollis/secalinus	18	1		5		××	××	××	×
Chenopodiaceae indet.	13			5		×	×	×	
Chenopodium album L.	44(b)	1		27(b)	2	×	×	×	
Fabaceae indet.				3					
Fallopia convolvulus (L.) A. Love	3	1				×	×	×	
Galium aparine L.									
Medicago/Trifolium/Lotus-type							×	×	
Persicaria sp.	3					×	×	×	
Plantago lanceolata L.				2		×	×	×	
Poaceae indet.	2			2		×	×	×	
Polygonaceae indet.						×	×		
Polygonum aviculare L.					1	×			
cf. *Potentilla* sp.							×		
Rumex acetosella L.		1		1		×		×	×
Rumex spp.	1			1		×	×	x	
Stellaria graminea L.									
Vicia/Lathyrus sp.					1	×	×		
Wetland plants									
Carex sp.	1					×	×	×	
Eleocharis sp.								x	
Montia fontana subsp. minor Hayw.				1		×	×		
Trees and shrubs									
Corylus avellana L.					1(d)	×		××	
Crataegus monogyna Jacq.									
Prunus sp.									
P. domestica subsp. *Insititia* L.									
P. spinosa L.									
Quercus sp. (cupule frag.									
Quercus sp. (immature acorn)									
Sambucus nigra L.									
Charcoal	××	×	×××	×	××	×××	×××	×××	×××
Heathland plants									
Danthonia decumbens (L.) DC									
Ericaceae indet. (flo.)									
Other plant macrofossils									
Moss stem fragments									
Root/stem/rhizome						×	×	×	
Tuber fragment						×			
Buds									
Indeterminate fruitstone frags.									
Indeterminate inflorescence fragments							×	×	
Indeterminate seeds etc.	3	1		1	1		×	×	×
Mineral replaced wood									
Other material									
Black porous 'cokey' material						××	××	×	××
Black tarry material						×	×		×
Siliceous globules						×	×		
Vitrified material							×	×	
Small coal fragments						×	×	×	××
Cremated/burnt bone	×	×			×				×
Sample volume (litres)	12	7	3	11.5	6	26	20.5	36	26
% flot sorted	100	100	25	100	100	50	100	100	50

IRON AGE/EARLY ROMAN CONTEXTS (× = 1–10 specimens; ×× = 11–100 specimens; ××× = 100+ specimens)

					?MIA	***LIA***	***LIAlearly Roman***					
CF170	*CF171*	*CF173*	*CF250*	*CF250*	*AF44*	*CF415*	*BF6*	*BF16*	*BF17*	*CF23*	*CF23*	*CF66*
	CL158	*CL169*	*CL175/6*	*CL176*		*CL178*		*BL5*		*CL123*	*CL122*	*CL74/5*
					A498		*B129*	*B72*	*B144*	*C1418*	*C1416*	
pit	*pit*	*pit*	*pit*		*pit*	*pit*	*chamber*	*pyre site*	*pit*	*shaft*		*pit*
2	*2*	*2*	*2*	*2*	*2*	*2*	*3*	*3*	*3*	*5*	*5*	*5*
	×		×	×								
				×								
	×	×	×	×		×						
			×									
			×									
		×	×			×						
×	×		×	×								
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								6				
						×						
								×				
×	×	××	×	×		×××		×		×	×	×
						×××		2				
×										××	×	×
						×				×		
×	×	×				×		4	1			×
							×					
×	×	×	×			×				×		×
×						×						
	×					×						
	×					×						
×	×	×	×									
			×	×		×		×				
25	24.5	13	11	20.5	2.5	25	20	14	16.5	20	2	4
50	100	100	100	100	25	25	100	25	3.125	50	100	100

THE WOOD AND LEATHER REMAINS (TABLES 62–7)

By Anne-Maria Bojko and Nina Crummy, incorporating information from Ashok Roy

INTRODUCTION *(AMB)*

Despite the aggressive soil conditions, the preservation of organic material at Stanway was especially rich for this district. The following categories of material were identified: wood, textile, leather, and plant remains, including moss and grasses. Only the wood and leather are described here, the other materials have been discussed by the relevant specialists elsewhere in the volume. While some of the organic matter has been preserved due to mineralisation by iron salts, most has survived in an unmineralised state owing to its proximity to copper-alloy objects.

The wood divides into three groups: artefacts, structural remains, and charcoal. The latter forms the bulk of the assemblage, and has been recovered from the Middle Iron Age enclosure (Enclosure 2) and from all the funerary enclosures, although most comes from Enclosure 5, the ditches and other features that were the most intensively excavated. There is a distinct difference between the assemblages from Enclosures 2 and 5, with hazel the most commonly occurring species at the former, ash at the latter.

PRESERVATION *(AMB)*

Wood was recovered in the three following states: unaltered, mineralised, and charcoal. A distinction can be made between wood that has been deliberately worked in order to make an artefact or structure and wood that has been used in an unaltered state, *i.e.* for fuel in the funeral pyres. The vast majority of charcoal specimens examined were twig or branch wood.

Unaltered wood is invariably preserved only where it has been in direct contact with copper-alloy artefacts in burial contexts, doubtless due to the biocidal effect of copper alloy, and several features have produced both fragments of oak planking and of a maple game board in this state. While the wood is compressed and desiccated by the burial conditions, it is generally well enough preserved to allow identification.

Mineralised wood was preserved because of its proximity to iron and is mainly found on the nails from the graves and chambers. Positive identification has not been undertaken on this category of material. Unmineralised wood was also found in close proximity to nails and it may be assumed that it forms part of the same structure.

Charcoal was principally found in the enclosure ditches, and some was also recovered from burials and other features inside the enclosures. The state of preservation of the charcoal varies considerably, from very good to poor. It is possible that some of the poorly preserved specimens are wood which was quite degraded prior to burning. This is probably true of some of the specimens of oak, which appear very flattened and distorted.

Leather was found only in CF47, in contact with both the copper-alloy fittings on the game board (CF47.20a and CF47.20c) and two of the copper-alloy rings (CF47.24f and CF47.24g).

METHOD OF EXAMINATION *(AMB)*

Samples of unaltered wood were sectioned with a razor blade to provide thin sections of transverse, tangential longitudinal and radial longitudinal planes. Charcoal was fractured along these planes. The structures were examined using transmitted light for the thin sections and incident light for the charcoal.

RESULTS *(NC from identifications by AMB)*

Enclosure 2 (TABLE 62)

Only charcoal fragments, mostly twigs, were recovered from the Middle Iron Age enclosure. Most came from the enclosure ditches, but a few pits also produced fragments (TABLE 62). They may be debris from hedge fires or the discarded remnants of fuel cleared from hearths, ovens or furnaces.

TABLE 62: CHARCOAL FROM ENCLOSURE 2

Find	*Feature*	*Context description*	*Species*	*Common name*
C13	CF6	enclosure ditch	*Hedera helix*	ivy
C13	CF6	enclosure ditch	*Fraxinus excelsior*	ash
C20	CF6 Sx 1	enclosure ditch	*Corylus avellana*	hazel
C20	CF6 Sx 1	enclosure ditch	*Betula* sp.	birch
C20	CF6 Sx 1	enclosure ditch	*Quercus* sp.	oak
C25	CF6 Sx 1	enclosure ditch	*Corylus avellana*	hazel
C26	CF6 Sx 1	enclosure ditch	*Corylus avellana*	hazel
C47	CF6 Sx 1	enclosure ditch	probably *Acer* sp.	maple
C55	CF6 Sx 2	enclosure ditch	*Ulmus* sp.	elm
C59	CF6 Sx 1	enclosure ditch	*Betula* sp.	birch
C61	CF6 Sx 1	enclosure ditch	*Betula* sp.	birch
C61	CF6 Sx 1	enclosure ditch	*Corylus avellana*	hazel
C61	CF6 Sx 1	enclosure ditch	?bark	–
C62	CF6 Sx 1	enclosure ditch	*Betula* sp.	birch
C75	CF6 Sx 1	enclosure ditch	*Corylus avellana*	hazel
C1228	CF6	enclosure ditch	*Quercus* sp.	oak
C1253	CF6	enclosure ditch	*Corylus avellana*	hazel
C1259	CF6 Sx 9	enclosure ditch	*Quercus* sp.	oak
C1459	CF6	enclosure ditch	*Corylus avellana*	hazel
C1459	CF6	enclosure ditch	*Fraxinus excelsior*	ash
C1459	CF6	enclosure ditch	*Quercus* sp.	oak
C1469	CF6	enclosure ditch	*Fraxinus excelsior*	ash
C1469	CF6	enclosure ditch	*Ulmus* sp.	elm
C1469	CF6	enclosure ditch	*Corylus avellana*	hazel
C1469	CF6	enclosure ditch	*Quercus* sp.	oak
C1480	CF6	enclosure ditch	Maloideae or *Acer*	fruitwoods or maple
C1446	CF21	pit	*Acer* sp.	maple
C1446	CF21	pit	*Quercus* sp.	oak
C1455	CF21	pit	*Quercus* sp.	oak
C1460	CF21	pit	*Quercus* sp.	oak
C–	CF21	pit	*Quercus* sp.	oak
C1264	CF168	pit	*Quercus* sp.	oak
C1429	CF168	pit	*Quercus* sp.	oak
C1329	CF171	pit	*Quercus* sp.	oak
C1431	CF173	pit	*Quercus* sp.	oak

Six or seven tree species are represented by the charcoal in the ditch, all native. Of 24 identified fragments, eight were of hazel (33 per cent), five of oak (21 per cent), four of birch (17 per cent), three of ash (13 per cent), two of elm (8 per cent), and there was also one piece of maple and another of either a fruitwood or maple. One fragment of ivy was also found. This group could come from a mixed species hedge, but the absence of large fragments suggests it may be the result of random collection of brushwood for fuel, and the preponderance of hazel and oak may be caused by the burning of offcuts of coppiced wood used for hurdles, fences, or wattle-and-daub structures. The absence of species preferring wet conditions such as alder, willow and poplar suggests that most of the wood came from trees in the immediate vicinity of the site, which lies on a plateau above the damp soils of the Roman River valley and its small tributary streams.

In contrast to the range of species present in the enclosure ditch, all the charcoal from the pits is of oak except for a single fragment of maple. The latter and four of the oak fragments (out of eight) came from CF21, a pit that also produced a considerable quantity of burnt or scorched structural clay (pp. 36–8). These pieces may therefore be all that remains of wattles from the same structure. The three other pits, CF168, CF171 and CF173, also produced

fragments of structural clay. Although slight, this deposition pattern may indicate a preference for the use of coppiced oak for wattles (Gale 1996, 262; Straker 2000, 513).

Enclosure 1 (TABLE 64)

Only two fragments of charcoal came from Enclosure 1, both from the section across the north ditch AF17 (TABLE 64). One piece is ash and the other oak.

Enclosure 3 (TABLES 63–4)

Wood associated with the very fragmentary copper-alloy game board fittings in BF6 could not be positively identified (TABLE 63). However, it appears to be ring porous, and the rays are uniseriate and homogeneous, which suggests that it is oak (*Quercus* sp.). It is certainly not maple, which was used for the game boards in BF64 and CF47.

The wood preserved in the copper-alloy fittings from the game board in BF64 is maple (*Acer* sp.). If this is the native field maple, then it is a tree that flourishes today in the Stanway area and wider region. The wood works well and is particularly good for turning. Large field maples are rarely found in England today, but the fact that maple was the wood of choice for all the identifiable wooden artefacts found at Stanway suggests that there was no shortage of good-sized boards from large trees in the mid 1st century A.D. Alternatively, the game board may have been worked from imported timber, or was imported ready-made.

Fragments of wood found beneath the handled basin in BF64 are of oak (*Quercus* sp.), and might be the remains of a wooden platter or tray.

Two fragments of charcoal came from the ditches of Enclosure 3, both of hazel, and two fragments of oak and one of ash came from BF17, a feature that also produced heat-affected metalwork (TABLE 64). The latter group can be assumed to be pyre debris, the former may be either from pyres or from fires associated with funerary feasts.

Charcoal, again probably pyre debris but not found with the cremated bone, also came from two of the burials in this enclosure, BF64 and BF67 (TABLE 63). All the pieces recovered are of oak.

Enclosure 4 (TABLE 64)

Four fragments of charcoal came from the southern half of the east ditch of Enclosure 4, two of oak and one each of elm and ash. The ditches of the ?mortuary enclosure produced a fragment of ash and a fragment of oak (TABLE 64).

Enclosure 5 (TABLES 63, 65–7)

The well-furnished burial CF47 produced several unaltered wood samples (TABLE 63), some from grave goods, others from the funerary structure. Fragments of a game board of maple (*Acer* sp.) were preserved in association with its copper-alloy fittings, and other organic materials were also found in association with the board. On the underside were traces of a straw-like material covering the outer surface of the copper-alloy fittings and extending onto the board itself. When the wood was removed from the metal, a dark smooth substance was observed on the surface of the wood. This has no obvious structure when viewed under low-power magnification and is probably leather. Similar fragments were associated with the hinge. Also observed on the wood of the board were small patches of a powdery red pigment (C939, SF37). This was analysed by Ashok Roy of the National Gallery and found to be a definite paint layer of natural earth pigment (report in archive).

Maple was also used for a wooden board or tray decorated with copper-alloy studs and sheet. Some of the wood from this object was also preserved beneath the strainer bowl in the grave.

Fragments of oak planks (*Quercus* sp.) were found covering the strainer bowl, on the handle of the saucepan, and over the game board, and also behind the rings that lay against the wall of the grave. Traces of the same red pigment found on the wood of the game board coated both sides of the oak fragments associated with the rings. Small fragments of leather loops were found surviving in contact with two of the rings.

TABLE 63: WOOD FROM BURIALS AND CHAMBERS IN ENCLOSURES 3 AND 5

Enclosure	*Find*	*Feature*	*Location in burial*	*Condition*	*Species*	*Common name*
3	B226	BF6	board of game board (with game board fittings BF6.24b)	unaltered	possibly *Quercus* sp.	oak
3	B–/1059–60	BF64	board with game board (with game board fittings BF64.29e)	unaltered	*Acer* sp.	maple
3	B1019	BF64	beneath the handled basin BF64.26	unaltered	*Quercus* sp.	oak
3	B1135	BF64	spoil heap	charcoal	*Quercus* sp.	oak
3	B1144	BF67/BF64	spoil heap	charcoal	*Quercus* sp.	oak
3	B1005	BF67	fill	charcoal	*Quercus* sp.	oak
5	C524	CL49/BF42	upper fill	charcoal	*Quercus* sp.	oak
5	C901–2/ 906–7	CF47	remains of ?grave cover CF47.41 (fragments on top of strainer bowl CF47.22)	unaltered	*Quercus* sp.	oak
5	C905	CF47	remains of ?grave cover CF47.41 (on top of handle of saucepan CF47.21)	unaltered	*Quercus* sp.	oak
5	C908/913/ 971/979	CF47	tray CF47.25 (with studs CF47.25 and sheet CF47.25 and beneath strainer bowl CF47.22)	unaltered	*Acer* sp.	maple
5	C915/996–999	CF47	board of game (with fittings CF47.20a)	unaltered	*Acer* sp.	maple
5	C938–9	CF47	with rings CF47.24	unaltered	*Quercus* sp.	oak

TABLE 64: CHARCOAL FROM ENCLOSURES 1, 3 AND 4

Enclosure	*Find*	*Feature*	*Context description*	*Species*	*Common name*
1	A592	AF17	north enclosure ditch	*Fraxinus excelsior*	ash
1	A592	AF17	north enclosure ditch	*Quercus* sp.	oak
3	B1102	BF4	east enclosure ditch	*Corylus avellana*	hazel
3	B1103	BF4	east enclosure ditch	*Corylus avellana*	hazel
3	B124	BF17	pit	*Quercus* sp.	oak
3	B142	BF17	pit	*Quercus* sp.	oak
3	B154	BF17	pit	*Fraxinus excelsior*	ash
4	B942	BF40	east enclosure ditch	possibly *Ulmus* sp.	elm
4	B970	BF40	east enclosure ditch	*Quercus* sp.	oak
4	B970	BF40	east enclosure ditch	*Fraxinus excelsior*	ash
4	C9	CF5	east enclosure ditch (south end)	probably *Quercus* sp.	oak
4	B586	BF30	east ditch of ?mortuary encl	*Fraxinus excelsior*	ash
4	B524	BF30/31	north/east ditch of ?mortuary encl.	*Quercus* sp.	oak
4	B1159	BF180	?natural feature	probably *Quercus* sp.	oak

A large number of charcoal fragments, presumably debris from pyre fuel or from funerary feasting, were recovered from the north ditch of Enclosure 5, with a few also from a patch of burning in the west ditch and two from the south ditch (TABLE 65). The north ditch was shared with Enclosure 4 and is close to the ?mortuary enclosure BF32, and therefore these fragments may relate to the funerary rites in either enclosure. The north and south ditches produced charcoal from four native species: ash (42%), oak (27%), hazel (12%), and elm (12%), and one fragment each of one or two others, *Prunus sp.* and either hazel or alder. In contrast, the charcoal in the west ditch was only of oak, but also included a ?plant stem and a piece of bark.

TABLE 65: CHARCOAL FROM THE DITCHES OF ENCLOSURE 5

Find	*Feature*	*Context description*	*Species*	*Common name*
C6	CF1	north enclosure ditch	*Fraxinus excelsior*	ash
C7	CF1 Sx 1	north enclosure ditch	*Quercus* sp.	oak
C7	CF1 Sx 1	north enclosure ditch	*Fraxinus excelsior*	ash
C8	CF1 Sx 1	north enclosure ditch	*Fraxinus excelsior*	ash
C10	CF1 Sx 1	north enclosure ditch	*Fraxinus excelsior*	ash
C11	CF1 Sx 1	north enclosure ditch	*Fraxinus excelsior*	ash
C11	CF1 Sx 1	north enclosure ditch	*Quercus* sp.	oak
C12	CF1 Sx 1	north enclosure ditch	*Corylus avellana*	hazel
C18	CF1 Sx 1	north enclosure ditch	*Fraxinus excelsior*	ash
C71	CF1 Sx 4	north enclosure ditch	*Quercus* sp.	oak
C139	CF1 Sx 6	north enclosure ditch	*Quercus* sp.	oak
C139	CF1 Sx 6	north enclosure ditch	*Ulmus* sp.	elm
C139	CF1 Sx 6	north enclosure ditch	*Fraxinus excelsior*	ash
C146	CF1 Sx 6	north enclosure ditch	*Quercus* sp.	oak
C147	CF1 Sx 7	north enclosure ditch	*Quercus* sp.	oak
C147	CF1 Sx 7	north enclosure ditch	*Fraxinus excelsior*	ash
C158	CF1	north enclosure ditch	*Fraxinus excelsior*	ash
C158	CF1	north enclosure ditch	?folded bark	–
C158	CF1	north enclosure ditch	*Corylus avellana*	hazel
C158	CF1	north enclosure ditch	*Ulmus sp.*	elm
C158	CF1	north enclosure ditch	probably *Prunus* sp.	plum *etc*
C1364	CF1	north enclosure ditch	*Fraxinus excelsior*	ash
C1365	CF1	north enclosure ditch	*Ulmus* sp.	elm
C1377	CF1	north enclosure ditch	*Quercus* sp.	oak
C1383	CF1 Sx 11	north enclosure ditch	*Fraxinus excelsior*	ash
C50	CF3	south enclosure ditch	*Corylus avellana*	hazel
C1397	CF3 Sx 11	south enclosure ditch	*Corylus* or *Alnus*	hazel or alder
C111	CF66	burning in west enclosure ditch	*Quercus* sp.	oak
C111	CF66	burning in west enclosure ditch	?plant stem	–
C116	CF66	burning in west enclosure ditch	*Quercus* sp.	oak
C116	CF66	burning in west enclosure ditch	?bark fragment	–
C173	CF66	burning in west enclosure ditch	*Quercus* sp.	oak

All the ditches of the ?mortuary enclosure CF43–6 in Enclosure 5 also contained many charcoal fragments; most were found on the east side, perhaps the result of the prevailing west wind (TABLE 66). Five native species are present, with ash and oak occurring in exactly the same proportions as in the main enclosure ditches, 42% and 27% respectively, followed by small quantities of birch, alder and hazel. The similarity between the principal components of the two assemblages may show not only the local species available for fuel collection, but also deliberate proportional selection of various woods for a well-managed fire. The high, and seemingly consistent, proportions of ash and oak, which are both good fuel woods (Gale 1996, 262), may therefore be deliberate. The charcoal fragments from the burial pit at Folly Lane, Verulamium, also contained much ash and oak, as well as a similar amount of hazel and a quantity of blackthorn (Gale 1999, 393).

In the other features in Enclosure 5, many of them probably natural, the charcoal is predominantly oak. A pit or hearth near the ?mortuary enclosure, CF64, produced a single fragment of birch, also a good fuel wood (TABLE 67).

TABLE 66: CHARCOAL FROM THE ?MORTUARY ENCLOSURE CF43–6 IN ENCLOSURE 5

Find	*Feature*	*Context description*	*Species*	*Common name*
C178	F43 Sx 4	north ditch	*Fraxinus excelsior*	ash
C180	F43 Sx 4	north ditch	*Fraxinus excelsior*	ash
C180	F43 Sx 4	north ditch	*Quercus* sp.	oak
C130	F44 Sx 2	east ditch	*Fraxinus excelsior*	ash
C130	F44 Sx 2	east ditch	*Quercus* sp.	oak
C134	F44 Sx 3	east ditch	*Quercus* sp.	oak
C134	F44 Sx 3	east ditch	*Fraxinus excelsior*	ash
C145	F44 Sx 3	east ditch	*Quercus* sp.	oak
C145	F44 Sx 3	east ditch	*Alnus* sp.	alder
C145	F44 Sx 3	east ditch	*Fraxinus excelsior*	ash
C143	F44 Sx 4	east ditch	*Quercus* sp.	oak
C143	F44 Sx 4	east ditch	*Fraxinus excelsior*	ash
C143	F44 Sx 4	east ditch	*Alnus* sp.	alder
C179	F44 Sx 6	east ditch	*Fraxinus excelsior*	ash
C179	F44 Sx 6	east ditch	*Quercus* sp.	oak
C181	F44 Sx 6	east ditch	*Fraxinus excelsior*	ash
C181	F44 Sx 6	east ditch	*Quercus* sp.	oak
C190	F44 Sx 7	east ditch	*Betula* sp.	birch
C142	F45 Sx 2	south ditch	*Fraxinus excelsior*	ash
C191	F45 Sx 6	south ditch	*Betula* sp.	birch
C191	F45 Sx 6	south ditch	*Fraxinus excelsior*	ash
C192	F45 Sx 6	south ditch	*Betula* sp.	birch
C136	F46 Sx 4	west ditch	probably *Fraxinus*	ash
C170	F46 Sx 5	west ditch	possibly *Alnus* or *Betula*	alder or birch
C170	F46 Sx 5	west ditch	*Corylus avellana*	hazel
C170	F46 Sx 5	west ditch	*Quercus* sp.	oak
C170	F46 Sx 5	west ditch	*Hedera helix*	ivy

TABLE 67: CHARCOAL FROM OTHER FEATURES IN ENCLOSURE 5

Find	*Feature*	*Context description*	*Species*	*Common name*
C54	CF22 Sx 1	linear feature, probably natural	*Quercus* sp.	oak
C78	CF23	shaft/post-pit	*Quercus* sp.	oak
C80	CF23	shaft/post-pit	possibly *Corylus*	hazel
C104	CF23	shaft/post-pit	*Quercus* sp.	oak
C118	CF64	pit/hearth near ?mortuary encl	*Betula* sp.	birch
C128	CF77	pit	*Corylus avellana*	hazel
C172	CF96 Sx 13	slot	*Prunus* sp.	plum etc.
C195	CF96	slot	probably *Quercus*	oak
C51	CF13	?natural feature	*Quercus* sp.	oak
C52	CF14	?natural feature	*Quercus* sp.	oak
C1374	CF211	?natural feature	*Quercus* sp.	oak
C1374	CF211	?natural feature	*Fraxinus excelsior*	ash
C1401	CF360	?natural feature, probable tree hollow	2 pieces *Quercus* sp.	oak

PALYNOLOGICAL ANALYSIS OF THE ORGANIC MATERIAL LODGED IN THE SPOUT OF THE STRAINER BOWL (FIGS 155–6; TABLES 68–70)

By Patricia E.J. Wiltshire

The plug of organic debris retrieved from the spout of this container (CF47.22) was initially examined by Peter Murphy using scanning electron microscopy, but it appeared to consist of an amorphous mass of organic material. To maximise the information, it was decided to sacrifice a proportion of the plug in order to carry out palynological analysis of the matrix.

Standard preparation procedures were used to process the sample (Dimbleby 1985). It was acetolysed and treated with hydrofluoric acid, and then lightly stained with 0.5% safranine and mounted in glycerol jelly. Pollen counting was carried out with a Zeiss phase contrast microscope at ×400 and ×1000 magnification. Counts for pollen and plant spores exceeded 500. Pollen and plant spores were expressed as percentages of total land pollen and spores (tlp/s). Palynological nomenclature follows that of Bennett *et al.* 1994 and Moore *et al.* 1991. Cereal-type pollen refers to all Poaceae grains >40 μm with annulus diameters >8 μm (Anderson 1979; Edwards 1989). Botanical nomenclature follows that of Stace (1997).

The results are shown in TABLES 68–70, and FIGURES 155–6. TABLE 68 shows the percentage of total land pollen and spores (tlp/s) of all the palynological taxa found in the plug. These have been arranged according to plant family and probable taphonomic status. TABLE 69 shows the proportions of the various taxa represented in the plug, excluding artemisia. TABLE 70 gives a list of chemical compounds extracted from *Artemisia absinthium* and *A. vulgaris*. FIGURE 155 is a pie chart showing the proportions of artemisia to 'bee flower' pollen and that of probable adventive pollen. FIGURE 156 is a pie chart illustrating the proportions of pollen from various 'bee flowers'.

The data shown in TABLE 68 are quite startling in their degree of bias towards a limited range of palynological taxa. They demonstrate quite clearly that the plug of organic material represents the collection of a specific range of plant material by one or more agencies. The assemblage of taxa could not, in any way, represent the natural pollen rain. In the first place, very few plant families were represented, the major ones being Asteraceae (daisy family), Fabaceae (clover, pea, and bean family), Lamiaceae (white deadnettle family), and Rosaceae (rose family). Secondly, the assemblage was overwhelmingly dominated by artemisia (mugwort

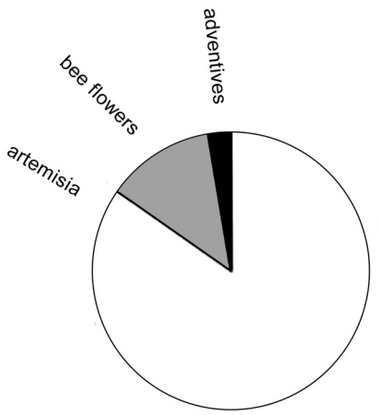

FIG. 155. Doctor's burial CF47 strainer bowl: the proportions of artemisia to 'bee flower' pollen and that of probable adventive pollen from the plug of organic debris

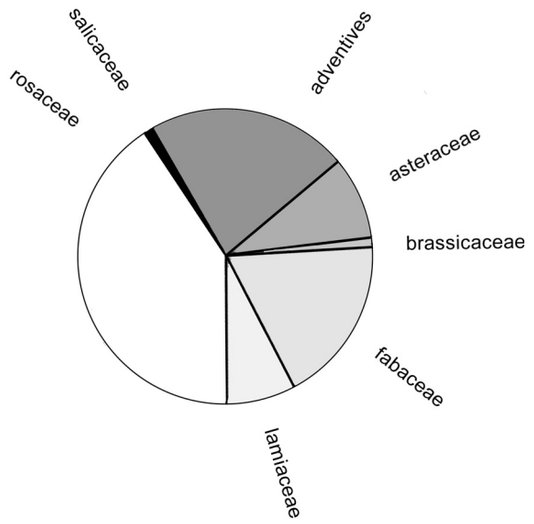

FIG. 156. Doctor's burial CF47 strainer bowl: the proportions of various bee flower pollen from the plug of organic debris

TABLE 68: THE PERCENTAGES OF TOTAL LAND POLLEN AND SPORES (TLP/S) OF ALL THE PALYNOLOGICAL TAXA FOUND IN THE PLUG

Pollen taxa	*Possible/probable plant taxa*	*% total pollen*
Medicinal plant		
Artemisia	mugwort/wormwood	84.7
Bee plants		
Aster-type	daisy/ragwort/coltsfoot/fleabane	0.8
Asteracaea (fenestrate)	dandelion-like plants	0.6
Sinapis type	bitter cresses/lady's smock/hedge mustard	+
Ononis (cf.)	rest harrow	0.8
Trifolium type	clovers/medicks	+
Vicia type	vetches	1.4
Fabaceae indet.	pea/bean/clover/broom	+
Lamium (cf.)	white and red dead nettles	0.6
Stachys type	woundworts	+
Crataegus (cf.)	hawthorn	+
Rubus (cf.)	bramble	5.8
Sorbus (cf.)	rowan/white beam	+
Salix	willow	+
Adventives		
Quercus	oak	+
Cereal type	cereal	+
Plantago lanceolata	ribwort plantain	0.8
Poaceae	grasses	2.0

or wormwood) while most of the rest of the assemblage were from plants that are characteristically pollinated by insects, particularly bees.

Insect-pollinated plants rarely dominate pollen assemblages in samples from natural habitats, or from archaeological features where sediments have accumulated over periods of time. Their pollen production is characteristically low, and dispersal is poor (Faegri and Iversen 1989). In very many instances, the plant may be represented in the pollen record only if its tissues have been incorporated into a deposit, or if it has been introduced artificially (personal observation).

Artemisia is considered to be wind-pollinated, but its representation in the air is generally as low as that for many insect-pollinated plants, and it is restricted to a short period between late July and August (Proctor *et al.* 1996). Of the other taxa represented, the only taxa usually well represented in the pollen rain are those listed as adventives. Even here, however, cereal pollen does not travel far from the plant.

ARTEMISIA

There are four species of artemisia native to Britain, the most common and widespread being *A. vulgaris* (mugwort) and *A. absinthium* (wormwood) (Stace 1997). In Britain, both have their centres of distribution in the south but, today, mugwort is much more widespread than wormwood. Nevertheless, both species of artemisia are freely available in Essex and, presumably, would have been so in the past. Unfortunately, the two species cannot be differentiated through pollen morphology (certainly not by light microscopy), so it is not possible to say which artemisia is present in the copper-alloy vessel. Indeed, the organic plug might have contained a mixture of both.

The large concentration of mugwort/wormwood pollen suggests that considerable amounts of the plant (leaves and/or flowers) had been placed into the vessel. The archaeological evidence (surgical instruments) from the grave indicates that it was of a medical practitioner. It is likely, therefore, that herbal remedies were being administered as well as surgical treatments.

TABLE 69: THE PROPORTIONS OF THE VARIOUS TAXA REPRESENTED IN THE PLUG, EXCLUDING ARTEMISIA

Plant family	*% sum minus Artemisia*
Asteraceae	9.2
Brassicaceae	1.2
Fabaceae	18.4
Lamiaceae	7.8
Rosaceae	0.8
Salicaceae	1.3
Adventives	22.4

TABLE 70: THE CHEMICAL COMPOUNDS EXTRACTED FROM *ARTEMISIA ABSINTHIUM* AND *A. VULGARIS*

Compound	*Class of compound*	*Activity/comments*	*Artemisia species*
Vulgarin	Sesquiterpene lactone	Cytotoxic and anti-tumour	*A. vulgaris* (& many spp.)
Santamarin	Sesquiterpene lactone	Cytotoxic and anti-tumour	Many species
Desacetoxymatricarin	Sesquiterpene lactone	Cytotoxic and anti-tumour	Many species
Canin	Sesquiterpene lactone	Cytotoxic and anti-tumour	Many species
Alpha-Santonin	Sesquiterpene lactone	Anti-helminthic, ascaricidal, insect-deterrent, cytotoxic and anti-tumour	Many species
Beta-Santonin	Sesquiterpene lactone	Anti-helminthic but highly toxic	Many species
Absinthin	Sesquiterpene lactone	Main bitter principle (causes nervousness, convulsions, death)	*A. absinthium*
Artabsin	Sesquiterpene lactone	Converted to chamazulene on steam distillation (*see* below)	*A. absinthium*
Achillin	Sesquiterpene lactone	Converted to chamazulene on steam distillation (*see* below)	Several species
Chamazulene	Sesquiterpenoid	Anti-inflammatory, anti-pyretic	*A. absinthium*
Thujone	Monoterpenoid	Anti-helminthic (may cause convulsions)	*A. absinthium*
Camphor	Monoterpenoid	Rubefacient, mild analgesic, topical anti-pruritic, affects central nervous system (toxic to humans)	Many species
Naringen	Flavonone	Anti-bacterial, anti-fungal, anti-hepatotoxic, anti-spasmodic, anti-ulcer, inhibits serotonin, inhibits platelet aggregation	Many species
Axillarin	Flavonol	Anti-viral	Many species
Isochlorogenic acid b	Phenylpropanoid	Inhibits lipid peroxidation in mitochondria and microsomes of liver	Many species

Both species of artemisia have a long history in herbal medicine and have had uses as diuretics and treatments for, among other things, fevers, hysteria, problems associated with childbirth, epilepsy, jaundice, oedema, throat infections, bruising, gravel, and flatulence. They have also been used to counteract the effects of opiates, and as an antidote to poisoning by hemlock and toadstools. They have also been used as strewing herbs (to discourage fleas, moths, and other pests), as well as components of love potions. One of the most important and widespread uses of both species was for treating intestinal worm infestations, particularly those caused by nematodes such as roundworm, threadworm, and pinworm. A medicine was made by infusing the plant in hot water, the liquid filtered, and the filtrate administered orally to the patient. However, it has been noted that a 'spirit' infusion (probably in some alcoholic drink) was more effective (Grieve 1992, 556–8, 858–60).

This genus has been of considerable interest to modern biochemists and many active principles have been characterised. A list of known bioactive compounds that have been extracted from the aerial parts of artemisia is given in TABLE 70 (Harborne *et al.* 1999). It is of interest that many of the symptoms thought by herbalists to have been alleviated by application of the plant extracts, are actually caused by some of these active principles. When given in excess some are lethal, so ancient medical practitioners are likely to have been skilled in assessing appropriate dosage when medication involved oral administration.

All artemisia species are very bitter but *A. absinthium* is the bitterest herb known (Grieve 1992). It is not surprising, therefore, to find a significant percentage of the total pollen sum to be represented by bee-pollinated plants. The addition of honey to the mugwort/wormwood medicine would make it more palatable.

BEE FLOWERS

TABLES 68 and 69 show the range of pollen taxa other than artemisia in the plug from the spout of the copper vessel. Most of the plants represented in the assemblage are insect-pollinated and many produce typical 'bee flowers', particularly the Asteraceae, Fabaceae, and Lamiaceae. These families have evolved flowers where the rewards of pollen and/or nectar are hidden in the corolla of the flower so that only insects with specific tongue lengths can gain access to them (Proctor *et al.* 1996). However, excluding artemisia, the most frequent taxon represented in the plug was Rosaceae (rose family) with cf. *Rubus* (bramble) being the most abundant (38.2% of total pollen excluding artemisia). Rosaceous flowers are accessible to a wide range of insects and are frequently visited by bees, as are most of the flowers represented in TABLES 68 and 69.

ADVENTIVES

The plants included in this category are commonly found in the pollen rain, and their pollen is known to settle on many surfaces, including those of other plants. They may, therefore, be considered as 'contaminants' in this particular assemblage. Leaves, flowers, and stems can filter pollen out of the air, and a plant can often be coated with pollen from other species. It would be very difficult, therefore, to exclude them when collecting plant material for a specific purpose such as making medicine. It is not surprising to find the pollen of *Quercus* (oak), *Plantago lanceolata* (ribwort plantain), and Poaceae (grasses) because all are wind-pollinated and are high pollen producers. Cereals, on the other hand, have poor production and dispersal and their presence might indicate the proximity of cereal fields to the collected material.

INTERPRETATION

It seems highly likely that the owner of the copper-alloy vessel had collected artemisia plants and was in the practice of making infusions for some medical purpose. Considering the proven efficacy of many of the compounds produced by both mugwort and wormwood, it is reasonable to suggest that either or both of these plants were being used as treatment. Texts of herbalism such as that by Nicholas Culpeper (17th century) and M. Grieve (1992; first published 1931 and revised in 1973) list a wide range of ailments treated by artemisia species. For example, it is perfectly reasonable to suggest that the Stanway doctor was treating his patients for complaints such as intestinal worms. Archaeological features regularly yield *Trichuris* (whipworm) and *Ascaris* (roundworm) eggs (personal observation), and this suggests that people in the past were troubled by nematode worm infections. Certainly, in temperate regions today, infestation by nematodes such as pinworm (*Enterobius vermicularis*) is very common, especially in children (Smyth 1962).

As shown in TABLE 70, many bioactive compounds have been identified in artemisia species, and there is scientific evidence for their effectiveness in treating a range of ailments. All artemisia species contain bitter principles that would render any infusion highly unpalatable. The very high representation of 'bee flower' plants in the assemblage is indicative of honey having been added in an attempt to sweeten the medicine. The adventive pollen in the assemblage probably represents grains accumulated by the aerial parts of the collected plants.

Mugwort (the common name of *Artemisia vulgaris*) is thought to derive from the fact that the plant was used to flavour drinks. It was certainly added to beer for flavouring before the introduction of hops (Grieve 1992, 556). There are also records of artemisia having been used to flavour wine in ancient times (Pliny, *Historia Naturalis* 14, 109). However, if the copper-alloy vessel had contained wine, at least a trace of *Vitis vinifera* (grapevine) might have been expected in the pollen profile from the plug. Grapevine pollen was certainly found in wine containers excavated from a high-status Roman burial in Wheathampstead, Hertfordshire (Wiltshire, unpublished report: Verulamium Museum). If mugwort had been added to some form of ale or beer, relatively large amounts of cereal pollen might have been present.

No *Vitis* was found, and cereal pollen was present merely as a trace. The evidence suggests, therefore, that even if the vessel had started out life straining alcoholic drinks, it later functioned as a container for the preparation of some bitter medicine.

THE PALYNOLOGICAL ANALYSIS OF THE PALAEOTURF FORMING THE COLLAPSED MOUND IN THE CHAMBER CF42 (FIG. 157; TABLE 71)

By Patricia E.J. Wiltshire

The methods used in the analysis of the turf were the same as those for the plug of debris in the strainer bowl (p. 394). TABLE 71 shows the percentage values for the palynological assemblage in a single horizon of one of the turf layers in the subsided mound filling most of the chamber pit, while FIGURE 157 shows the proportions of various palynological taxa present in the turf soil.

Palynological analysis of buried turves has shown that they can yield important information on the nature of ancient landscapes (Wiltshire 1997; 1999). It proved possible to locate the horizon within a turf that represented a buried land surface at Stanway. Although only a single turf was analysed, it gave important information regarding the Late Iron Age countryside from which it was collected.

There is little doubt that the turf was collected from a very open environment. The only trees represented were *Betula* (birch), *Fraxinus* (ash), and *Quercus* (oak). Oak had the highest percentage (2.3%), but this must be considered to be a low value. It is likely that either trees were very heavily managed by coppicing and pollarding so that they had little opportunity to flower, or that the landscape in the environs of the turf collection was virtually treeless. There might have been isolated individual trees scattered locally.

The values for cereal-type pollen (6.2%) must be considered high and it is likely that the turf was collected in the vicinity of arable fields or near cereal-processing sites. Some of the

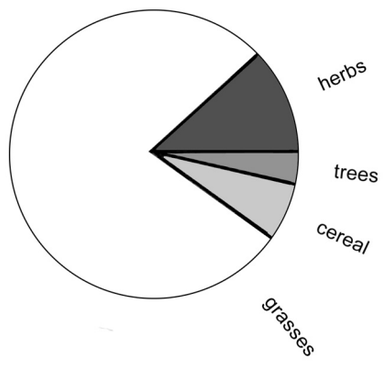

FIG. 157. Chamber CF42: proportions of various palynological taxa present in the turf (turf 1) from the mound

TABLE 71: PERCENTAGE VALUES FOR TAXA FOUND IN THE TURF IN CHAMBER CF42

Trees and shrubs	*English name*	*Turf (CF42) % tlp/s*
Betula	birch	0.6
Fraxinus	ash	0.8
Quercus	oak	2.3
Crops		
Cereal type	cereals	6.2
Herbs		
Artemisia	mugwort, wormwood	2.0
Aster type	e.g. daisy	+
Capsella type	e.g. shepherd's purse	+
Centaurea nigra type	e.g. knapweed	0.8
Lactuceae	dandelion-like plants	3.1
Papaver	poppy	+
Plantago lanceolata	ribwort plantain	2.4
Poaceae	grasses	78.4
Ranunculus type	e.g. buttercup	0.6
Reseda luteola	dyer's rocket	+
Sinapis type	e.g. charlock	0.9
Spergula type	e.g. corn spurrey	+
Urtica	nettle	+
Ferns		
Polypodium	polypody fern	+
Pteridium	bracken	1.6

herbaceous taxa such as *Capsella* type (shepherd's purse and others), *Papaver* (poppy), *Ranunculus* type (buttercups), *Reseda luteola* (weld or dyer's rocket), and *Spergula* type (corn spurrey and others) could represent weeds of the cornfield, although some of them could also be growing in a grass sward. The area certainly seems to have been dominated by weedy grassland, and the high value for Poaceae (grass) pollen might suggest that the local grassland was not over-grazed. Percentages of grass pollen can be very low indeed in the centre of a small, mown lawn (personal observation). A similar picture is often seen for Lactuceae (dandelion-like plants) and *Plantago lanceolata* (ribwort plantain) where constant grazing drastically reduces flowering. It is possible, therefore, that the immediate vicinity in the area of turf collection had escaped intense grazing or cutting.

Many of the weeds could also have been growing as ruderals, and it is very difficult to define accurately the mosaic of micro-habitats in a place so pressurised by human activity.

THE LANDSCAPE OF THE SITE OF TURF COLLECTION

The area from which the turf was collected was very open with few trees. In fact, the landscape probably had fewer trees than the landscape around Stanway today. It appears to have been an area dominated by herb-rich grassland and broken soils. It was also close to cereal fields or a place where cereal-processing took place. If the turf were collected from pasture, it would seem that the stocking density of animals was low. *Artemisia* (p. 395) was certainly growing in the catchment and would have been available for the doctor to give appropriate treatment to his patients.