Chapter 4: Artefactual evidence

POTTERY *by Paul Booth*

Introduction

In total just over 40 kg of pottery were recovered during the excavations. The great majority of this was of Roman date (39.7 kg) – small assemblages of pre- and post-Roman pottery are summarised briefly below, after which the Roman pottery is treated in more detail. The pottery was recorded using a standardised OA system, but to aid comparability with other Winchester data fabric codes used in recent Winchester work (Rees forthcoming), kindly supplied by Helen Rees, were employed. In addition to fabric, details of vessel form, decoration and other aspects such as evidence for use and reuse, were recorded where present. Quantification was by sherd count, weight, rim equivalents (REs) and a more subjective vessel count based (usually) on rim sherds. This last is of particular significance for the funerary assemblage, where the number of vessels involved is the most important individual statistic.

Pre-Roman pottery

A small quantity of hand-made prehistoric pottery (34 sherds, 214 g) was recovered, almost exclusively from the fills of late Roman graves. Many of the sherds were abraded. This material was broadly comparable to that found in the earlier excavations (Barclay 1979). The majority of the sherds were in fabrics tempered either solely with flint or with a combination of flint and sand. Flint inclusions were typically moderate in frequency and up to 2-3 mm in length, but occasional more coarsely tempered sherds were also seen. A very few sherds were in fine sandy fabrics with no flint inclusions. These included the only rim sherd in the collection, from a slightly shouldered jar with an insloping rim, a form typical of the later part of the middle Iron Age, from the fill of Grave 1016. The remaining material lacked diagnostic characteristics. Much of it may have been of Iron Age date, but some of the more coarsely flint-tempered sherds might have been earlier, perhaps of the middle or late Bronze Age. The later prehistoric pottery sites in the Winchester area are typically dominated by flint-tempered fabrics, a broad tradition that extended from the Neolithic (Ellison 1989, 87) at least into the middle Iron Age (eg Hawkes 1985, 62; 1987, 27). In the absence of other diagnostic features close dating is impossible.

Post-Roman pottery

Some 36 sherds of medieval pottery (258 g) were recovered. These were not examined in detail. Most of these sherds came from poorly-stratified or unstratified contexts. Six of them, however, weighing 36 g, came from Roman grave fills, one each from Graves 595, 650, 705, 720, 735 and 790. In each case the medieval sherd was from the upper fill of the grave. It is considered that the sherds are intrusive from the topsoil and other overlying deposits; there is no reason to believe that they indicate disturbance of graves at the medieval period. In addition, 34 sherds (315 g) of post-medieval pottery were recovered, all from topsoil or analogous deposits.

Roman pottery

Quantities

The Roman assemblage included 45 complete or partly complete vessels (79 sherds, 14250 g, 40.67 REs) which seem certain to have been placed as grave goods in inhumation burials. A largely complete vessel (1592, 1 sherd, 354 g, 1.00 RE) seems to have been placed deliberately on the top of the fill of Grave 1622. Some 729 sherds (8853 g, 10.97 REs) came from inhumation grave backfill deposits. Cremation burial and related deposits produced 343 sherds (10329 g, 7.55 REs) plus two further incomplete vessels (604 and 606, totalling 50 sherds, 2680 g, 1.00 RE), placed deliberately within the backfill of the unusual burial 655. The remaining pottery (some 455 sherds, 3233 g, 3.98 REs) came from the fills of ditches and pits, from layers and from unstratified deposits. It is noted with regret that a number of the complete vessels were stolen from OA premises before the assessment phase of the project was complete. In every case, however, it has been possible to reconstruct a reasonable record of the vessel using site records and photographs, finds administration system data and the assessment notes where applicable. The missing vessels are included in the following analysis and their vessel numbers are asterisked in Table 4.2. Only in one instance is the weight of a vessel estimated on the basis of comparative data. Generic illustrations of the missing vessels are provided, but in most cases the decoration, where present, had not been recorded in detail at the time the vessels went missing.

Fabrics

The range of fabrics present was restricted as a consequence both of the relatively narrow date range of the site (with the majority of deposits assigned to the 4th century) and its specific function. Some diversity

did result from the presence of a component, presumably largely residual, which may have derived from pre-cemetery phase activity in the area. Fabrics are quantified in Table 4.1 in terms of the Winchester code system, but grouped in terms of major ware categories defined by the OA recording system. Only fabrics indicated with an asterisk were used specifically in burial contexts. The others did not appear either as grave goods or in any of the cremation burials or cremation related deposits.

Overall, the assemblage is dominated by fine wares and reduced coarse wares. These are of course the principal elements of the grave good and cremation urn assemblages, but they were widespread in other contexts as well. The widest range of fabrics is seen in the oxidised coarse ware group, but few of the individual fabrics in this group were common, and despite the occasional occurrence of sherds in grave fills and in cremation related deposits only one fabric in this group (a distinctive import placed here in the generic fabric Y category) was used for grave goods (see further below). The majority of the oxidised wares, like the occasional fragments of samian ware and the single amphora sherd, were clearly not related to the use of the site in its cemetery phase. For the most part the coarse ware fabrics defined by the Winchester system are not assigned to specific sources, partly because at a local level these are not well-understood and partly because of difficulties in distinguishing between the fabrics of the two major regional suppliers, the New Forest and Alice Holt industries. In both Clarke's excavation and the present work, however, the reduced ware grave good vessels were assigned without exception to the New Forest industry (see further below) and only one group of sherds (in fabric ZF from the fill 671 of Grave 1190) was specifically noted as being probably of Alice Holt origin. Clearly attribution is aided by the presence of large typologically diagnostic sherds, and it may also have been the case that the distinction between the reduced ware products of the two industries was more marked in the 4th century than earlier.

However, another significant component of the reduced coarse wares at Lankhills, the grog-tempered jars particularly favoured as cremation urns, remains unattributed, although a relatively local source seems likely. In addition, the minor contribution of black-burnished ware to the assemblage is notable, particularly when the single grave good vessel is discounted.

Table 4.1: Quantification of Roman pottery fabrics by sherd count, weight and rim equivalents

Ware group	*Fabric code*	*Summary description*	*No. sh.*	*% sh.*	*Wt (g)*	*% wt*	*RE*	*% RE*
S samian ware	TCA	Central Gaulish samian ware	3	0.2	11	+	0.06	0.1
	TUS	samian ware, uncertain source	1	0.1	3	+	-	-
F fine wares	TF*	New Forest colour coated ware fabric 1b	121	7.3	2232	5.6	3.83	5.9
	TR*	New Forest colour-coated ware fabric 1a	211	12.7	6800	17.1	25.41	39.0
A amphorae	ADA	South Spanish 'Dressel 20' fabric	1	0.1	9	+	-	-
O oxidised	WC	Orange, with medium and coarse sand	5	0.3	84	0.2	0.21	0.3
coarse wares	WCA	Orange, medium sand, iron oxides and clay pellets	56	3.4	267	0.7	0.68	1.0
	WF*	Orange, dense fine sand, iron oxides	8	0.5	30	0.1	0.30	0.5
	WFA	Orange, sparse fine sand, iron oxides	5	0.3	17	+	-	-
	WM*	Orange, medium sand and iron oxides	8	0.5	320	0.8	-	-
	WMG	Orange, medium sand, iron oxides, micaceous	1	0.1	9	+	-	-
	Y*	Buff, sandy (imported, ?Trier region)	2	0.1	291	0.7	1.00	1.5
	YC*	Buff, medium-coarse sand and iron oxides	18	1.1	140	0.4	0.08	0.1
	YF	Buff, fine sand	3	0.2	19	+	-	-
	YM	Buff, dense medium sand, iron oxides	5	0.3	48	0.1	0.22	0.3
R reduced	SG*	Grey-dark grey but surface colour variation.	694	41.9	16816	42.4	10.24	15.7
coarse wares		Fine sand, grog and iron oxides						
	Z	Grey, fine, otherwise uncharacterised	4	0.2	34	0.1	-	-
	ZC	Grey, dense medium-coarse sand, iron oxides	7	0.4	60	0.2	-	-
	ZF*	Grey, dense fine sand, iron oxides	187	11.3	1562	3.9	2.36	3.6
	ZG	Grey, slightly sandy with abundant flint	16	1.0	209	0.5	-	-
	ZM*	Grey, dense medium sand, iron oxides	268	16.2	10208	25.7	19.68	30.2
	ZMJ	Grey, medium sand with occasional grog	22	1.3	240	0.6	0.10	0.2
B black-burnished ware	ZMA*	Dorset BB1	12	0.7	293	0.7	1.00	1.5
TOTAL			1658		39702		65.17	

*Fabrics used for grave good vessels

Grave goods

As mentioned above, 45 vessels were placed deliberately in the lower parts of grave fills as grave goods. They occurred in 39 graves, six of which contained two pots. In most cases, therefore, pottery vessels were placed singly, although they were often associated with other types of objects (see further below). The principal characteristics of the grave good vessels are shown in Table 4.2. The vessels are described in detail in the relevant grave catalogue entries. The ceramic dates are based on the New Forest chronologies set out by Fulford (1975a).

The vessels deposited as grave goods occurred in a narrow range of fabrics and forms. The correlation of vessel classes with ware group, quantified by REs with figures for vessel count in brackets, is shown in Table 4.3.

Colour-coated ware vessels (23 out of the 45 vessels) were entirely in New Forest fabrics, with the great majority (19) in the white/pale grey fabric TR (Fulford 1975a fabric 1a). In contrast with the material from Clarke's excavation, Oxford colour-coated wares appeared to be completely absent in the present assemblage. The fine ware vessels consisted of flasks, flagons and jugs (12) and beakers (9), with a single open form (a hemispherical bowl) and a small jar/bowl. The range of types in coarse ware fabrics was similar in some respects, again having a high proportion of flasks/flagons (10 of the 18 vessels in New Forest grey ware fabric ZF/ZM). The remaining types included vessels probably for drinking, ranging from the beaker NFC type 1.3 to the two-handled vessel paralleled at Portchester (Fulford 1975b type 175.1), a hybrid of New Forest coarse ware types 17 and 18 (Fulford 1975a, 93, 96) but presumably derived from that industry. A single example of the former type was found in Clarke's excavations (in grave 22) but the taller form seen in the OA site was not present there. Analogous vessels, but in black-burnished ware, are known for example from the cemetery at Alington Avenue, Dorchester (Seager-Smith 2002, nos 14 and 21). Jar forms were also present in fabric ZM and consisted of New Forest coarse ware types 30.9 (2 examples), 30.11, 32.1 and 33/35. The small size of all these vessels may indicate that they were seen as beaker substitutes. The New Forest grey ware repertoire was completed by a single flanged bowl (NFC type 6), while the two examples of simple plain rimmed dishes from graves were in fabrics not otherwise represented among the grave goods, one each of Dorset black-burnished ware and the ?local grog-tempered fabric SG.

The only other vessels deposited as grave goods were the two sandy oxidised unguent bottles (Nos 147 and 148) from Grave 82 (Fig. 4.1). These exactly parallel a vessel from Clarke's excavation (Clarke 1979, fig. 69 no. 61) which was identified as an import, probably from the Trier region, and at the time was thought to be unique in Britain (Fulford 1979, 227; see also Fulford and Bird 1975, 178).

Fig. 4.1 Probable North African unguentaria from Grave 82

Table 4.2: Grave good and other significant vessels

Grave	*Vessel number*	*Fabric*	*Form*	*'Functional' category*	*Ceramic date*	*Location in grave*	*No.sh./ wt (g)*	*Completeness*	*Comment*
18	27	ZM	NFC 30.11	Small jar	270-350?	OC? near l foot	1/213	A/B	Chips out of rim; three notches cut on rim. Vessel possibly placed on coffin, but this seems unlikely
41	46	ZM	cf NFC 1.3	Drinking vessel	300-350	IC next to skull	1/240	B	
82	147	Y	as Clarke Grave 45 no. 61	Uncertain	300-400?	OC near l foot above vessel 148	1/137	C	Neck and rim absent, break appears old
	148	Y	ditto	Uncertain	300-400?	OC near l foot below vessel 147	1/154	A	
87	230	TR	NFF 17	Liquid container	350-400	IC next to l lower leg	1/512	A	Patchy firing. Form is closest to NFF 17.4
99	128	ZM	cf NFC 33/35	Small jar	270-350?	OC at foot end	1/393	A/B	Outer lip of rim largely absent
256	286	ZM	NFC 20.2	Liquid container	270-350	OC at foot end	1/483	A/B	Surfaces quite eroded
272	273	ZF	NFC 20.2	Liquid container	270-350	OC on r near waist	1/314	A?	
291	319*	TR	NFF 13	Liquid container	300-340	IC by l foot	1/400E	A	
423	427*	TR	NFF 27.3	Drinking vessel	270-340	IC near r hand	1/233	A	
490	493*	TR	NFF 27.7	Drinking vessel	270-340	OC above l shoulder	1/102	A	
545	509	TF	cf NFF 1	Liquid container	300-330?	OC beside r femur	1/299	B	Rim more everted and overhung than NFF 1.2 which the vessel otherwise resembles. ?Deliberate hole in body
560	568	SG	Plain rim dish	Eating vessel	300-400	OC beyond r shoulder	8/384	A?	
565	516*	TR	NFF 18	Liquid container	320-370	OC at foot end	1/466	A	
575	608	ZM	NFC 30.9	Small jar	270-350?	OC at foot end	1/193	B?	
	609	TR	NFF 44.3	Drinking vessel	300-350	IC by r leg	1/95	A/B	Two rows of coarse 'roulette' decoration
620	569*	TR	NFF 12	Liquid container	300-350	OC above l shoulder	1/294	A	Rouletted and barbotine decoration
630	613	ZM	NFC 20.5	Liquid container	270-350	IC by l leg	1/345	A	
680	801	ZM	NFC 20.4	Liquid container	270-350	IC by r foot	24/537	B	Deliberate damage in girth area may have resulted in complete fracture of vessel body in antiquity
745	713	ZM	NFC 20	Liquid container	270-350	IC by l foot	1/365	B	Neck and rim absent, break appears old
880	828*	TR	NFF 11	Liquid container	300-350	IC between feet	2/371	A	No decoration
890	831	ZM	cf NFC 20	Liquid container	270-350	OC N of skull	1/421	A	Cf NFC 20, but squat and has two handles
	832	TF	NFF 11	Liquid container	300-350?	OC N of skull	1/343	A/B	Part of neck flange missing
965	936	ZMA	as NFC 19.1	Eating vessel	270-400	IC by r lower leg	1/237	A?	Fragmented and flaking surfaces so assessment of true condition difficult
	937*	TR	NFF 1	Liquid container	300-350	IC by r ankle	1/134	A	
1200	1151	TF?	NFF 11	Liquid container	300-350?	OC at foot end	1/506	B	Neck and handle present but no rim, lost in antiquity
1205	1144	TF	NFF 71	?Food container	325-380	?above coffin, pelvis	1/268	A	Fabric lightly oxidised 1a or 1b?
	1146	ZM	cf NFC 20.4	Liquid container	270-350	?above coffin, lower legs	1/281	A/B	Eroded/spalled
1225	1179*	ZM	NFC 20	Liquid container	270-350	IC at head end	1/345	A	
	1181	ZM	NFC 6	Eating vessel	270-400	IC at head end	1/230	A	
1349	1256*	ZM	NFC 20.1	Liquid container	270-350	IC by l foot	1/271	A	Form as NFC 20.1 but decoration as 20.5

1351	1342	TR	NFF 41.8	Drinking vessel	320-400	IC l of skull	1/173	A	Barbotine rather than painted decoration
1362	1384	TR	NFF 18.2	Liquid container	320-370	IC by l foot	1/359	B	Handle missing before deposition
1373	1374*	TR	NFF 17	Liquid container	350-400	IC l of skull	1/265	A?	No decoration?
1400	1402*	TR?	NFF 22	Liquid container	340-400	IC by l shoulder	1/148	A?	
1403	1450	ZM	NFC 20.4	Liquid container	270-350	IC by r knee	1/370	A/B	Rim chipped before deposition
1440	1443*	TR	NFF 30-	Drinking vessel	300-400	IC r of skull	1/496	A	Decoration uncertain
1495	1496*	ZM	NFC 32.1	Small jar	270-350	IC above r shoulder	1/642	A	
1567	1566*	TR	NFF 33	Drinking vessel	300-400	IC? l of skull	1/113	A	Poss placed on top of coffin
1760	1763*	TR	NFF 30-	Drinking vessel	300-400	OC? beyond r shoulder	1/370	A	Decoration uncertain
1810	1807*	ZM	NFC 30.9	Small jar	270-350	IC l of skull	1/302	A	
1866	1869*	TR	NFF 30-	Drinking vessel	300-400	r of skull (uncoffined)	1/523	A	Decoration uncertain
1930	1935	ZM	Portchester 175.1	Drinking vessel?	300-370	IC at r foot	1/668	A	cf NFC types 17 and 18
3027	3008	TR	NFF 57.2	Small jar/bowl	330-400	IC between feet	1/123	A	
3028	3025	TR	NFF 41	Drinking vessel	300-400	IC between feet	1/132	A	
Significant grave associated vessels									
1622	1592	ZM	NFC 30.10	Small jar	?270-350	Inverted above grave fill	1/354	B	No decoration. One and possibly two deliberate holes in body

Abbreviations: Form - NFC=New Forest coarse ware type series (Fulford 1975a, 89-103), NFF=New Forest fine ware type series (Fulford 1975a, 43-76); Location - IC=inside coffin, OC=outside coffin; Completeness - A=complete, B=damaged or incomplete before placement in grave, C=mostly complete (80% or more), D=incomplete (50-80% present)

These uncommon but widely-distributed vessels are now thought to come from Tunisia and are dated to the late 3rd to the mid 4th century (Pirling 2003, 200). Several more of these vessels are now known from Britain, and it may be significant that a number of them are from burials. A further possible Winchester example comes from Henly's Garage, where a vessel from a late pit fill is described thus "156. 585.2. Y fabric, bottle or flask with flanged rim. and incised lines around the body, near-complete. The surface is abraded, but appears to have an orange wash. The vessel is similar, although not precisely the same in form to a vessel from the Lankhills cemetery (Fulford 1979, 227, no. 61), and it is also similar to a form made in New Forest colour-coated ware (Fulford, 1975a, 47, type 10)" (Rees forthcoming). This vessel has not been seen by the present writer and the identification is uncertain. Another vessel is known from Verulamium (Wilson 1984, 206-7, no. 1982) and one from the East London cemetery (Barber and Bowsher 2000, 146-7, grave B166.2). Two further examples of the form have been recorded from Colchester (Symonds and Wade 1999, 352 nos 116 and 117), from LWC (Lion Walk) A30 Gp 20 and BUC (Butt Road cemetery) C1467 Gp 18 respectively. The latter is from a double grave (grave 395/396) of west-east aligned inhumations in nailed timber coffins in a vault with plaster (Crummy and Crossan 1993, 112). This feature has some superficial resemblance to the arrangement of the step grave (Grave 82) from which both the new Lankhills finds came. In contrast with the earlier Lankhills find, however, the vessels from Grave 82 were outside the coffin, one above the other. It is also notable that the upper vessel 147 was incomplete, with part of the shoulder and all of the neck and rim missing, but it is unclear why this should have been the case – the breaks were ancient and there was no trace of the missing fragments elsewhere in the grave fill.

The broad vessel form and interpretative classifications used in Tables 4.2 and 4.3 are of course subjective. They are based initially upon commonly-accepted terminology, but modern categorisations, however value-neutral, may not always reflect ancient usage. Nor, of course, was the latter necessarily the same in a funerary context as it was in daily life. The labels in Table 4.3 are essentially typologically based, while in Table 4.2 an attempt has been made to suggest the possible function of vessels in their role as grave goods, but as this is largely based on typological characteristics the interpretations offered may be open to question. Nevertheless, the broad vessel class names used here have been retained as a shorthand for terms which would otherwise involve lengthy qualification with regard to potential function.

As far as possible, the completeness of the grave good vessels was considered systematically (see Table 4.2) particularly (but not exclusively) in the light of an increasing body of evidence for deliberate

Table 4.3: Quantification by RE (and vessel count in brackets) of grave good vessel classes in relation to ware groups (including all vessels listed in Table 4.2)

	Ware group					
Vessel class	*F*	*O*	*R*	*B*	*Total*	*%*
B flagons/flasks	11.75 (13)	1.00 (2)	8.70 (10)		21.45 (25)	50.3 (52.1)
C jars	1.00 (1)		5.26 (7)		6.26 (8)	14.7 (16.7)
E beakers	9.00 (9)		0.96 (1)		9.96 (10)	23.3 (20.8)
G handled jar/beakers			1.00 (1)		1.00 (1)	2.3 (2.1)
H bowls	1.00 (1)		1.00 (1)		2.00 (2)	4.7 (4.2)
J dishes			1.00 (1)	1.00 (1)	2.00 (2)	4.7 (4.2)
Total	22.75 (24)	1.00 (2)	17.92 (21)	1.00 (1)	42.67 (48)	
%	53.3 (50.0)	2.3 (4.2)	43.0 (43.8)	2.3 (4.2)		

damage to vessels deposited in burials, presumably intended to render the vessel non-functional in an everyday sense or to mark it as special in some other way, although much of the evidence currently available relates to cremation cemeteries (eg Going 1988; Biddulph 2002, 104-5). The evidence takes several forms. In the case of unguentarium 147 the vessel seems to have been deposited in an incomplete state, but whether it was damaged before or at the time of deposition in the grave is not clear. Three other vessels, all closed forms, were clearly incomplete at the time of deposition in graves. The neck and rim of vessel 713 (Grave 745) were missing, the rim of vessel 1151 (Grave 1200) was absent above the flange, and vessel 1384 (Grave 1362) had no handle. Such absences are paralleled in the assemblage from Clarke's excavation, which included a flagon of the same form as vessel 1151 with the topmost part of the nozzle missing (Fulford 1979, 228 no. 95) and a grey ware flagon with most of the handle broken away (ibid., 230 no. 203). In all cases the vessels remained 'functional' at one level, so it is difficult to be certain if they had been damaged in a domestic context and were included in graves in the same way as other unmodified vessels, whether they were specially selected from the domestic assemblage because of their condition, or whether the damage was done deliberately immediately prior to placement in the grave, the 'missing' parts of the vessels being disposed of in some other part of the site.

Less equivocal is the evidence for deliberate damage which is seen in two cases. Vessel 509 in Grave 545, a small flask of NFF type 1, had a small hole at the girth. Vessel 801 (Grave 680), a flagon in fabric ZM, was also damaged at the girth, although this had resulted in fracture of the vessel body into two main parts, generating a number of smaller fragments in the process. It is possible that this damage was caused accidentally within the coffin, but the character of the fracture at the vessel girth suggests that it resulted from a deliberate attempt to puncture the pot at the time of burial. Other damage is evident on a number of vessels, but its status is much less clear. Chips from rims and footrings are as likely as not to have resulted from the day-to-day use of vessels before they were selected as grave goods, and vessels with this type of damage have generally been recorded as A/B in the completeness category of Table 4.2, with very minor chips etc usually ignored. Even features such as the loss of part of the flange on the neck of flagon 832 in Grave 890 could have been accidental. Damage to rims can be more difficult to assess, as the removal of a relatively small sherd here could be considered sufficient to symbolically affect the function of the vessel. No clear-cut examples of such action, rather than of 'wear and tear' damage, were identified in this assemblage, however. In the East London cemetery, where a significant proportion of damaged vessels was identified (23% of 200 vessels including cremation containers) the implication was that these vessels may have been preferentially selected from existing household stock for use in burial contexts (Barber and Bowsher 2000, 122).

Location of grave good vessels

The general location of vessels placed within graves is recorded in Table 4.2. Complete certainty is not possible in every case, but 24 vessels from 22 burials were recorded as probably or certainly within the coffin, with a further 4 vessels from 3 graves perhaps placed on top of the coffin. Some 16 vessels from 14 burials lay certainly or probably outside the coffin and there was a single case of a vessel associated with a (juvenile) un-coffined burial (1866). This was a beaker (1869) placed fairly close to the right of the head, a location shared by three other vessels in graves containing coffins. Of the 24 vessels placed within coffins nine were at the head and ten in the vicinity of the feet, while the other five were positioned from the waist downwards next to the legs, three on the right side and two on the left. Of the vessels outside the coffin six were around the head end and five at the feet, with two adjacent to the right upper leg and three next to the left lower leg; in other words the distributions of vessels inside and outside the coffin in relation to the

position of the body were quite similar. It is noticeable, however that the distribution of vessels outside the coffin at the head end extended to the corners of the coffin and the grave pit, whereas all the vessels outside the coffin at the foot end were clustered in the centre of the long axis of the grave. Two of the four vessels tentatively identified as having been placed on top of the coffin were in positions commonly used for vessels within the coffin, one at the left shoulder and the other by the right foot. The other two of these vessels, both from Grave 1205, were in unique locations, one on the pelvis and the other roughly between the knees. Even in this case it is not certain that the vessels were originally placed upon the coffin rather than inside it, but this seems likely.

In three cases (Graves 1373, 1440 and 1763) a single pottery vessel was accompanied by a glass vessel. In Grave 1373 the pottery and glass vessels lay respectively to left and right of the skull, while in Grave 1440 these positions were reversed. In Grave 1763 the glass vessel was again near the right shoulder but the pot (1760) lay further away on the same side and was probably, though not certainly, placed outside the coffin. It is notable that these three graves lay close together in the north-western corner of the site and that all were dated after AD 388 by associated coins.

Cremation burials

The pottery associated with cremation burials contrasts markedly with that from the inhumations. The exact number of cremation burials is slightly uncertain because of the degree of intercutting of features in the areas favoured for cremation burial and related activities, and the consequent difficulty of distinguishing genuine (but disturbed) cremation burials from deposits containing cremation-related debris, but the most likely total of such burials is 25. For the purposes of Table 4.4 deposits containing relatively small quantities of pottery have been disregarded (total quantities of pottery from cremation burials and cremation-related deposits are given in Table 4.5). Five certain cremation urns were identified, and other possible examples are also listed in Table 4.5. Only two of the five certain examples are effectively complete, and only one is relatively unfragmented. Two of these five vessels were New Forest grey ware (fabric ZM) jars of type NFC 30, while the remainder were jars in grog-tempered fabric SG. These varied considerably in size but were probably all of the same general, medium mouthed 'cooking-pot' form, characterised by a fairly simple curving everted rim and typically having a roughly burnished surface finish, often of close-set horizontal strokes around the shoulder and lower body and oblique strokes at the girth of the vessel. Very similar vessels were associated with three cremation burials (G60, G237 and G361) in Clarke's excavation (a fourth cremation urn, G26, was in a sandy grey fabric).

Although fabric SG is grouped with reduced coarse wares in Table 4.1 its surface colour is very variable, and can range from dark grey to orange and reddish-brown. In a number of cases there were joining oxidised and reduced sherds from the same vessel, these vessels having been broken and some parts of them subjected to refiring. The refiring may have been accidental, but it seems more likely that the vessels affected in this way have been placed on or adjacent to the cremation pyre. This interpretation has been adopted in the case of vessels in cremation burials 1060, 1195 and 1215, although it cannot be regarded as absolutely certain. It is notable that in every case the vessel was a jar in fabric SG, the preferred container for cremated human remains. Some uncertainty that vessels were definitely placed on the pyre rather than burnt in other contexts arises because the evidence indicates that cremation-related activity was concentrated very heavily in a couple of small areas, carrying with it the implication that cremation burials placed in these areas were susceptible to disturbance by later episodes of cremation and burial of the resulting remains. Another form of disturbance, however, may be represented by the absence of the upper parts of a number of the cremation urns. While it is possible that in some cases such truncation occurred within the late Roman period it is equally likely that it was the result of post-Roman use of the site, the upper parts of shallowly-buried vessels being removed by medieval agricultural activity or even by post-medieval landscaping.

Two of the vessel fragments in fabric SG were from flanged bowls of characteristic late Roman type. One of these (in context 467) was closely associated with the truncated cremation urn in grave group 550. Unfortunately, because of the disturbed nature of the feature it is impossible to determine if the bowl was an ancillary vessel or had perhaps served as a lid for the cremation urn. The other flanged bowl was the only significant vessel in feature 1160, but its function remains unclear. Context 808, in feature 1060, is likely to have been a deposit of cremation-related and other debris, rather than representing a disturbed burial. Although it contained a substantial part of a fabric SG cremation urn, the total pottery from this feature amounted to 114 sherds (1328 g) in six fabrics with a minimum of seven different vessels represented by rims – including at least four beakers in colour-coated fabric TR. The most complete of these, listed in Table 4.4, was notable for the presence of a substantial calcareous deposit on its interior surface which extended over the broken edges of some of the sherds. It seems, therefore, that this vessel had broken in an environment with voids which allowed the accumulation of this material, perhaps suggesting the interior of an inhumation grave rather than a cremation-related feature. These sherds and much of the other material are therefore likely to have been redeposited in context 808. There is thus no certainty that any of the urned cremation burials

Table 4.4: Vessels certainly or possibly associated with cremation burials

Grave/ feature	*Context/ vessel number*	*Fabric*	*Form*	*Functional category*	*Ceramic date*	*Completeness*	*Comment*
510	467	SG	Jar	Cremation urn	300-400	D	Most of upper body and rim missing
	467	SG	Flanged bowl	Secondary	300-400	E?	Fragment
655	604	SG	Jar base	Large jar	300-400	D	Lower part of vessel placed over horse skull and vessel 606
655	606	TR	NFF 22	Liquid container	340-400	C	Associated with horse skull beneath vessel 604
845	764	SG	Jar	Cremation urn	300-400	D	Rim and shoulder missing
1055	1007	SG	Large jar	Cremation urn	300-400	A?	Fragmented but apparently complete
1060	808	SG	Jar	Cremation urn?	300-400	D	Just over half survives. Some sherds refired
	808	TR	NFF 27	Drinking vessel	270-350?	D	Interior calcareous deposits
1160	1107	SG	Flanged bowl	Uncertain	300-400	E	Status of these fragments unclear
1180?	999	SG	Small jar	Secondary	300-400	E	Sherds mostly from base and lower body, inverted on upper surface of feature fill
1195	1121	SG	Jar	Cremation urn?	300-400	E	Lower part heavily burnt
1215	1148	SG	Jar	Cremation urn?	300-400	C/D	Fragmented, some sherds refired after breakage
1255	1186	ZM	NFC 30	Cremation urn	270-400	A?	Undecorated, closest to NFC 30.1
2060	405	ZM	NFC 30	Cremation urn	270-350?	D	Between NFC 30.10 and 30.11, but rim and shoulder missing

were accompanied by drinking vessels, though the association is attested in a late Roman context, for example at Barrow Hills, Radley, Oxfordshire (Chambers and Boyle 2007, 29-30). In the northern cemetery of Winchester itself a ?mid-late 4th-century cremation burial excavated at Hyde Street in 1979 (grave 39) contained two New Forest colour-coated ware flasks alongside the grog-tempered cremation urn (Rees forthcoming, Appendix 3).

Comparison of pottery assemblages by general context type

The overall breakdown of pottery fabric quantities by generalised feature type is shown in Table 4.5. Some of the inferences that can be drawn from this are limited because some of the feature type assemblages are only small, but there are variations that appear to be significant. The principal characteristics of the inhumation grave goods (in particular their dominance by fine ware fabrics) and the pottery from cremation burials have already been noted. Table 4.5 shows, however, a slightly different aspect of the material from cremation-related deposits. The importance of the fine ware component in these deposits, hinted at by vessel 808 in feature 1060, is underlined, at least by the RE figures, although the fact that such totals can be boosted by quite small sherds (particularly deriving from the rims of beakers) is demonstrated by the minimal weight of the fine wares from these contexts (only 5.3%). Fine wares constitute a reasonable proportion of the material from all the other context types, ranging from 23.9% of REs in layers to 37.8% in pits and ditches, figures that probably reflect the occurrence of redeposited disturbed grave good material. The impact of such disturbance is less clear in relation to the occurrence of reduced coarse wares. Fabric ZM (New Forest grey ware), the only significant reduced fabric used for grave goods in the inhumation burials, was generally less common in other context types than in the graves, except in terms of RE representation in pits and ditches, which gave a closely comparable figure to that from the graves, but from a much smaller sample. The grog-tempered fabric SG, fundamentally important in its use for cremation urns, was less well-represented (but quite common) in terms of REs in both inhumation grave fills and layers, probably reflecting the potential of the cremation urns to be disturbed and truncated within the Roman period as well as later.

Grave fills, forming the largest group of material in terms of sherd count, unsurprisingly produced the widest range of fabrics, including both reduced and (particularly) oxidised fabrics which did not occur among the repertoire of grave goods. While it is possible that some of this material could have derived from disturbed grave goods in fabrics not otherwise present in the excavated burials, it seems more likely that the majority of this pottery represents material related to other activities on the site, probably, but not necessarily, predating the use of the cemetery. A residual component in the grave fill pottery is certainly indicated by the presence of redeposited prehistoric sherds.

In terms of further general characterisation of the assemblage the correlation of major ware groups and vessel classes is shown in Table 4.6; the same correlation, but just for the inhumation grave goods and associated vessels listed in Table 4.2, is shown above in Table 4.3.

Table 4.5: Quantification of pottery fabrics by feature type

		*Grave goods**			*Grave fills*			*All cremation deposits***			*Pits and ditches*			*Layers*			*Unstratified*		
Ware group	*Fabric code*	*% sh*	*% wt*	*% RE*	*% sh*	*% wt*	*% RE*	*% sh*	*% wt*	*% RE*	*% sh*	*% wt*	*%RE*	*% sh*	*%wt*	*% RE*	*% sh*	*%wt*	*% RE*
S samian ware	TCA				0.3	0.1	0.5										3.0	1.5	-
	TUS																3.0	1.5	-
F fine wares	TF	3.1	8.2	6.6	9.6	6.3	7.4	1.5	0.2	0.3	25.5	22.7	9.0	2.5	0.7	2.8			
	TR	30.8	31.8	46.8	10.4	6.4	19.1	16.9	5.1	31.5	15.3	13.5	28.8	4.6	4.0	21.1	9.1	3.9	33.3
A amphorae	ADA				0.1	0.1	-												
O oxidised coarse wares	WC				0.5	0.9	1.9				0.7	0.1	-						
	WCA				0.5	0.6	-				2.9	3.0	14.7	16.9	8.8	20.6			
	WF				0.3	0.1	-	1.2	0.2	4.0				0.7	0.3	-			
	WFA				0.5	0.1	-				0.7	1.3	-						
	WM				0.8	3.5	-	0.3	+	-	0.7	1.0	-						
	WMG																3.0	4.4	-
	Y	1.5	1.7	2.3															
	YC				0.1	0.1	-	0.6	0.4	1.1				5.3	4.5	-			
	YF				0.4	0.2	-												
	YM				0.7	0.5	2.0												
R reduced coarse wares	SG	31.5	16.7	2.3	35.4	49.3	41.7	75.2	79.5	50.5	17.5	14.1	-	38.4	56.7	34.4	9.1	20.7	45.8
	Z				0.1	0.1	-				2.2	3.1	-						
	ZC				1.0	0.7	-												
	ZF	0.8	1.8	2.3	18.1	10.8	10.5	0.3	+	-	16.8	13.1	10.3	5.3	4.4	-	45.5	37.9	20.8
	ZG				2.1	2.2	-				0.7	1.5	-						
	ZM	31.5	38.5	37.3	17.2	17.1	17.0	3.8	14.6	12.7	16.1	26.2	37.2	20.8	11.5	16.5	21.2	22.7	-
	ZMJ				0.4	0.3	-				0.7	0.5	-	5.6	9.1	4.6	6.1	7.4	-
B black-burnished ware	ZMA	0.8	1.4	2.3	1.4	0.6	-	0.3	+	-									
TOTAL		130	17284	42.67	731	8859	10.97	343	10329	7.55	137	947	1.56	284	2080	2.18	33	203	0.24

All vessels in Table 4.2; **Includes all vessels in Table 4.3*

Table 4.6: Overall quantification (by RE) of vessel classes in relation to ware groups

	Ware group						
Vessel class	*S*	*F*	*O*	*R*	*B*	*Total*	*%*
B flagons/flasks		12.92	1.00	9.07		22.99	35.3
C jars		1.00	1.40	16.85		19.25	29.5
D jar/bowls			0.09	0.10		0.19	0.3
E beakers		13.51		1.31		14.82	22.7
F cups		0.13				0.13	0.2
G handled jar/beakers				1.32		1.32	2.0
H bowls		1.68		1.72		3.40	5.2
J dishes	0.06			1.92	1.00	2.98	4.6
L lids				0.02		0.02	+
Z uncertain				0.07		0.07	0.1
Total	0.06	29.24	2.49	32.38	1.00	65.17	
%	0.1	44.9	3.8	49.7	1.5		

While not as pronounced as the pattern revealed by the figures in Table 4.3, the essentially funerary character of the assemblage is clear both from the high percentage of colour-coated wares and also from the balance of the principal vessel classes, with closed forms (flagons, flasks and jugs) the most common individual class (35.3% of all vessels by REs), jars comprising just under 30% and beakers 22.7%. The very low representation of open forms (bowls and dishes) is particularly notable. These two classes together amount to just less than 10% of the assemblage, whereas the figures from ten broadly contemporary non-funerary Winchester assemblages (a series of 'later Roman primary key groups'; Rees forthcoming, table 2.2.35), admittedly based on rim count rather than REs, show a single group with 15% of open forms, while in the remaining groups these types range from 28% to 58%. Comparative data based on percentages of REs are, however, available for Winchester late Roman groups from The Brooks and recently-recorded assemblages from the Cultural Centre and Northgate House sites within the north-west corner of the walled town (Biddulph and Booth forthcoming). These are summarised alongside the Lankhills figures in Table 4.7.

Table 4.7: Comparison of vessel classes from late Roman groups in Winchester quantified by RE (The Brooks data (Groups 13397, F1684, F1466, F1342) from Lyne forthcoming, Tables A2.4.2-5)

Vessel class	*The Brooks*	*Cultural Centre*	*Northgate House*	*Lankhills*
Beakers	12%	12%	14%	24.7%
Bowls/dishes	33%	25%	33%	9.8%
Cups	1%	1%	0%	0.2%
Flasks/flagons	6%	15%	4%	35.3%
Jars	43%	42%	44%	29.8%
Lids	3%	1%	1%	+
Mortaria	2%	4%	4%	-
Total RE	26.18	15.34	20.91	65.17

The contrast between the Lankhills material and the approximately contemporary domestic assemblages is very clear, particularly when it is recognised that many of the jars have a funerary function, either as cremation urns or as small ancillary vessels that may in fact have functioned as cups (see above). Nevertheless the distinction between funerary and domestic assemblages is less marked in the late Roman period than earlier, principally because the expansion of the New Forest and Oxford industries results in the presence of much higher proportions of beakers and flagons compared with early and middle Roman groups. However, the combined proportion of these classes by REs (18% for The Brooks (Lyne forthcoming), 27% for the Cultural Centre and 18% for Northgate House) are substantially lower than the 60% at Lankhills. Drinking-related forms therefore remained of fundamental importance in late Roman funerary assemblages (at least among graves that contained pottery) while also being of growing significance in the contemporary Roman household.

One unusual vessel from the grave fill assemblages calls for further comment. This was part of a small costrel-like form (not in Table 4.6) from fill 3005 of Grave 3030 (Fig. 4.2, No. 8). The vessel, with a strap handle at the end, was in the oxidised New Forest colour-coated fabric TF and appears not to have been recorded in that fabric hitherto.

Chronology

Very few of the vessels from the 2000-2004 work have closely-defined date ranges. Dating was based on that in the standard corpus of New Forest pottery (Fulford 1975a), rather than that given in the

Table 4.8: Grave good and other key vessels by approximate period of manufacture

Date range	*Vessel numbers*	*Total*
270-340/350	27, 128, 273, 286, 427, 493, 608, 613, 713, 801, 831, 1146, 1179, 1256, 1450, 1496, 1592, 1807	18
300-330/350	46, 319, 509, 569, 609, 828, 832, 937, 1151	9
300-370	1935	1
320/325-370/380	516, 1144, 1384	3
320/330-400	1342, 3008	2
340/350-400	230, 606, 1374, 1402	4
300-400	147?, 148?, 568, 604, 1443, 1566, 1763, 1869, 3025	9
270-400	936, 1181	2
Total		48

original Lankhills report (Fulford 1979) where differences exist, and that of the vessels from graves is summarised in Table 4.8. All these vessels had date ranges from *c* AD 270 (or later) onwards. A few of the reduced ware types could only be assigned a date in the period AD 270-400. Where closer dating was possible the most common ranges were AD 270-350 and AD 300-350 (for example for such common types as 20 and 30 in the reduced ware typology). Relatively few vessels were dated specifically to the middle part of the 4th century (eg colour-coated type 18, dated AD 320-370, from Grave 565 and type 71, dated AD 325-380, from Grave 1205) or to the second half of the 4th century (fine ware types 17 (dated AD 350-400+, from Grave 87), 22 (dated AD 340-400, from Graves 655 and 1400) and 57.2 (dated AD 330-400, from Grave 3008 in the watching brief area,). Superficially, therefore, 28 of the 48 vessels have date ranges focussed on the first half of the 4th century while only 9 have date ranges encompassing the middle part or the second half of the century; a further 11 can only be dated broadly to the 4th century. Of course some examples of types with a wide 4th-century date range could belong to the later part of the century, but this is not demonstrable from the pottery alone.

In five cases pottery vessels occurred in coin-dated graves. Vessels 1384 and 1450 were in graves with coins of the period 330-335 (Graves 1362 and 1403 respectively), the coin dates falling within the ceramic date ranges assigned to the relevant vessel types. Three vessels (1374, 1443 and 1763) came from graves (1373, 1440 and 1760 respectively) all with coins dated after AD 388 (for the occurrence of glass vessels in all these graves see above). In the first of these cases the date of the coins corresponded with that of the vessel, a flagon of NFF type 17 dated AD 350-400. This type is known to have late Roman associations, as three of the four examples from Clarke's excavation were from graves dated AD 380-410 (Fulford 1975a, 48). The two vessels from Graves 1440 and 1760 (vessels 1443 and 1763 respectively) were beakers within the range of NFF type 30 with a broad 4th-century date bracket; these vessels might therefore have been old at the time of burial, but equally could have been placed in the grave only a short time after manufacture. These last three graves were all in the north-west corner of the excavated area, which contained a notable cluster of late burials among which Graves 1373 and 1440 were aligned north-south. This is consistent with a more general view of the contexts of the later (post *c* AD 350) vessels, almost all of which are from components of clusters of graves and other features of distinctive character and mostly dated to the later 4th century by other finds as well as by pottery.

Inevitably, however, a fairly high proportion of the graves with pottery have no or few other artefactual or stratigraphic associations; in almost all of these cases the relevant vessels were dated AD 270-350 or AD 300-350. In view of this evidence it is possible that some of the graves with pottery could have dated to the late 3rd century, but none of the other evidence from the cemetery supports this conclusion. There were no instances of the use of obviously 'old' or 'heirloom' vessels in these burials, as has been noted in a number of Romano-British cemeteries such as Pepper Hill, Springhead, Kent (Biddulph forthcoming), East London (Barber and Bowsher 2000, 122) and Butt Road, Colchester (Going 1993, 149 – though not the 'Brockley Hill' vessel that he quotes there). Some additional examples are given by Biddulph (2005, 38).

The pottery from grave backfills sheds a little further light on the overall chronology of the cemetery. Some 96 graves incorporated non-grave good pottery in their fills, but out of all this material a date necessarily after *c* AD 350 is demonstrable with reasonable confidence in only a single case, Grave 1755 (which has a *terminus post quem* of AD 337-341 based on coins), and even here the vessel in question was only similar, rather than exactly parallel to, New Forest fine ware type 19, dated after AD 350 (Fulford 1975a, 48). The grave backfill pottery therefore supports the evidence of the bulk of the grave goods in suggesting that a large proportion of the pottery from the site should be assigned to the first half of the 4th century rather than later. Given the overall chronological profile of the ceramic grave goods this was perhaps to be expected, but it is nevertheless of interest that the two groups of material present a consistent picture.

Discussion

Only four of the 45 vessels deposited as grave goods (as opposed to those used for example as cremation urns) were certainly not products of the New Forest industry. The dominance of this industry reflects both its relative proximity to Winchester and the specialised aspects of the funerary assemblage, with its requirement for drinking and related vessels and

a preference (albeit far from absolute) that these should be in fine wares. A wider range of sources (and presumably vessel types) was represented among the material that found its way into contexts such as grave fills. While some of this material will have been generated through disturbance of earlier graves, some of it is also likely to have derived from deposits and activities that were unconnected with the cemetery, either functionally or chronologically.

As would be expected there are substantial similarities between the 2000-2004 assemblage and that from Clarke's excavation, but there are also some differences. The 91 grave good vessels from inhumation graves in Clarke's excavations (Fulford 1979) are summarised here in Table 4.9.

The headings used in Table 4.9 are not exactly the same as those shown in Table 4.3 above but can be compared quite closely. The OA excavations show slightly higher representations of flasks/flagons/jugs and jars, while Fulford's data show slightly higher levels of beakers and bowls. In neither case, however, are the differences large enough (or the vessels involved sufficiently numerous) for the variations to be statistically significant. In broad terms, vessels potentially associated with drinking (flasks, flagons, jugs and beakers and the handled beakers) in effect constituted identical percentages of the ceramic grave good assemblage (by vessel count) from the OA excavations and from Clarke's comparable material (75% and 74.7% respectively). In addition it is possible that some of the small jars from both assemblages also functioned as drinking vessels, thus emphasising the importance of this function still further. These figures indicate the highly selective and specialised nature of the funerary assemblage (see also comparative discussion above). It is notable, however, that a large majority of the graves with pottery only contained a single vessel. Thirty-three out of 39 graves from the OA excavations and 67 out of 79 graves from Clarke's excavations fell into this category, although in a further three of the OA graves (1373, 1440 and 1760) and nine of those from Clarke's excavation single pots were accompanied by glass vessels. What seems clear, therefore, is that where pottery vessels were used at all (which is to say, in about one grave in eight in the OA excavations, although it must be remembered that more graves may originally have contained vessels which were disturbed and removed by the cutting of later graves) there is no suggestion that it was considered obligatory to provide a 'set' of drinking-related vessels, ie a flask/flagon/jug and a beaker. The questions that follow from this are whether a single vessel was considered an adequate representative of the set, whether the concept of the 'drinking set' is valid at all, or whether indeed all of the apparently different components of the set were multifunctional and therefore interchangeable?

The suggestion that the concept of 'drinking set' is of limited validity seems to be supported by the evidence of the vessel types in those cases where two vessels were present. In the six such instances in the OA excavation none of pairings involved a flask/flagon and a beaker; in two cases both vessels were closed flagons/flasks, and in all the others the pairing comprised a flask/jug or beaker with a more open form, tentatively associated with consumption of food. This evidence is consistent with, for example, recent analyses of vessel associations in cemeteries at East End, Ash, at Pepper Hill and Ospringe, all in Kent (Biddulph 2002; forthcoming), where many of the combinations do not fit the model of a standard dining set consisting, for example, of drinking vessel, liquid container and plate/dish. The chronological emphasis of these sites is earlier than that of Lankhills, however, and many of the vessels concerned (though by no means all) are from cremation burials. Strictly comparable data for the composition of the Lankhills assemblage are relatively scarce. Major late Roman cemeteries such as Butt Road (Colchester), Bath Gate (Cirencester) and Poundbury (Dorchester) have produced only minimal amounts of pottery grave goods. In the East London cemetery, where some 362 inhumation burials were assigned to

Table 4.9: Clarke's excavations: correlation of grave good pottery (vessel count) from inhumation burials by fabric group and vessel class

	Ware group and source/fabric type								
Vessel class	*F Oxford CC*	*F New Forest CC*	*R New Forest grey*	*F Pevensey CC*	*O (Trier)*	*R Grog (SG)*	*B Dorset BB1*	*TOTAL*	*%*
Flask	2	5			1			8	8.8
Flagon/jug	5	10	20					35	38.5
Jar			10			1		11	12.1
Beaker	3	20	1	1				25	27.5
Bowl	4	2	4				1	11	12.1
Dish							1	1	1.1
TOTAL	14	37	35	1	1	1	2	91	

phases dated from AD 250 or later, there were perhaps as many as 35 grave good vessels from 28 graves (in a few cases it was difficult to determine whether parts of vessels represented grave goods or were redeposited in fills). These included 2 flasks, 4 flagons and 16 beakers, while a miniature jar could have represented another beaker, though this is uncertain. The proportion of liquid container/ consumption vessels, at just under 63%, was therefore a little lower than that at Lankhills, but perhaps not significantly different from it. The pattern of the other vessels types is rather different from Lankhills, however, including two 'odd' types (an unguent jar and a tazza) but being dominated by jars, of which there were 7 examples (data from Barber and Bowsher 2000, passim). Another roughly comparable assemblage is seen at Barrow Hills, Radley, Oxfordshire. Here, in a cemetery of 57 inhumation and 12 cremation burials, probably all of 4th-century date, 9 burials (6 cremations and 3 inhumations) were accompanied by colour-coated ware beakers or small jars suggested as having a drinking function, none of which can have dated before AD 270 at the earliest. Apart from cremation urns, other vessel types were completely absent (Booth 2007, 35-6). These figures underline the drink-related aspect of at least some late Roman cemetery assemblages.

The principal apparent difference between the Clarke and OA assemblages is in the identification of Oxfordshire products in the former. Fulford's report was prepared in 1973 (Fulford 1979, 221, fn3), at a time when the products of the Oxfordshire industry were not as well understood as they are now. It is accepted that distinction between the red colour-coated ware products of the two industries can be difficult in cases where it is not possible to examine the fabric in a fresh break (as with complete grave good vessels), a difficulty exacerbated by the partial overlap in typological ranges. Nevertheless, the fact that no Oxfordshire products were identified among the grave goods from the OA excavation, and that some of the vessels attributed to Oxfordshire by Fulford are of forms not closely paralleled in the industry (eg nos 3 (grave 6), 8 (grave 27), 242 (grave 186), 322 (grave 195) and 384 (grave 299)), suggest that he may have been over-optimistic in identifying Oxfordshire vessels. The other vessels attributed to the Oxford industry by Fulford are certainly acceptable in typological terms (although most are also found in the New Forest repertoire: their fabrics have not been re-examined), so the likelihood that at least some Oxford products were present in Clarke's assemblage is in contrast with the evidence from the recent excavations. The significance of this contrast is uncertain – the distribution of graves with possible Oxford vessels in Clarke's excavation does not reveal any obvious patterning, except that all are to the west of the north-south ditch F12 and two of the graves in question (182 and 186) lie next to one another in the middle of excavated area.

Chronological aspects of the assemblage have been discussed above. Broadly the assemblage reflects the chronological range established for the material from the earlier excavation, although it may contain a rather smaller proportion of vessels assigned to the second half of the 4th century, in part because the OA excavated area did not include the eastern extremity of the cemetery thought by Clarke to contain most of the latest burials. For the same reason it is less clear that the pottery demonstrates the general scheme of west-to-east development of the cemetery established in the earlier work, though this remains a plausible model (see general discussion below). Overall, this assemblage appears to show a concentration of burial activity in the first half of the 4th century. It is uncertain whether the deposition of pottery vessels as grave goods continued into the 360s and 370s (none of the graves dated to this period by coins contained pottery vessels, but this is not necessarily significant as the numbers of graves involved are quite small) or if there was discontinuity in this practice. However, the placing of pots as grave goods was certainly a characteristic of some of the latest graves (in terms of artefact dating) in the site, assigned to the last decade of the 4th century if not later, a pattern which mirrors that seen in Clarke's excavation. That three of the four graves dated after 388 by coins contained a pottery vessel is a striking and significant association.

Lankhills pottery vessels of intrinsic interest other than grave goods

A number of graves contained ceramic material that was probably or certainly redeposited in the backfill material (see above). A small selection of this material, consisting of vessels of some intrinsic interest, is illustrated in Figure 4.2.

1. Grave 580 fill context 532. Fabric TR, New Forest colour-coated ware. Upper part of a jug of Fulford (1975a) fine ware type 18 with linear scratch marks on shoulder, *c* AD 320-370.

2. Grave 580 fill context 532. Fabric SG, local grog-tempered ware, hand-made. About one third of a jar, with overall burnish of the upper parts and scribble burnished lines below, *c* AD 300-400.

3. Grave 930 fill context 799. Fabric ZM, New Forest reduced coarse ware with black slip on neck and shoulder, burnished. Medium-necked jar broadly of Fulford (ibid.) grey ware type 31, *c* AD 270-400.

4. Grave 1030 fill context 961 and Grave 1295 fill context 1218. Fabric ZM, New Forest reduced coarse ware with black surface, burnished on neck and top of rim. Neck of jug of Fulford (1975a) grey ware type 20.8, *c* AD 270-350.

5. Grave 1379 fill context 1381. Fabric ZM, New Forest reduced coarse ware with black surface.

Flanged bowl of Fulford (1975a) grey ware type 6, *c* AD 270-400.

6. Grave 1491 fill context 1489. Fabric SG, local grog-tempered ware, hand-made. Large part of a jar, with overall rough horizontal burnish of upper and lower parts, with zone of close-set oblique burnished lines between. *c* AD 300-400. This vessel may have been the urn in cremation burial 1695, disturbed by inhumation grave 1491.

7. Grave 1491 fill context 1489. Fabric SG, local grog-tempered ware, hand-made. Fragment of curving sided dish with exterior boss. Overall burnish of

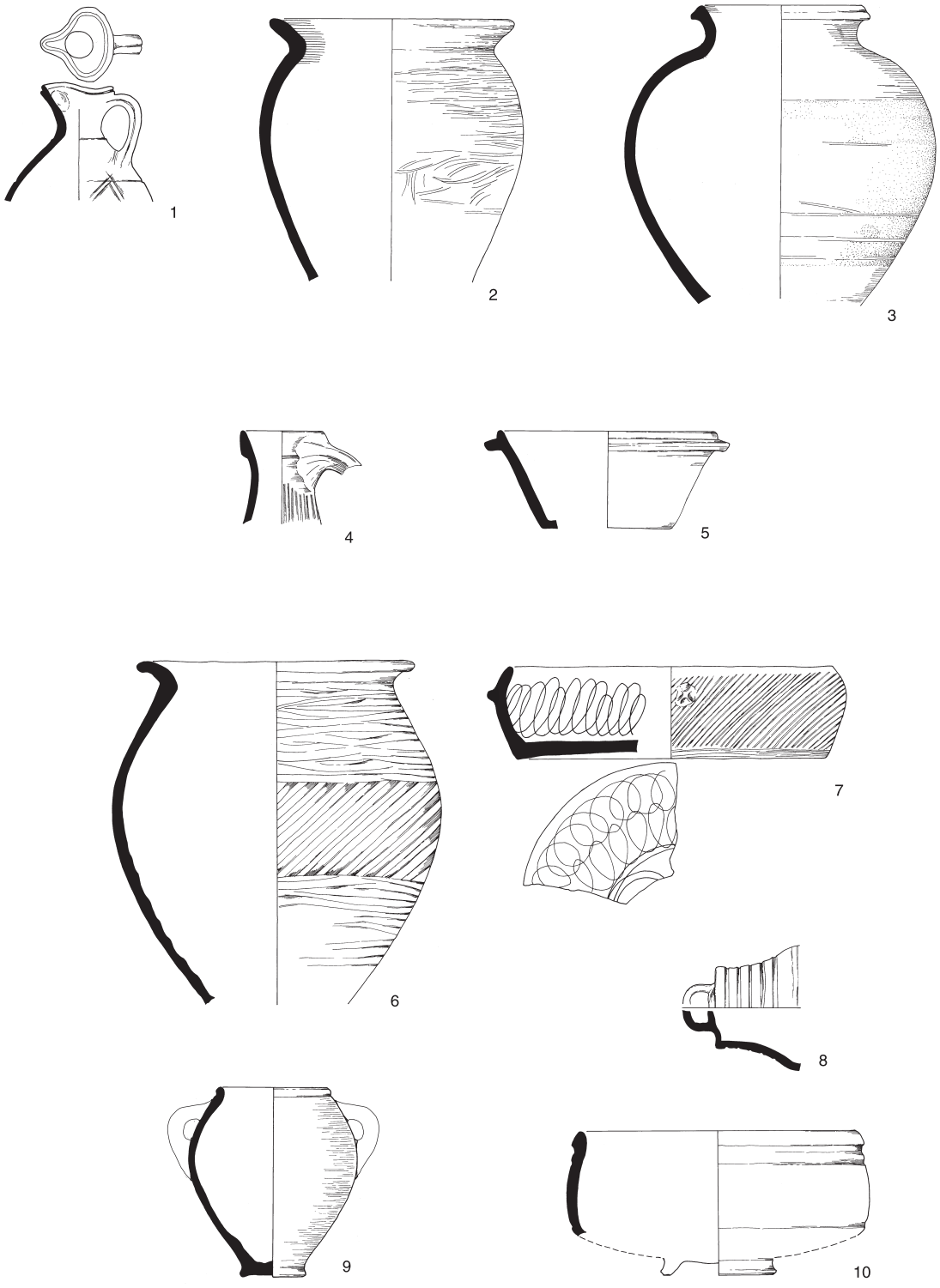

Fig. 4.2 Lankhills pottery vessels of intrinsic interest not from grave goods

closely spaced oblique lines on exterior and continuous scribble burnished line on interior. Lyne (1999a, 285-6) has suggested a very late 4th-century date for analogous vessels from Portchester and elsewhere. ?*c* AD 350-400.

8. Grave 3030 fill context 3005. Fabric TF, New Forest colour-coated ware with red-brown slip. Fragment of small costrel-like vessel with handle at one end. The general form is well known (see eg Gillam 1970, no. 21), but examples are rare and this vessel is apparently unique within the New Forest industry. It is presumed that the barrel-like vessel had an opening at the widest point of the body, but insufficient survived for this to be demonstrable. A potentially close parallel from a site near Tewkesbury, which like the Lankhills example has a handle on one end, is in Severn Valley ware (Hart and McSloy 2008, 39-40, no. 40), while a further example, perhaps also in Severn Valley ware, comes from Wroxeter (Atkinson 1942, 295, 297, vessel D7 in 'brown ware'). The fragmentary nature of the Lankhills vessel makes its status uncertain, but it should be noted that two complete costrels, in glazed fabrics, are recorded as grave goods from the late Roman cemetery at Krefeld-Gellep (Pirling 1986, 92, 105), raising the possibility that this unusual piece might originally have been a deliberate inclusion in the grave.

9. Pit 847 fill 856, with sherds in fill 833 of Grave 790 (which directly cut pit 847) and fill 838 of Grave 1010. Fabric ZM, New Forest reduced coarse ware. Handled beaker of Fulford (ibid.) grey ware type 26, perhaps dated after *c* AD 350. The scars show that there were two handles, mounted high on the shoulder.

10. Pit 1671 fill 1673. Fabric TF, New Forest colour-coated ware with orange slip. Bowl, perhaps a hybrid of Fulford (1975a) fine ware types 67 and 68. ?*c* AD 300-370.

ROMAN COINS *by Paul Booth*

Seventy-two Roman coins were recovered, of which 52 derived from the fills of inhumation graves and one from a cremation burial. The remainder were from topsoil or poorly stratified superficial deposits. The coins are in very variable condition, which has affected the reliability of identification in some cases and also restricted consistent assessment of the degree of wear, although this has been attempted, generally using the categories defined by Brickstock (2004, 7). The coins range in date from the reign of Hadrian to the end of the 4th century, with all but three coins (one unstratified) dating from the mid-late 3rd century onwards. Notable pieces are a denarius of Hadrian and a nummus of Maximian, dated AD 303-5 and in very good condition, from pit 1261.

The 52 coins from inhumation burials came from 28 graves. In three instances (Graves 22, 1000 and 1491) a single coin derived from the backfill of the grave, thus providing a general *terminus post quem* for the infill, while a further coin may have been in the upper fill of Grave 1490 or in a layer immediately overlying it. Twenty-four graves therefore contained coins which are certain or very likely to have been deposited deliberately at the time of burial (and it is possible that the coins from grave backfills were also deliberately deposited; see Philpott (1991), 212). Graves 263, 635, 660, 790, 870, 1020, 1080, 1150, 1175, 1240, 1362, 1547, 1705, 1760 and 3029 each contained a single coin, while Graves 710 (3), 1010 (2), 1370 (3), 1373 (7), 1403 (3), 1440 (5), 1638 (4), 1755 (3) and 1805 (3) produced multiple coins.

The coin-dated graves have been tabulated in terms of the issue period of the latest coin within each, rather than in relation to any systematic attempt to estimate the likely date of deposition, as done by Reece (1979) for the coins from the earlier excavation. It is important, however, to consider the coin from Grave 3029 in this way, because this was anomalous in the context of the rest of the group. The coin is a denarius of Hadrian. It was worn, but not heavily so, and the presence of mineral-replaced textile adhering to the coin suggests that it was wrapped in fabric or laid on the clothing(?) of the deceased, with the implication that it was deliberately deposited rather than accidentally incorporated within the grave. Technically, the coin thus provides an early 2nd-century *terminus post quem* for the grave, but such a date is not supported by other evidence (see further below) and it is more likely that the coin was old (though not, presumably, regularly circulated) and had been carefully curated up to the time of deposition.

With this exception the figures from the OA site in Table 4.10 support Reece's assertion that 'graves with coins in them date from after *c* 320' (ibid., 202) but not, apparently, the view that 'it was not until *c*. 350 that such burials became common' (ibid.). In crude terms, ten of the coin-dated graves from the present excavations can be assigned to the second quarter of the 4th century and 12 to the third and fourth quarters of the century, with one uncertain. On this basis there is no evidence for a significant change of practice around the middle of the 4th century with regard to coin deposition within the part of the cemetery considered here. Moreover, while the condition of many of the coins makes precise assessment of their degree of wear uncertain, there is no indication that the issues of the 330s and 340s were more worn than the coins appearing in later graves, and therefore no suggestion that they should be regarded as residual or as having been in circulation for an extended period before deposition. Indeed the earliest 4th-century pieces from coin-dated graves, Providentiae Caess issues of AD 324-5 and AD 326, were both in good condition, the latter barely, if at all, worn.

A comparable breakdown of the coins from Clarke's excavation does indeed suggest a slightly different emphasis in terms of the chronology of

Table 4.10: Numbers of graves with deliberately deposited coins, by latest issue period

Latest issue date	*OA Grave groups (with total coins in each)*	*OA graves*	*Av. no. coins per OA grave*	*Clarke's graves*	*Av. no. coins per grave*
pre 324	3029(1)	1	1	5	1
324-330	263(1); 635(1)	2	1	1	1
330-341	660(1); 870(1), 1362(1); 1370(3); 1403(3); 1547(1); 1705(1*); 1755(3)	8	1.8	5	1.2
341-350				1	1
350-364	1010(2); 1150(1); 1240(1)	3	1.3	6	3.7
364-378	710(3); 1020(1); 1638(4); 1805(3)	4	2.8	13	1.6
378-388	790(1);	1	1		
388-402	1175(1); 1373(7); 1440(5); 1760(1)	4	4	8	3
4C	1080(1)	1	1	4	1.3
TOTAL		24		43	
Total coins		48		83	

Note: numbers exclude non-grave features and graves only dated by coins ?incidentally included in backfill. Such coins are also excluded from totals for graves with deliberately deposited coins.
*imitation coin assigned to period of regular issue

deposition (the figures in the present table are based on the data in Reece's coin list (Reece 1979, 203-5) and not on the more restricted interpretation of 'graves with coins' given by Clarke (1979, 164-5, 357-9) and followed by Philpott (eg 1991, 213); the issue of associated objects is not significant here. Allowing for the fact that the overall totals involved, particularly from the present excavation, are only small, the earlier excavation has a higher proportion of coin-dated graves assignable to the second half of the 4th century. Only one grave predating *c* 350 contained more than one coin, whereas the present excavation produced three grave groups that contradict the earlier evidence that graves with three or more coins date after *c* 360 (Clarke 1979, 359). In contrast, the augmented mid 4th-century activity noted by Reece is attested by the deposition of significantly more coins in graves of this period than is the case in the present excavation. This trend is not observed in the Valentinianic period, however. In both parts of the site the latest grave groups tended to contain multiple coins, sometimes with a relatively wide chronological spread (Reece 1979, 202). This is seen in extreme form in the present excavation in Grave 1373, which contained seven coins, four of the House of Theodosius, two of the mid 4th century and a sestertius, probably of Antoninus Pius, very worn but nevertheless contrasting markedly in size and weight with the other pieces.

The four coins perhaps incidentally incorporated in grave fills were broadly comparable to the deliberately deposited ones, the earliest coin, of Gallienus, being heavily worn, supporting the idea that at least some of these coins were residual, accidental incorporations in grave fills. In addition to the coins from inhumation graves, a single coin of Valens came from cremation burial 1195. This appears to have been placed on the pyre, with the result that the details of the reverse are lost. The coins from non-grave contexts, mostly topsoil, covered the same chronological range as those from burials, but with a much stronger emphasis on the earlier part of the range; six of the eight 'radiates' from the site coming from these deposits (all but one from topsoil). Among other things this contrast suggests that the topsoil material does not reflect closely the burial assemblage and therefore probably only derived in part from features such as disturbed graves. The 3rd-century component in the assemblage may indicate pre-cemetery activity at the margins of Winchester. Finally, it can be noted that the identifiable mints represented were the main sources recognised for late Roman Britain, headed by Trier (with 10 examples) followed by Arles (6 or 7), 3 coins from Lyons and 1 each from London and Rome.

The coins were placed in a variety of locations within graves. In four cases (SF2688 in Grave 1020, SF3350 in Grave 1080, SF2967 in Grave 1175 and SF3536 in Grave 1362) it is certain or almost certain that the coin was placed in the mouth of the deceased. Other possible examples of this practice were recorded (for example SF1558 in Grave 635 and SF1720 in Grave 660) but have been treated with caution, particularly in view of the presence of some evidence for movement of the skull consequent upon decay of the body in the coffin. For example, the three coins in Grave 1805 lay adjacent to the front of the skull, which was on its side, and the excavator of the grave speculated that they had originally been placed in the mouth. This is far from certain, however. For one thing, examples of the practice usually consist of single coins, as is seen in all the four 'certain' and two 'possible' cases above (these coins, incidentally, suggest the continuation of the practice throughout the 4th century). In addition, in the case of Grave 1805 one of the coins,

Table 4.11: Coins in deposit type and number order

Group	Context	SF no.	Date	Denomination	Obverse	Reverse	Mint	Wear	Reference/comment
Grave goods in inhumation graves									
263	265	886	324-325	AE3 18 mm	CONSTANTINUSIUNNOBC	PROVIDENTIAE CAESS	London	SW/SW	RIC VII London, 296
635	577	1558	326	AE2 18-19 mm	CONSTANTINUSIUNNOBC	PROVIDEN TIAE CAESS	Trier	UW/UW	RIC VII Trier, 479
660	656	1720	330-341	AE3 16-18 mm	head r	?Gloria Exercitus (2 standing figures)	-	C/C	heavily eroded and damaged at edges
710	779	1961	367-375	AE3 17 mm	DNGRA]TIAN USAUGGAUG	SECURITAS REIPUBLICAE	Lyons	SW/SW	eroded, fused to SF 1962
710	779	1962	367-375	AE3 17 mm	DNG]RATIANUSAUGGAUG	GLORIA NO VI]SAECULI	Arles	W/W	eroded, fused to SF 1961
710	779	1963	364-378	AE3 18-16 mm	?DNVALEN [SPFAUG	GLORIA RO]MANO[RUM, emperor and captive (8)	II in r field	SW/SW	eroded
790	833	SS664	383-388	AE3 17 mm	] USPFAUG, head r	VOT X MULT XX in wreath		W/W	surfaces eroded
870	738	2018	335-341	AE3 15 mm	head r	GLORIA EXERCITUS, 1 standard	Trier	?SW/SW	eroded, particularly obverse
1010	838	2539	260-295	antoninianus 18 mm	radiate head	?		SW/SW	barbarous, overstruck?
1010	838	2538	352-354?	AE2 18-21 mm	DNCON[STANTIUSPFAUG	FE]LTEMPRE PARATIO, falling horseman (4)	-	SW/SW	date depends on ID of reverse type as FH4, ascribed to Rome in this period. Mostly well struck, but flan is irregular in shape and exergue area largely lost
1020	968	2688	364-378	AE2 18-19 mm	DNVA]LEN SPFAUG	SE]CURI[TAS] REIPUB[LICAE	-	SW/SW	eroded
1080	1233	3350	4C	AE3 17 mm	head r			eroded	
1150	1013	2892	350-364	AE3 14 mm	]IUS[ ]AUG	Fel Temp Rep, falling horseman	-	SW/SW	irregular - rev very crude
1175	1117	2967	388-395	AE4 12-13 mm	DN THEOD[OSIUS PFAUG	Victory	-	W/SW	wear uncertain, rev very poorly struck, eroded
1240	1172	3150	353-360	AE3 18 mm	DNCONSTAN TIUSPFAUG	FEL TEMP REPARATIO, falling horseman	Lyons	SW/SW	LRBC2, 253 or 256
1362	1366	3536	333-334	AE3 17 mm	CONSTANTI NUSMAXAUG	GLORIA EXERCITUS 2 standards	Arles	SW/SW	RIC VI1, Arles 370 or 375, eroded
1370	1066	2869	330-335	AE3 18 mm	URBS ROMA	Wolf and twins	Trier	SW/SW	RIC VII, Trier 529
1370	1066	2868	330-335	AE3 18 mm	CONSTAN TINOPOLIS	Victory on prow (obscured)	Trier	SW/SW	RIC VII, Trier 530, mineralised wood on reverse
1370	1066	2867	337-341	AE3 14 mm	FLMAXTHEO DORAEAUG	PIETAS ROMANA	Trier		?as LRBC1, 120
1373	1369	3505	138-161	sestertius	Antoninus Pius	Figure standing l		EW/EW	Antoninus almost certain
1373	1369	3501	348-350?	AE3 16-17 mm	head r, probably Constantius II	FEL TEMP RE]PARATIO, falling horseman	-	W/W	damaged
1373	1369	3502	355-360	AE3 15 mm	head r	?Spes Reipublice	-	VW/VW	Rev ID reasonably certain
1373	1369	3503	388-402	AE4 12-13 mm	DNARC[ADIUS PFAUG	VICTORI]A AUGGG	-	SW/SW	
1373	1369	3504	388-402	AE4 c 13 mm	head r	SALU]SREI [PUBLICAE		W/W	damaged and part encrusted
1373	1369	3506	388-402	AE4 12 mm	head r	Salus Reipublicae	-	?SW/W	wear uncertain, very poor, cracked flan, eroded

Table 4.11 (continued): Coins in deposit type and number order

Sgroup	*Context*	*SF no.*	*Date*	*Denomination*	*Obverse*	*Reverse*	*Mint*	*Wear*	*Reference/comment*
1373	1369	3507	388-402?	AE3? 12-14 mm	head r	?		?/?	damaged. General character and poor, cracked flan suggest date
1403	1406	3623	330-335	AE4 13 mm	Urbs Roma	Wolf and twins	-	W/W	mostly eroded
1403	1406	3624	330-335	AE3 18 mm	FLIULCONSTAN]TIUSNOBC	GLORIA EXERCITUS, 2 standards	Arles	SW/SW	?almost new when deposited, now eroded
1403	1406	3625	330-335	AE3 18 mm	FLIULCONSTANTIUSNOBC	Gloria Exercitus, 2 standards	?	SW/?SW	encrusted, particularly on reverse
1440	1439	3629a	364-378	AE3 17 mm	DNVALEN SPFAUG	SECURITAS REIPUBLICAE	Arles	W/W	LRBC2, 542, fused to SF3629b
1440	1439	3629b	364-375	AE3 17 mm	DNVALENTINI [ANUSPFAUG	GLORIA ROMA]NORUM	-	VW/VW	fused to SF3629a
1440	1439	3628	388-395	AE3 13-14 mm	DNTHEODO] SIUSPFAUG	VICTORIA AUGGG	-	W/W	
1440	1439	3627	388-402	AE4 12 mm	head r	VI[CTORIA AUGGG	?	W/VW	wear uncertain, dies positioned well off-centre
1440	1439	3626	388-402?	AE3 14 mm	head r	?	?	VW/VW	wear uncertain, very poorly struck
1547	1542	3822	330-331	AE3 16 mm	CONSTANTI[NUS IU]NNOBC	GLORIA EXERCITUS 2 standards	Trier	W/W	RIC VII Trier, 527
1638	1642	4016	348-350	AE3 16 mm	DNCONST ANSPFAUG	FEL TEMP REP]ARAT[IO	-	SW/W	?regular, mm eroded
1638	1642	4017	364-367	AE3 17-18 mm	DN]VALEN SPFAUG	GLORIA ROMANORUM emperor and captive	Arles	SW/SW	LRBC2, 480
1638	1642	4020	364-375	AE3 16 mm	DNVALENTINI ANUSPFAUG	SECURITAS] REIPUBLICAE	Arles?	SW/SW	
1638	1642	4015	4C	AE3 15-16 mm	head r			W/W	encrusted
1705	1703	4059	330-348	AE3 13-14 mm	head r	Gloria Exercitus? 2 standards	-	VW/?VW	irregular
1755	1758	4217a	330-335	AE3 13-14 mm	Urbs Roma	Wolf and twins	-	W/SW	irregular?, fused to SF4217b
1755	1758	4217b	335-337	AE3 14-15 mm	CONSTANTI] NUSMAXA[UG	Gloria Exercitus, 1 standard	-	SW/SW	?irregular, legends partly off flan, fused to SF4217a}
1755	1758	4216	337-341	AE3 14-15 mm	Veiled head r	Quadriga	?	W/W	no surviving legends
1760	1759	4118	388-392?	AE3 13-14 mm	? DN VALENT]INI ANUS[PFAUG	VICTOR]IAAUGGG	?	W/W	unevenly struck on very poor flan, obverse legend not certain
1805	1644	4053	367-375	AE3 17-18 mm	DNVAL]ENTINI ANUSPFAUG	SECURITAS REIPUBLICAE	Rome	SW/SW	LRBC2, 724, minerally preserved fabric on reverse
1805	1644	4052	364-378	AE3 17 mm	?DNVALEN] SPFAUG	SECURITAS [REIPUBLICAE	Arles?	W/W	
1805	1644	4082	364-378	AE3 17 mm emperor and captive	DNGRATIAN] USAUGGAUG	GLORIA RO] MANORUM,]?GSdot	O F II S over	W/W	mm not exactly matched in LRBC2 for Lyons
3029	3017	3046	119-138	denarius	]ADRIAN COS[	P M TR P [COS III], emp stg r holding rudder and spear	(Rome)	W/W	BMC 3, no. 237, minerally preserved textile
In backfill of inhumation graves									
22	26	159	322	AE2 19 mm	CONSTANT INUSAUG	BEATA TRANQUILLITAS	Trier	SW/SW	as RIC VII Trier, 343

Table 4.11 (continued): Coins in deposit type and number order

Sgroup	*Context*	*SF no.*	*Date*	*Denomination*	*Obverse*	*Reverse*	*Mint*	*Wear*	*Reference/comment*
						altar VO/TIS/XX			
1000	944	2512	350-364	AE4 8 mm	head r	Fel Temp Reparatio, falling horseman		W/W	irregular minim
1490?	1454	3633	367-375	AE3 17 mm	DNGRAT]IAN USAUGGA[UG	SECURITAS REIPUBLICAE	Lyons	SW/SW	LRBC2, 333 or 337
1491	1851	4205	260-268	antoninianus 20 mm	radiate head r, Gallienus	IO]VI CONS AUG, goat	-	VW/VW	residual
Pyre good in cremation burial									
1195	1121	3013	364-378	AE3 17-16 mm	DNVALEN] SPFAUG	?	-	SW/?	burnt, reverse lost as a result
In non-grave features									
	426	1888	?	AE3 18 mm					damaged
	1189	3028	260-295	antoninianus 15x17 mm	radiate head	'figure'		W/W	barbarous
1261	1266	3379	303-305	nummus 25-26 mm	IMPMAXIMIANVSAVG	GENIO POPV LI ROMANI	Trier	UW/UW	RIC VI Trier, 587b
In topsoil/unstratified contexts									
	1	456	161-180??	?sest 28 mm	??Marcus Aurelius	figure seated l holding cornucopia	VW/EW	no surviving legends	
	1	1	268-270	antoninianus 18 mm	IMPCCLAUDIUSAUG	SALU]S AUG Salus 1		SW/W	RIC Vi, 98
	1	16	260-295	antoninianus 16 mm	radiate head r	?		VW/EW	
	1	19	260-295	antoninianus 19-20 mm	]…AUG radiate head r	figure		VW/VW	perforated behind head
	1	28	260-295	antoninianus 18-20 mm	radiate head r	?Mars r		VW/VW	encrusted
	1	388	260-295	antoninianus 16-17 mm	radiate head r	figure		VW/VW	
	1	186	332-333	AE3 17 mm	URBS ROMA	Wolf and twins	Trier	SW/SW	RIC VII Trier, 547
	1	21	330-335	AE3 16-17 mm	head r	Gloria Exercitus, 2 standards	-	EW/EW	
	1	167	348-364	AE3 14 mm	head r	Fel Temp Reparatio falling horseman	Trier??	W/W	?irregular
	1	166	364-378	AE3 15 mm	DN VA[	GLORIA ROMANORUM emperor and captive		mm missing	W/W
	1	20	364-378	AE3 16 mm	head r	Victory ?Securitas Reipublicae	-	W/W	eroded, no surviving legends
	1	17	388-402	AE4 12 mm	DNARCADIUSAUG	VICTORIA AUGGG	mm lost	W/W	
	1	15	388-402	AE4 12 mm	head r	Victoria Auggg	-	?SW/SW	
	4	44	341-348	AE3	CONS[ ]SPFAUG not necessarily Constans	VICTORIAEDDAUGGQNN		W/W	damaged
	4	40	350-364?	AE4 9-11 mm	head r	??Fel Temp Reparatio, falling horseman	-	VW/VW	irregular minim
	4	41	350-364?	AE4 7.5 mm	head r	?	-	W/W	irregular minim, cut down from larger coin

SF4053, had minerally replaced fabric on one side. Here, as in the other cases in the cemetery, multiple coins were usually found close together if not immediately adjacent to one another. In two instances (Graves 1440 and 1755) pairs of coins were fused together (SF3269a and b and SF4217a and b respectively), with a further 3 coins in Grave 1440 and one other in Grave 1755. This suggests that in some cases, at least, coins were placed in the grave in small bags or purses or wrapped in pieces of cloth, a suggestion supported by the evidence of the minerally replaced fabric in Grave 1805 already mentioned and also attached to the denarius in Grave 3029. Comparable evidence remains relatively scarce (see eg Philpott 1991, 212), but at Roden Downs, Berkshire, for example, it was suggested that coins from four graves were contained in leather bags or purses (Hood and Walton 1948, 21). Apart from being placed in the mouth, generalised locations of coin deposition were the head area and the vicinity of the waist, but these were not rigidly defined. In terms of other associations, exactly one third of the 24 graves with deposited coins also contained other grave furniture. These aspects are discussed in more detail elsewhere.

MEDIEVAL COINS AND POST-MEDIEVAL TOKENS *by Martin Allen*

The three coins from the site can be dated between 1266 and *c* 1314. The billon (base silver) *denier tournois* of King Louis IX of France, issued in 1266-70, is an example of a denomination imported into England in significant quantities in the late 13th century and first half of the 14th century (Cook 1999, 244-5, 254-5, 273). The English silver penny of Edward I, produced in 1300, shows some signs of wear but its edges do not seem to have been clipped, which was common after reductions of the weights of English silver coins in 1344-51, and it is unlikely to have been deposited later than the end of the 14th century. The silver farthing of Edward II (issued *c* 1310-*c* 1314) is probably also a 14th-century loss.

The two 17th-century tokens were both issued by Nicholas Purdue of Winchester, providing some evidence of the local circulation of such tokens. They were probably deposited no later than the 1670s, as the circulation of tokens was suppressed by proclamation in 1672-4 (Peck 1964, 105-6).

OBJECTS OF GLASS, SHALE, BONE AND METAL (EXCEPT NAILS) *by H E M Cool*

Introduction

Lankhills has long attracted attention because it is one of the most richly furnished 4th-century cemeteries in Britain. Compared to the practices in many other provinces, Romano-British society tended to be frugal when it came to making provision for the dead, at least in as far as grave goods that leave archaeological traces were concerned. In part Lankhills stands alone because it was dug under modern conditions and published in an exemplary manner (Clarke 1979). The 4th-century cemeteries of some cities such as York (RCHME 1962) obviously had many graves that were richly furnished but they are known primarily from antiquarian finds and normally there is only a patchy record of what was found. Even allowing for this, however, it is likely that Lankhills would have stood apart due to the nature of some of the furnishings. The number of individuals buried with crossbow brooches and belt equipment, for example, is unrivalled within Britain. The new excavations have increased the number of furnished graves by a considerable amount, and provide the opportunity to re-assess the sometimes controversial conclusions that Clarke drew from the ones he had excavated. The aim of this section is to consider the finds from the Oxford Archaeology excavations and integrate them with the finds from the earlier excavations in the cemetery. By doing so it is hoped to illuminate the lives of the community or communities who were burying their dead there. All the finds, other than coins, pottery vessels and hobnails, which were deliberately burnt on the pyre or placed as grave goods, are considered here. The catalogue entries for the material will be found in Chapter 3.

It has become very clear that in many Roman communities the choice of items to accompany the deceased was often closely governed by their age

Table 4.12: Medieval coins and post-medieval tokens

No.	*Description*	*Date*	*Weight*	*Condition*
448	France, Louis IX (1226-70), billon denier tournois. Lafaurie 1951 no. 201	1266-70	0.87 g	moderate wear
461	Edward I (1272-1307), silver penny, class 9b1, London mint	1300	1.34 g	moderate wear; bent
81	Edward II (1327-77) silver farthing, Withers 2005 type 31 (Fox class 13), London mint	*c* 1310-*c* 1314	0.31 g	moderate wear
59	Copper-alloy farthing token, Winchester, Nicholas Purdue, Williamson 1889-91, Hampshire 226	1649-72	0.96 g	light wear
162	Copper-alloy farthing token, Winchester, Nicholas Purdue, Williamson 1889-91, Hampshire 226	1649-72	0.94 g	light wear; corroded

and sex. In part this related to what the different sexes wore in life. Also important was the life stage that people had reached when they died because it was clearly felt that grave goods were more appropriate for some categories of people than others. A good example here is the quantities of jewellery deposited with (presumably) girls on the cusp of adolescence (see for example Gowland 2001) which can be seen as an aspect of the response to the premature death resulting in an unfulfilled life, as discussed by Martin-Kilcher (2000). Other sites have shown that items such as vessels which do not have any obviously gendered interpretation in modern eyes, were seen by the communities burying their dead in particular cemeteries as appropriate for a particular sex or age (eg Cool 2004).

In the light of this, all the discussions that follow are integrated with the information about the deceased provided by the osteology report. At the outset it is useful to summarise the pattern of deposition at Lankhills. Table 4.13 presents the data for inhumation burials with a single occupant where the grave has not been disturbed in any major way, either by subsequent burials, by truncation or by modern disturbance, any of which might have removed some of the items originally deposited with the body. The table includes graves which have been re-opened for a subsequent interment but excludes burials where two (or more) individuals were buried at the same time. The age categories are those used in this report. The data for the Clarke's burials are those of Gowland (2001) and not those presented by Clarke (1979). The age categories for the two different sets of excavations are broadly rather than precisely comparable in the mature to older adult categories and Gowland did not assign any bodies to the much older adult category (60+) used here. For the age categories up to and including the prime adult category, however, the two sets of data are directly comparable. (The individual in Clarke's grave 333 was aged by Gowland as being up to one year. This is a lavishly furnished grave and features in several of the tables that follow. It has been included as an infant (1-3) as the size of the body seen on the plan (Clarke 1979, fig. 62) is at some odds with the age suggested by Gowland).

The first eight columns of Table 4.13 show the numbers of graves without goods and those which

Table 4.13: Single undisturbed inhumation graves with and without grave goods in Clarke's and OA excavations, by age and sex

Age/Sex	*No grave goods*		*Coins only*		*Hobnails only*		*Vessel only*		*Other goods & combinations*		*Total*
	Clarke	*OA*	*Clarke*	*OA*	*Clarke*	*OA*	*Clarke*	*0A*	*Clarke*	*OA*	
Neonate	29	3	2	1	-	1	-	-	-	-	36
Infant	10	10	2	-	1	3	1	3	7	1	38
Young child	10	3	1	-	2	1	3	1	7	2	30
Older child	1	2	1	-	3	4	-	-	2	4	17
Child	16	2	-	-	1	1	1	1	9	2	33
Female adolescent	-	-	-	-	-	-	-	-	1	4	5
Male adolescent	1	-	-	-	1	-	-	-	1	-	3
Adolescent	-	2	-	-	-	1	-	-	4	-	7
Female young adult	11	1	1	-	7	1	3	1	9	1	35
Male young adult	6	2	-	-	5	2	2	1	4	2	24
Young adult	2	1	-	-	1	-	1	-	-	1	6
Female prime adult	13	6	-	1	3	5	-	-	7	2	37
Male prime adult	10	4	1	-	6	3	3	1	2	4	34
Prime adult	2	-	-	-	2	-	1	-	4	-	9
Female mature adult	4	3	1	2	4	6	1	-	5	1	27
Male mature adult	11	7	2	-	1	6	2	1	6	5	41
Mature adult	2	1	-	-	1	-	-	-	2	-	6
Female older adult	3	7	2	-	1	3	1	-	2	2	21
Male older adult	4	11	-	1	6	9	1	-	3	4	39
Older adult	1	1	-	-	-	-	-	-	1	1	4
Female much older adult	-	3	-	1	-	1	-	-	-	1	6
Male much older adult	-	-	-	-	-	5	-	-	-	1	6
Female adult	7	4	-	1	5	6	1	-	5	10	39
Male adult	6	4	-	-	3	5	2	1	6	1	28
Adult	17	2	2	1	26	2	3	1	15	8	77
Unknown	-	1	-	-	-	2	-	-	-	2	5
Total	166	80	15	8	79	67	26	11	102	59	613

just have coins or hobnails or vessels (of all materials). The final pair of columns shows the more lavishly furnished graves which have combinations of those categories and/or other sorts of finds of the types discussed here. As can be seen, most of the age categories are well represented with only the older children, adolescents and much older adult category being represented by smaller numbers. It has been possible to sex large numbers of individuals, summarised in Table 4.14 for ease of reference. This table again deals only with the graves with a single individual but also includes those disturbed graves where the skeleton could be sexed.

More lavish furnishing of graves only ever occur in a minority of cases, amounting to approximately one quarter of the corpus. Even here, at a cemetery where grave goods were provided in abundance in comparison to other 4th-century cemeteries such as Poundbury near Dorchester (Farwell and Molleson 1993) and Butt Road at Colchester (Crummy *et al.* 1993), well over a third of the individuals were buried without any goods at all.

Against this background, it is possible to explore in some detail quite why certain individuals were accompanied in their graves by particular types of objects. As part of this exploration formal significance tests will be used from time to time. The methodology used is discussed in Cool and Baxter 2005 and tests have been conducted in the R package (http://www.r-project.org/). Given that only a subset of the individuals in the cemetery have what has been termed here lavishly furnished graves, the tests look at the incidence in these, ie taking the total numbers in each age sex category from the final two columns of Table 4.13. Thus if it was desired to compare the incidence of a particular item in young female graves (adolescent and young adult) against those in the graves of the older females, the total of graves in each category would be 15 (5 + 10) and 20 (9+6+4+1).

Some of the graves contain legible coins as either grave good or inclusions in the fills. For ease of reference the incidence of the small finds in the graves with coins is summarised in Table 4.15. From this it can be seen that it is the coins of the middle third of the 4th century that are the most numerous. This probably reflects more the circulation patterns of coinage within the province than providing an accurate summary of the dating of the graves in which the coinage was found. Certainly the middle third of the 4th century, Periods 17 and 18 in the Reece system, is one that sees a major increase in the number of coins in circulation (Reece 1995, fig. 1). As will become apparent in what follows, dating for the objects derived from site assemblages of finds often suggests a generally later currency than the coins in the various graves would suggest. It is possible that the choice of a coin to be placed in a grave might have been governed by other factors than a casual selection from the small change available in the purses of the bereaved. The coins should be recognised as providing very much a *terminus post quem* indicator, and the actual date of the grave could be some decades after the date of minting. This is well-demonstrated in the case of Grave 710 because of its stratigraphic relationship with Grave 810 that contained a comb.

The detailed discussion of the finds follows the pattern and order set out in the Clarke (1979)

Table 4.14: Numbers of sexed individuals in inhumations with a single body

Sex	*Clarke undisturbed*	*OA undisturbed*	*Clarke disturbed*	*OA disturbed*	*Total*
Female	97	73	1	10	181
Male	96	80	-	15	191
Total	193	153	1	25	372

Table 4.15: Incidence of different small find categories in inhumations with coins

	Coins minted first third 4th century	*Coins minted second third 4th century*	*House of Valentinian 364-378*	*House of Theodosius 388-402*	*Number of occurrences in graves without coins*
Comb	-	-	3	1	14
Shale spindle	-	3	1	-	11
Knife	-	2	1	3	8
Crossbow brooch	-	2	1	-	10
Belts	1	3	1	3	12
Bead strings	-	3	-	-	25
Bracelets					
Copper alloy	-	5	-	-	32
Iron	-	1	-	-	8
Jet/shale	-	1	-	-	10
Bone/ivory	-	3	1	1	23
Hair pins	-	3	-	-	6
Finger rings	-	1	-	-	14

monograph to allow for ease of comparison. This is followed by an overview where the evidence is integrated. For ease of reference the earlier excavations will be referred to as Clarke's excavations, and those conducted by Oxford Archaeology as the OA excavations. The convention has been adopted of referring to items from the OA excavations by grave number and individual number in bold thus: **1846.1**, and from Clarke's excavations by grave number and find number in italics thus: *322/447*. In the tables that show the distribution of particular types according to the age and sex of the individual, female graves will be shown in red and males graves in blue. The sex categories include both those securely identified in the osteology reports (male, female) and those less securely assigned (?male, ?female).

Glass vessels

In the OA excavations glass vessels were deposited in three graves, each of which contained coins indicating that interment took place in the final decade of the 4th century at the earliest. All three vessels are forms that were not represented among the glass recovered from the earlier excavations.

Grave 1373 had a small conical beaker with a fire-rounded rim (**1373.1**). This latter feature distinguishes it from the conical beakers found in the earlier excavations which all had cracked-off rims (Harden 1979, 213-4 Class II). The form with the fire-rounded rim came into use later than that with a cracked-off rim, and traditionally has been viewed as a 5th-century form though it was in use in the second half of the 4th century (Price and Cottam 1998, 121-31). In late 4th- to 5th-century assemblages the form with the cracked-off rim still tended to be numerically dominant (Cool 1995, 13). From the site finds at Winchester it is not possible to separate out late 4th- to 5th-century assemblages from the earlier 4th-century ones, but it is clear that taking the 4th to 5th century as a whole, cups and beakers with cracked-off rims were much more numerous than those with fire-rounded ones. Among the 4th-century glass from the suburb and defences sites only the forms with cracked-off rims were found (Cool 2008, 93). In the large 4th-century assemblage from The Brooks (unpublished) the cracked-off form is approximately three times as common as the fire-rounded form (3.8 EVE to 1.2 EVE).

It seems reasonable to conclude that a beaker like the one in Grave 1373 would not have been particularly common in Winchester in the last decade of the 4th century, and a 5th-century date of deposition might be preferred. As will be discussed below, in some of the graves the choices of the type of glass vessel to be deposited definitely erred towards the unusual and uncommon, but this does not seem likely to have influenced the choice here. As far as the drinking vessels go, the choice seems to have depended on what was commonly available in the community. If that is applied here, then the burial is likely to have taken place in the 5th century rather than the late 4th.

The second drinking vessel came from Grave 1440 (**1440.1**). Although superficially similar to the hemispherical cups with cracked-off rims found deliberately deposited in two of Clarke's graves (Harden 1979, 211 Class I), this vessel is considerably larger and is slightly more conical in shape. In Britain, this form was first defined as a separate type by Price and Cottam in their study of the glass from Beadlam (1996, 99) and subsequently in their handbook to Romano-British glass (1998, 126-8). They date the form to the second half of the 4th century, but unfortunately few of the examples have come from well-dated contexts. At Beadlam, where the form was very well-represented, it is not possible to relate the glass to the contexts from which it came, but the occupation on the site clearly runs into the 5th century. The coin list runs up to Theodosian issues which form just under one-quarter of all the identifiable coins (Barclay 1996, table 1). The finds assemblage includes such items as bone combs and a spur which, as will be discussed below, may be dated to the very late 4th century and into the 5th century (Neal 1996, 49 no. 20 and 50 no. 26). The presence of Fowler Type E and F penannular brooches also points to occupation in the 5th century (Neal 1996, 49 nos 12 and 13).

The fact that the form is so well-represented at Beadlam where 5th-century occupation seems to be well attested, but is rare in 4th-century assemblages generally, perhaps indicates that its *floruit* is slightly later than that originally suggested and that a later 4th to 5th century one should be preferred. Such a date would fit happily with the evidence of Grave 1440 and would also fit the pair forming part of a group of glass vessels found within a bronze bowl at Burgh Castle (Harden 1983, 123 nos 83-4).

Cups such as this do occur among site finds at Winchester. Price and Cottam note several examples from unpublished material (probably from the Biddle excavations – Price and Cottam 1998, 127), and it is possible that some of the less diagnostic rim fragments from The Brooks also belonged to this type (unpublished).

Both of the forms discussed so far can be shown to be part of the range of vessels in use in the town; the same is not true of the third vessel from Grave 1760 (**1760.1**, Fig. 4.3). This is a small globular jug with a lateral spout on the body. It belongs to the class of vessels normally called *tettines* or sometimes *biberons*. The glass examples are Form 99 in the Isings (1957) typology. While never numerous it is not uncommon to find such vessels among the goods deposited in cemeteries in Gaul and the Rhineland. In the discussions of those from Strasbourg (Arveiller-Dulong and Arveiller 1985, 116-7) and from the Poitiers region (Simon-Hiernard 2000, 169-72) numerous others from France and Germany were noted and more examples could easily be added to these lists. The form appears first

in the Flavian period (Moirin 2003, 219) and thereafter appears to have been made throughout the Roman era. An example from Steinfort in Luxembourg was deposited in a grave contemporary with Lankhills Grave 1760 as the rest of the grave furniture was dated to the end of the 4th and beginning of the 5th century (Wilhelm 1979, 29-30 no. 120).

Through its long history the form shows a variety of types of rim finish, base type, length of the neck, precise type of spout, colour etc, but these do not regularly combine in such a way as to suggest a standardised chronological progression. It seems most likely that a need was felt for a vessel with a lateral spout and that it was occasionally made by a wide range of glass-houses over a number of centuries. Quite what that function was has been a matter of some debate. For similar vessels in pottery it is often suggested that they were used to feed infants or invalids, or sometimes to fill oil lamps (for discussion see Webster 1981).

Given that the spouts of glass examples are often rough, the interpretation as an infant's feeding vessel seems unlikely. The glass examples are often stated to have been found in childrens' graves but many of the discoveries are antiquarian finds and, as has been pointed out, there is sometimes the suspicion that the mere presence of a *tettine* has been sufficient to identify the grave as that of a child, rather than relying on the osteological evidence (Arveiller-Dulong and Arveiller 1985, 117). In this case, however, the vessel did accompany a child, probably with a minimum age of about five. In determining the function of this vessel type there is also the problem that the position and orientation of the lateral spout is sometimes not very practical for dispensing the contents. In the present example, the spout is centrally placed on the body and is horizontal, so the contents would have started to flow out when the vessel was only half full. In the case of one found at Steinfort the spout is on the lower body and points down, so the contents would have started to drain out even earlier. It is possible that the spouts were plugged to prevent this, though the thinness of the glass at the end of the spout would have led to damage and breakage if this was done on a regular basis. Whatever the vessels held was not required in large quantities. This example would have held approximately 150 ml of liquid.

Glass *tettines* have rarely been found before in Britain. The present writer knows of only two, both from Colchester. One is a blue/green antiquarian find without provenance in the Colchester and Essex Museum (Acc. no. 88.98 – see Cool and Price 1995, fig. 13.4 for drawing). The other is colourless and was found during building work in the mid 1990s (information from Philip Crummy 1993). The first is complete, the second lacks the upper part and handle. Their state of preservation suggests that

Fig. 4.3 Photographs of glass vessel 1760.1

both were originally deposited in graves. From the colours and from the rim details preserved on the first, they are likely to have been in use during the 2nd to 3rd centuries and would thus have been in use at least 100 years or so before the example found in Grave 1760. Where pottery *tettines* are found in Britain they too appear to belong to this earlier period. One in a deposit without a body in the eastern cemetery at London belonged to the 3rd century (Barber and Bowsher 2000, 228 B713), while the pair from graves at York were made in Ebor ware so may be dated to the 2nd to later 3rd century (Monaghan 1997, 1021 Form YI). Five examples were recovered from graves at Pepper Hill, Springhead, one from a cremation and four from inhumation burials. These were all in local fabrics and of a type dated broadly from the mid 1st-early 2nd century (Monaghan 1987, 169). In the case of all four inhumations the vessels were apparently associated with children (Biddulph 2006).

Identification of glass *tettines* in domestic assemblages is hampered by the fact that rim, base and handle forms are all shared by jugs without lateral spouts. The spout itself, however, and its junction with the body would be a diagnostic and easily recognisable fragment. The rarity of the form among Romano-British material is demonstrated by the fact that though I have dealt with numerous glass assemblages over a period of more than a quarter of a century and so have seen tens of thousands of fragments, I do not recall ever encountering a fragment I could assign to a *tettine*. The form does not appear to be one that most people in Roman-Britain had any use for. The possibility must be strong that this vessel had some particular significance either for the deceased or the bereaved and may have been a personal possession acquired outside the province. Where it might have been acquired is therefore of some interest.

As already noted the core distribution area for the form is Gaul and the Rhineland. Sennequier (1985, 194) suggested that the distribution in France was limited to the north, but they are also found in the central parts and one is certainly known from Fréjus on the Mediterranean coast. That, however, had been placed in a grave dated to the first half of the 2nd century (Béraud and Gébarra 1990, 162; Foy and Nenna 2001, 191 no. 334), and it certainly appears that during the 4th century the distribution was concentrated further north. Laterally-spouted vessels both with and without handles are noted much less commonly as coming from Italy, and when they have useful contextual information they can be seen to be of 1st- to 2nd-century date (eg Maccabruni 1983, 59). Negative evidence is always fraught with problems of interpretation, but given the links with the Danubian area that have been drawn for some of the burials, it is worth noting that Barkózci's (1988) survey of Roman glass from Pannonia did not include the form, although many other 4th-century forms were present. In summary therefore, this vessel is most likely to have come from northern Gaul or the northern Rhineland. The isotopic evidence for the child, possibly a boy given the other grave goods, indicates that he was local, but one might wonder whether his family had links across the Channel.

In addition to the vessels discussed, three body fragments have also been designated a grave good accompanying a mature adult (**700.1**). The glass shows no sign of granulation that might explain why the rest of the vessel is not present and it might perhaps be suspected that these were inclusions in the fill, like the base fragment in Grave 87.

The depositional pattern of all the glass vessels from inhumations with one body is shown in Table 4.16. There is a distinct pattern based on age, and the vessels from the OA excavations continue the pattern seen from Clarke's excavations. The vessels can be divided into those that could have been used as drinking vessels and the forms which could not have been used in this way (the closed forms). It is also unlikely that the handled cups were used to drink from as they had tubular rims. In all but one case drinking vessels are deposited with adults, the one exception being a young child's grave richly furnished with jewellery. Closed vessels were generally placed in children's graves. Of the two exceptions, one (*35/20*) is perhaps to be explained by the fact that this is an earlier grave than most of those with glass vessels in the cemetery. An interesting feature of the table is that the handled cups were also deposited in children's graves. Perhaps it was the provision of handles that made the various vessels appropriate for young people. If the two graves with the dolphin-handled bottles are excluded from consideration because of their earlier date, a Fisher's Exact test can be carried out on the rest of data belonging to the late 4th to 5th century to see if the pattern has come about by chance. It returns a p-value of 0.005, which is very strong evidence against the hypothesis that all the different types of vessels were thought equally appropriate for children and adults.

At Lankhills, as in the 3rd-century cemetery at Brougham (Cool 2004, 371), glass drinking vessels were the preserve of adults, although unlike at that site they were thought appropriate for both sexes. It appears likely that though all the vessels were made of glass, the different categories served different functions in the grave. In the case of the closed forms it was probably what they contained that was important, whereas for the adults the vessels appear to have been functioning as parts of sets of tablewares. It is noticeable that the glass cups and beakers in Clarke's graves 63, 347, 351, 369, 396 and OA Graves 1373 and 1440 were all accompanied by pottery vessels. This happened in a smaller number of graves with closed glass vessel forms.

Glass vessels were deposited relatively rarely in 4th-century graves in Britain and the number of cemeteries where there are glass vessels and which have good osteological data is not large. The best group probably comes from the Butt Road in

Table 4.16: Glass vessels at Lankhills in inhumation graves with a single body

	Infant	*Young child*	*Child*	*Young adult*	*Prime adult*	*Mature adult*	*Adult*
Drinking		337/385			347/382	81/62	63/51
					351/391		369/530
							396/501
							1373.1
							1440.1
Handled cup		136/117	390/508				
Cup/flask							329/372
Jug	333/310						
One-handled flask		385/472		352/551			
Two-handled flask			236/270				322/450
Dolphin flask		337/411			35/20		
Tettine			**1760.1**				

Colchester. There only six of the 669 graves in the period 2 cemetery were accompanied by glass vessels, but it is clear that the pattern seen at Lankhills was not repeated there, as all but one of the burials were those of adults and most of the vessels were closed forms (Crummy *et al*. 1993, 152-4). This highlights the fact that the Lankhills glass assemblage is unusually large and that patterns of use seen in one community may not be universal. Fourth-century cemeteries have been found elsewhere in Winchester (Rees *et al*. 2008, 202-6) but at these too the deposition of glass vessels was either rare or non-existent. The only possible candidate for a 4th-century glass grave good was a beaker found in a medieval feature at Chester Road (Cool 2008, 95 no. 480), but that would have been in use earlier in the 4th century than the bulk of the Lankhills vessels. At present, therefore, they stand in splendid isolation at Winchester.

Vessel glass fragments were found associated with two cremation burials. Fragment **655.1** was certainly heat-affected and probably comes from a vessel placed on the pyre. In Grave 985 there was the base of a colourless vessel with trailed base ring and 15 body fragments from a second vessel in the typical greenish colourless bubbly glass of the 4th century. None of these show any evidence of having been heat distorted so their status is unknown, but given the rarity of glass vessel fragments on the site other than the vessels deposited as grave goods, it might be suspected they were associated with the funeral in some way.

Equipment

Under equipment Clarke itemised 12 different categories of finds. Items from one of these (locks and keys) were only found in the fill of graves and another (spoons) was obtained from rescue observation. There is no evidence therefore, that these were actually grave goods. Nail-cleaners were represented by one example *(106/127)* which was more likely to have been a strap end, so the category is redundant. In the iron needles and pin category the OA excavations produced one item that might be a much fragmented iron pin (**1355.3**), but as it cannot be further identified it warrants no further discussion. Of the remaining eight categories, the OA excavations produced no examples of weaving-tablets, gaming pieces and sets, whetstones, strike-a-lights or arrowheads. All of these had been represented in two graves at most in Clarke's excavation. The recent excavations have produced examples of combs, spindle whorls and knives, and have added three new categories: shears, a possible loom weight and a stylus.

Combs

All of the combs found during the OA excavations were in extremely poor condition due to the burial conditions and it was not generally possible to identify whether they were made of bone or antler, though the latter is more likely. All were double-sided composite combs of the type that had been the commonest one found during Clarke's excavations (Galloway 1979). Five were found deliberately deposited as grave goods (see Table 4.17) and a sixth (**136.1**) was found in the fill of a grave.

It is generally agreed that this type of comb came into use during the second half of the 4th century, and probably during the last third. Three of the graves with combs from Clarke's excavations also contained coins of 364-75 and a fourth had coins of 388-402. As can be seen from Table 4.15, combs are the only category of find that do not occur in graves with earlier coins. A grave at Butt Road, Colchester which contained one had a coin of 367-75 in the fill (Crummy *et al*. 1993, 146). Where found in domestic contexts a similar late date is indicated. One formed part of a deliberate deposit at a shrine at Great Dunmow which must have taken place in or after the sixth decade of the century (Wickenden 1988, 38 no. 17). Another, from Canterbury, came from a context post-dating AD 370 (Blockley *et al*. 1995, 1167 no. F1186). They were also present in deposits

dating to the very late 4th to 5th century and beyond at Wellington Row, York (Ottaway 1993, 116, fig. 71). There can be no doubt they are an indicator of late 4th- to 5th-century activity which has an interesting implication for the date of Grave 710. The digging of this had destroyed the western end of Grave 810 which contained one of these combs. Three coins of the period 367-75 and 364-78 had been placed in the hand of the body in Grave 710. It has to be assumed that they were old when they were deposited and do not directly date the grave as the comb in the earlier grave indicates the same date at the earliest, and presumably an interval of time would have had to have elapsed before it was disturbed.

Table 4.17 shows that these combs were generally deposited in adult female graves. Four other combs were found in graves that contained two bodies (*297/323, 402/428, 413/521, 438/584*) and each of those included adult females of young, prime and mature age. Where good osteological reports exist for the burials with combs elsewhere the association with adult females is maintained. Seven burials at Poundbury had combs with six accompanying females aged over 25 and the seventh not aged or sexed (Farwell and Molleson 1993, 108-10). Of the seven graves with combs at Butt Road, two accompanied young children, two accompanied adult females, one accompanied a male adult and the other two were with unsexed adults (Crummy *et al.* 1993, 146, table 2.58). At the Bath Gate cemetery at Cirencester one was buried with a female aged 50-60 years (McWhirr *et al.* 1982, 129 burial 175). The burials from other cemeteries in Winchester have not yet been published in full but it is known that combs accompanied burials at Victoria Road, Hyde Street and St Martin's Close Winnall (Rees *et al.* 2008, 64-66 nos 311-7). Information for the age and sex of the three burials from Victoria Road is available (Gowland 2002, 464-8). Two accompanied females of young and prime age. The third accompanied a ?male adult. This is therefore very much an adult female item, only occasionally being felt appropriate for a male.

There are some hints in Table 4.17 that combs were most favoured among older women. The incidence of combs accompanying women of young and prime adult age can be compared to those accompanying older women. When this is done using a Fisher's Exact test the result (a *p*-value of 0.04) does provide support for the belief that in this community combs were indeed seen as more appropriate for older women. This is of some interest as there are grounds for believing that combs may have been prestige items and indicated that their owners came from the wealthier echelons of society. Certainly one of the examples found in the cemetery at St Martin's Close, Winnall had been a treasured rather than utilitarian item as it was kept in an elaborately decorated box (Rees *et al*. 2008, 66 no. 315, 108-11). At Poundbury three of the people with combs had been buried in the mausolea, and one of these was additionally placed in a stone coffin (Farwell and Molleson 1993, 110), a sign of high status. Philpott (1991, 180-81) has noted other associations with lead and stone coffins and with mausolea. The pattern of deposition here could well suggest that at least some older women, past childbearing age, were figures of esteem and were not marginalised. The case is not clear-cut because of the problems over whether **530.1** was or was not associated with the individual in Grave 530. This is considered further below.

The question of why certain individuals were buried with combs can be further explored using the isotope evidence (Evans *et al.* 2006a; Chenery *et al.* below) as two of them were analysed from Clarke's excavations (63 and 333) and four (530, 1270, 1280, 1355) from the OA excavations. All of these individuals were British and all bar possibly 1270 were local; the elderly female in that grave having isotopic values more appropriate for the west or north of Britain. Clearly there is no evidence to suggest that the adoption of combs was influenced by any exotic influence.

Combs such as these have often been found placed close to or in the vicinity of the head and this has sometimes led to the supposition that they were actually worn, though this seems highly unlikely (see Cooke 2000 for two opposing views in this debate). The examples from the OA excavations would strengthen the belief that they were in the graves as personal equipment, not as worn items; **1280.1** was placed vertically beside the skull, **810.1**

Table 4.17: Double-sided composite combs at Lankhills in inhumation graves with a single body

Infant	*Child*	*Young adult*	*Prime adult*	*Mature adult*	*Older adult*	*Much older adult*	*Adult*
290/309	**1355.1**	5/9	365/473	17/19	254/225	**1270.1**	63/64
333/316				30/35	446/610		288/471
				436/583	**530.1***		369/557
							381/479
							423/593
							810.1
							1280.1

*see discussion for a consideration of the attribution of this piece

was above the left shoulder, **1270.1** was by the right humerus and **1355.1** was by the feet. The position of **530.1** is the most interesting. This is a very fragmentary comb and when excavated it was described as a bone and iron pendant, probably because the fragments were found in a 'V'-shape on the chest. In a photograph it can be seen that one of the end plates and one of the tooth plates were lying adjacent to each other in a position that would have been impossible if the comb had been placed on the chest as a complete piece. This grave had been dug directly into the backfill of Grave 535 and the bones of the original occupant had been moved to one side. It seems distinctly possible that the comb had originally been with the occupant of Grave 535, an older adult ?male, and the decayed fragments placed on the chest of the un-coffined woman placed in Grave 530. If this is indeed the case then the correlation of combs with young and old females disappears. It would, however, have interesting implications for the date of Grave 530, as the latter would have to post-date the introduction of these combs by sufficient time to allow for the comb to be deposited in Grave 535 and to decay so that it was in a fragmentary state by the time Grave 530 was dug. A date in the 5th rather than the 4th century is thus indicated.

Spindle whorls

The OA excavations produced five shale spindle whorls deposited as grave goods (see Table 4.18). A sixth was found on the surface of Grave 595 when machining. One bone whorl was found in a cremation burial where it had clearly been a pyre good (**1195.1**).

The new finds bring the total of shale and jet whorls from the cemetery to thirteen. Two of the OA whorls (**1590.1**, **1930.1**) are further examples of the commonest form reported in 1979 which Clarke termed cylindrical, though given the curved outer edges annular might be a better description. Three have a biconical form which was not found before (**1000.1**, **1705.1** and the whorl from **595**). The sixth has a hemispherical shape (**785.1**), again not a form found in the earlier excavation.

The various shapes of the shale whorls recovered now approximate more closely to the pattern seen more generally, in which biconical whorls are the commonest form followed by the annular ones. Hemispherical shale whorls are known, as for example at Catsgore (Leech 1982, 127 no. 4), but are much less frequent finds. Given the uneven flat face on **785.1** it is possible that this had originally had a more globular outline and that part of the piece had sheared off along a natural plane, as had happened in one in a grave at Poundbury (Mills 1993c, 100 no. 1).

Turned shale spindle whorls like these came into use in the 4th century as is well-illustrated at such sites as Greyhound Yard, Dorchester, where shale artefacts occurred in abundance as a result of the proximity of the site to the Kimmeridge shale beds from which the material was derived. There, other shale artefacts were recovered regularly in early to mid Roman contexts, but the spindle whorls first make their appearance in the late Roman ones (Mills and Woodward 1993, table 11). Where the whorls are found in more closely dated contexts they regularly belong to the later 4th century. One in a well fill at Catsgore was accompanied by coinage of 341-8 (Ellis 1984, 39 no. 85). At Winchester one was found in another well fill at Victoria Road, which also contained a coin hoard ending at 364 (Rees *et al.* 2008, 76 no. 361). It is more common, however, to find them in contexts which include Valentinianic coinage post-dating 364, as at Shakenoak (Brodribb *et al*. 1973, 44 nos. 9-10) and Chells (Green 1999, 80 no. 8). They clearly continue in use to the end of the century and beyond. At Cirencester, two were found in the abandonment layers over a large suburban house in an area that was not developed until the mid 4th century (McWhirr 1986, 116 nos 241-2). At Bancroft one was recovered from the basal deposits of a sunken featured building assigned to the early Saxon period (Bird 1994, 370 no. 427). Instances of the occurrence of these whorls in later 4th- and 5th-century contexts could easily be multiplied, but securely stratified examples that can be assigned to the fourth decade of the 4th century or earlier seem to be lacking.

Bone spindle whorls are very rare in assemblages from Romano-British sites. Ones made of modified cattle femur heads are occasionally found in 1st- and 2nd-century contexts, but these appear to be a continuation of a late pre-Roman Iron Age tradition. This died out throughout most of the Roman period, not to be revived until the 4th century when bone whorls start to re-appear in contexts dating to the second half of the century, as for example at Kingscote (Timby 1998, 202 no. 18.4) and Lullingstone (Meates 1987, 151 no. 456). Turned examples occur very occasionally in late 3rd- or early 4th-century contexts, as a truncated conical one from Lullingstone (Meates 1987, 149 no. 454) and a very shallow biconical one from Derby Racecourse (Dool 1985, 214 no. 49) demonstrate. It is difficult to establish when their main period of popularity was thereafter as they continue to be relatively uncommon. This is well-demonstrated in the 4th-century assemblage of finds from Portchester, where shale spindle whorls are four times as common as ones of bone (Webster 1975, 220, 226). What can be said is that the shallow hemispherical form represented by **1195.1** was certainly in use during the later 4th century and into the 5th century. At Shakenoak, for example, one was found in a dump dating to the last third of the 4th century and later (Brodribb *et al*. 1973, 142 no. 129) and at Frocester one made of antler came from a mid to late 4th-century context (Price 2000, 99 no. 57, fig. 6.1 no. 58).

Against this background Clarke's assertion (1979, 248) that the graves with spindle whorls were evenly distributed in both halves of the 4th century

looks distinctly odd. As can be seen from Table 4.15, several of these graves also contained coins. Of Clarke's graves two (329 and 336) had coins of 350-64 and one (396) had one of 364-75. The OA excavations added to this total with Grave **1000** containing an irregular nummus of 350-64 in the fill. The graves that led Clarke to believe that spindle whorls were being deposited in the first half of the century were 89, 98 and 145. Graves 89 and 145 were dated to 310-50/70 on the grounds of vertical stratigraphy; 89 was cut by a grave that contained a coin of 364/78 but the grave that cut 145 had no independent dating evidence. Grave 98 was dated to 310-50 on the grounds of the pottery vessel it contained, though that was given the broader date range of 270-370 in the pottery report (Fulford 1979, 228) and it was noted that the vessel was very worn, suggesting that it was old when placed in the grave. These three graves produce no compelling evidence that they have to date to the first half of the century, and it does seem very likely that graves with shale spindle whorls belong to the second half of the 4th century and most probably to the final third. As already outlined, dating bone spindle whorls is more problematic but their pattern of deposition could well be the same as that of the shale ones. For whorls of either material, deposition in the 5th century is as likely as deposition in the late 4th.

Table 4.18 shows that spindle whorls are overwhelmingly a female artefact. The age distribution looks slightly odd. From Clarke's excavations the data clearly indicate that this was an artefact appropriate for girls and young women. The OA excavations have added two old individuals but there remain no women with spindle whorls of prime or mature age with them. Comparing the incidence of spindle whorl between the two age groupings (adolescent/young adult and prime adult and older) in the total data set females in the lavishly furnished graves shows that this pattern is not statistically significant and so spindle whorls were probably thought appropriate for females of all ages once they began to approach adulthood. Poundbury hints at a similar pattern. There five individuals were accompanied by whorls. Two fall into the older child age bracket used here (ages 10 and 12). The other three were with older women, one aged 50 and the other two 60 (Mills 1993c, 99).

Table 4.18: Spindle whorls at Lankhills in inhumation graves with a single body showing age and sex

Older child	*Adolescent*	*Young adult*	*Older adult*	*Adult*
336/359	250/258	98/77	**785.1**	145/150
		89/78	**1000.1**	329/369
		117/133		396/504
		326/388		**1590.1**
				1705.1
				1930.1

It is of some interest to note that the examples of the less common materials at Lankhills were concentrated among the younger people. That in the grave of the child was jet, and both the material and shape mark it out as unusual among the normal range of black whorls. To the users of these it would have been very apparent that jet stayed black and shiny whereas shale becomes dull and dark grey unless kept oiled. The two bone whorls from Clarke's excavations (*98/77*, *117/133*) both belonged to young adults and the cremated individual in Grave 1180, with the bone whorl as a pyre good, might have been a young adult based on the tooth wear observed.

Philpott (1991, 184) noted that burial with spindle whorls was a distinctly regional trait concentrated in the Dorset/Hampshire/Somerset area, and it is interesting to note that both of the individuals with spindle whorls who have been subject to isotope analysis (117 and 326 from Clarke's excavations – Evans *et al.* 2006a) had a local signature. In the period since Philpott wrote, new work has not produced much evidence to contradict this, although graves from South Shields (Snape 1994, 46, 53-60) and Bantycock near Newark, Nottinghamshire (unpublished excavations by Pre-Construct Archaeology) can now be added. The former is of particular interest as the grave contained a jet distaff as well as a jet spindle whorl and a rich collection of unworn jewellery and equipment indicative of a very late Roman date. At Bantycock the whorl was made of a reused samian sherd, a fashion that seems also to be of late 4th- to 5th-century date (Cool 2000, 52-3). At South Shields the skeleton did not survive, although the jewellery strongly suggests this was a female. At Bantycock the skeleton was that of a woman.

Whorls made out of broken potsherds are a common feature on Roman sites and frequently fulfil all the criteria that enable them to be viewed as spindle whorls (Crummy 1983, 67). Despite their ubiquity Philpott listed only one potsherd whorl as a grave good (Philpott 1991, tables A12 and A33). Clearly for much of the Roman period spindle whorls were not thought appropriate grave goods. In the light of this it is curious that they start to be deposited in the second half of the 4th century, coincidentally with the appearance of turned shale whorls in some numbers on domestic sites and when shiny red pottery was being sought out to make whorls. Given that the Kimmeridge shale industries had been producing turned bracelets and bowls for several centuries before they started making whorls, the impetus for the start of whorl production cannot have been a technological development. Whorls made of reused pottery sherds do not need the craft skills and equipment that turned items require, and presumably turned whorls would have been more expensive. The coming together of various strands of evidence might perhaps suggest that the production of textiles started to be regarded in a different way. Philpott

(1991, 184) drew attention to the fact that a subset of the Dorset burials with whorls were placed in lead coffins or stone cists, and the individual with a spindle whorl and jewellery of precious metals buried at Normangate Field, Castor was the primary burial in a mausoleum (Wilson 1969, 219). Such burials are appropriate for people with status and wealth. Set against this wider background, it is possible that spindles had become an appropriate accoutrement for the mistress of an establishment, whether or not she did the actual work of spinning and weaving. Possibly textile work had come to symbolise the proper activity for a respectable woman, just as it had been associated with Roman republican matrons. It is perhaps for this reason that so many have been found at Lankhills rather than because of the possible presence of a *gynaeceum* at Winchester as suggested by Clarke (1979, 369).

Knives

We turn now from a feminine to a masculine artefact. The OA excavations uncovered seven graves with knives among their grave goods to add to the seven found during Clarke's excavations. One of the OA knives (**3030.5**) was fragmentary and not available for study. As can be seen from Table 4.19 all the associations in cases where the body can be sexed are with males.

All of the knives have a tang set more or less centrally. Clarke (1979, 249-51) categorised the knives as having leaf-shaped blades and sub-divided them according to the proportion of the blade to the tang. Of the OA knives only two, **1175.2** and **1805.1**, fit happily into the earlier typology; they could be assigned to Clarke's Type B with a longer blade. One of these (**1805.1**) preserved its bone handle which had been elaborately inlaid with silver. Two of the three other knives which are preserved in a more or less complete state can be fitted relatively easily into Manning's (1985) typology of domestic knives; **1760.2** is a typical example of Manning's Type 14 and **1310.1** is an example of Manning's Type 16. Both of these are common types. Manning (1985, 114) describes them as the 'everyday, general purpose knives of the period'. These more domestic knives are also characterised by a lack of a metal cap at the end of the handle, a feature that all but one of Clarke's knives had. Knife **1921.3** with a weak S curve to the blade is not a Manning type, nor does it match the earlier knives in either the blade shape or the lack of a metal cap.

The deposition of knives in inhumations took place in the second half of the 4th century at Lankhills judging by those that were accompanied by coins (see Table 4.15), and two of the OA graves with knives (1175 and 1760) could be dated to the end of the 4th century at the earliest as they contained Theodosian coins. The antler handle on **1310.1** is also likely to indicate a late 4th-century date or later as antler becomes a more common material at that point. Throughout much of the Roman period bone had been the preferred material for making handles and other items if skeletal material was required.

All of the different stages of adult age from prime adult onwards have some individuals with knives and the OA excavations produced one child as well. Comparison of the incidence of knives in young male (adolescent and young adult) graves to that in the graves of the older males shows that the difference is not significant, so it would appear that knives were appropriate for adult males of all ages. This is not the pattern seen elsewhere in 4th-century graves where knives are present, though we are hampered by the frequent lack of good osteological evidence. At Poundbury, two knives and a modified shear blade were found, all from young adult female graves (Mills 1993a, 97-8). At Butt Road in Colchester the only knife accompanied a 12 to 15 year old accompanied by beads and bracelets and thus probably female (Crummy *et al*. 1993, 155). A small knife was also found in the South Shields grave with the spindle whorl and distaff together with beads and bracelets which would normally indicate a female burial (Snape 1994). Philpott shows that the deposition of knives is a continuing if not very common trait in Romano-British graves, but it has to be said that at Lankhills it seems more common and more sex specific than normal.

Knife **1175.2** was found by the right knee of an older adult male with worn belt equipment and so fits one of the patterns seen Clarke's excavations, and this is also the pattern seen for the unusual knife **1921.3**. The knife in the latter case lay beside the right femur with the point towards the head and slightly under the femur, suggesting that it was not in a worn sheath. Knife **1805.1**, the other example from the OA excavations that is closest in type to Clarke's knives, lay beneath the lower part of the

Table 4.19: Knives at Lankhills in inhumation graves with a single body showing age and sex

Child	*Prime adult*	*Mature adult*	*Older adult*	*Much older adult*	*Adult*	*Unknown*
1760.2	443/602	37/93	**1175.2**	**1921.3**	55/60	**3030.4**
	1805.1	81/69	**1310.1**		106/130	
		283/476			418/501	
		930.1				

left leg. Both of the domestic style knives do not appear to have been worn. Knife **1760.2** was by the head and knife **1310.1** was laid across the pelvis. Both of these individuals are local on the basis of their isotopes. Of the two OA knife graves that most closely approach the pattern seen in Clarke's excavation, only the body in Grave 1175 was analysed and he proved to be the one individual among all those sampled from the OA excavations for whom a Pannonian origin is quite possible on the basis of the isotopes. It may be noted that the man with the most spectacular knife in the cemetery (**1805.1**) was also possibly local. Of the knife burials with isotopic information from Clarke's excavations, the man in grave 81 came from the south central Europe area and the adult in grave 55 was judged to be not of southern British extraction. Clearly the fact that knives were a male attribute at Lankhills owes little to ethnic origins. Equally, elsewhere in Britain the wearing of crossbow brooches and belt equipment does not automatically mean that knives will be present. One was found in the grave of an individual with a crossbow brooch at Norton (N Yorkshire) (Philpott 1991, 177), but at Scorton no knives were present (Speed forthcoming). There was none in the grave from the Eastern cemetery at London with brooch and belt equipment (Barber and Bowsher 2000, 206), nor with the individual with a crossbow brooch in Normangate Field, Castor (Wilson 1969, 219). They cannot, therefore, be taken as some form of uniform item.

The association of knives and males appears not to have held true for everyone burying their dead in the later 4th to 5th century at Winchester. Another domestic style knife of Manning Type 15 was found possibly deposited as a grave good at Hyde Street with a ?female in grave 27 (Rees *et al*. 2008, 150 no. 671, 202). Until the other Winchester late Roman cemeteries are published in full it is not possible to study this in detail. The Hyde Street burial does, however, flag up the possibility that the pattern of knife deposition at Lankhills may have been unusual, not just within Britain generally, but possibly also at Winchester.

Shears

A set of shears (**730.1**) was recovered from a grave where the fragmentary adult skeleton was probably of a male. Shears have very rarely been recovered from Romano-British graves of any date. The only example listed by Philpott (1991, 186) came from an inhumation of a male aged 25-35 at Cassington, (Oxon).

In antiquity shears fulfilled all the roles that modern scissors do. Manning (1985, 24) divides them into three sizes, and at 130 mm long, the set in 730 falls into the smaller category (less than 150 mm long) useful for domestic and personal use. Shears have also been found in two graves in Oudenburg, a cemetery which to judge from the patterns of deposition had much in common with at least parts of Lankhills (Mertens and van Impe 1971, 140 no. 2 and 150 no. 3). When complete the Oudenburg shears would have measured about 180–200 mm long, which would have placed them at the bottom end of the medium-sized category in Manning's typology. In neither case could the body be sexed, but an age of *c* 30 years was suggested for one of them. One of the graves had a crossbow brooch, belt equipment and a knife. The other had a buckle, knife and axe. In both cases it might be suspected that these were the graves of males, though of course that cannot be proven. The possible association of shears with males in the Lankhills, Cassington and Oudenburg graves opens up the intriguing possibility that these may have been male grooming tools for trimming beards, for even the larger Oudenburg shears are within the size range which would have been useful for this purpose. (My thanks to my partner, a man with a full beard, for his aid in exploring this point!).

Stylus

The most likely identification of object **1940.3** found by the right foot of an adolescent is that it is a stylus. As it is currently preserved it is short but the X-radiograph preserves an indication that the point might have been narrow and distinct from the stem, as in the case of Manning's (1985) types 2 and 3.

Styli are rarely found as grave goods in Britain. Philpott (1991, 185) lists only one late Roman inhumation burial with a stylus, from the Butt Road cemetery at Colchester. That grave contained an identical pair which were exceptional pieces made from copper alloy, not the much more normal iron (Crummy 1983, 104 no. 2534; Crummy *et al.* 1993, 51). In a corroded state, the normal stylus could easily be mistaken for a coffin nail and it might be questioned to what extent, prior to the routine use of X-radiography for all iron finds, styli would have been recognised. At Scorton a pair of iron implements have been plausibly identified as styli from their expanded heads. They were found accompanying an individual of 25 to 35 years who had been buried with an unworn crossbow brooch and belt plate (Speed forthcoming, Grave 5).

Loom weight

A curious stone disc (**1015.1**) was found accompanying a female adult. It is clearly not a spindle whorl given the irregularity and size of perforation, but because of the association of spinning equipment with females it has been tentatively identified as a loom weight, though loom weights are never a common element of Romano-British assemblages. The earlier excavations did not produce anything comparable, nor are such items a regular feature of the grave goods of other Romano-British cemeteries. A pierced chalk disc is recorded as lying by the neck of a male aged 40 in Grave 602 at

Poundbury (Farwell and Molleson 1993, fig. 60) but as no other details are provided in the publication it is unknown whether it was similar to object **1015.1**.

Brooches

Crossbow brooches

Crossbow brooches are the dominant bow brooch form of the 4th century in the western provinces and, like the contemporary elaborate belt sets, appear to have been worn by males in positions of authority (Swift 2000a, 3-4). The OA excavations produced six brooches, five from inhumations and one from a cremation burial. The latter had clearly been placed on the pyre. Eight examples have come from the previous excavations, all in inhumation graves. Up to 2005 the cemetery had therefore produced 14 of these brooches, summarised in Table 4.20, and a further three, not included in the table, were found during the Wessex Archaeology work in 2007. These numbers place Lankhills in the top rank of sites in Britain producing crossbow brooches alongside London and Richborough (Swift 2000a, fig. 13). The number of crossbow brooches deposited as grave goods has always marked Lankhills out as an unusual cemetery in Britain, more akin to continental patterns of deposition. In discussing the earlier finds Clarke (1979, 366) noted three other sites which had produced crossbow brooches, but the total of graves only numbered five. Since then one additional grave has been excavated in the Eastern cemetery in London (Barber and Bowsher 2000, 206 no. B538.3), and four of the graves at Scorton near Catterick had crossbow brooches (Speed forthcoming). The total from all of the other graves with crossbow brooches in Britain, however, is still less than the total from Lankhills.

The typology of crossbow brooches has attracted a great deal of attention. On the continent they have often been found in graves that also contained coins and this has tempted scholars to produce complex typologies showing a progress through time. Most modern typological discussion is based on Keller (1971) who used graves in south Bavaria to propose six basic forms which spanned the period from 290 into the 5th century in a neat progression. Attempts to apply this typology elsewhere in Europe have not always proved easy; and it is not uncommon for workers to use the Keller typology while noting that it is difficult to assign brooches to it. This was the case when Clarke discussed the earlier brooches from Lankhills. There was only one (*81/74*) that he felt could be attributed to a Keller form with certainty. The difficulties have resulted in revisions to the original scheme, most notably by Pröttel (1988). His divisions led to a less linear development both in terms of the features of the brooch and the chronology of the types (Pröttel 1988, Abbn. 10-11).

Broadly speaking the trajectory of the crossbow can be described as starting as a cast form where the bow is longer than the foot and the knobs take on a variety of shapes which are generally longer than they are wide (Keller Types 1-2; Pröttel Types 1 -2). With time the foot lengthens at the expense of the bow so that they are either of approximately equal length or the foot is longer than the bow. The knobs on these regularly have the characteristic onion shape and are wider than they are long (Keller Types 3 and 4; Pröttel Type 3/4). There are also forms which are made of sheet elements and are hollow, unlike the solid cast forms (Keller and Pröttel Types 5 and 6).

Pröttel's broad dating (summarised in his Abb. 11) sees Type 1 coming into use in the last quarter of the 3rd century and continuing into the first quarter of the 4th century. Type 2 belongs to the first half of the 4th century and Type 3/4 to the last two thirds of the 4th century and into the early 5th century. The two sheet forms are typical of the second half of the 4th century and the 5th century. That fully developed crossbows were in existence very early in the 4th century is conveniently demonstrated by gold examples with inscriptions relating to members of the Imperial family. The fragmentary openwork brooch from Erickstanebrie, Dumfriesshire celebrates the *vicennalia* of Diocletian's accession which took place in November 303 (RIB II.3, no. 2421.43); and a gold brooch of Type 2 has an inscription relating to Constantine I as Caesar which dates it to AD 306/7 (Pröttel 1988, 354, Abb. 2 no. 6).

There is little independent dating from British sites. The excavations which have produced large numbers of them such as Richborough (Bayley and Butcher 2004, 109-20), South Shields (Allason-Jones and Miket 1984, 100-106 *passim*) and Corbridge (Snape 1993, 23) were all explored at a time when the stratigraphic context of a find was rarely recorded in a useful manner. Other than at Lankhills and Scorton, crossbow brooches are uncommon as grave goods in British cemeteries, so grave associations are equally rare, though at Scorton one of the burials with a crossbow brooch had a hoard of coins of AD 348-58 in the fill (Speed forthcoming, Grave 5). One thing that may be noted, however, is that

Table 4.20: Crossbow brooches in the Lankhills cemetery showing age and sex of associated individuals

Adolescent	*Mature adult*	*Older adult*	*Adult*	*Unknown*
745.1	81/74	13/13	23/24	**3030.1**
	895.1	373/587	106/121	
			234/278	
			322/477	
			426/532	
			1075.1	
			1846.1	
			1925.1	

there is some evidence that these brooches could have very long lives in Britain. The continental date ranges can thus only indicate the earliest likely dates. At Wroxeter two complete and four fragmentary brooches were recovered from the Baths Basilica excavations (Barker *et al.* 1997, 207, fig. 308). The two complete examples belong to the broad Type 3/4 range for which a mid 4th- into early 5th-century date is conventional, and their state of preservation argues against them being residual. Yet at Wroxeter none of the crossbows were found stratified earlier than Phase Z, dated to the mid 6th to early 7th centuries. The nature of the finds publication at this site makes it impossible to examine the contexts of individual finds, but it does seem possible that at Wroxeter '4th-century' crossbow brooches could still have been being worn in the 5th century and beyond.

Swift's work on regionality in dress accessories in the western empire has demonstrated that, far from showing a pan-European uniformity, regional clusters can be identified (Swift 2000a, 30-88). The situation in Britain that emerges from her work suggests that while continental forms can be identified, there is a noticeable amount of divergence from the mainstream (Swift 2000a, 211). Her comparison of Bayley's metal analysis of the crossbows from Richborough with her own stylistic analysis enabled her to draw a distinction between those made of brass and gunmetal which could be attributed to the Danubian area and those made of bronze which lacked regional stylistic features (Swift 2000a, 81-8). She suggested that some of the brooches from British sites could well have been made in the province. This was a conclusion that Clarke also came to when discussing the earlier brooches from Lankhills (Clarke 1979, 262). A failed casting of a crossbow brooch recovered during the Atkinson excavations at Wroxeter (Atkinson 1942, 203), overlooked until its recent republication (White 2007, fig. 25 left), certainly provides evidence that some were indeed made within the province.

Against this background it is wise to be wary of trying to apply a typology derived from continental dated examples too rigorously to an assemblage from a British site. The assemblage from the earlier excavations shows the pitfalls well. In her survey of over 1000 crossbow brooches from the western empire Swift followed Pröttel's typology but found the need to define seven additional 'hybrid' types (Swift 2000a, 13, table B). In her Appendix 3 slightly more than a quarter (27%) of her corpus falls into these types; six of the eight earlier Lankhills brooches are assigned to these types.

All of the brooches from the OA excavations (Figs 4.4 and 4.5) are cast and have feet that are approximately the same length or slightly longer than the bow. The knobs are normally wider than they are long. The gilded example, brooch **1846.1** has a hexagonal-sectioned cross arm with openwork decoration on the front. All the others have a narrow rectangular cross arm with a stepped front on either side of the bow. Generally the bow width is approximately the same as that of the foot, with the exception of brooch **1925.1** where it is narrower. On the four which preserve the foot in full, brooch **1846.1** and brooch **3030.1** taper very slightly, brooch **1075.**1 maintains a constant width and brooch **1925.1** expands slightly. Most show features that are consistent with them being of Type 3/4 and thus, on continental dating, belong to the last two-thirds of the 4th century and into the 5th century. This contrasts with the earlier examples, of which Swift assigned only one to this category (*81/74*), the others being assigned to Type 1 (*426/532*), her hybrid type 2 forms (*13/13, 23/24, 106/121*) and to hybrid 5 and 5/6 forms (*234/278, 322/447, 373/587*).

The most spectacular example from the cemetery is brooch **1846.1** which was originally gilded all over with an inscription on either side of the bow. It falls readily into Pröttel's Typ 3/4C. The foot and bow of this brooch are identical with that on a brooch from Augst (Riha 1979, 176 no.1487, Taf. 55). Both shared the same security mechanism for holding the pin in place. This consisted of a small bolt inserted into a hole in the back of the upper part of the foot. When the brooch was fastened, this moved forward to cover the outside of the pin which could only be undone if the bolt was shaken back into the foot (see Riha 1979, Abb. 30c for illustration of mechanism). In the Augst brooch the bolt is still present though the pin is lacking. In the Lankhills brooch all that remains is the hole for the bolt. The Augst knobs are faceted onions, whereas those at Lankhills are smooth spheres with the nipples, formed by the internal crossbar which produces the onion shape, neatly trimmed. The openwork decoration on front of the cross arm also differs between the two brooches, but in general they are very close.

Swift (2000a, 62) defines brooches as being identical if they share the same bow decoration, foot decoration, knob base moulding and bow base moulding, and notes that for Type 3/4 such similarity is not common. The Augst and Lankhills brooches share all elements apart from the bow decoration, but given that the Augst brooch only retains traces of gilding this raises the intriguing possibility that it once had more elaborate decoration. Prior to the investigative conservation of brooch **1846.1**, faint traces of gilding could be seen in the corrosion products but there was no indication that the bow was lettered. It is difficult to draw any conclusions about the origin of the pair as Riha noted that the foot pattern was unusual for Augst. The Augst brooch is without contextual information and so cannot be used to help refine the dating within the general range for the type.

The inscription is carried out in black lettering which is normally described as being of niello (copper or silver sulphide). XRF analysis of the lettering on this brooch detected no silver so it is likely that copper sulphide was used as was normal

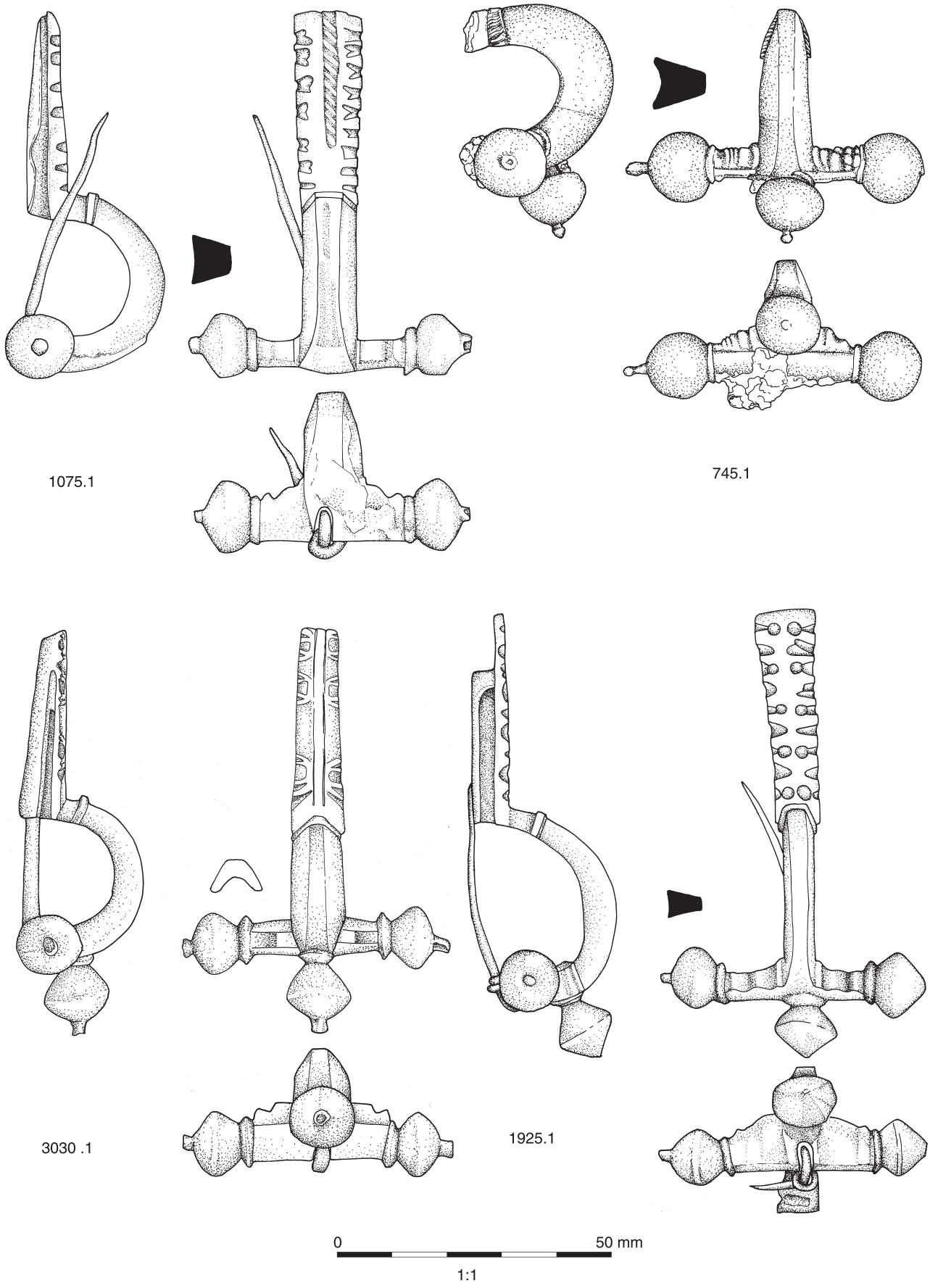

Fig. 4.4 Crossbow brooches 745.1, 1075.1, 1925.1 and 3030.1

on copper alloy objects (Bayley and Butcher 2004, 46). One side of the brooch has the wish VTRE FELIX (for VTERE FELIX, *good luck to the user*). On the other side the inscription reads VENE VIVAS. Dr Roger Tomlin has kindly inspected photographs of the inscription and has suggested that VENE is a mistake for BENE and so the inscription was intended to read BENE VIVAS (*live well*). He notes that the B/V confusion is very widespread, but was not known to have reached Britain, examples such as that in RIB 1 probably occurring on imported pieces.

On the continent there is a small number of gold and gilded copper alloy crossbow brooches with inscriptions. In his survey Behrens (1950, 10-11) listed five where VIVAS was combined with a personal name, two where a name was combined with VTERE FELIX, eight with VTERE FELIX on its own, and one case each of VTERE or FELIX. Of particular interest in regard to the Lankhills brooch are the three which combine both wishes. These are a silver brooch probably of Type 3/4 (Behrens 1950, Abb. 14 no. 2), one whose material is not stated and which combines the wishes with the word SER, and a bronze brooch from an inhumation cemetery at Anières, France, which reads DOMINE MARTI VIVAS VTERE FELEX (Caylus 1752, 256).

Although there is a tendency in the literature to associate the names on these brooches with emperors wherever possible, this should probably be resisted unless it is made explicit by the individual's title (AVG or CAES – see Pröttel 1988, 348 fn. 18 for discussion). The Anières brooch with its use of the term DOMINE (lord) suggests that these brooches may have been gifts for high ranking individuals. A gold bracelet in the Hoxne treasure has the openwork wish VTEREF . ELIX . DOMIN . A . IV . LIANE which Hassall and Tomlin translate as

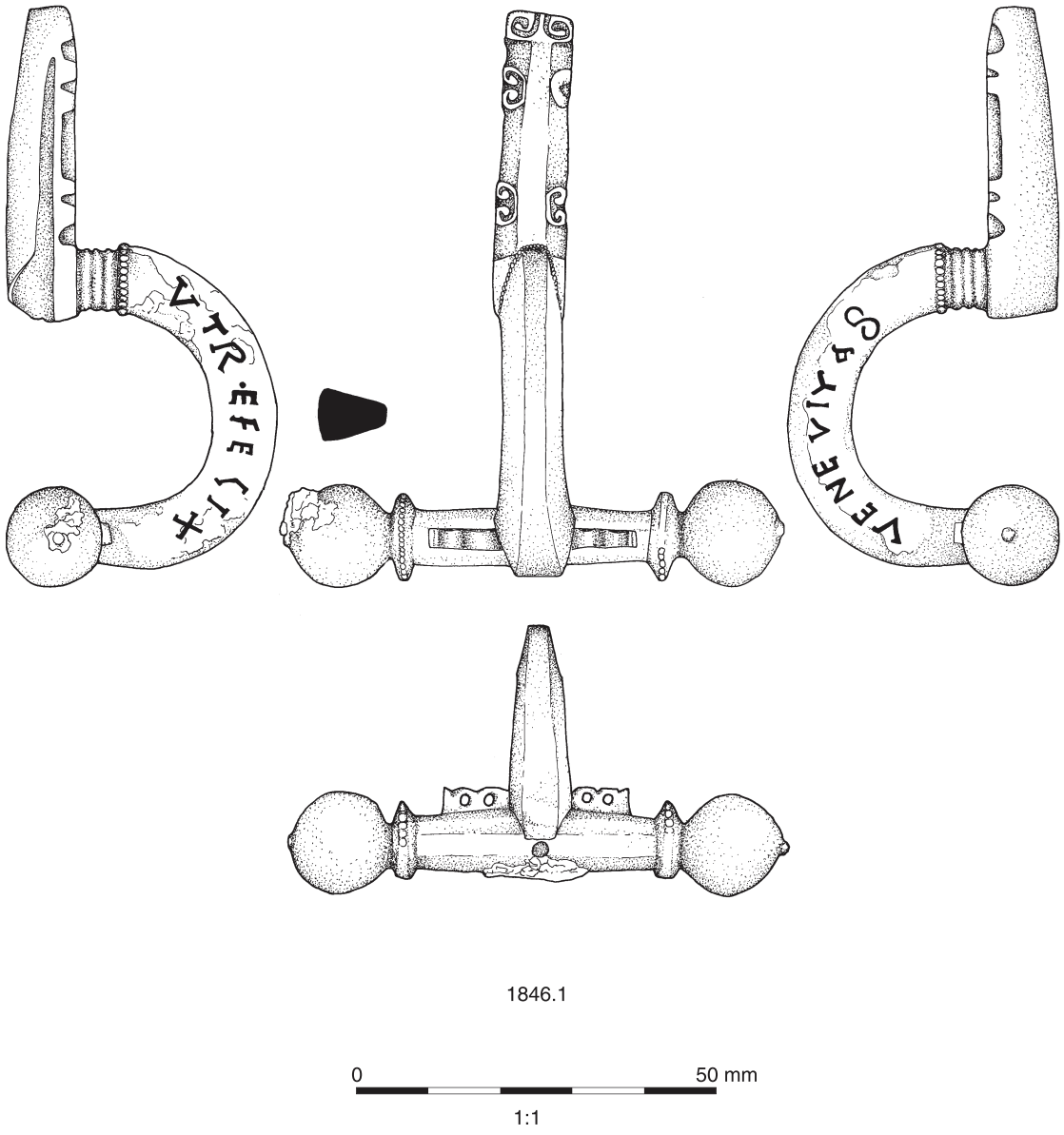

Fig. 4.5 Crossbow brooch 1846.1

'*use (this and be) happy Lady Juliana*' (Hassall and Tomlin 1994, 307 no. 62). Similarly the Anières brooch could be read '*long life to you Lord Martius, use this and be happy*'. The Lankhills brooch was originally presumably a present expressing similar sentiments, though it was not as personalised as these two.

Crossbow brooches with inscriptions were only ever a very tiny proportion of the total numbers made, and those with names were presumably special commissions. Distribution maps can often be misleading, but what is most noticeable about Behrens' list of the VIVAS and VTERE FELIX brooches is that there is a marked concentration in the Danubian provinces. This does not appear to be a product of the literature and museums he surveyed, as the same article includes a listing of first century Aucissa brooches, which are much more widely spread. Dr Swift very kindly informs me that in her survey she had three examples of inscribed brooches from the Rhineland and five from the Danubian areas, but that did not include all the Hungarian material as the von Patek (1942) compilation was not included in her work. It would thus appear possible that brooches with these mottos were more fashionable in the Danubian area than elsewhere.

In summary then, the fact that the brooch can be fitted easily into the Pröttel typology and the fact that it is inscribed together suggest that it was an import. This is further supported by the fact that BENE VIVAS has not previously been noted in Britain and that the unusual form of the A in VIVAS is also one that Dr Tomlin has hardly ever seen in Britain. The fact that an individual had in their possession a foreign item does not necessarily indicate that they themselves were foreign. It is possible, however, to explore what sort of person would have been likely to have owned such a brooch.

The VTERE FELIX wish is not one that seems to have appealed to the native population of Roman Britain to any great extent. It is noticeable that where an origin can be suggested for items decorated with it belonging to the 2nd to 3rd century, this tends to be continental. There are, for example, four knee brooches with this wish spelt out against an enamelled background (RIB II.3, nos 2421.56-58; Tomlin and Hassall 1998, 438 no. 19 = Crummy 2004, 60-61). Discussing the example from Canterbury, Mackreth (1995, 979, no. 111) noted that this variant of knee brooch did not have the characteristics of those made in Britain. A similar observation could be made about the military belt plates where the letters are picked out in red and green enamel (RIB II.3, nos 2429.13-5; Hassall and Tomlin 1995, 383 no. 18) and for those in which it is part of an openwork pattern (RIB II.3, nos 2429.16). It does not appear on jewellery and other personal items that are undoubtedly of British manufacture, suggesting that there was not much of a market for such items among the bulk of the population.

In the late 4th century the same continental association might be suspected. The motto is present on a spoon from the Thetford hoard (Johns and Potter 1983, 113 no. 59) deposited in the 380s at the earliest (Chadburn 1995), and on the Lady Juliana bracelet from the Hoxne treasure mentioned above, deposited in the early years of the 5th century at the earliest (Guest 2005, tables 3-4). The origin of the items in both these hoards cannot be assigned on typological grounds, but it might be suspected that in both cases the people who owned them were part of the Roman international elite. Even if the Lady Juliana was ethnically British, her tastes would have been formed by the mores and fashions prevalent among her class, and the presence of the motto on a bracelet created for her cannot be used to show that it was in common use among the wider population.

Against this background, the person buried in Grave 1846 seems likely to have had tastes more common among continental communities than British ones. The brooch was clearly old when deposited. Virtually all of the gilding had worn off on the back and on the apex of the bow, precisely the areas which would receive most wear through daily use. At some point the upper knob had disappeared and its shank neatly worked flush with the upper surface. The safety bolt had also been lost. The preservation of the skeleton was poor and merely preserved the information that the deceased was adult. Whether he was the original owner is unknown. If he was, he must have been old as it may well have required decades of use to explain the wear and tear, and he may have had his origins in the Danubian area.

All the other crossbow brooches from the OA excavations were smaller than the gilded one just discussed. Brooches **1075.1** and **3030.1** both fit within Pröttel's Typ 3/4D. The notched foot-decoration on brooch **1075.1** is seen as later than the pelta decoration of brooch **3030.1** (Pröttel 1985, 364) which would place it in the latter part of the date range for the type. In this case, however, the typological date can only be taken as a starting point for when the brooch was deposited. At some point in its life it had lost the upper knob leaving the circular void into which this would have fitted. Originally it had also had a safety bolt like brooch **1846.1**, but this too is missing, leaving only the hole in the upper part of the foot. Finally, at some point during its life the original pin had been replaced with a stout piece of pointed wire, twisted around the inner crossbar.

Given that much of the distinction between the different variants of the Pröttel Typ 3/4 relies on the foot decoration, Brooches **895.1** and **745.1** cannot be assigned to a variant as the decoration has been destroyed on the former and the latter was placed in the grave as a broken fragment consisting only of the cross arm and bow. An interesting feature of this brooch is that it was a faulty casting, with major voids visible in the bow. This had been rectified by

cutting back the bow on either side so that it could be inlaid with a carefully fitted sheet that formed both sides. It was possibly another internal void that led to the brooch snapping at the junction of the bow and foot.

The final brooch (**1925.1)** was old when it went into the grave as the pin had been replaced in the same way as on brooch **1075.1**. It does not fit so easily into the Pröttel typology. It has the same stepped rectangular section cross arm as most of the others, but each knob is a different shape with only one being onion-shaped; the other two are biconical, one angular and one rounded. The bow is narrow and the foot decoration is also unusual, combining punched dots with edge notches. This brooch might be a candidate for being of insular rather than continental origin, although its composition might argue against this as it is made of a high tin gunmetal. Unfortunately until the metal of more brooches from the continent is analysed the brass/bronze opposition cannot really be used to assign provenance. Here both this brooch and brooch **1075.1** are zinc-rich alloys, while brooches **745.1** and **1846.1**, for which a continental origin seems most likely, are of leaded bronze.

It is of some interest to compare the typology of the brooches to the origins of the individual as defined by isotope analysis, though data are only available for four individuals from the earlier excavations (Evans *et al.* 2006a, 270-71 – summarised here in Table 4.21). As already noted, only one of the earlier brooches fell readily into the Pröttel typology (*81/74*); the rest were hybrids with the possibility of insular manufacture. The continental brooch was indeed worn by an individual from the continent, possibly from an upland area such as the Austrian/Italian Alps. The hybrid types too, however, were generally associated with people who had spent at least their youth on the continent, with the person in grave 426 coming from an area with the same signature as that of the individual in grave 81, while grave 13 contained someone with a possible Hungarian region signature. Only the person in Grave 322 might have been British. This provides a useful warning that the 'ethnicity' of objects is not always the same as those of their wearers.

It has long been accepted that crossbow brooches were worn by men on their shoulders, fastening cloaks with the foot pointing upwards (Swift 2000a, 3-4 for discussion. This view has been derived from both pictorial and grave evidence. Table 4.20 summarises the evidence for the sex and Table 4.21 that for the position for all the graves with crossbow brooches at Lankhills.

The associations among the sexed individuals are all male, with the possible exception of the individual in Clarke's grave 13 who was assigned by Gowland to the ?female category (but sexed as male in the original publication; Clarke 1979, 24). While not wishing to give artefacts priority over osteological analysis when sexing a skeleton, it has to be said that if this was a woman it would be very surprising. If we accept the distinction that sex is a biological given but gender is a sexual persona adopted by the individual, then if she was a biological woman she was adopting a male persona as the body was buried wearing both the brooch and belt equipment.

Where it has been possible to age the individuals, it is generally adult males who were buried with crossbow brooches. The only young person with one was the adolescent in Grave 745 and interestingly that was the brooch which lacked its foot. Exploring the distribution of the crossbow brooches between the ages via a significance test shows that there is no reason to reject the idea that all adult males could have a crossbow brooch, despite the lack of any associated with the young and prime adult males. An interesting observation is that in one of the cases where a cast brooch was gilded (*13/13*) it accompanied one of the older individuals in the cemetery. The state of the body with the other gilded brooch (**1846.1**) precluded ageing or sexing. In both cases these brooches are by far the largest ones in the assemblage. There are hints here that in this community, the most senior individuals were marked out by the size and showy nature of their brooches. This cannot be explored further using the gilded sheet examples as the bodies which they accompanied could not be aged.

As can be seen from Table 4.21 here crossbow brooches were not all on the shoulder where worn, and in the cases from the earlier excavations, they were the 'wrong way' up. Mineralised remains were found on two of the brooches from OA excavations (**1075.1**, **1925.1**) and on two from Clarke's excavations (*106/121*, *322/447*). A few fibres were also found on the head of the gilded brooch (**1846.1**). In the case of brooch **1925.1** detailed examination of

Table 4.21: Summary of the placing of the crossbow brooches in the Lankhills cemetery with isotopic information where available

Shoulder area	*On torso*	*Not worn*	*Pyre good*
13/13+	23/24	373/587	895.1
81/74+	234//278	745.1	
106/121+	426/532		
322/447+	**1925.1**		
1075.1*	**3030.1**		
1846.1*			

Notes
* - worn with the foot facing downwards
+ - foot facing up, those in 106 and 322 above and to right and left of the skull respectively but with minerally preserved textile so possibly displaced upward during burial)

This colour = Isotope as Hungarian region
This colour = S/C Europe, - Austro/Hungarian alps
This colour = NW provinces including UK but not Winchester

the textile has shown that the brooch was fastening cloth of unknown type. The pin of brooch **3030.1** pierced a leather strap. There was a fine wool cloth on the pin of brooch *106/121* and linen on much of the left side and on the pin of brooch *322/477* (Crowfoot 1979, 330). There are grounds for believing, therefore, that the brooches often pinned clothing when placed in the grave, whatever their position was.

That crossbow brooches were important to the members of the Lankhills community is suggested by the state of the brooches which were deposited. Both of the gilded examples (*13/13* and **1846.1**) were worn, and the latter lacked both the central knob and its safety bolt as did brooch **1075.1** which also had a replacement pin. The pin on brooch **1925.1** had been replaced in an identical manner.

The foot of brooch *426/532* from the earlier excavations had broken and been repaired, while in brooch *106/121* the entire foot had been replaced. In his catalogue entry Mackreth notes

'It is not at all clear that the brooch as deposited was ever intended to function properly: the parts fit ill together and, unless ancient solder has been lost to corrosion, the brooch would surely have fallen apart too readily to have been anything other than an object deliberately made-up for placing in a grave.' (Clarke 1979, 260)

While repairs are sometimes seen in other items placed with the deceased (eg the necklace **1360.11**) no other class of material in the cemetery shows this level of wear, loss and repair, and it points to lengthy curation of the brooches. These are items that may well have had their own biographies, perhaps owned by various individuals before they were placed in the grave. In life they may have provided an immediate marker of who was the most important person in a group, easily picked out because he would have had the largest, brightest brooch. In death they might in, some cases, have marked out those who did not live long enough to achieve the status they might have been expected to take on. The fragmentary brooch placed in the adolescent's grave (**745.1**) might have served this purpose. If they did have this significance for sections of the Lankhills community, then it has important ramifications for using the crossbow brooches as a dating tool, and the continental dating may only be taken as a *terminus post quem*. The full *floruit* of the Pröttel Typ 3/4 brooches lasts for almost a century, so there would be time within it for an individual brooch to have a long life and still be deposited within this range. The case of the Wroxeter brooches noted earlier needs to be born in mind though, and it is not difficult to imagine that some of these brooches were not finally deposited until the 5th century.

The state of crossbow brooches when placed in the grave does not appear to be one that attracts a great deal of attention, though it might well prove quite informative about how these brooches were regarded in the communities where they were used. The community at Lankhills was not alone in thinking that a worn, repaired or damaged crossbow brooch was still an appropriate item to place with the departed. Of the 31 crossbow brooches placed in graves at the Oudenburg cemetery (Mertens and van Impe 1971), twelve lacked the central knob, like brooch **1846.1**. The Anières brooch with its elaborate inscription also appears to have been deposited in this state judged by the original illustration (Caylus 1752, 257, pl. XCIV no. VIII). At Lankhills it would be hard to argue that damaged or repaired examples were being deposited either because of impoverishment or because it was felt that the item was 'good enough', when such a brooch was buried with the individual in Grave 1846. Equally, at Oudenburg a comparison of the grave assemblages between the damaged and the undamaged crossbow graves shows no evidence of impoverishment either. Everything suggests these items kept their power even when not pristine.

Penannular brooches

Two pennanular brooches were recovered, the first to have been recovered from the cemetery. An adult female was buried wearing a penannular brooch (**780.1**). From the textile remains and the position in the grave Walton Rogers (see below) suggests that it was fastening a mantle. The brooch itself belongs to Fowler's (1960) Type D category where the terminal is folded back along the hoop. Those with notched decoration on the terminals as here are placed in either D1 or D2 depending on whether the viewer perceives the notching as approximating to an animal head, which is often a somewhat subjective decision. This is not a chronologically sensitive variant and was in use throughout the Roman period by both native and incomer communities. Examples were certainly present in contexts that predate AD 60 (Mackreth 1995, 982 no. 127) and also occur in ones of the late 4th century and beyond (eg Summerfield 1997, 281 no. 72). This example is unusual in having an iron pin and it might be suspected that this was a repair as the pins are normally of copper alloy.

A poorly preserved iron example (**1440.8**) was found by the right shoulder of an ?adult male in a grave with four coins, the latest of which dated to 388-402. The corrosion products around the pin, though not so well-preserved as those on brooch **780.1**, suggest that this one was also pinning cloth when deposited. It too appears to have been of Fowler (1960) Type D.

These two brooches are most unusual finds, not only for this cemetery but for 4th-century cemeteries generally. Philpott's survey (1991, 137-9) shows that penannular brooches occur intermittently in burials of the 1st-3rd centuries, though they were never common. By the 4th century they were even less common as he noted only two from graves of this date (ibid., 158 fn. 31). One example

came from Kelvedon, Essex where the skeletons did not survive. The brooch, of Fowler (1960) Type C, was found centrally positioned within a small coffin measuring *c* 0.9-1.0 m long judged from the coffin stain (grave 20). There were also four jet spacer beads and pottery vessels dated *c* 280-350+ within the coffin (Rodwell 1988, fig. 27, fig. 45 no. 32, 117, MF1.A6). From the size of the coffin and the presence of the beads it might be suspected that this was the burial of a female child. The brooch from Ancaster and its associated grave remains unpublished in any detail. A small silver example of Fowler Type C with a ribbed hoop and ribbed pin articulation is also known from the Butt Road cemetery where it was found on the right shoulder of an adult (Crummy *et al.* 1993, 135). The individual was not sexed but other grave goods included bracelets and a comb. The grave belonged to the last third of the 4th century or later, as a coin of 367-75 was found in the fill.

In discussing the Butt Road brooch, Fowler (in Crummy 1983, 19) redefined her definition of the Type C brooch, separating out the ones that were clearly late Iron Age-early Roman and those made during the late Roman period. She suggested that the resurgence of the type reflected changing elements in Romano-British society that re-interpreted the penannular brooch. Here both a male and a female wore penannular brooches, but the definite association of brooch **780.1** with a female and the possible examples in the graves at Kelvedon and Colchester is of interest as it would suggest that the penannular brooch may have been coming to be associated with females in the late Roman period. In Anglo-Saxon graves this certainly appears to be the case (Walton Rogers 2007a, 117). This might be seen as part of the trajectory of insular use of various elements of material culture in which the patterns are clearly established by the 5th century but can be seen starting a century or two before (Cool forthcoming).

Belts and belt fittings

For a long time the Lankhills cemetery has been the only one in Britain where late Roman belt equipment has occurred in any quantity. The only other cemetery that approaches the number found is that at Scorton near Catterick, where seven graves had belt equipment (Speed forthcoming). Other large cemeteries such as Butt Road, Colchester (Crummy *et al.* 1993, 145) and the Eastern Cemetery at London (Barber and Bowsher 2000, 206-7) produced only one instance at most, and others like Poundbury produced none at all. Belt equipment is also occasionally found in isolated burials (Philpott 1991, 187-8). The pattern in Britain, however, is very different from that seen in other frontier provinces where it is not uncommon to find individuals equipped in this way. The OA excavations at Lankhills have added a further eight burials to the twelve already known (see Table 4.22) and have thus emphasised the unusual pattern there even more (belt fittings occurred as pyre goods in two further graves, and a single buckle pin used as a pendant is discussed separately below). Swift, studying regionality within belt fittings, assigned some of the earlier Lankhills buckles to the Sommer (1984) typology (Swift 2000a, 186-8) to allow them to be viewed within the wider context of the western empire and that approach will be continued here where possible.

The commonest buckle form recovered was one with an oval plate and oval or 'D'-shaped buckle frame (Sommer's Sorte 1 Form A Typ A). This was present in four of Clarke's graves (*23/27, 106/122, 426/533, 283/481*), and two of the OA graves (**1846.2, 3030.2**). One of the new finds (**1846.2**) was a silver gilt example and is the first silver buckle to have been recovered from the cemetery. Similar buckles where the frame is concave or saddle-shaped constitute Sommer's Sorte 1 Form A Typ B. This was found in one of Clarke's graves (*81/70*) and two of the OA graves (**1921.1** and **1925.2**).

On the continent Sommer Form A is generally dated to the 4th century in the Danubian area and

Table 4.22: Graves with belt equipment at the Lankhills cemetery summarising the age and sex associations

Child	*Adolescent*	*Prime adult*	*Mature adult*	*Old adult*	*Much older adult*	*Adult*	*Unknown*
1760	**745**	443	37	13	**1921**	23	3030
			81	**1175**		106	
			283			234	
			376			322	
						366	
						426	
						1075	
						1846	
						1925	
						895(?)*	
							1180*

* Pyre good

the first half of the 4th-century west of the Rhineland (Swift 2000a, 190). Clarke (1979, 272) suggested a mid 4th-century date for these buckles. This would fit the context of the example with a rounded frame (Typ A) that came from a foundation deposit at Canterbury also containing a coin of 345-8 (Blockley *et al.* 1995, 250, 1028 no. 414; Ager 1988, 27 fig 1e). The presence of buckle *283/481* in a grave containing coins of 388-402 shows that they continued in use until the end of the 4th century at least. This would fit the context of buckle **1846.2** because that was associated with the gilded crossbow brooch **1846.1,** which was old when deposited. Examples of these oval plates have also been found on domestic sites, and at Gestingthorpe one was associated with very late 4th-century pottery (Henig 1985, 29 no. 17). This type of buckle and plate was the one used in the Scorton cemetery (Speed forthcoming) and Clarke (1979, 270) noted that it also occurred with the burials with crossbow brooches at Norton, North Yorkshire, a site that has never been published in detail.

The Sommer Sorte 1 Form C buckles have rectangular plates, with Typ A having a D-shaped buckle and Typ C a rectangular one. One of each type was found in Clarke's excavations – *106/126* (Typ A) and *234/279* (Typ C). From the OA excavations buckle **1921.2** is an example of a Typ C and buckle **1180.1**, damaged from having been on the pyre, is most likely to be of Typ A, though the possibility of it having a saddle-shaped buckle frame and so being of Typ B cannot be entirely excluded. Clarke's review of the dating evidence from the continent suggested that the rectangular plate form became popular towards the end of the 4th century, superseding those with oval plates. As noted above, however, the oval plate form was still in use at the end of the 4th century at least, and one of the graves from the OA excavations (Grave 1921) clearly shows that the types were contemporaneous, because the man was buried wearing a belt with the oval plate buckle and with another belt with a rectangular plate close to the knife by the right thigh.

Since Clarke wrote, some useful additional information about the occurrence of the rectangular plate buckles in Britain has come to light. One with repoussé decoration on the plate and a rectangular frame came from a Phase 4b context at the Alchester Road suburb of Towcester (Brown and Woodfield 1983, 106 no.7). The dating derived from the coins for Phase 4 suggests a *floruit* of *c* 330-70, but the pottery clearly indicates occupation continuing later in the century. At Winchester, one with a narrow repoussé decorated plate and a very unusual rectangular frame decorated with small heads was found in a well fill at Victoria Road, which also contained a coin hoard ending at 364 (Rees *et al.* 2008, 173 no. 936). Lyne's reappraisal of the Richborough assemblage has allowed a closer contextual dating than was hitherto possible. The repoussé decorated rectangular belt plate cited as a parallel for buckle *106/126* and published earlier without provenance (Wilson 1968, 94 no. 107), can now be assigned to a context post-dating 400 (Lyne 1999b, 106 no. 38). At Canterbury a buckle with rectangular frame and plate was recovered from the dark earth deposits assigned to the first half of the 5th century (Blockley *et al*. 1995, 1028 no. 415; Ager 1987, 27 no. 1g). An atypical buckle with a rectangular repoussé plate was also found within the well fill at Dalton Parlours, West Yorkshire dated after *c* 370 (Cool 1990, 86 no. 25). This unusual piece had used a penannular brooch as the buckle frame and clearly would not have fastened in the same way as the other buckles. The new examples definitely suggest that the rectangular plate buckles were in use in the second half of the 4th century and into the 5th century.

Examples from the series of animal-headed belt buckles studied by Hawkes and Dunning (1961) also appear at the cemetery. In Clarke's excavations two examples of Hawkes and Dunning Type IIA (*37/92* and *443/603*) and two of Type IIIA (*283/496* and *376/498*) were recovered. The OA excavations have added the first example of Type IB (buckle **1175.1**), found in a grave where a coin of 388-95 had been placed in the mouth of the deceased. Another example of a Type IIA with very stylised confronted animal heads was found unstratified (SF 3304, Fig. 4.6).

The recovery of buckle **1175.1** in a coin-dated grave is particularly welcome as so many of these items have been recovered from undated contexts. In re-assessing the type in 1974 after the recovery of additional examples, Hawkes argued for manufacture in the last three decades of the 4th century and for them being worn out by the early 5th century (Hawkes 1974, 387). Böhme (1986, 507), on the basis of three in early Anglo-Saxon graves, argued that their main period of use lay in the first half of the 5th century. Certainly at Shakenoak fragmentary examples of the plates were found in 5th-century contexts. One was found as part of the latest occupation deposit in Building A, accompanied by a clipped siliqua of 392-5 (Brodribb *et al.* 1968, 26, 92 no. 58) and the other was found in a ditch fill associated with a small long brooch of mid 5th-century date (Brodribb *et al.*1972, 26, 69 no. 137). The clipping of siliquae appears to take place early in the 5th century and Guest has suggested that it might have continued beyond 409, possibly for several years or even decades (Guest 2005, 114). At Cirencester a Type IB buckle came from the latest street surface at the Verulamium Gate. The coinage associated with that re-surfacing runs up to issues of Honorius of 395-402, but given that similar coinage is associated with the previous re-surfacing as well, the final re-surfacing is likely to have taken place noticeably later than the coinage associated with it (Paddock 1998, 321 no. 62, see also 64). Occurrences such as this hint at a longer lifespan than Hawkes allowed and would support Böhme's view. Buckle **1175.1** is in pristine condition and certainly gives no hint that it was old when it was deposited.

The Type IB buckles can show a wide range of competence in their manufacture. Buckle **1175.1** is

extremely competently made. The careful detailing of the horses' heads and the small pellets dividing the heads from the rest of the frame are very similar to the frames from Stanwick, Mucking, Richborough and Wycomb (conveniently illustrated together on Böhme 1986, Abb. 27 nos 4, 6, 7 and 16). A diagnostic feature also seen on it is the use of confronted triangular punch-marks on both the buckle and plate. Precisely similar marks were seen on the buckle plate from Greta Bridge, North Yorkshire (Hawkes 1974, 386, fig. 3.1). This seems to be a very distinctive decorative technique as many of the plates for these buckles are framed with a running scroll pattern, and it is possible that both were made by the same hand.

The final two buckles recovered during the OA excavations consisted of frames without plates, the straps being connected directly to the frame. Buckle **1760.3** was annular and came from a grave that also contained a coin of 388-92, and buckle **745.6** was D-shaped; both were made of iron. Clarke's excavations produced two buckles that consisted merely of frames, both of copper alloy. Buckle *366/488* was D-shaped and buckle *376/497* had a saddle-shaped frame. Both of these were clearly parts of belts as they were found in positions that indicated they had been worn. Something similar may be suspected for buckle **745.6** as it was found at the feet of the deceased together with a strap end (**745.2**). Buckle **1760.3** was found with other items including a knife at the head of the grave.

Simple buckle frames like this are naturally very difficult to date unless they come from well-dated contexts. This becomes a particular problem on urban sites where Roman material is often found residually in medieval contexts, and medieval assemblages generally include many buckles, some of whose frames are very similar to these. As a result, it is difficult to judge quite how common belts with just a simple frame were in the late Roman period. It is to be suspected that they were commoner than we generally appreciate. In Lyne's reappraisal of the assemblage from Richborough, where residuality is not the problem that it is on urban sites, he noted that belt plates were surprisingly few in number compared with the frames and suggested that the latter were being worn without plates (Lyne 1999b, 103).

In addition to the examples of buckles and belt plates discussed so far, two other pyre good fragments also appear to come from buckle plates. Object **1180.2** is the outer end of a plate from a narrow strap retaining two rivets. Given the presence of buckle **1180.1** this suggests that the young man may have been cremated with two belts. It is possible that object **895.2** might also have come from a belt plate. It consists of a narrow flat strip. One side is original and has notched decoration along it with a groove running along the inside of the notches. The other side is possibly, rather than certainly, broken. The decoration would not be out of place on light bangle bracelets of the type discussed below (see below), but the flatness of the piece and its thickness argue against such an identification and it seems more likely that this is a fragment from the edge of a belt plate. Given the presence of the burnt remains of the crossbow brooch in the same deposit (**895.1**), the possibility that the man might have been cremated wearing a belt is a likely one.

At Lankhills, strap ends were less common than buckles and it is clear that they were only found appropriate for a sub-set of the belts. In Clarke's excavations six graves had strap ends (2, 37, 106, 322, 366, 376). In the OA excavations they were found in only three graves (745, 1075, 1846). The commonest type was the amphora-shaped strap end (Simpson 1976, 198-90) which has now been found in six graves. Clarke's excavations produced four, a fragmentary one of silver (*322/449*) and three of copper alloy (*23/26*, *106/128*, *366/489*). The OA excavations produced one of gilded silver (**1846.3**) and one of copper alloy (**745.2**). All of the Lankhills amphora-shaped strap ends have solid plates and thus belong to Simpson's Type 1b.

Grave 745 is unusual in having two strap-ends in the grave, the only one in the cemetery where this has been observed. The second example (**745.3**) was a heart-shaped strap-end (Simpson 1976, 201-2), a type which was recovered from two graves in Clarke's excavations (*81/75*, *426/534*). Both of the strap ends in Grave 745 are unusual in having a solid bar for the attachment of the strap, whereas all the others in the cemetery have the more normal two-piece construction or the split upper plate to allow the strap to be inserted and riveted in place. Strap end **745.3** was certainly deposited with a strap attached, as minerally preserved leather was observed inside the loop. It has to be assumed that in both cases the strap was sewn in place as no other fittings such as rivets were observed. This type of bar attachment, which was not included in Simpson's original definition of the types, is also found at Richborough on one example of each shape, with the heart-shaped example deposited in a context of 400+ (Lyne 1999b, 108 nos. 44 and 48).

The final strap end from the OA excavations (**1075.2**) has an oval plate and a split attachment plate. It was originally tinned or silvered as white metal was visible on one face. The shape of the plate and the attachment method is similar to that seen on Simpson Type II amphora-shaped strap ends, and in general the shape of the piece approximates to heart-shaped strap ends, lacking only the central indentation on the lower edge. This is an unusual piece in that there was no buckle in the grave, although strap end **1075.2** lay alongside the left femur in a position appropriate for a worn belt.

Simpson (1976, 204) dated these classes of strap ends to the second half of the 4th century. Clarke in discussing the earlier ones from Lankhills followed Keller's coin-based dating, assigning the heart-shaped ones to *c* 340-70 and the amphora-shaped ones to *c* 350-90. There are two graves in the

cemetery itself which are coin-dated. The fragmentary silver amphora-shaped strap end *322/449* was accompanied by a coin of 364-75, and the heart-shaped strap end *81/75* came from a grave where the latest coin was of 350-64. Elsewhere in Britain both types have come from contexts belonging to the second half of the 4th century and into the 5th century. At Richborough the three heart-shaped examples which came from dated contexts belonged either to the late 4th century (two examples) or 400+. For the amphora-shaped ones, one came from a pit of *c* 350, one came from a late 4th-century deposit and two came from ones of 400+ (Lyne 1999b, 108). A heart-shaped example came from the Bypass site at Catterick in a Phase 6b context which indicates a date in the last few years of the 4th century and into the 5th century (Lentowicz 2002, 64 no. 207). At Frocester Court an amphora-shaped strap end came from a 5th-century context (Price 2000, 57 no. 350). The evidence suggests that both shapes were in use contemporaneously, as indeed does the presence of an example of each type (albeit non-standard variants) in Grave 745.

Three of the graves from the OA excavations with belt fittings also had plain metal rings. The metal was frequently the same at that used for the buckle. In no case could the precise relationship to the other metal belt fitting be established as the recording of Grave 3030, the only grave of the three in which the belt may have been worn, was not sufficiently detailed. In two of the cases (Graves 1760 and 3030) knives were also present in the grave. In grave 443 of Clarke's excavations four rings were found with mineralised leather, a buckle and a knife in positions that would be appropriate for them to have been attached to a sheath in which the knife was placed. It seems possible that the rings were fulfilling a similar role in the OA graves. If that is so then the absence of a knife in Grave 745 is of some interest and will be returned to in the final discussion.

As the surveys of Simpson (1976) and Swift (2000a) show, much of the belt equipment from the Lankhills cemetery belongs to broad types that were in use throughout the western empire in the frontier areas from the Danube to the Rhineland and across northern France. It is, therefore, not straightforward to argue from the objects to particular ethnicities. In the past it has been tempting to see much of this material as coming from Pannonia because of the concentration of examples that could be seen in any distribution map. In part, however, this is very much a function of the fact that the people living in that province favoured burying their loved ones clothed and with their brooches, belts and jewellery in place (see Lányi 1972). The perils of distribution maps and what happens when new sites are dug is well illustrated by the maps which Swift (2000a, fig. 231-2) presents, showing the distribution of the buckles with oval plates (Sommer Sorte 1 Form A). The initial data set is coded by numbers present and there is one spot where 11 to 18 examples are present (the Budapest area in Pannonia) and then four of the smaller spots indicating where four to ten are present. These are widely scattered from Pannonia to the Belgian coast at Oudenburg. Were that map to be redrawn today Winchester with its six examples and Scorton with its five would happily provide large dots across the Channel, and it would be easy to add more dots signifying scattered British finds not included in Swift's corpus.

With this in mind it is useful to look at which elements of the belt equipment at Lankhills might have been produced in Britain and which items could have come with incomers from other provinces. The most obvious British product is buckle **1175.1**. This form with its outward facing horse-head motifs on the buckle frame and long narrow plate, is undoubtedly of insular manufacture given its concentration in Britain. The only example of the distinctive frame outside Britain is a fragment from Iruña, Trespuentes, Villados in north-west Spain (Aurrecoechea 2001, 81 no. 41) which was found in a 5th-century context. A plate probably from one of these buckles was also found with a Saxon cremation burial at Westerwanna, Kr. Cuxhaven in the northern German coastal area, and it was suggested that it represented the possession of a soldier in the Roman army who had served in Britain (Böhme 1986, 508 Abb. 29). Given that the type was defined nearly 50 years ago and is very distinctive, it seems reasonable to conclude that if more examples were present on the continent they would have been recognised. Certainly Swift found none in her continental work (Swift 2000a, 185).

Two of the buckles with rectangular plates, *106/126* and **1921.2**, have repoussé decoration, and in discussing the former Clarke was able to cite sufficient British comparanda to suggest it might have been made in Britain. Additional repoussé-decorated plates from Britain can now be cited and those with a useful contextual date have been noted above. A British origin does seem a distinct probability.

Some of the confronted dolphin-head buckles of Hawkes and Dunning (1961) Type IIA were certainly manufactured in Britain as a failed casting of one has been found in Cirencester (Paddock 1998, 321 no. 63). The area around Cirencester has the largest concentration of late 4th-century belt equipment in Britain (ibid., 306) and both amphora- and heart-shaped strap ends are relatively common finds in the area. It would thus be no surprise if some of the ones found at Lankhills were of local manufacture. Until the publication of Corney and Griffiths's corpus (see Swift 2000a, 185), evaluating which of the strap ends are insular and which are continental is not possible; though I am not aware of anything comparable to the gilded silver example **(1846.3)** from elsewhere in Britain.

Table 4.22 shows that where the bodies can be aged and sexed belt equipment was deposited primarily with older adult males, apart from the anomalous occurrence of belt equipment in grave 13 with a possible female. The implications of this have been discussed in connection with the crossbow

brooch found in the same grave (see above). Testing the observed incidence in younger males (prime category and younger) against that in the older ones shows that the pattern is not statistically significant and that males of all ages had an equal chance of being buried with belt equipment. The pattern of deposition is summarised in Table 4.23 where an attempt is made to indicate the number of belts found in each grave.

In the earlier excavations there was one example of a belt with two straps; most of the fittings were attached to the showy wide belt which was then fastened by a narrower strap attached to the end opposite the buckle so that it was the narrow strap that articulated with the buckle frame. This type was not represented among the belt equipment from the OA excavations and all of the belts would have had a single strap.

Among the single strap buckles with strap ends the most common combination is an oval plated buckle (Sommer Form A Typ A) with an amphora strap end. It was found in three graves 23 and 106 from Clarke's excavations and Grave 1846 from the OA excavation. There can be no doubt that the buckle and strap end in Grave 1846 were made as a pair as both are gilded silver. In Grave 366 the strap end is associated with a D-shaped buckle frame without a plate. One of the amphora-shaped strap ends came from Clarke's grave 322 where no buckle

Table 4.23: Summary of the placing of the belt equipment in the Lankhills cemetery with isotopic information where available

	Worn	*Placed on body*	*At head*	*At feet*	*Pyre good*
Two belts	23 (1) 234 (2) (4) 376	106	283(2)	**745** (3)	
One belt	13 81 366 426 (5) 1175 **1921** **1925** **3030**	**1846**	1760	37 443	**895**(?) **1180**
Strap end only	322 **1075**				

(1) one worn, one possibly worn
(2) second belt represented by buckle frame without tongue
(3) Belts represented by strap ends not buckles
(4) one worn 1 placed beside the body
(5) Possibly rather than certainly worn

Colour key
Isotope indicating south-central European origin
Isotope indicating ? Pannonian origin
Isotope indicating local origins

was present. A strap with an oval strap-end but no buckle was found in Grave 1075 and realising that this was a curious pattern, the excavators sieved the spoil carefully to check that no buckle fittings had been overlooked. In both Graves 322 and 1075 the body appears to have been laid out with fittings in place as worn (see Table 4.21), so this opens up the possibility that that some narrow belts might have functioned without buckles, unless the latter had been deliberately removed. Belts are sometimes depicted in late antique art as simply knotted, as can be seen on the diptych of the consul Anicius Petronius Probus dated 406, on which Honorius is shown in military cuirass with sword and shield (Elsner 1998, 84; Ruggini 2008). This might have been how the belts without buckles fastened, though in that case it might seem more logical to have had two strap ends rather than a single one.

The combination of oval-plated buckle and heart-shaped strap end occurs twice, in Clarke's graves 81 and 426. The individuals they accompanied were incomers, as isotope analysis suggested they originated in the south central area of Europe. None of the individuals accompanied by oval-plated buckles and amphora-shaped strap ends has been subject to isotope analysis, but it is possible that belts combining oval-plated buckles with strap ends might have been favoured by incomers. Such belts would certainly have been at home in other frontier provinces on typological grounds. Clarke of course famously used the wearing of personal ornaments as one of the indicators that the individual was of foreign extraction (Clark 1979, 367). If the combination of oval plated buckles and strap ends is an indicator of this as well, then the pattern of deposition would not fit that as in two of the graves where it occurs the belts were placed on or by the body and were not worn. The pattern of what an incoming soldier might choose to wear, however, has been greatly complicated by the case of the man in Grave 1175. This is the only individual from the isotopic analysis of individuals from the OA graves who has isotopes values compatible with those expected for a person with a 'Pannonian' origin, but the belt he was wearing is fastened by an undoubtedly insular type of buckle (**1175.1**).

That the individual in 1846 was an incomer is hinted at by the fact that the belt fittings are made of gilded silver. This marks the belt out as exceptional. Silver belt equipment is extremely rare in Britain. There is only one other individual buried with silver belt fittings and that is a male aged 25 to 30 from Kingsholm near Gloucester (Brown 1975; Hurst 1985, 35). The original publication drew attention to Anglo-Saxon comparanda for the knife with a silver decorated handle that also accompanied him, but Böhme (1986, 503) has shown that the belt fittings are typical of the east German/south Russian areas in the late 4th century and especially in the first half of the 5th century. This person, far from being a native elite Briton as first suggested, could well have been an immigrant Goth. This suggestion is perhaps

supported by the fact that certain skeletal characteristics differed from those of the other individuals buried on the site (Hurst 1985, 95).

The other group of silver belt fittings, some of which were gilded like those in Grave 1846, were found in the silver hoard from Traprain Law (Hartley *et al.* 2006, 244 nos. 257-61). Some of the items are east European, typical of the troops stationed in the Balkans and datable to the mid 5th century. As the treasure also contained a silver brooch of east German type, one interpretation of the hoard that has developed is that it consists of the donatives of another Gothic officer who had served in the Danubian area and had, somehow, ended up at Traprain Law. Whether this is correct or not, what the Kingsholm and Traprain pieces demonstrate is the taste for silver belt fittings among the peoples who lived beyond the Roman frontiers. This was a long-established taste, as can be seen earlier in the spectacular burial dated to the middle third of the 3rd century at Gommern, Sachsen-Anhalt in south-eastern Germany (Becker 2008). Silver belt equipment was not a feature of normal Roman military equipment, so the pieces that do start to appear in the 4th to 5th centuries probably reflect the tastes of the soldiers increasingly recruited from beyond the Roman frontier. This too might perhaps provide us with a clue as to the ethnicity of the individual in Grave 1846.

Spurs

The most remarkable finds from the cemetery are the two spurs (**1846.4-5**) buried with the individual in Grave 1846 who also had the inscribed gilded cross bow brooch and the gilded silver belt equipment. Spur **1846.4** was found at approximately knee level on the right side of the body. Spur **1846.5** was found close to the foot end, also on the right side of the body. The latter was accompanied by some mineralised leather retaining soft folds which Walton Rogers suggests indicates boots rather than straps. Among the intriguing deposit of 4th-century weaponry, shoes and textiles together with a silver gilt helmet recovered from Deurne in the Netherlands there was a spur (Braat 1973, 62, Abb. 7). Reassessing this find, van Driel-Murray showed that the spur had been attached to a soft open-work one-piece shoe (van Driel-Murray 2000, 298). It is probably this general sort of shoe, suitable for a rider, which has to be envisaged in Grave 1846, laid out beside the body.

Though appearing quite similar, the spurs are not an identical pair. Spur **1846.5** is larger than spur **1846.4** and whereas the rivets to hold the straps were clearly inserted in the former, this is not the case with the latter. The shapes of the plates differ, as does the ornament below the prick. The side plates on spur **1846.4** also have the remains of gilded silver rosettes but there is no evidence that spur **1846.5** was similarly decorated.

Both of these spurs belong to the 4th-century provincial Roman tradition as defined by Jahn (1921, 77-81), characterised by riveted attachments. In his 1959 study Shortt was able to show that there was an insular variant of these, characterised by riveted plates at either end of the arm and a forward facing hook above the prick, which in the best preserved cases clearly formed a bird's head. Subsequent finds in Britain have confirmed that this is the dominant British type. In addition to those listed by Shortt, examples can be noted from excavations at Rudston (Stead 1980, 103 no. 47 – albeit with an unusual prick plate), South Shields (Allason and Miket 1984, 206 no. 3.685-6), Caister-on-Sea (Darling and Gurney 1993, 102 no. 430), Beadlam (Neal 1996, 49 no. 20), Filey (Cool 2001, 129 no. 21), Catterick (Lentowicz 2002, 66 no. 213-4) and Piercebridge (Cool and Mason 2008, fig. 11.9; D11.63-4 nos. 501-506). Additional examples have been recovered through metal detecting. These include several from Lincolnshire, at Ludford and Old Winteringham (Leahy 1996), Thimbleby (PAS LIN-0887A7) and Winceby (PAS LIN-D3B115). Two from Hampshire have been recorded from Kimpton (PAS – HAMP567) and Upham (PAS – HAMP3317). One has also been recorded from Milton Keynes (PAS reference no. NARC-D98096). (The PAS numbers relate to the reference numbers on the Portable Antiquities Scheme Database – http://www.findsdatabase.org.uk).

Where these hook spurs are from dated contexts, they consistently indicate that this was a new introduction in the last third or last quarter of the 4th century with use continuing into the 5th century. One of the examples from Southampton came from a context of 370-90 and the other post-dated that (Cotton and Gathercole 1958, 45 nos 6 and 7). The example from the signal station at Filey, founded some time during the final quarter of the 4th century, came from an occupation deposit which also contained a coin of 388-402. The Rudston spur came from a layer in a deep well where the pottery was similar to that found in the signal stations and so a date in the final quarter of the 4th century and later is also appropriate. Most of the Piercebridge spurs came from a ditch fill that did not start to accumulate until the end of the 4th century at the earliest.

The Lankhills spurs differ from this British type in having an additional oval or circular riveted plate above the prick rather than the bird hook. As well as falling within Jahn's provincial grouping this method of attachment is also typical of the 4th-century spurs in his *Mittelgermanien* style in free Germany (Jahn 1921, 83-6). Spurs with three rivets have been much less commonly found in Britain than the hooked spurs, and the only comparable one known to me from an excavated context was found at the Bays Meadow villa, Droitwich, in an occupation layer which accumulated over a cobbled surface which in turn sealed a coin of 355-60 (Lloyd Morgan 2006, 197 no. 3). Another very recent discovery which has been reported to the Portable Antiquity Scheme has been found in Claxby with Moorby parish, Lincolnshire (PAS -NCL-3F8A04).

The fact that the spurs in Grave 1846 are not part of the British group might well add to the evidence of the brooch and buckle to suggest that the individual buried there was an immigrant.

The status of the spurs, whether they should be regarded as items of military equipment or whether civilians were as likely to use them, has long been debated because of the very varied range of site types from which they have been retrieved (see for example Leahy 1996; Cool 2001, 124-5). I have argued elsewhere (Cool forthcoming) that this confusion has probably arisen because not enough attention has been given to the very late date at which these spurs appear. By the late 4th century, of course, the nature of military deployment is very different from what it had been previously and it is not to be expected that military items would have been confined to obvious military sites such as forts. What can be said is that spurs are frequently found on the same sites that produce belt equipment, about the status of which there is also debate, and sometimes on sites where undoubted late military weaponry has been found. The Catterick spurs, for example, though unstratified, came from the area of a building which also produced barbed spearheads (Cool 2002, 33). There are grounds for thinking, therefore, that spurs probably were a military accoutrement.

Their sudden appearance seems likely to have been connected with the growing numbers of tribesmen from free Germany who were being absorbed into the Roman army, as noted in the discussion of the silver belt fittings. Spurs had not been seen as a necessary element of a cavalryman's equipment for most of the Roman period in Britain, or indeed elsewhere. The standard work on Roman military equipment mentions them only twice, once in a Republican and once in a 4th-century context (Bishop and Coulston 2006, 69, 227). In Free Germany, by contrast, they were clearly part of the accoutrements of elite warriors and the range of types was discussed by Jahn (1921, 82-8). They regularly occur in richly furnished princely graves. There were, for example, silver spurs in the Gommern burial noted in connection with the silver belt equipment, while in a burial of three individuals in a tomb at Musov in the Czech Republic dated to the second half of the 2nd century there were no less than 17 spurs (Peska 2008, 108).

While the placing of spurs in elite burials beyond the Roman frontiers is not unusual, placing them in a grave within the empire appears extremely rare. There is certainly no other instance of it in Britain, though that in itself is of little importance given the general paucity of furnishings in 4th-century graves. What perhaps is more telling is the fact that in Pannonia, an area where graves furnished with crossbow brooches and belt fittings are extremely common, Lányi's (1972) survey did not list a single example of a grave furnished with spurs. In the Rhineland, at the enormous cemetery at Krefeld Gellep for example, 79 individuals were furnished with crossbow brooches (Pirling and Siepen 2006, 334-40), but again there was not a single grave with spurs. It has not, of course, been possible to conduct a thorough survey of the continental cemetery literature to look for *comparanda*, but it does appear very likely that for an individual to be buried with spurs probably marks him out as an exceptional person. As discussed elsewhere (Cool forthcoming) it is possible that details seen on the feet of Stilicho in the Stilicho diptych of *c* 400 may indicate that he was wearing spurs as well as a crossbow brooch. In the diptych Stilicho is depicted in military garb with sword, spear and shield. If the identification of the presence of spurs is correct, then they can be regarded as appropriate parts of the costume of soldiers of the highest rank. The spurs that accompanied the individual in grave 1846 may have marked him out as a very high ranking soldier just as much as did the crossbow brooch and the belt with silver fittings.

Beads and necklaces

Four graves from the OA excavations included bead strings among the grave goods, adding to the thirteen graves from the earlier excavations which contained them (summarised in Table 4.24).

Table 4.24: Bead strings at Lankhills in inhumation graves showing the age and sex associations for those with a single body

	Infant	*Young child*	*Older child*	*Adolescent.*	*Young adult*	*Prime adult*	*Adult*	*Multiple*
Worn	333/315	323/436 & 443			117/140 326/424	351/399	40/28 63/52	
Unworn	**110.4**	188/248	336/353, & 363-5	**985.21**	85(1)			183/182 & 192
		337/425	**920.15**	1360.10-13				199/215 438/560 &583

(1) Deposited as part of discrete group of ornaments in fill. Notes for the graves with the remains of multiple persons recorded by Gowland: * indicates the body which the items apparently accompanied. Grave 183: younger child* and neonate. Grave 199: Adult*, infant and child recorded. Grave 438: female young adult and mature male*.

Individual beads were also recovered from Graves 87, 855 and 1235. Although the bead strings need to be considered as a whole it will be useful first of all to summarise the individual types present in the recently excavated graves. For the glass beads the simplest and most useful way of doing this is by colour.

Deep translucent blue glass

This was the colour most frequently used and the majority of the beads were short, ie between 2 and 4 mm long. They came in a variety of shapes; the bulk of string **110.4** consisted of biconical examples and these were also found on strings **920.15** and **985.21**. These short biconical blue beads appear to have been one of the commonest found in the cemetery. They certainly occurred on strings *40/28*, *183/192* and *199/215* and, though the precise shade and degree of transparency is not described, blue short biconical beads are noted on strings *100/85*, *183/182*, *188/248*, *323/443*, *336/353* and *337/425*. Another example came from a soil sample recovered from OA Grave 855 where it was the only bead recovered. One of the strings on which blue beads occur is made up predominantly of small blue annular beads (**920.15**). On two of the other strings (**110.4** and **920.15)** there are also small annular beads and on one (**920.15**) an uneven spherical one. A small spherical bead came from Grave 1235 where it was the only bead recovered. Possibly these annular beads here are best regarded as part of the same continuum of small blue beads as the biconicals.

The short blue biconical type is a common find (Guido 1978, 78), first occurring in the late 2nd-century in Britain. There are examples in the fortress baths drain deposit dated *c* 160-230 at Caerleon (Brewer 1986, 149 no. 62-5) and it is also the bead type used on a necklace with silver wire links found in a late 2nd-century deposit at Kelvedon (Rodwell 1988, 76, fig. 61.1). They regularly form large parts of necklaces from 4th-century graves such as those from Butt Road, Colchester (Crummy 1983, 32 nos. 651-802), Poundbury (Guido and Mills 1993, 102 no. 7) and Ancaster (unpublished grave 218). That they continue to be available into the 5th century is suggested by the necklace in a grave at South Shields where they made up two-thirds of the beads. On the grounds of its other associations this grave is likely to very late in date (Croom 1994, 58).

The beads used on string **1360.10** had a distinctive diamond-shaped section and do not appear to have been recorded in the cemetery previously. This is a much less commonly encountered form and not separately itemised in Guido's (1978) corpus. Where found elsewhere they have a consistently very late dating. They occur on a necklace found in a pit at Gadebridge which also included pottery of the mid 4th century (Neal 1974, 133 no. 75; see also Cool 1983, 1157 no. 14). At Segontium one was recovered from a context of the late 4th century onwards (Allen 1993, 227 no. 60). At Barnsley Park one came from a 5th-century context (Webster and Smith, 1982, 110 no. 126) and at Piercebridge two, of a slightly paler shade of blue, were recovered from a ditch fill that did not start filling until the end of the 4th century (Cool and Mason 2008, database reference 1702-3).

The only other type of small deep translucent blue bead from the OA excavations was a single small cubic bead on string **1360.13**. Similar beads were found on string *438/560* which consisted primarily of these and coral beads. There are some grounds for thinking that these might be a later 4th-century type, but the question is complicated because the shape is made in opaque blue glass and a cloudy deep blue glass as well and catalogue descriptions do not always make the distinction. The three found on a necklace at Poundbury were exactly similar to the ones from Graves 438 and 1360. They were found on a necklace which consisted primarily of opaque green disc cylindrical beads which appear to be a good indicator of very late 4th- to 5th-century activity (Cool 2000, 50; Cool and Mason 2008, 269)

Three types of longer translucent deep blue beads were also found. Two of these, segmented and square-sectioned rectangular beads about 4-6 mm long, were both found on the same bead string (**1360.13**). Blue segmented beads were also found on strings **920.21** and **985.21,** and string *336/364* from Clarke's excavations. Segmented beads are most frequently found in green glass (Guido 1978, 91) and blue ones are noticeably less common on British sites. There are currently insufficient examples accurately recorded with respect to shade of blue and degree of translucency to trace when they start becoming common. The square-sectioned rectangular beads in deep translucent blue are also an uncommon type not recorded from the cemetery before. One example had been placed on a pyre during the late 3rd century (*c* 280/85-300/310) at Brougham (Cool 2004, 386 no. 282.8). Other examples on 4th-century necklaces in graves can be noted at Poundbury (Guido and Mills 1993, 102 no. 7) and at Butt Road, Colchester (Crummy 1983, 226 nos 1387-1413).

Long cylindrical beads were a major element of string **1360.11**. In the earlier excavations a similar bead was found on each of strings *188/248* and *336/363,* and there were three on *333/315*. This combination of colour, shape and length is a moderately common find in Britain. Guido (1978, 94-5) suggested that they occurred throughout the Roman period but it is noticeable that these long ones are primarily a 4th-century form.

Finally a long hexagonal deep blue bead may be noted (**87.3**), found while processing the skull of the body and so perhaps strung around the neck as a single piece. Short examples of the form were found in the earlier excavations on strings *323/436* and *336/363*. It has been asserted that blue hexagonal beads only occur at Lankhills in Britain (Swift 2000b, 72), but while not particularly common, they

are found elsewhere in the province in various shades of blue and various lengths, see for example those from the fortress drain deposit at Caerleon (Brewer 1986, 148-9 nos. 1, 2, 23).

Mid blue opaque glass

In addition to the translucent deep blue cubic bead, string **1360.13** also had a similar cubic bead made of opaque mid blue glass. A small conical bead in the same glass came from the same string. These appear to be the only examples of this colour glass from the cemetery. Small opaque blue cubic beads occur in the fortress baths drain deposit dated to 160-230 at Caerleon, but the precise shade is not stated (Brewer 1986, 151 no. 71-2), a problem that besets many of the ones noted in the literature. Opaque mid blue glass is used to for cubic beads at Vindolanda (Price 1985, 213 nos 70-1) but unfortunately these are unstratified. Square-sectioned opaque mid blue beads were used on a necklace in a 4th-century grave at Butt Road, Colchester (Crummy 1983, 226 nos. 1387-1413). These were of varying lengths but appear to include cubic ones. In my experience this shade of blue is not commonly encountered in beads from Britain.

Green/blue and peacock translucent glass

These colours are very similar, with the peacock shade being more vivid, and so they will be discussed together. In the 1979 report only three beads, on string *188/248,* were described as greenish blue. Whether this was because the colours were otherwise absent or just not distinguished is unclear. Certainly the shades are rarely described in the literature, but that may be because they are subsumed within the general blue and green categories. In my experience, as in the case with the opaque mid blue glass, they are not colours often used for beads.

The commonest form in these colours was the long cylindrical. Beads in peacock glass alternated with deep blue glass on string **1360.11**, and a blue/green one together with a slightly shorter peacock bead formed the terminal of string **110.4**. The three green/blue beads on string *188/248* were of this type and a long peacock cylindrical bead is recorded from a residual context from the Swinegate site at York (Cool *et al.* 1995, 1668 no. 6434).

A long square-sectioned peacock bead formed part of string **920.15**. A similar bead is known from the King Harry Lane site at Verulamium, though not from a dated context (Price 1989, 40 no. 259). The other green/blue beads were three segmented examples, also on string **920.15.**

Turquoise glass

This is another uncommon colour and does not appear to have been recorded from the cemetery before, but that may be for the same reason that the green/blue shades were apparently missing. One long ovoid bead in translucent glass was found on string **1360.11** and I am not aware of a precisely similar bead elsewhere. An opaque hexagonal bead or beads was found on string **985.21**. The only other combination of this colour and shape I know of came from Piercebridge (Cool and Mason 2008, database no. 1663).

Green glass

Green beads of a variety of shapes were common in the necklaces found during Clarke's excavations, as they are generally among site finds. They were less common from the OA excavations. There was one short hexagonal opaque green bead and one small annular translucent mid green bead, both on **985.21**. The hexagonal form has been found before in the cemetery on *351/399*. This is a long-lived and very common type, originally imitating beryl emeralds (Guido 1978, 96).

Yellow translucent glass

Short biconical beads in translucent yellow glass were found on two strings. Those on **1360.10** were yellow/brown and one in that shade, together with one in yellow/green glass, was found on **920.15**. Short biconical beads in yellow translucent glass (shade unspecified) were common in the earlier excavations occurring in strings *40/28*, *100/85*, *183/182* and *192*, *188/248*, *199/215*, *323/443*, *336/353* and *337/425*. Guido (1978, 98) suggested they might represent imports from the Germanic territories but this seems unlikely given they regularly occur in the same bead strings as the short biconical deep translucent blue beads discussed above. The combination is seen on seven of the Lankhills strings, on the Ancaster string, on one of the Colchester Butt Road strings (Crummy *et al.* 1993, grave 16) and on the South Shields necklace. They are admittedly not as common as site finds, but given that the deep blue ones are long-established in Britain, an external source does not really need to be invoked for them. Certainly in her survey Swift (2000a, 90, map 104) saw them as a widespread type rather than one which might provide clues as to ethnicities.

The other yellow/brown bead type was also found on string **1360.10** and was of the same lozenge-sectioned shape as the translucent deep blue beads that made up the bulk of the string. A similar combination was seen on a necklace from the Gadebridge villa (Neal 1974, 133 no. 75).

Opaque terracotta red glass

Red glass is extremely rare among beads that are typical Roman forms and here the rarity is unlikely to be due to inadequacies of reporting given that it is an easily recognisable colour. An irregularly faceted cubic bead in a shade of light opaque terracotta red was found on string **920.15**. Opaque red

beads are very rare on Roman sites and where they occur it is often in very late contexts. Short cylindrical ones, for example, have been noted at Vindolanda (Price 1985, 213 no. 63) and Piercebridge (Cool and Mason 2008, database ref 1700). The former was in a construction deposit of *c* 370 and the latter in a ditch fill that did not start accumulating until the end of the 4th century. Shades of opaque red, including terracotta, are common in 5th- to 7th-century Anglo-Saxon and Anglian assemblages (Guido 1999, 283), and so such evidence as there is would suggest that any 'Roman' beads in opaque red glass are likely to be of late 4th- or 5th-century date.

Colourless glass

There is one oval lentoid bead in colourless glass on string **985.21**. Again colourless glass is very rarely encountered in Roman beads, other than for the gold-in-glass form. Guido (1999, 12) noted it as occurring sometimes in 5th- to 7th-century assemblages.

Beads of other materials

Among the OA bead strings amber was the most frequently encountered material used to make beads other than glass. Amber beads occurred in three of the strings, **110.4**, **920.15** and **1360.13**, and had also been present on one of Clarke's strings, *323/436*. For the examples from the OA excavations only those from string **1360.13** retained their forms, a small annular bead and a dumbbell-shaped pendant. In the other two strings, the amber had decayed and was only recovered as small fragments. The amber bead from string *323/436* was also an annular one.

In discussing the example found during his excavations Clarke (1979, 296) drew his comparanda primarily from the continent, noted that amber beads were common outside of the empire and in Anglo-Saxon graves and raised the question of whether they should be seen as Romano-British. The site finds make it clear that amber beads are found regularly from the 1st century onwards in Britain. Annular beads of the sort recognised at Lankhills occurred on the amber bead string from the Walbrook which can be assigned to the mid 1st to mid 2nd century (Chapman 1974). The type was present in a small group of amber beads in the late 1st- to very early 2nd-century drain deposit in the Caerleon fortress baths, and in discussing those Brewer (1986, 152) noted that others had been part of a necklace associated with a 2nd-century cremation burial at Caerleon. Another example from a dated context can be noted at Watercrook, where it was found in occupation debris of the second half of the 2nd century and into the 3rd century, in a guard house (Potter 1979, 218 no. 89). While never common, amber beads are part of wider Romano-British culture and need not imply that anyone with them in their possession was an incomer. Their occurrence on bead strings found in 4th-century graves is variable. They were present on four of the ten strings recorded at the Butt Road cemetery at Colchester (Crummy *et al*. 1993, 143-3 tables 2.54-5), but absent from the seven strings found at Poundbury. Elsewhere on one of the two strings at Ancaster which only had nine beads, seven were of amber (grave 162 unpublished), and they are also recorded among the beads in a grave at Dunstable, Bedfordshire which appears to have had at least two strings (Matthews 1981, 45 no. 30). This variability may well be connected with the fact that, as Swift (2003, 342-3) has noted, amber seems to have been a material that was thought particularly appropriate for particular age groups, but that appropriateness varied between communities. Here amber was regarded as a young person's possession.

Dumbbell-shaped amber pendants are much less common than the beads but similar ones have been found associated with a bead strings in the 4th-century cemetery at Fordington, Dorset (Henig 1984a, 244 no. 1) and at Colchester (Cool 1983, 1158 no. 17). The latter is unprovenanced but presumably comes from the town. It was associated with a double-strand string where the beads were threaded on copper alloy links and so is certainly of Roman date.

One bead on string **920.15** is almost certainly made of coral. Coral beads were noted on seven of the strings from Clarke's excavations (*117/140*; *183/182*; *336* strings *353, 363, 365; 337/425* and *438/560*). Coral beads are rare in Britain and generally have only been identified on necklaces in 4th-century graves. They were present on a string in one of the few furnished graves at the Bath Gate cemetery at Cirencester (McWhirr *et al.* 1982, 132), and in two bead strings at Poundbury (Guido and Mills 1983, 102 nos. 5 and 7). They did not occur on any of the Butt Road cemetery bead strings, but have been found subsequently in Colchester on one in a richly furnished grave on the site of St Mary's Hospital (Anon 2003, 13). Five are recorded among the Baths Basilica site assemblage at Wroxeter (Barker *et al.* 1997, 250). The evidence would suggest that unlike amber beads, those made in coral were a 4th-century introduction. Given their rarity the number present at Lankhills does seem exceptional.

Finally five beads made from shaped stones are present on two of the OA strings; **920.15** has two cylindrical beads; one (**.15t**) is a light terracotta red with a green streak and the other (**.15w)** is a creamy pink. On string **985.21** there is also a barrel-shaped bead in a cream stone (**.21k**). In these three cases it has not been possible to identify precisely what the stone is. In the case of the other two beads from string **985.21** it is most likely that bead **.21i** is varisite and bead **.21j** is brown chalcedony (following Hutchinson 1996, 6-7). Both are diamond and triangular faceted rectangular beads. A varisite

bead of this shape was identified by Hutchinson from a Roman site in York (1996, 7, pl 9 left – 1981.12, Rougier Street). Three octagonal-sectioned beads of the material were recovered from mid 2nd- to mid 3rd-century contexts at Balkerne Lane, Colchester (Crummy 1983, 34 nos. 1444-6). A varisite bead was also identified in the Baths Basilica assemblage at Wroxeter (Barker *et al.* 1997, 250). Neither the type nor the context can be ascertained from the publication.

Brown chalcedony faceted beads were found during Clarke's excavations where they were described as brown cornelian. Hutchinson has also identified 29 similar beads from Ardleigh (Hutchinson 1996, 6 pl. 6) and a single bead threaded on silver wire from Caerleon (Brewer 1986, 154 no. 11, described as cornelian in the report) as being of this type. The Ardleigh beads came from a from a late 4th-century inhumation, broadly contemporary with the Lankhills examples; but the Caerleon one came from the fortress baths drain deposit dated to *c* AD 160-230.

Varisite is found in Europe in Saxony and southern Brittany, though the Breton material is bluer than normally found (Hutchinson 1996, 7). Clarke (1979, 295) drew attention to the numbers of the brown chalcedony beads of this form from Hungary. Both types are thus likely to originate in central Europe although, as the beads from Caerleon and Colchester show, some entered Britain well before the 4th century. Given that beads can have very long histories if they are restrung, the presence of singletons on a 4th-century string need not indicate that the person stringing the beads, or the person wearing the string, necessarily had any direct contact with that area. The fact that there are two of these rare bead types on string **985.21** does suggest though, that such a contact might be possible in this case, even if only at the level of someone inheriting or finding spare beads in a mother's or grandmother's jewel box.

As well as the deliberately formed beads, there was also the eye terminal of a copper alloy light bangle fastened with a hook and eye of the type discussed in the next section (**920.13**). This was found among the bead string **920.15** and appears to have been threaded as part of it.

The bead strings

The discussion above has set out the problems with deciding whether some beads in the shades of green/blue, peacock, pale blue etc are indeed rare or just apparently rare through non-detailed reporting. If these are ignored for this reason, then it is possible to divide the beads into common types, such as the small translucent deep blue and green beads of various shapes; less common types, such as amber beads and very rare forms such as ones made of opaque red, black and colourless glass, coral, varisite and brown chalcedony. Of the major types that occurred in Clarke's excavations but not in the OA ones, gold-in-glass are counted as common, and diamond and triangular faceted cubic glass beads as less common based on wider site find patterns. Table 4.25 itemises the strings according to this categorisation, arranging the strings according to the proportion of very rare forms they contain. As can be seen, approximately half of the strings from the Lankhills have no rare beads incorporated in them. Of the new strings, those from Graves 110 and 1360 comprise, on the whole, relatively common types and only those in Graves 920 and 985 contain any of the rare types, though at a much lower frequency than in some of Clarke's strings.

Table 4.25: Bead strings from Lankhills showing the proportion of rare types present

String	*Common*	*Less common*	*Rare*	*Peacock etc*	*Total*	*% Rare*
63/52	-	-	9	-	9	100
336/365	-	-	-	-	35	100
333/315	3	6	124	-	133	93
117/140	18	22	43	-	83	52
337/425	36	-	26	-	62	42
323/436	8	1	4	-	13	31
438/560(1)	present	-	present	-	?	?25
336/363	10	3	4	-	17	24
920.15	15	6	4	5	30	13
336/353	22	-	2	-	24	8
985.21	56	1	4	1	64	6
183/182	37	1	1	-	39	3
199/215	108	-	1	-	109	1
110.4	23	1	-	3	27	0
1360.10	2	25	-	-	27	0
1360.11	5	-	-	6	11	0
1360.13	26	2	-	1	29	0
40/28	100	-	-	-	100	0
100/85	165	-	-	-	165	0
183/192	69	-	-	-	69	0
188/248	106	-	-	3	109	0
323/443	56	-	-	-	56	0
326/424	4	2	-	-	6	0
336/364	100	-	-	-	100	0
351/399	66	-	-	-	66	0
438/583	140+	-	-	-	140+	0

(1) the numbers in this string are not stated and the proportion of rare forms is an estimate based on a the description

String **1360.11** is slightly unusual in that it consists of long beads threaded onto copper alloy links and it is much more common to encounter small beads threaded like this, as in the case of string **1360.10**. It is possible that the strings in this grave had been accumulated over some time. String **1360.10** has beads with a diamond-shaped section which have been noted as a type that have regularly seen in later 4th-century contexts. Those on string **1360.11** appear to have been in use earlier as well, and the fastener for the string appears to have been mended with a twist of iron wire.

As can be seen from Table 4.24, where the individual could be sexed, the overwhelming association is with females. In only one case were beads apparently found with a male, in grave 199 in Clarke's excavations, where the bead string appears to have been placed with a mature male though Gowland's re-assessment of the skeletal material has shown that there are also bones from a young adult female associated with this grave, not mentioned in the original report. As the wearing of ornaments was one of the factors that Clarke used to define incomers, the table has been structured according to whether the strings were worn or placed separately in the grave. The pattern seen suggests that it is age that governs how bead strings were placed in a grave. This can be formally tested comparing the incidence between what happens in the adolescent and younger graves and that in graves of young adult and older women. A Fisher's Exact test returns *p*-values of 0.02 if only the graves with a single individual are included and 0.03 if Clarke's graves 183 and 199 are included. This means that there is strong evidence to reject the hypothesis that age does not influence how the strings are deposited.

The information about the presence of rare beads in the strings can be used to explore this pattern further. It could be hypothesised, for example, that the presence of unusual beads, possibly indicative of immigrants, might explain why the strings accompanying the children in graves 333 and 324 were worn. Analysis of the data in Table 4.25 suggests this is not the case. Although string *333/315* has 93% rare beads and *323/436* has 31%, the other string in grave 323 has none. In the graves of children and young girls with unworn ornaments, the strings in Graves 110 and 1360 of the OA excavations and grave 188 of Clarke's excavations have no rare beads, but three of the four strings in grave 336 have many rare ones.

It therefore seems very unlikely that the wearing of bead strings can be taken as a secure identification of foreign extraction at Lankhills. From the isotope evidence the infant in Grave 110 cannot be assigned an origin with confidence because the enhanced oxygen isotope value may be related to breastfeeding rather than place of origin, and the prime adult in Clarke's grave 351 probably came from south central Europe. Both were indeed wearing the bead strings but the beads in the strings were all ones that can easily be paralleled elsewhere in Britain. The other individuals who have been subject to isotope analysis (Clarke's graves 323 and 326 and OA Graves 920, 985 and 1360) were all local. They were predominantly buried with unworn ornaments, but of the seven strings that accompanied them four had rare beads making up 6-31% of the individual strings. It could, and indeed has, been argued that 'local' individuals buried according to 'exotic' customs could be seen as second generation immigrants brought up in Winchester (Evans *et al*. 2006a, 271). Given the demonstrably strong association between age and the burial rite, the data would seem to point more strongly towards a community in which, among those who thought burial with grave goods was appropriate, it was stage of life that governed deposition, not ethnicity. Indeed, given the presence of the varisite and brown chalcedony beads on string **985.21,** where the possibility has been raised that this individual might have had a mother or grandmother from central Europe, it seems more likely that second generation immigrants, if that is what she was, were absorbed into the local pattern of what was felt appropriate.

The deposition of unworn beads with young people and the wearing of necklaces by older ones can be seen elsewhere, but it is not a universal pattern. There were two graves with bead strings in the cemetery at Dunstable. The worn one accompanied a young adult female and the unworn strings were with an older child (Matthews 1981, 44-5, skeletons G and AF). The bead strings from Poundbury were found in four graves. In one case one was worn by a 14-year-old, but in the cases of the other individuals, aged 12, 14 and 25, they were unworn. At Butt Road the bead strings accompanied one infant, four children, one adolescent and three adults. All were unworn apart from those accompanying the infant and an adult (Crummy *et al*. 1993, 142-3, tables 2.54-5). The necklace from Bath Gate, Cirencester was worn by the three-year-old it accompanied.

Clearly across the province there is no one simple reason why some individuals are buried wearing beads strings and some have them placed in the graves. What is noticeable is that they often seem to be thought especially appropriate for children and adolescents.

Bracelets

Bracelets were found deposited as grave goods in 13 of the OA graves as summarised in Table 4.26. A fragment of a shale bracelet came from the fill of Grave 1010 and in Grave 930 there was a copper alloy hoop fragment that could have come from a bracelet. Given the fragmentary nature of the latter and the fact that a knife blade was found in that grave, it might be suspected that these are inclusions in the fill rather than formal grave goods. As with the beads, the individual types represented will be discussed first before the assemblages placed in graves are considered.

Copper alloy bracelets

Writing at a time when no survey of copper alloy bracelets was available, Clarke divided the 94 copper alloy bracelets from his excavations on the basis primarily of section shape (Clarke 1979, 301). Here I will discuss them from the vantage point of my 1983 survey of the bracelets from southern

Table 4.26: Graves at Lankhills with bracelets deposited as grave goods

	Infant	*Young child*	*Older child*	*Child*	*Adolescent*	*Young adult*	*Prime adult*	*Mature adult*	*Adult*
Worn	333	323	336			326	351		40
		1070	**685**			**495**			63
			1866						**87**
									396
Unworn	238	85	**920**	105	139	117	143	168	266
	110	134	**1370**	122	265	137	430	218	369
		183		155	**18**	256		313	**1385**
		188		268	**985**	438			
		327			**1360**				
		337							

Britain, as this allows them to be put more appropriately into context. In that publication the groups were identified by Roman numerals, but here the nomenclature has been translated into Arabic numbers for simplicity.

The most common type of bracelet from Roman Britain is the cable twist made up of two or more strands twisted together, three strands being the commonest number found (Group 1). Generally they are fastened by hook and eye terminals. They appear in Britain by the early 2nd century and, as with so many bracelet types, become most common in the 4th century when bracelet-wearing as at its height. Two examples came from the OA excavations (**1070.1** and **1866.4**), both being of three strands with hook and eye terminals. This is the most common copper alloy bracelet type from Clarke's excavations, occurring in 12 graves (Clarke 1979, type 1).

Another type that has a long lifespan but which is commonest in the 4th century is the form with an expanding joint made by the ends of the wire wrapping around the opposite end of the hoop (Group 3). While not as numerous as the cable twist bracelet, it is common and widespread. My survey catalogued approximately 100 of the type compared to over 400 cable twist bracelets. Examples occurred in three of the OA graves (**495.2**, **920.4-7** and **985.3**) and in five of Clarke's graves (183, 256, 323, 100 and 327 – two examples each, and 336 which had five examples). All of the new finds have plain hoops – the commonest variant found. One (**920.7**) had clearly been broken before deposition in the grave because a make-shift repair had been effected between the joints.

Three bracelets have torc-twisted hoops. This type of bracelet (Group 4) has a long life as a penannular form but the types with a hook-and-eye fastening (Group 4A represented here by **985.6** and **1370.1**) and expanding joint (Group 4B – **1385.1**) nearly all come from late 3rd- or 4th-century contexts. The earlier examples from the cemetery were all of the hook and eye form and came from four graves (40 – two examples, 137, 238 and 328) They are widely spread in southern Britain but not particularly numerous, I recorded approximately 30 of the 4A and 4B type (including those from the earlier Lankhills excavations). Subsequently it has become apparent that torc-twisted bracelets might be more popular in the north than the south (Cool 2002, 26; Cool and Mason 2008, 251)

At the end of the 3rd century there was a surge in bracelet wearing, and to cater for this many new types came onto the market, while long-established types like the torc-twisted bracelets were rejuvenated with new fastening mechanisms. The bulk of the new forms fall into what I have termed light bangles, they tend to be slender and were fastened by a variety of mechanisms including hook and eyes, and overlapped joints. To have been effective several bangles like this would need to have been worn together. This would have been a flashy and noisy fashion as the faceting seen on many caught the light and they rattled against each other. There was a very wide range of decoration used, with the ones that were worn broadest to the wrist naturally providing the most space for this. I divided these into 18 major types with numerous sub-types; Clarke subsumed all the ones from the earlier excavations into his Group D.

From the OA excavations there are two examples of Group 16 in which plain and ribbed units alternate on a wide band. Bangle **1360.4** is a variant as the plain units appear to be decorated with a cross on at least some of them. I did not record this pattern in my survey. Bangle **985.7** belongs to the more standard type, as do the others recorded from the cemetery (*143/163*, *238/220*, *369/555*). It is a widespread group with approximately 50 recorded in my corpus. Wide bangles with transverse grooving (Group 19) had an approximately similar incidence. Here they are represented by bangle **1360.5**. No examples came from the earlier excavations.

Group 20 is a wide form with a band of incised or punched decoration running along the centre of the width. The normal decoration is either an incised line or a punched 'S'-shape. Bangle **920.3** belongs to this type but has a 'C'-shaped punch mark. This has only been found at Woodeaton (Cool 1983, 842 no. 1) and on an example from the Butt Road cemetery

at Colchester (Crummy 1983, 41 no. 1702). It may thus be regarded as rare. Examples of this group have not been found at Lankhills before.

Bangles decorated with a plain zig-zag pattern (Group 22) are one of the most common recovered in Britain. Bangle **985.1** is an example of the variant where the nicks are arranged to produce a blocked pattern (22B), considerably less common than the simple zig-zag (22A) which was the type present in Clarke's excavations (*117/141*, *155/196*). Bangle **985.1** is also slightly unusual in having this pattern applied to a wide band. The zig-zag pattern could also be augmented by the addition of grooves and ring and dots (Group 23) but these were less common than the plain ones (*c* 60 examples compared to *c* 120 in my survey). At Lankhills these decorated zig-zag bangles have been found in three graves, **18.1** and **685.1** from the OA excavations and *268/265* from Clarke's exavations. All belong to the 23D variant, in which a boxed zig-zag is additionally notched. This is the commonest variant among all the decorated zig-zag bangles.

Wide bangles with dotted decoration (Group 25 – single punched dots or ring and dots) are another numerous type with a number of different variants. The two from Grave 920 (**920.1-2** and **18.2**) all have the dots or ring and dots divided by edge notches paired across (Group 25E). The only example from this group from Clarke's excavations (*337/422*) also belonged to this variant, which is the second commonest in the whole group. Bangle **920.1** lacks one of its terminals but is otherwise in very good condition. It seems likely that it was placed in the grave in a damaged state as was bangle **920.7**.

Bangles with wedge-shaped decoration (Group 27) are not particularly numerous. They were found in two of the graves from the OA excavations (**985.4** and **1360.3**) and one of Clarke's graves (*188/251*). All are of the variant where the wedge shapes are paired across (27A). My corpus has about 10 others of these from southern Britain, so it can be regarded as a rare type, though apparently insular. I found no continental *comparanda*, nor did Swift (2000a, fig. 175 – plotting the Group 27B variant where the wedge shapes are staggered).

There are also bracelets that can be regarded as light bangles, being of the same general dimensions and date, but which are distinguished by not having any decoration. There are two examples of Group 33, which consist of simple wire hoops with hooked terminals (**1360.1-2**), also found in one grave of Clarke's excavations (*183/191*). There is an additional example (**1866.5**) that falls into this general category but which is distinguished by an unusual ribbed detail on the interior. There is one example (**87.1**) of a light version of the simple hook and eye bracelet (Group 34A), and one (**985.2**) of the similar type distinguished by grooves behind the terminals (Group 35A). With the exception of **1866.5**, all of these are common forms.

Of the remaining two light bangles from the OA excavations, one cannot be assigned to type as it so corroded (**1370.2**). The other (**1866.1**) is an example of the two-unit decoration type where one pattern of decoration occurs immediately behind the terminals but the bulk of the hoop takes another (Group 32). It is unusual in having the unit behind the terminals consisting of ring and dots, but it combines common motifs from the light bangle repertoire and thus seems similar to all the other examples of this insular type.

During the 4th century there is also a tradition of heavier, more massive cast bracelets. Bracelet **985.5** is of this type. It is an example of the Group 34B variant with blocks behind the terminals, also found in one of Clarke's graves (*326/403* and *406*). The fragment in Grave 930 (**930.1**) would also have belonged to a heavier bracelet form, but because it lacks its terminals it is not possible to identify the variant. An unstratified fragment from a cast multiple unit bracelet (Group 31) came from the OA excavations (SF 522, Fig. 4.6). This popular insular type was relatively common in Clarke's excavations (Clarke Type E), as they are as site finds, but was absent from the grave goods from the most recent excavations.

Finally the unusual hollow bracelet **495.1** may be considered. It is made of repoussé decorated sheet that presumably originally enclosed an organic core to give it stability. Hollow sheet bracelets are extremely uncommon in Britain. Swift notes that they are characteristic of the Pannonian and Danubian Limes though it cannot really be said they are common there (Swift 2000a, 178, 306, fig. 106). She notes their occurrence at three places in Britain; one from Colchester, one from Uley (Woodward and Leach 1993, 164) and three from Rochester (Cool 1981, 130-31, fig. 10.15). As no details are published for the first two, it cannot be judged to what extent they are similar to the European ones, but the Rochester bracelets do not appear to be directly comparable to them as they only have a diameter of 2.5 mm. The Danubian ones have much larger sections of *c* 6 mm or more (see for example Burger 1966, fig. 120 no. 328.4a, fig. 121 no. 330.3), and with a diameter of 6-8 mm bracelet **495.1** fits that range. Since Swift's publication a fourth hollow fragment has been published from Winchester, from a mid-late 4th-century well fill at Victoria Road (Rees *et al.* 2008, 56 no. 226). It has a section of *c* 6 mm and is decorated in a chevron pattern which was impressed from the outside. There are slight indications that the chevron decoration may have been panelled.

Most of the examples noted by Swift in the Danubian area are plain or just have ribbed terminals. They do not have the repoussé decoration of the Lankhills one nor the impressed decoration of the Victoria Road fragment. In his study of the grave goods from southern Bavaria, Keller published one piece from grave 17 at Pfaffenhofen that may have been closely comparable to bracelet **495.1** (Keller 1971, 104, Taf. 18.13). Only approximately one quarter of the circumference is extant

but it clearly retains parts of two units of repoussé decoration, one of which is very similar to the diagonal ribs that divide the different decorative patterns on bracelet **495.1**. Keller distinguished between the plain examples and the decorated ones like this and one with a different pattern from another Bavarian grave at Göggingen, and knew of no direct parallels for the decorated examples. Since then Swift has noted a bracelet broadly similar to the Göggingen example at Chartres and she suggests that this may have come from the Danube region (Swift 2000a, 179, fig. 228).

At one level, therefore, it is extremely tempting to assume that bracelet **495.1** is of Danubian origin. The fact that repoussé bracelets are so rare in that area, however, might give pause for thought. Another possibility is that these bracelets all came from quite a different source. Hollow gold sheet bracelets with repoussé decoration similar to that seen on **495.1** and the fragment from Pfaffenhofen are known from the Rhineland, including two from a hoard that also contained gold coins up to 353 (Hartley *et al*. 2006, 166-7, nos 122-4). A very elaborate gold bracelet in the 5th-century Hoxne hoard also has similar repoussé hollow tubes as part of its construction (ibid. no. 121). Bracelet **495.1** has many more similarities to these gold bracelets than it does with the plain Danubian copper alloy ones, and so could have been imitating a fashion in the more expensive metal. Where it would have been made is an open question. A continental source is possible given the current absence of any other bracelet like this in Britain, but that source could as easily have been in the vicinity of the Rhine as the Danube.

The degree to which bracelet **495.1** was unique within late Roman Britain is an interesting question given the presence of the Victoria Road fragment and the unusual hollow bracelet in a child's grave at the late/sub Roman cemetery at Cannington, Somerset (Rahtz *et al*. 2000, 355, fig. 239). The latter was made of three segments of copper alloy sheet with a slender branch of hazel as the core. It has incised decoration on the exterior consisting of alternating units of vertical and herringbone grooves, possibly the sort of pattern that the Victoria Road example may have had when complete. The Cannington bracelet has always appeared to be a unique piece and the discussion of it cited *comparanda* among 6th- and 7th-century continental ornaments and references in the early Welsh literature to relics of saints. It and the Victoria Road fragment could as easily, given the construction and decorative pattern, be derived from a piece like bracelet **495.1**. It will easily be appreciated that a fragile ornament like the Lankhills bracelet, very probably constructed around an organic core, is only likely to survive in a recognisable form in a grave, or possibly a hoard. As a site find it would be most likely to be recovered as an unusual fragment of repoussé decorated sheet that would not be identified as a bracelet. The extent to which bracelet **495.1** was unique in Roman Britain will only become apparent in the future now that we know how to view fragments of interestingly decorated sheet with new eyes.

Fig. 4.6 Copper alloy bracelets (SF 522 and SF 1990) and buckle (SF 3304) from non-grave contexts

Iron bracelets

Two graves had iron bracelets; **685.2** and **685.3** are both fragmentary and incomplete, but the position they were found in and the fact that the former is plain while the latter has grooved decoration indicates that two bracelets were present. Bracelet **1360.8** is now only represented by iron corrosion products and more than one bracelet may originally have been represented. In Clarke's excavations nine iron bracelets were recognised, including both plain and grooved examples and two with additional copper alloy sleeves. There can be no doubt that iron was used to make light bangle-style bracelets as a number have also been recognised at the Butt Road cemetery in Colchester (Crummy *et al*. 1993, table 2.53), but for obvious reasons they are virtually never identified as site finds and so there is no way of gauging how common they were generally.

Jet and shale bracelets

From visual inspection, all of the bracelets from the OA excavations in this category were made of shale. This is similar to the case for Clarke's excavations where the only one suggested as being of jet was from the fill of grave 100. Shale bracelets were found in three of the OA graves; **920.12** and **985.17** were plain, D-sectioned bracelets. A fragment of another of these was found in the fill of Grave 1010 and a further example was unstratified (SF 1990, Fig. 4.6). Plain bracelets were also present in six of Clarke's graves (85, 105, 183, 256, 323 and 337) with a seventh bracelet being essentially plain but with ridges on either side (*134/124*). The OA excavations also produced one decorated bracelet placed as a grave good (**1070.2**) and a fragment of a second was found unstratified. Both of the decorated bracelets have a herringbone pattern running around the outer circumference in four bands.

Plain shale bracelets always considerably outnumber decorated ones in any site assemblage. From the Winchester suburb excavations, for example, the ratio of decorated to plain bracelets was one to four (Rees *et al*. 2008, 52 nos. 192-206) and in two of the three decorated examples the decoration consisted merely of grooves running around the circumference, with only one having more elaborate decoration in the form of ring and dots. The pattern of deposition at Lankhills thus matches what might be expected with regard to the scarcity of decorated shale bracelets generally. What is unexpected is the nature of the decoration on bracelet **1070.2**. Herringbone or chevron decoration like this is rare, as most decoration consists of edge nicks forming zig-zag patterns, mock cabling or ring and dots (see for example Crummy 1983, fig. 38). The pattern is, however, precisely paralleled on a fragment from Silchester (Lawson 1976, 254 no. 46).

Plain shale bracelets are in use throughout the Roman period. Decorated ones are commoner in the late Roman period but no closer typological dating can be offered.

Ivory and bone bracelets

Bracelets made of slender strips of bone and ivory are common at Lankhills. They were fastened with the aid of sheet metal sleeves and/or small rivets. When these corroded the hoops could spring open and at a site like Lankhills where skeletal material does not always survive well this can cause problems for quantifying how many there were in a particular grave if multiple examples were deposited. For the OA excavations the quantification has been done primarily on the number of terminal fittings that are present with additional information derived from the size and shape of the extant hoop sections being used in some instances.

The OA excavations produced only one bracelet that was probably made of ivory (**313.1**); the rest were of bone. Bracelet **313.1** had clearly been fastened with the aid of copper alloy fittings, indicated by green staining. It did not retain rivet holes in the extant terminal so was probably fastened by a sleeve. Similar ivory bracelets were recorded in Clarke's graves 83, 438 and in the fill of grave 100. OA Grave 313 had been excavated and published by Clarke as grave 115 but no grave goods are recorded as coming from it, so it appears that just this one bracelet was deposited.

Clarke divided the bone bracelets into three types. Type A was fastened with a ribbed sheet sleeve of silver or bronze and no rivets were observed. Type B had a plain sleeve of bronze which was riveted in place with iron rivets. Type C had overlapped ends held together with bronze or iron rivets. In the OA excavations the metal fittings had frequently disappeared, leaving only green staining and corrosion products to show the presence of copper alloy and iron. Allowing for this, it seems likely that three of the bracelets from Grave 985 were of Type A (**985.11-13**). The other examples in that grave were of Type B, as were those in Graves 18, 1360 and 1866. The bracelets in Grave 920 were probably also of Type B but in one case the sleeve appears to have been of iron (**920.10**). No examples of Type C were recovered. Bone bracelets had also been deposited in Graves 110 and 1370 but they were in very poor condition and did not retain any traces of the terminals.

Clarke suggested that the use of Type A and B bone bracelets overlapped during the period 350-370, and that many of the Type A bracelets were deposited prior to 350 with the Type B bracelets continuing to be deposited after 370. Greep, who had conducted a province-wide survey of bone and allied material worked objects, did not consider that the 4th-century dating of these bracelets could be refined on the basis of either the fastening system or the decoration which they very occasionally carry (Greep 1993, 107). The suggestion that this type of bone and ivory bracelet was being regularly

deposited prior to 350 is at odds with the evidence from the site finds. Where the date of the deposit can be further refined within the 4th century, overwhelmingly they come from contexts belonging to the second half of the century, especially late in the century and in the 5th century (Cool 2000, 49). As can be seen from Table 4.15 coin associations for female personal ornaments are confined to those of the middle third of the 4th century with the exception of bone bracelets which also have coins of the Houses of Valentinian and of Theodosius. Judged by the coin associations alone, the deposition patterns in Clarke's excavations do not appear quite so much at odds with the site pattern as his discussion suggests. To this may be added the bracelets in Clarke's grave 438, the grave with the most bracelets from either excavation (see Table 4.27) and in which 75% of the bracelets are of ivory and bone. This grave cut grave 437, the latest coins in which were of AD 361-3. Such a sequence would suggest that grave 438 must date to the final quarter of the 4th century at the earliest. One of the OA graves with bone bracelets (Grave 1370) contained three coins, the latest one dated AD 337-341, and one did have a pottery vessel (**18.12**) which was compared to a type current from *c* 270-350. Given the fact that the presence of bone bracelets elsewhere can normally be regarded as a good indicator of late 4th- to 5th-century occupation, the likely date at Lankhills will be considered further in the next section when the incidence of all the different types of bracelets is compared.

Overview of bracelet deposition

As Table 4.26 makes clear, bracelets are overwhelmingly a female attribute. (In the catalogue of Clarke's excavations, two bone bracelets (nos 457 and 458) were erroneously attributed to grave 427, the grave of a mature male (Clarke 1979, 313). Clarke's figure 86 makes it clear that this was a misprint for grave 327).

It is also clear that there is no simple age-related pattern that determined whether the bracelets were worn or deposited separately within the grave, as there was with the bead strings. The bracelets from Clarke's excavations have attracted a certain amount of attention since they were published. They naturally formed part of Clarke's discussion with regard to the view that worn ornaments were indicative of incomers. Swift took the argument further, pointing out that some of the individuals wearing bracelets were doing so in the same ways that were observed in Pannonia (Swift 2000a, 179; 2000b, 72-4, fig. 30). She suggested a pattern of younger females having multiple bracelets on the left arm and a single one on the right, whereas older females tended to have one or two bracelets on the left wrist and one on the right. Gowland's reappraisal of the age of the skeletons has moved one of Swift's younger females to the adult category (grave 40), although it may be noted that the plan of the grave suggests an individual who was smaller than an adult (Clarke 1979, fig. 62). As a result of her work Gowland (2001, 160) drew attention to the peak in the number of grave goods deposited with younger and older children (ages 4 to 12), and many of these were bracelets. She also drew attention to the peak in similar grave goods for young adult women.

In order to explore these and other patterns, Table 4.27 summarises the bracelet assemblage from each grave and includes Clarke's grave 100 in which a group of bracelets was deliberately inserted into the fill of the grave. The very common cable twist bracelets form one category and the other copper alloy bracelets have been divided into common, less common and rare forms. The criteria for this are based on Cool 1983. Rare bracelets are ones which are either absent from the corpus or where there are four examples or less. The less rare category consists of those variants which I catalogued between 5 and 15 examples. Common variants are those of which there are 15 examples or more, though in many cases there are 50 plus examples. Bracelets that appear to belong to common Romano-British types but which show unusual features have been placed in the less rare category. The table has been arranged from largest number of bracelets to least and the final column provides the age of the individual together with an indication of whether the bracelets were worn or deposited separately. Table 4.28 summarises the content of Table 4.27 still further, presenting four bands based on the quartiles of the bracelet total according to age bands. The quartile boundaries have been adjusted so that graves with the same number of bracelets are not split between different bands and graves where the individual is only broadly aged (child, adult) are ignored.

As can be seen from these tables Gowland's observation about younger girls having large numbers of grave goods continues to hold true with the addition of the data from the OA excavations. Most of the graves with ten or more bracelets contain the body of an adolescent or child. Older women tend only to have one or two bracelets, with the exception of the prime adult in Grave 143 who had the second highest number of bracelets from the entire cemetery.

The use of worn bracelets as an indicator that the individual was either an incomer or a second generation immigrant now appears less secure. In Pannonia itself it is clear that different cemeteries show some variation in placing and the patterns are not reproduced exactly. For example, the very diagnostic snake's head bracelets that are placed on the right arm in Pannonia, are not found at Lankhills (Lányi 1971, 106). Even allowing for the substitution of British bracelet types, it is odd that heavier snake's head types were not acquired for this role if it was seen as important to maintain placing patterns. The nearest equivalent at Lankhills is bracelet *396/502*, but the bracelets in this

Table 4.27: Graves with bracelets at Lankhills showing the different types present

Grave	*Copper alloy*				*Iron*	*Shale*	*Ivory*	*Bone*	*Total*	*Age*
	Cable	*Common*	*Less Common*	*Rare*						
438	-	2	-	1	1	-	11	1	16	*YA*
143	1	4	-	1	-	-	-	8	14	*PA*
183	4	5	-	-	-	1	2	2	14	*YC*(1)
985	-	5	2	-	-	1	-	6	14	*Adol*
920	-	6	-	1	-	1	-	4	12	OC
336	-	7	-	-	-	-	-	4	11	**OC**
18	-	2	-	-	-	-	-	9	11	*Adol*
323	-	4	-	2	2	1	-	1	10	**YC**
337	-	1	-	-	-	2	-	7	10	*YC*
100	1	2	-	-	1	1(2)	2	2	9	YA
139	5	2	-	1	-	-	-	-	8	*Adol*
1360	-	3	1	1	1	-	-	2	8	*Adol*
117	1	3	-	-	-	-	2	-	6	*YA*
256	1	1	-	-	1	2	-	1	6	*YA*
327	-	4	-	-	-	-	-	2	6	*YC*
122	3	-	-	-	-	-	-	2	5	*Child*
1866	1	-	2	-	-	-	-	2	5	**OC**
40	-	2	-	-	1	-	-	1	4	**Adult**
134	-	-	-	-	2	1	-	1	4	*YC*
188	3	-	-	1	-	-	-	-	4	*YC*
238	-	2	-	-	-	-	-	2	4	*Infant*
369	1	3	-	-	-	-	-	-	4	*Adult*
155	1	2	-	-	-	-	-	-	3	*Child*
333	-	2	-	-	-	-	1	-	3	**YC**
110	-	1	-	-	-	-	-	2	3	*Infant*
685	-	1	-	-	2	-	-	-	3	**OC**
1370	-	2	-	-	-	-	-	1	3	*OC*
85	-	-	-	-	-	2	-	-	2	*YC*
105	-	-	-	-	1	1	-	-	2	*Child*
137	-	1	-	-	-	-	-	1	2	*YA*
266	-	1	-	-	-	-	-	1	2	*Adult*
326	-	2	-	-	-	-	-	-	2	**YA**
351	-	2	-	-	-	-	-	-	2	**PA**
396	-	1	-	-	-	-	-	1	2	**Adult**
495	-	1	-	1	-	-	-	-	2	**YA**
1070	1	-	-	-	-	1(3)	-	-	2	**Child**
63	-	-	-	-	-	-	-	1	1	**Adult**
168	1	-	-	-	-	-	-	-	1	*MA*
218	-	-	-	-	-	-	-	1	1	*MA*
265	-	-	-	-	-	-	-	1	1	*Adol*
268	-	-	-	-	-	-	-	1	1	*Child*
430	-	1	-	-	-	-	-	-	1	*PA*
87	-	1	-	-	-	-	-	-	1	**Adult**
313	-	-	-	-	-	-	1	-	1	*MA*
1385	-	-	1	-	-	-	-	-	1	*Adult*

See text for definition of copper alloy types.
Final column key:
YC – Young child, OC – older child, Adol – adolescent, YA – young adult, PA – prime adult; MA Mature adult.
Bold indicates bracelets worn, Italics indicates bracelet deposited separately. Grave 100 – bracelets deposited in fill.

Notes
(1) additional individual recorded
(2) jet rather than shale
(3) rare decorated variant

Table 4.28: The distribution of the bracelets by age of deceased

No. of bracelets	*Infant*	*Young child*	*Older child*	*Adolescent*	*Young adult*	*Prime adult*	*Mature adult*
16-10	-	3	2	2	1	1	-
9-5	-	1	1	2	3	-	-
4-3	2	-	5	-	-	-	-
2-1	-	1	1	1	3	2	3
All	37	30	17	12	41	46	33
%	7	17	53	42	17	7	9

Note: All is the total number of individuals in the age category recorded for the cemetery as a whole ignoring those sexed as male for the adolescent category onwards – (see Table 4.13). The percentage figure shows the number of relevant graves in each category with bracelets.

grave were not worn. Philpott (1991, 144-6) reviewed the evidence for Britain and concluded there was a wide range of habits associated with the wearing of jewellery and that these were encountered at a variety of sites, including ones such as the small town of Dunstable where no evidence for immigration had ever been suspected. The isotope analysis carried out on four of the bodies with worn jewellery from Clarke's excavations (63, 323, 326, 333) also returned signatures suggesting that they were local (Evans *et al*. 2006a). As can be seen from Table 4.26 the types of bracelets associated with three of those individuals are all typical Romano-British forms, with only grave 323 having rare copper alloy forms.

Of the two girls with worn bracelets from the OA excavations who underwent isotopic analysis, one from Grave 1866 was wearing them in what had been suggested as the classic Pannonian pattern with four on the left arm and one on the right. Two of these bracelets fell into the less common category (**1866.1** and **.5**), though the former was clearly an insular type. Both of the girls, however, were local. So the evidence continues to accumulate against the hypothesis that the wearing of jewellery is a useful indicator of immigration.

Finally, to return to the likely date of deposition of the bone and ivory bracelets. On the basis of the evidence from other assemblages I have suggested that one of the diagnostic indicators of whether a site assemblage belongs to the end of the 4th century may be whether there are more light bangles and related bracelets than there are cable twist examples among the copper alloy bracelets (Cool 2000, 49). At Lankhills there are 17 graves which contain five or more bracelets. All contain copper alloy bracelets and all but one contain ivory or bone bracelets. From Table 4.26 it can be seen that nine of these graves have no cable twist bracelets and all of these have bone bracelets. Four (143, 100, 117, and 1866) have fewer cable twist bracelets than other forms. All of these have bone or ivory bracelets, although those in grave 117 are of a different type from those discussed here. One (183) has approximately equal numbers of both types and has bone and ivory bracelets. One has more cable twists than other types (139) but does not have bone bracelets, and one (122) has only cable twist bracelets together with two bone bracelets. Among the graves with four bracelets the only grave where cable twists are in the majority also lacks bone bracelets.

These patterns would certainly be consistent with the suggestion that cable twist bracelets were more popular in the early to mid 4th century and were losing their popularity in the later 4th and into the 5th centuries when bone bracelets became much more common. It is possible to compare the number of graves in the assemblage as a whole with bone bracelets to those with cable twist and to those with the common types of other copper alloy bracelets. Using a Chi-squared test it can be shown that the difference in the pattern between cable twist bracelets and bone ones is statistically significant (*p*-value 0.002) whereas between bone bracelets and common copper alloy ones it is not. Given that the difference in the incidence of the cable twist and bone bracelets is clearly not related to the age of the deceased or whether the bracelets were worn or not worn, a chronological difference seems most likely. This would suggest that the OA graves with a high proportion of bone bracelets (920, 985, 18) are likely to be late 4th century at the earliest. Of the other OA bracelet graves, four more (110, 313, 1360 and 1370) are also likely to be late 4th century in date given the absence of cable twists and presence of bone bracelets.

Other personal ornaments

Hair pins

A maximum of three of the OA graves had hairpins. One of these, a bone pin from Grave 82, has not been available for study. Pin **545.1** has a very unusual copper alloy diamond and triangle faceted head which is hollow centrally. Hairpins with solid heads in this shape are a common late 3rd- and 4th-century type, widespread in Britain and the rest of the western provinces. In metal they form my Type

15 (Cool 1991, 164), in bone Crummy's type 4 and in jet her Type 2 (Crummy 1983, 22, 27). This was the commonest type found during Clarke's excavations being recovered in silver (*336/31*), copper alloy (*351/396*) and jet (*100/89* and *250/267*). None of them have hollow heads, nor did any of the 66 in my survey, nor of the ones I have noted since. Solid heads are also normal for the continental examples. This then is an extremely rare variant for which no parallel is currently known.

Grave 545 also contained two slender copper alloy shank fragments and a similar shank fragment came from another OA grave (**985.20**). These may have come from other hair pins, but it would be unusual in the 4th century to have the heads made separately. The only other type in which that occurs regularly is the glass headed form, belonging to the second half of the 4th century (Cool 1991, Type 16) and the heads of those rarely become detached. At Butt Road, Colchester a silver pin had a repoussé decorated silver sheet head separately soldered on (Crummy 1983, 30 no. 512; Crummy *et al.* 1993, 135). Something similar may have been the case here, but traces at least of the head could have been expected to survive. Pin **985.20** was found under the skull of the skeleton and so may have been worn and effectively complete.

Table 4.29 shows the distribution of hair pins by age and sex. Again this is overwhelmingly a female type and it was young girls and young women who were buried with these hair ornaments. Most have been found directly associated with the skull or close to it and so a role in decorating the hair or fixing some form of head-dress is probable. That they were regarded as practical items as well as jewellery is suggested by the fact that while some of them were worn alongside other items of jewellery, others are the only item worn. In the cases of grave 276 and Grave 545 there were no other items of jewellery and in Grave 985 only the pin was worn, the rest of the ornaments were placed separately from the body.

Finger rings

Clarke described all rings as finger rings (Clarke 1979, 318-21). Some were slender types with overlapped terminals which elsewhere have been described as earrings (see Allason-Jones 1989). However, various of these were found on finger bones or among the hand bones (eg *326/401* and *402*; *336/7*) and so it is clear that they were being used as light decorative trinket rings. The convention of calling all the rings from the OA excavations finger rings will thus be followed here, but it will be indicated which types could be earrings. The graves with these rings are summarised in Table 4.30.

The only finger ring to fall into any of the standard Roman types was **1070.3**. This is a silver ring with scalloped shoulders and an octagonal box bezel worn on the second finger of the left hand of a child who, from isotope analysis, was local. The basic type of ring occurs across the western provinces (see for example Endre undated, pl. 6 c and d; Henkel 1913, Tafn XI.220, L.1320), but it seems very likely it was also being made in Britain. I recorded 15 examples of the type with an octagonal bezel like this (Cool 1983, Group 16A). The setting for ring **1070.3** is missing but it is noticeable that where they survive in the other rings of the sort from southern Britain, they are of the moulded glass type which appears to be an insular development of the 3rd century (Henig 1974, 164).

Table 4.29: Graves with hair pins deposited as grave goods (excluding OA Grave 82)

	Young child	*Older child*	*Child*	*Adolescent*	*Young adult*	*Prime adult*
Worn	323	336	276	545 **985**	326	351
Unworn			102	250		

Table 4.30: Graves at Lankhills with finger rings deposited as grave goods

	Infant	*Young child*	*Older child*	*Child*	*Adolescent*	*Young adult*	*Prime adult*	*Mature adult*	*Adult*
Worn	**1866**	188(1)	336	1070		326	362		**885**(2)
Unworn		337	336	155	139 **985** **1360**	117 438	53	281	

Notes:
(1) in this grave one was below the neck and one near the left hand with bracelets
(2) the arms and hands do not survive but the ring was positioned on pelvis where it would have been appropriate for a worn ring if the hands were placed on the body

Henig has noted that intaglio rings are rarely found in graves, possibly because the signet was needed as evidence for legal matters concerning the heir (Henig 1974, 66-7). By the 4th century intaglios used as personal seals had long since fallen out of use and so it is to be doubted that the setting would have been deliberately removed for this reason, especially as the deceased was a child. The ring thus appears to have been deliberately placed in the grave without the setting, which was also the case for at least one of the rings in Clarke's grave 139. Given that rings like **1070.3** often had 3rd-century intaglios, the absence of one here may just mean that it had long since been lost and the ring was old by the time of the burial.

Three of the rings from the OA graves belong to a type that rarely features in any consideration of Roman finger rings because of its method of construction, involving a butt-jointed hoop with a bezel soldered onto it (Cool 1983, 276 Group 24). This is a 4th-century type, but normally when they occur as site finds the plate has long since become detached and is missing, though differential corrosion products normally indicate its existence. Only environments such as graves normally conserve such rings with their bezel plates intact. At Poundbury, for example, two were found in the grave of a nine-year-old child, one of which retained a repoussé decorated sheet (Cool 1993, 96 nos. 28-9). In ring **885.1** the bezel was a small square plate which had become detached in the grave. It had a hoop of uniform section rather than the expanding shoulders seen on the Poundbury examples, and broadly resembles a very late 4th-century form which was cast in one piece and which has a square bezel with undercut edges. Johns (1996, 53) has termed these rings the Brancaster type. The dated associations in Britain and on the continent indicate they were in use at the end of the 4th century and in the 5th century. The incised intaglio decoration on these have recognisable figurative motifs which can sometimes become almost abstract. Ring **885.1** is not a Brancaster type ring but the general shape and the decoration on the bezel, possibly indicative of two confronted figures, is far closer to that type of ring than to any other in use in Roman Britain, and a similar late date might be suspected.

The second finger ring using the same basic construction technique came from Grave 1360 (**1360.14**). In this case the bezel consisted of two additional metal sheets which, like ring **885.1**, had separated in the grave and indeed had been given three separate small find numbers. The piece was eventually re-assembled by matching features such as differential corrosion on the different elements. It is currently unparalleled, but this is not surprising. Even within the closed assemblage from a grave it was not initially clear that the lower bezel plate belonged to this piece. The upper plate has punched marks which resolve themselves into a design of two confronted figures when an impression is taken. This probably indicates that it was designed as an intaglio ring.

A third example of one of these butt-jointed rings (**1866.5**) was found worn on the left hand of a child aged between six and twelve. Here the bezel has not survived but is indicated by differential corrosion products. This child wore a second finger ring (**1866.6**). Interestingly this consists of just a copper alloy strip bent into a ring with overlapping ends. In an ordinary domestic assemblage there would be no way of identifying such an item as a finger ring, but it probably indicates within the whole Lankhills assemblage that similar simple rings such as *188.250* and *336.362* were also finger rings, even though they were not found worn.

Ring **985.18** is an example of the sort of ring that could be either an earring or a finger ring. It is broken but the hoop appears to tapering towards the sort of joint necessary for an earring. Three-pronged rings such as this are a common type and form Allason-Jones (1989) Type 2a earrings. They were common in the previous excavations both as examples with overlapped terminals and as annular rings (Clarke 1979, 319 Type Bb and c). This example was found in a pile of deposited jewellery and as the only other ring that could have been a pair to it (**985.19**) has expanded oval plate terminals that would not have been suitable for an earring, it is probably best to regard both as trinket finger rings.

Finally ring **920.14** can be noted; this is a small fragment of an iron ring of a size that would be suitable for a finger ring. Given its associations in this grave (bracelets and bead strings) there is a possibility that it might have functioned as a finger ring, unlike the undecorated rings in Graves 745, 1760 and 3030 which were associated with belt equipment and may have been connected with the suspension of knife sheaths.

As Table 4.30 makes clear, this is another category of artefact where nearly all of the sexed associations are female, and which tends to occur in the graves of younger people.

Pendant

There was one example of a pendant worn on its own and not as part of a bead string; **1355.2** was located in the jaw/neck area of a child as if it had been hung around the neck. It is a most unusual piece as it is clearly the pin from a silver buckle. The curved-over faceted tip is a feature regularly seen on 4th-century buckles and in this cemetery occurs on *283/481*, *366/488* and **1921.27**. What marks this pin out as unusual is the material it is made from and the fact that it has a crossbar between the loop and the pin. The rarity of silver belt equipment in Britain and its links with areas beyond the Roman frontiers has already been discussed in connection with buckle **1846.2**. The crossbar seen on the pin separates it out from most of the common buckle forms in use in the 4th-century western empire. It implies a buckle that had a sufficiently wide frame to accommodate it and which did not have internal

detail close to the frame which would have impeded its movement. Oval-framed buckles of the sort common in the cemetery would not have been wide enough and the zoomorphic forms such as Hawkes and Dunning (1961) Type IIA would be ruled out because the involuted tails would not leave space for the crossbar detail. The configuration and size of Hawkes and Dunning Type IIIA, in which the outer part of the frame is plain and the animal heads are either side of the junction with the plate, would be suitable. On some continental examples of the type the pin is embellished with an additional crossbar as here. Those crossbars, however, tend to carry animal head terminals, as for example one from Oudenburg (Mertens and van Impe 1971, pl. XXXVII), and it is unlikely pendant **1355.2** came from one of these. Even closer to what might be thought of as the heartlands of silver belt equipment the crossbar detail appears to be rare. Lányi's survey produced only a single example with expanded pin detail, and that not closely comparable to pendant **1355.2** (Lányi 1972, Abb. 52.14). It is to be suspected that closer comparanda probably lie beyond the frontiers given the popularity of silver belt equipment there. Unfortunately it has not been possible to pursue this line of research further as part of this project.

The child the pendant accompanied has been shown by isotopic evidence to be local, so the presence of this exotic item with him or her is intriguing. The shape of the piece makes it ideal for reuse as a pendant. It is possible that it was perceived as having some amuletic function, just as *bullae* were hung around the necks of young boys. Though it is of cruciform shape and thus to modern eyes possibly a Christian symbol, in antiquity it would not have had this meaning as the cross was yet to become the diagnostic image for the religion.

Miscellaneous

The final item that appears to have been deliberately deposited as a grave good was object **620.1**, a broken strip of bone with the inscription DIVV[which has been expanded as DIV VIVAS, 'May you live long'. This is a puzzling piece as though decorated bone strips were often used in the 3rd and 4th centuries as inlay on boxes and items of furniture, they are not normally inscribed. The only inscribed fragment recovered as a site find came from Richborough but no circumstances are recorded about its discovery. It reads]S VIVAS (Bushe-Fox 1926, 45 no. 12, pl. XII; RIB II.3, no. 2441.18). There are two items from graves which might have been casket inlay and which spell out a message. One is the famous openwork plate spelling out S[OR]OR AVE VIVAS IN DEO from a stone coffin in York which also contained bracelets and beads among other grave goods (RCHME 1962, 73, fig. 58; RIB II.3, no. 2441.11; see also Hartley *et al.* 2006, 155). Several fragments of a strip probably of bone recorded in the 18th century and now lost were found in a stone coffin at Chesterton. They included the message VTERE FELIX and an untranslated word in Greek letters (RIB II.3, no. 2441.12).

In neither case is there sufficient information to make a judgement about whether the strips actually decorated anything or were placed in the grave as stand-alone objects. At Lankhills no item decorated with inlay was deliberately deposited as a grave good, though an undecorated fragment of bone, possibly originally a piece of inlay, was found in the fill of Grave 1610. Given that object **620.1** is broken and was apparently not deposited whole in the grave it seems unlikely that it is the sole surviving element of a decorated organic item such as a wooden box, and so may have been placed in the grave in the state it currently takes. It was presumably the message on the fragment that was important. This certainly seems to have been the case with regard to the bone rectangle found 'on the breast of a corpse' during the building of the Railway Station in York 1879. This read DOMINE VICTOR | VINCAS FELIX (RCHME 1962, 135 no. 149, pl. 65; RIB II.3, no. 2441.7). Both from the position and the fact that it was pierced at one end, this seems very likely to have been a pendant hung around the neck.

Given that the placing of inscribed items in graves is so rare in Britain, it is of some interest that in two of the three cases there are good grounds for thinking that the person they were buried with might be an immigrant. Recent isotope analysis on the body associated with the openwork mount has indicated that she probably grew up in an area that was warmer than Britain (Leach *et al.* 2010). As discussed in connection with brooch **1846.1** the VTERE FELIX sentiment is one that appears not to have had much attraction for the ethnically British and is more often associated with continental artefact types. Whether the inscribed ?pendant from York might be indicative of a foreign origin is an interesting question. The sentiment expressed 'Lord Victor, may you have a lucky win' is one traditionally associated with gladiators and charioteers. If this identification is correct, then there is a possibility that he too was an immigrant. Whether the presence of object **620.1** in the grave, placed between the feet of the woman and her baby, also indicates she is an immigrant would be an interesting question to explore via isotope analysis.

Overview

As the preceding detailed discussion has shown, there are very strong patterns related to the sex and sometimes to the age of the deceased which explain why certain types of artefacts were deposited in particular graves. It has also been possible to show that the sort of finds discussed here often provide good evidence for the date of the burials which is sometimes at odds with that provided by other categories of finds. It is also possible to compare

what we know about a person's origins derived from the isotope analysis with what we can deduce from the items they were buried with. This section seeks to draw all these sources of information together to summarise what we know about the lavishly furnished graves excavated during the OA campaign. Obviously it is only one small aspect of the overall interpretation that must take in all aspects of all the graves, but it may provide some useful insights. The question of who was buried with what will be considered first as that has an impact on the question of chronology. As it has regularly been the sex of the individual that has had the biggest impact on who was buried with which item, this part of the discussion will be structured around female and male graves. There are some ungendered artefacts such as glass vessels which show interesting differences between those used for the young and those used for adults (see above), but generally the differences with regard to age are intimately connected with sex.

Women and girls

Many of the items discussed in this section have been shown to be a female accoutrement. Spindle whorls, bead strings and bracelets only ever occur in female graves where sexed. Testing the incidence between all male and female adult lavishly furnished graves (see Table 4.13) shows that the patterns observed are significantly associated with sex and do not come about by chance. The sex associations of combs are predominantly female but two occur in male and ?male graves, so this pattern cannot be shown to be significant in the same way as that related to the spindle whorls etc.

Some items can be shown to be particularly appropriate for particular age groups. It is clear that it was thought that when combs were placed in female graves, it was most appropriate for older women (mature and older) to be accompanied by them; whereas spindle whorls were appropriate for all ages from the point at which a girl began to approach adulthood onwards. Among the jewellery items, necklaces and bead strings accompanied females from infancy to prime adulthood, but within that span it could be shown that the placing of beads in the graves was very much structured by age. For adolescents and younger the normal pattern was to deposit the beads separately in the grave, whereas for the adult women the normal pattern was for the beads to be worn. Bracelets were another item of jewellery that accompanied females from infancy to mature adulthood, but again there were age-related differences. Children and adolescents were generally buried with many bracelets, older women tended to have only one or two. Hair pins were very much a fashion for girls and very few adult women were buried with them. Given the small number of adults with hairpins, this data set cannot show that hair pins were definitely a female attribute in the same way that spindle whorls etc were, but where sexed all the associations were with females.

In general it was young females up to young adult stage that had the greatest number of different types of jewellery and the most individual pieces. From prime adulthood onwards there is a falling off in the range and quantity of jewellery. A few prime adult females have bead strings and bracelets. By the mature age (36-45) only three females have bracelets and none have bead strings. None of the older and much older women have jewellery. This makes the evidence that combs were more likely to be placed with older women, and that older women also continued to have spindle whorls, of some interest. In the detailed discussion of both types it was possible to demonstrate wider associations which indicated that they might be appropriate accoutrements for high status women. In any 4th-century cemetery it is the range of jewellery that accompanies young girls and women that always attracts attention. It is interesting to reflect that this may be the equivalent of the costume jewellery acquired in large quantities by modern teenagers and reflects nothing more than their age. If we seek the high status women at Lankhills we should probably be looking at the ones who have the spindle whorls and combs.

Men and boys

The male attributes at Lankhills are crossbow brooches, belt equipment and knives. Again, testing the incidence between all male and female adult lavishly furnished graves (see Table 4.13) shows that the pattern observed is significantly associated with sex. This is not surprising for the brooches and belt equipment, but the knife pattern is very marked compared to what is known from other cemeteries. Adult males of all ages could be buried with all of these three artefact types.

It is very noticeable that these male accoutrements are very strongly restricted to adults. Where they occur in the graves of young people they are all concentrated in only two of the OA graves (745 and 1760). There certainly does not appear to be the same pattern for boys as there was for girls. The difference is stark when the incidence by age of the types that are definitely female (spindle whorls, bead strings and bracelets) is compared to those that are definitely male as is

Table 4.31: Distribution of graves with gendered artefacts according to age

Age	*Female types*	*Male types*	*Grave total*
Young (1-17)	25	2	27
Adult (18+)	26	21	47
Total	51	23	74

done in Table 4.31. This is a pattern that is extremely unlikely to come about by chance. A chi-squared test on it returns a *p*-value of 0.002, which means that there is very strong evidence to reject the null hypothesis that the young of both sexes were as likely to receive gendered grave goods. At Lankhills, as generally the case in the rest of the western empire, it was girls who received gendered goods whereas boys tend to be invisible in the burial record.

What then are we to make of Graves 745 and 1760 with their assortment of male gendered artefacts? The child in Grave 1760, who is local judged by the isotopes, has simple iron belt equipment, a knife of domestic type and an extremely unusual, within a British *milieu*, glass vessel. The adolescent in Grave 745 has a more unusual group of items: a fragmentary crossbow brooch that was always a second; the fittings for a belt with a knife (buckle and ring) but no knife; and the only occurrence of two strap-ends in a grave in the whole cemetery. This looks very much like a set of equipment put together to symbolise the manhood that the boy never attained. The explanation of why these two boys received these goods when so many others did not might possibly be found in the ethnic origins of their families. Martin-Kilcher (2000, 73-5) has pointed out the difference in the treatment of boys within the empire and in Free Germany. Beyond the frontier (and in Anglo-Saxon England) boys did receive gendered artefacts and so, if the two Lankhills boys belonged to immigrant families their treatment might be explained. These immigrants might have been German tribesmen absorbed into the army relatively recently, however, rather than ones who had been long established within the empire.

In the cremation burials pyre goods were very rare, but it is noticeable that in the cases where they could be identified they were more likely to be male gendered (Graves 845, 895 and 1180) than female (Grave 1195).

Dating implications

Throughout the detailed discussions the date of the objects as judged by site finds from a wide range of non-sepulchral sites has been considered and it has regularly been found that the objects belong to the second half of the 4th century and later. The categories that are most useful for dating are the shale spindle whorls, the combs and the bone and ivory bracelets. Spindle whorls may be dated to *c* 340 at the earliest, but become much commoner in the final third of the century. Bone bracelets have a similar trajectory, probably starting a little later. Combs belong to the final third of the 4th century. All three types clearly continue in use in the 5th century. Among the bead strings it is possible to isolate various types of beads that indicate a late 4th-century date. Among the ones from the OA excavations strings **920.15** and **1360.10** are good candidates for such a date and both occur in graves with bone bracelets. The belt equipment and the crossbow brooches also include items most likely to have been current in the later 4th century.

There are, therefore, quite a lot of grounds for believing that many of the lavishly furnished graves of the types considered here are late 4th century in date. This contrasts with the pattern of pottery deposition, in which many of the vessels have date ranges that end *c* 350 (see Booth above, Table 4.2). On the whole there are no problems with the different dating because in general the small finds of the type discussed here do not occur in graves which also have pottery vessels, but there are two interesting mismatches. Grave 18 which has a small jar dated to *c* 270-350 has 11 bone bracelets and a date later than that of the pottery vessel is indicated. Grave 745 has a flask or jug dated to ?300-350 but the unusual strap ends belong to the second half of the 4th century and the best parallels for them are dated to the end of the century.

As will be clear, it is the finds associated with females that are the most useful for refining the dating. This has obvious implications for any demographic studies that attempt to use the grave dating as the male graves will be under-represented.

Ethnicity

It is clear that the mere wearing of items cannot be taken as a reliable indication that the person buried was an immigrant or of immigrant stock. Virtually all of the individuals from the OA excavations with finds of the sort discussed here have been shown to have been British as opposed to immigrants when their isotopes have been examined. In some cases it is the age and the sex of the individual that seems to have governed whether an item is worn or not. The concentration of grave goods of jewellery with the bodies of young girls is likely to make the picture that emerges from isotope analysis complicated as it is very likely that the children could have been born in this country and so would appear as local, as indeed they would be even if their parents were immigrants. Among the jewellery there are sometimes bead strings which show a high incidence of exotic items, but they are generally accompanied by items such as bracelets which are typical Romano-British ones and the likelihood of being able to detect the children of immigrants via their jewellery is small. Clarke's graves 333 and 336, and OA Grave 385 illustrate this well.

What can be of help is looking at whether the pattern of deposition cuts across the normal patterns, and whether the objects themselves are unusual within both the cemetery and the British *milieu*. In the case of the two boys with gendered artefacts (Graves 745 and 1760), the mere fact that they had them marked them out as unusual, although in both cases the grave goods had unusual features as well. It may be that it would be easier to spot second generation immigrant boys than girls.

They would of course be as British as their sisters and isotopically invisible.

In the case of the adults the isotope evidence seems set to raise even more questions than it answers when combined with the finds. Three individuals, all clearly immigrants from the south central part of Europe, illustrate this very well. The two from Clarke's excavations (81 and 426) had just the sort of pan-European belt equipment and crossbow brooch which would have made them look quite at home in a Pannonian cemetery, but what are we to make of the individual in the OA Grave 1175 with his insular belt buckle and no brooch? Had he gone native or was his foreignness expressed through quite other ways?

One of the problems probably lies in the very partial subset of data we get from even a lavishly furnished grave, well-excavated with good bone survival. The man buried in Grave 1846 is a good case in point and it will be useful to explore in detail what this burial may be telling us. Everything about the surviving grave goods says that this is an extremely senior officer, very probably of Germanic extraction. He was laid out in his coffin with riding shoes with their spurs beside him. The crossbow brooch was in position to have fastened his cloak, the belt with its gilded silver fitting was folded and laid out between his legs. Walton Rogers has suggested (below) that where belts are not in the appropriate position to be worn, as here, this indicates that the body was shrouded. The question of the extent to which 4th-century bodies were shrouded is a vexed one (see for example Crummy *et al*. 1993, 129), but one element that does not seem to have been considered is the element of display.

The corpse of a man of this seniority would have been displayed so that people could pay their respects. It may well have been carried to the cemetery in an open coffin. The spurred shoes, the brooch and the belt equipment all make the seniority of this man visible to us, but what we do not see are the rich textiles that would have been as much a part of this officer's identity as the metal fittings (for discussion see van Driel-Murray 2000, 298). The crossbow brooch could have clasped a cloak of just such a rich textile. If it did, the belt equipment would not have been easily visible. There has been much debate as to whether belt equipment can reliably be taken to indicate that its wearer was either a military man or a high official. We do know, however, that belt equipment could be the regalia of high office, and there is a vivid illustration of this in one of the illustrations associated with the *Notitia Dignitatum* showing the ceremonial codicil and attributes of the *Comes Sacrarum Largitionum* (Count of the Sacred Largesses) which includes belt buckles (Guest 2005, pl. 10). Laying out the belt on top of the cloak, in the same way that a modern soldier's decorations are placed on his coffin as it is taken to his funeral, would make it visible and signal his authority to all.

The placing of the spurred shoes beside him was probably done partially for practical reasons, as it is difficult to place shoes back on the feet of corpses and in historical times there are records of special shoes open at the back being used on corpses when shoes were required (Quita Mould pers. comm.). Also important, however, would have been the display element that placing them separately allowed. Had it been practical to place them on the feet they would not have been seen. It also has to be remembered that the sort of shoes postulated may themselves have been symbolic of military status (van Driel-Murray 2000, 298).

As can be seen, even with grave goods as spectacular as those in Grave 1846, we are missing a great deal, and it is that missing element that probably most obviously signalled his ethnicity and identity to his contemporaries.

A NOTE ON BLUE CORROSION PRODUCTS

Three copper alloy objects, crossbow brooches SF 2744 and 4402, in Graves 1075 and 1925 respectively, and a buckle plate SF 4363 in Grave 1921, displayed vivid blue surface coloration in parts. Dr Chris Doherty notes that this represents the blue hydrated copper carbonate mineral azurite, along with smaller area of its green hydrated copper carbonate counterpart, malachite.

The survival of some coffin wood and textile indicates that reducing conditions were maintained in these graves, albeit probably just in the immediate vicinity of coffin. This would have probably have led initially to bacterial corrosion of the copper alloy, producing a thin layer of copper sulphide minerals. With the continued loss of the coffin wood, local reducing conditions would have been replaced with mildly oxidising ones, and these early copper sulphides would have been replaced by azurite (and lesser malachite).

TEXTILES AND LEATHER *by Penelope Walton Rogers*

Remains of mineral-preserved textiles and leather were recorded on metalwork from nine inhumations (Table 4.32). Several different textile types were present (Fig. 4.7): a linen tabby with paired yarns in warp and weft (extended tabby or 'basket weave') in Grave 730; a wool tabby with paired yarns in only one system ('half-basket weave') in Grave 780; a linen tabby repp, in which one system lies flat and the other weaves round it in Grave 1075; a fine textile of uncertain weave in Grave 1846; and another relatively fine textile, probably a plain tabby, in Grave 1925. Leather straps were also noted in association with buckles and strap ends in Graves 745 and 1921, and there were other areas of leather in Graves 1846 and 3030.

The textiles are typical of the Roman period. Basket weave occurs in linen textiles throughout the Roman Empire, including Gaul and Britain, and

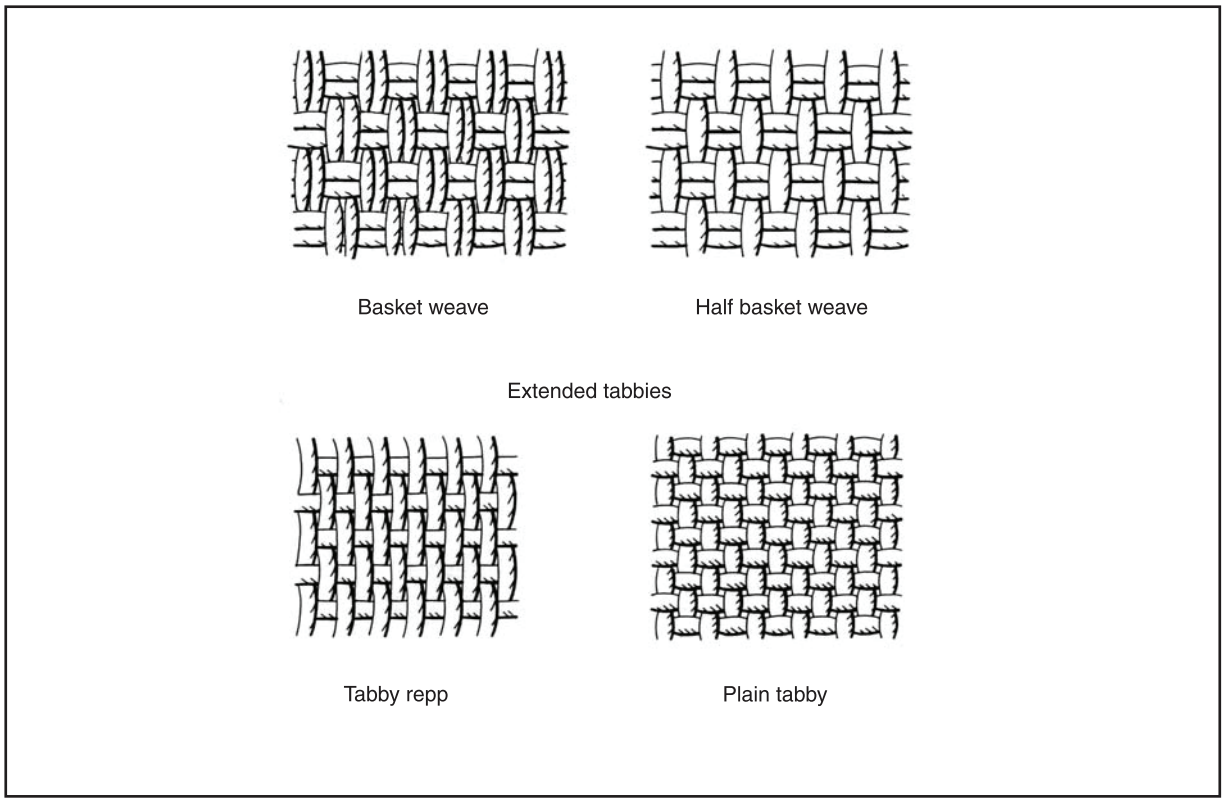

Fig. 4.7 The weave structures of the Lankhills textiles

half-basket weave was particularly popular in Roman Gaul (Wild and Bender Jørgensen 1988, 75-6). Both disappeared at the end of the Roman period in Britain, which suggests that they were either imports or made in state-controlled workshops disrupted by the end of Roman rule. Plain linen tabby and tabby repp were common fabric-types, used in Britain over a wide period of time.

Some of these textiles almost certainly represent shrouding. It was common practice to bury the dead wrapped in linen – mostly domestic sheets and towels – with accessories arranged on and around the body (Wild 1970, 46, 93; RCHME 1962, 67-110; Walton Rogers unpublished). The folds of linen basket weave on the shears beside the body in Grave 730 are likely to represent this kind of fabric (Fig. 4.8). In Grave 745, the position of the leather belt at the foot of the grave implies that the body was shrouded, even though no textile has been identified, and the same is probably true of Graves 1175 and 1921, where artefacts were recovered from the leg area. In Grave 1846, also, the belt was placed between the legs, while the boots represented by areas of soft leather on the spurs, were both on the right side of the body. The crossbow brooch in the region of the neck in Grave 1846 had textile adhering to it, but not in a position that suggested it had been clasped by the brooch.

In Grave 780, however, the woman was probably buried in her clothes. The hobnails are close enough to the feet to suggest that she wore

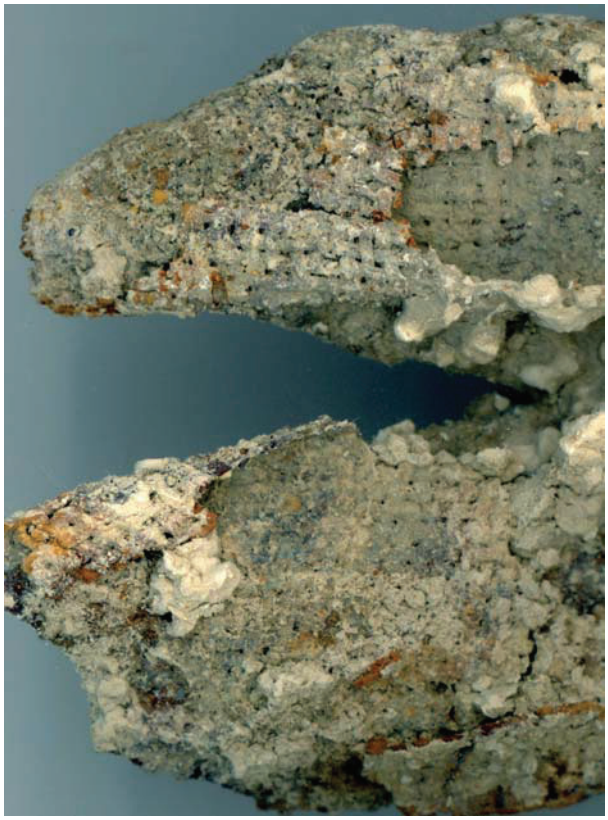

Fig. 4.8 Folds of linen extended tabby (basket weave) on the tips of the shears 1711 from Grave 730. Photo The Anglo-Saxon Laboratory.

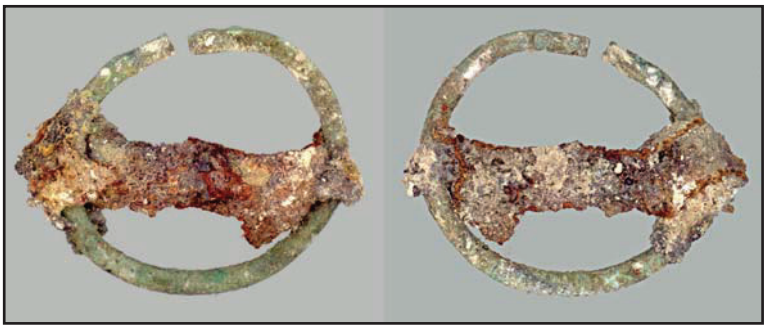

Fig. 4.9 Wool extended tabby (half-basket weave) pierced by pin of penannular brooch 1853 from Grave 780. Left back, right front. Photo The Anglo-Saxon Laboratory.

Fig. 4.10 Linen tabby repp on catch of crossbow brooch 2744 from Grave 1075. Photo Hilary Cool.

sandals, and the small penannular brooch at the lower centre waist clasps folds of wool half-basket weave (Fig. 4.9). The tunic of a woman buried in Tomb D at Les Martres-de-Veyre, near Clermont-Ferrand (Puy de Dôme), in the 2nd or 3rd century was made from this kind of fabric, but a brooch would not have been necessary on this garment. A brooch at the waist might instead represent a clasp for a mantle, as seen in Rhineland sculptures (Wild 1968, 210-2; 1985, 401-2). In Grave 1075 the position of the crossbow brooch at the left shoulder and the strap end directly below at the left thigh perhaps suggest another clothed body, this time a male, although the linen tabby repp on both objects is not necessarily the garment fastened by the brooch (Fig. 4.10).

Burial of bodies fully clothed was not very common within the Roman Empire (Clarke 1979; Swift 2000b, 36-37), although there are occasional examples such as the woman at Les Martres-de-Veyre and a 3rd-century juvenile in a tunic with purple *clavi* at Fordington, Dorchester (Crowfoot 2002). The earlier excavation at Lankhills includes the largest number, with examples of men, women and girls with dress accessories in positions that suggested clothed burial, although textiles do not appear to have been recorded (Clarke 1979, 170-1). Parallels for these have recently emerged in the small late Roman cemetery at Scorton, not far from the fort at Catterick, North Yorkshire (Walton Rogers unpublished). Here the women all appeared to be shrouded, but five of the men were clothed, three with a crossbow brooch at or near the right shoulder, all with a buckle at the waist or hip and one with a strap end at the left thigh. The strap end was heart-shaped and could be matched with two from Lankhills (Clarke 1979, 286). In three instances the fabric of the cloak was wool twill, and it was suggested that this represented the military cloak (ibid.). There is another burial at Norton, North Yorkshire, where a crossbow brooch and belt set seem to have been worn (Clarke 1979, 378), but on the whole clothed burials for women still seem to be rare.

FOOTWEAR: HOBNAILS AND BOOT PLATES

by Kelly Powell

Introduction

A minimum number of 11,133 hobnails (Manning (1985) type 10) and 88 boot plates were recovered from the excavation. The majority of both the hobnail and boot plate assemblages derived from inhumation burials (Table 4.33), but a number were also recovered from cremation deposits, pits, ditches and unstratified contexts.

Hobnails and boot plates (also referred to as cleats in some sources) often constitute the only remains for shoes, and in many cases clothing as a whole, on Roman sites. Hobnails can be distinguished from structural nails through their short shanks and domed or pyramidal heads. Both object types were driven through the sole of shoes primarily to attach the soles to other bottom layers but also to reinforce the heavily used surface of the

Table 4.32: Textiles and related materials from the burials at Lankhills

Grave	*Individual*	*Fibre*	*Structure*	*Thread-count/spin*	*Position*
730	?male adult	flax/hemp, prob. flax	extended tabby (basket weave)	9 pairs/Z+Z x 7-8 pairs/Z+Z	In folds lying against one face of shears (SF 1711) at left waist.
745	?male, c 16 years	leather	strap		Associated with strap end (SF 1804), with buckle by feet
780	female adult	Wool	extended tabby (half-basket)	9/Z x 10 pairs/Z+Z	Pierced by pin of small penannular brooch (SF 1853) at waist. The brooch appears to be face down over the textile.
1075	sex unknown, adult	flax/hemp, prob. flax	tabby repp	13/Z x 26-28/Z	In patches on and around foot of crossbow brooch (SF 2744), on outer face of cross arm and one side knob, at left shoulder. Not necessarily pierced by brooch.
		not identified	?tabby repp	c 12/Z x c 20/Z	On both faces of strap end (SF 2743) at left thigh. Probably same as on brooch.
1175	male, 45+ years	not identified	?	?	Poorly preserved remains of textile on back of buckle (SF 1175) on lower left thigh
1846	sex unknown, adult	not identified	?	fine Z x Z	On gilded crossbow brooch (SF 4190) on outer face of foot and adhering to skin/leather in association; in region of neck/shoulders
		skin/leather	square patch, 10 x 10 mm		Detached from centre cross arm of crossbow brooch (SF 4190), where stain marks its position. Grain surface missing.
		leather			Soft folds of leather on spur fittings (SF 4214) to right of legs.
1921	male 60+years	not identified prob. leather	?tabby	16-20/Z x ?/Z	On front of cu/a buckle (SF 4363) at lower waist. Inside buckle plate (SF 4365) on right thigh and on front of buckle (SF 4363)
1925	sex unknown, adult	not identified	?	fibres prob. remains of textile	Inside pin hinge and back of side knob of crossbow brooch (SF 4402) on lower chest. Probably a textile clasped by the brooch.
3030	no surviving remains	prob. leather	folded strap	8 mm wide	Folded and pierced by pin of crossbow brooch (SF 5040), probably on torso

Table 4.33: Hobnail quantification by feature type

Feature Type	*Minimum no. of hobnails*	*No. boot plates*	*Percentage of overall assemblage*	
Inhumation burials	10500	76	94.5	86
Cremation burials	574	12	5	14
Non funerary features	25	0	0.2	0
Unstratified	34	0	0.3	0
Total	11133	88	100	100

Table 4.34: Number of burials containing hobnails by sex of skeleton

	Male	*?Male*	*Female*	*?Female*	*Unsexed child*	*Unknown*
No of burials	30	17	30	11	17	14

shoe. While the organic uppers rarely survive hobnails and boot plates can sometimes be found in their original formations.

The absence of hobnails does not necessarily imply the absence of footwear, as some shoes were manufactured without the use of hobnails during the Roman period. Van Driel-Murray suggests that many late Roman shoe styles were not nailed (1999, 132). However, it is likely, particularly in this time and location, that most adult shoe soles were studded with nails, as argued by Rhodes (1980, 102).

Hobnails often occur in large groups representative of the original shoe. As a result of the way they corrode, often breaking into heads and shanks, exact numbers can be difficult to establish. Therefore hobnail numbers are referred to in terms of minimum numbers here. Minimum number was calculated on the basis of number of heads in combination with shank tips in each context group and may only represent a proportion of the number of hobnails originally present in shoes.

The hobnails and boot plates were quantified and minimum and maximum lengths and head diameters for hobnails were measured by context group. Dimensions were also recorded for boot plates and the current condition of both was noted, the resulting information was recorded on an Access database available in the site archive. Subsequent analysis was undertaken in the form of basic statistics and distributions. Where possible the results were recorded in an Excel spreadsheet, also in the site archive.

Overall, the hobnails were typical of assemblages found ubiquitously on Roman sites. Corrosion varied from moderate to very heavy, with some assemblages surviving as fragments alone. Some of the hobnails retained adhering mineralised organic material, presumably from the sole of the shoe. The presence of organic material was noted but was not in a good enough condition for further analysis, although in some cases it was clear that shoe soles had been composed of up to four layers. In comparison Clarke recorded up to seven layers of organic material relating to shoe soles (1979, 322). Complete or near-complete examples of all hobnails ranged in length from 12 mm to 24 mm, the majority falling between 14 and 21 mm. Head diameters ranged from 7 to 13 mm with most falling between 9 and 12 mm. The boot plates varied from 19 mm to 52 mm long with an average length of 30 mm, and 6 mm to 20 mm wide, on average 15 mm. Where arms survived these varied from 13 to 23 mm (average 16 mm). The boot plates were generally sub-oval or sub-rectangular, though a number were more unusual and will be discussed below.

Hobnails and boot plates in inhumation burials

In total 119 of the 304 excavated graves (39%, excluding nine graves effectively destroyed by later features) definitely produced hobnails, amounting to a minimum of 10,500 nails. In eight cases (Graves 795, 1175, 1185, 1240, 1302, 1345, 1622 and 1921) it is not clear that the hobnails represented the placement of footwear in the grave; consequently footwear is only listed as a grave good in 111 cases in the catalogue in Chapter 3 above. Twenty graves (7% of the total) also produced a total of 76 boot plates (Table 4.33). An additional 31 graves produced tiny fragments which may have been the remains of hobnails but could not be included with any certainty. Table 4.34 shows that hobnails were found in the graves of both men and women as well as children, with no one sex more significantly represented than the other. Where skeletons could be sexed the majority of boot plates accompanied males (8), although both females and children were represented (4 and 2 respectively).

The minimum number of hobnails per grave ranged from 1 to 272. Dimensions are similar to those of the assemblage as a whole. Lengths and head diameters tended to vary slightly within each grave group but this appears to have no relation to the age or sex of the interred individual and was probably a product of manufacture and post depositional processes. Numbers of boot plates per grave ranged from 1 to 10; these varied considerably in size and shape and may have served different functions within the shoe (see below).

Very small numbers of hobnails, including single examples, which clearly did not constitute whole shoes, were recovered from several graves. This occurrence may be the result of either pre- or post-depositional factors. In cremation deposits it is likely that such small assemblages represent differential collection of pyre material. However, this is less easily explained in inhumation burials where shoes would be interred in one piece. It has been suggested that a handful of hobnails may have been placed in the grave in the Roman period as a symbolic gesture (Salway 1981, 706), but this is not universally accepted. Symbolic inclusion of single hobnails may be seen in Grave 590, in which the deceased appears to have had single hobnails in the hand and on the sternum. However, more mundane post-depositional factors such as differential preservation in burial conditions, stratigraphic confusion or intrusive elements may be more likely explanations for this phenomenon in many cases.

The presence of hobnails and boot plates within a grave can be significant in a number of ways. Firstly it can imply that the individual was interred fully clothed, alternatively it can signify that a pair of shoes was deliberately placed within the grave for another, symbolic, purpose (see below). In general the significance of hobnails is partly ascertained from their position, and therefore that of the original shoes within the grave. In particular, hobnails surrounding the foot indicate (but do not always prove) that shoes were worn by the deceased. Those shown in Figure 4.11, for example, are likely to have been from shoes placed adjacent to the feet, but not worn on them. Those placed next

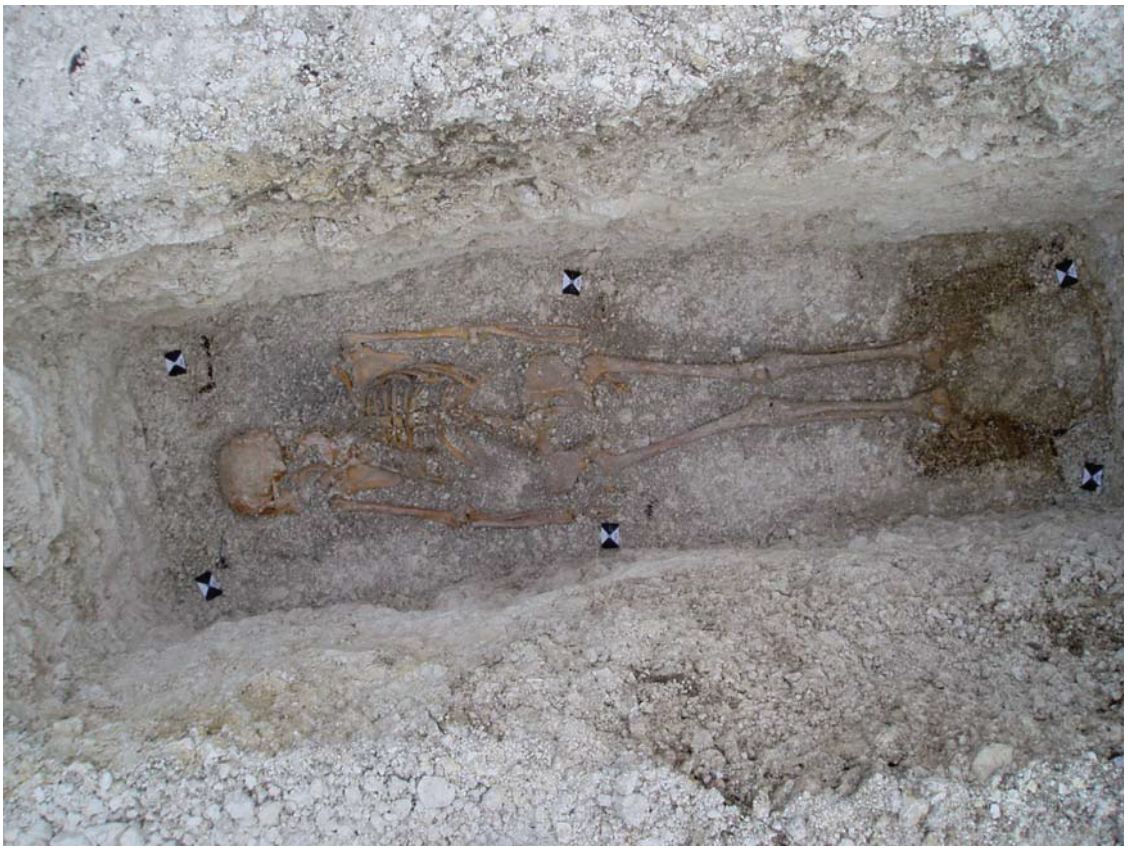

Fig. 4.11 Grave 1295, showing hobnails adjacent to feet

to the body or outside the coffin (Fig. 4.12) suggest that the shoes were a deliberate grave good independent of clothing.

In a number of cases single and multiple pairs of shoes within the grave of a single individual are known from the archaeological record (Philpott 1991, 168). This information is also dependent on the distributions of hobnails and boot plates within the grave as it is usually impossible to discern the number of shoes from the number of hobnails alone. Excavated examples of whole shoes from sites with exceptional preservation indicate that the number of hobnails per shoe can vary considerably. For example the illustrated examples from the Billingsgate Building in London varied from 22 to 100 hobnails per shoe (Rhodes 1980, 103). This figure is often dependent upon particular shoe styles (ibid.). Hobnails could also be used decoratively on shoe soles, arranged in different patterns relating to protection, the persona of the individual and fashion (van Driel-Murray 1999).

The number of hobnails within graves of each sex category is shown in Table 4.35. Males were accompanied by more hobnails on average than females, while children have the least number. This may indicate just a simple correlation with feet of different sizes, more hobnails being required for men and less for children. However, there may also be a relation to the number of shoes per grave. In general it is not usual to find small hobnailed shoes clearly made for a child; many are buried with adult sized shoes. The records from Grave 1336, however, indicate that the shoes would clearly have fitted the (child) inhabitant of the grave.

In many cases preservation of hobnails and boot plates and the effects of post-depositional processes can make identification of the original position of the shoes and patterns of the hobnails difficult. Often little or no organic material survives and both the grave and the corpse collapse over time, leaving incoherent groups of hobnails. However, where possible, location within the grave and discernible

Table 4.35: Number of hobnails by sex of skeleton

	Male or ?male	*Female or ?female*	*Unsexed child*
Overall number of hobnails per grave	1-239	2-184	16-70
Average number of hobnails per grave	123	81	37

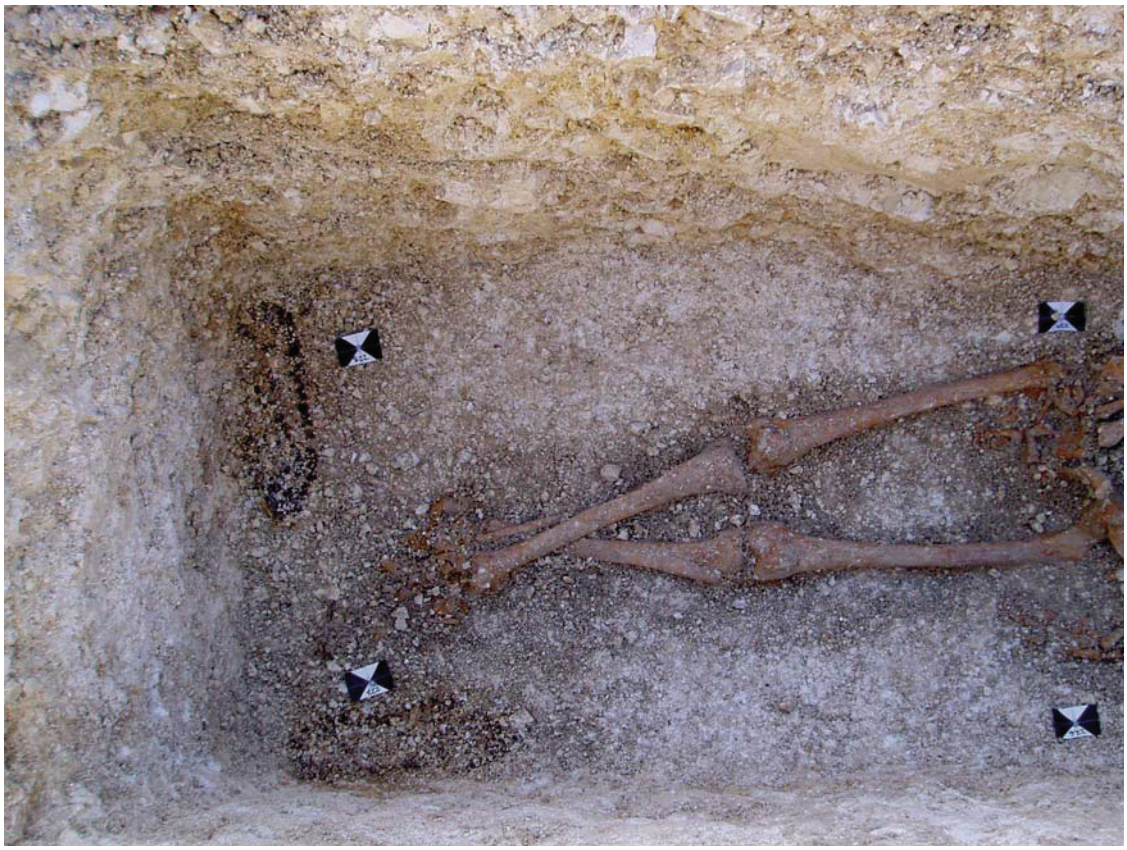

Fig. 4.12 Detail of Grave 635, showing hobnailed shoes outside the coffin

patterns have been recorded. The number of hobnails per shoe has only been recorded where hobnails were specifically collected in separate groups and the distribution indicates that these groups were independent of one another.

Data on shoe position are summarised in Table 4.36 and show that the majority of shoes were worn or placed in the area of the feet. Barber and Bowsher (2000, 137) have pointed out that the number of shoes actually worn is likely to be underestimated where the grave has collapsed and one can only say that shoes were in the foot area. A total of 14 of the examples which are in the feet area were identified as probably worn and it is likely that many more, or possibly all, of these examples were originally worn by the deceased. Relatively frequent positions for shoes which were not worn include beside the legs, beyond the feet and beneath legs or feet, all of which have obvious relationships to the feet. However, more unusual positions were noted at Lankhills, including beside the head and possibly on the torso. Skeleton 451 (Grave 590) appeared to have a single hobnail on the sternum and another clutched in the left hand.

Consequently 82% of shoes were found within the area of the coffin, only 12 pairs were outside or probably outside the coffin, two pairs were split inside and outside, and the location of the rest was unknown. Where it was possible to tell the majority of burials contained two shoes, some appear to have been placed one on top of the other and so it is unclear whether there were one or two shoes. Only one grave (277) definitely contained more than two shoes. Overall these data suggest that the majority of the individuals buried at Lankhills were wearing their shoes and were probably fully clothed on

Table 4.36: Shoe position in inhumation burials

Position	*No. of pairs*
Worn	14
Foot area	53
Beside right leg/foot	11
Beside left leg/foot	10
Beyond feet	5
Beneath legs/feet	4
Beside left arm	1
Worn and next to feet	1
One beside right foot, one beyond left foot	1
Beside head (left)	1
Beside head (right)	1
Foot area and beside right leg	1
Beside each foot	1
Torso?	1
Unknown	14
TOTAL	119

interment. However the unusual position of some of the hobnails and the presence of more than two shoes in one grave seems to indicate an element of ritual symbolism.

Where hobnail and boot plate patterns were discernible from original records, the majority of shoes, if not all, were manufactured with hobnails closely spaced around the periphery of the shoe. Evidence from other well-preserved Roman assemblages indicates that this is typical of nailed shoe construction in Roman Britain, regardless of shoe type (eg see Rhodes 1980; MacConnoran 1986). Further detail could be seen in a number of shoes. For example SF1010 from Grave 535 had clusters of internal hobnails at the heel and ball of the foot, and occasional internal hobnails were also found in shoes from Graves 1210 and 1270, all of which would fall into Rhodes' Type A category. In addition one of the shoes from Grave 635 seems to have had an internal S pattern, commonly used in Roman hobnailed shoes (see MacConnoran 1986; van Driel-Murray 1999). Many other shoes seem to have had a dense cluster of hobnails across the sole, as in Rhodes Type C. Where it was possible to determine the number of surviving hobnails per shoe varied from 8 to 131 with no real peaks in distribution illustrating this variation in hobnail patterning.

The boot plates were mostly oval, sub oval or sub rectangular (Fig. 4.13, no. 1 and Fig 4.14), as seen in most other assemblages including Clarke's original excavation. However, a number of the boot plates took unusual forms (Fig 4.13, nos 2-5). These are roughly semi-circular with the curved edge folded up and the arms on the straight edge. The latter is up to 5 mm thick. It is probable that these objects functioned as toe or heel plates, folding upwards to protect the foot as well as securing the sole. The numbers of boot plates retrieved from each context suggests that these objects probably functioned differently from shoe to shoe. Where several were present the boot plates were typically spaced around the periphery of the shoe, as seen in Graves 755 and 1140. Other shoes seem to have only had

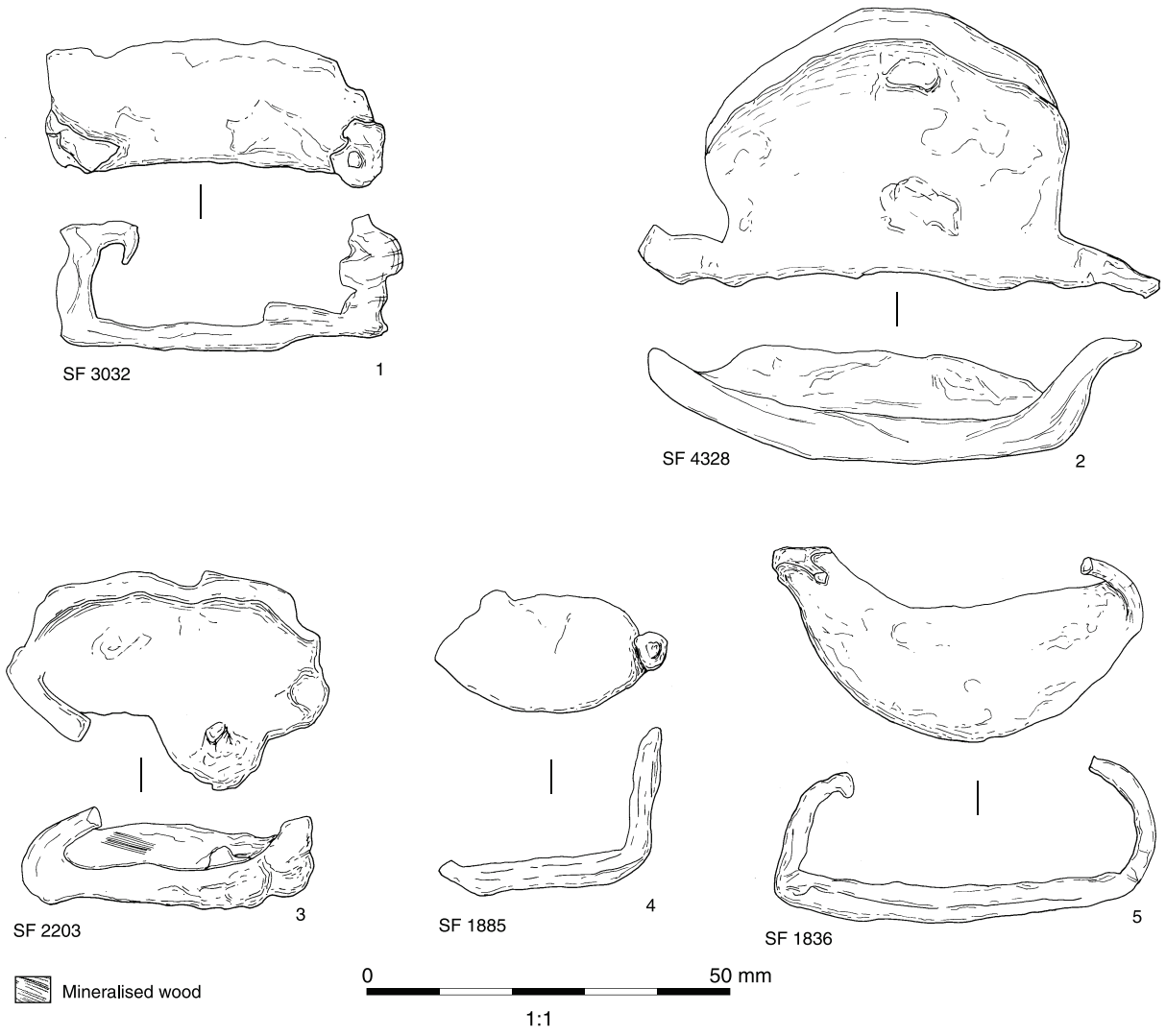

Fig. 4.13 Boot plates from Graves 1200, 1900, 885, 795 and 665

Fig. 4.14 Photograph of boot plates from Grave 1092 and boot plates and hobnails from sample 505 in Grave 645

one or two boot plates, possibly placed at the heel and toe for reinforcement.

Discussion

Lankhills is remarkable in terms of the overall provision of grave goods and the hobnails are no exception. While most or all of the contemporary cemeteries produced hobnails the figures involved are very different. For example only one grave in the main cemetery at Poundbury, one from Atlantic House and seven graves from Butt Road produced hobnails. In contrast hobnails were found in 144 graves from the earlier Lankhills excavation and a minimum of 119 from this phase. As a rule nailed shoes are relatively rare in cemeteries associated with major towns and forts but abundant in rural cemeteries. This is possibly a result of the type of terrain traversed and work undertaken in these different areas (Philpott 1991, 171) and makes Lankhills all the more exceptional.

In general, patterns have been recognised in placement of hobnails. Philpott (1991, 169) suggests that 'globally' men are more likely to be buried with hobnailed shoes and children rarely, although he cites Lankhills as an exception to this. Distinctions may be due to the type of shoes worn; Barber and Bowsher (2000, 137) suggest that the lighter indoor shoes and sandals were not nailed and that these were particularly worn by women and children. In this phase of excavation at Lankhills there appears to be no distinctions relating to age or sex or indeed distribution or chronology, where known. At its simplest it appears that burial with shoes on (and probably fully clothed) was the predominant funerary rite in late Roman Winchester. It is possible that all the individuals were buried with shoes but not all were nailed. Rhodes (1980, 113-4) infers from Diocletian's *De Pretiis* that there was a movement towards widespread adoption of nailed footwear of the military *caliga* type in civilian populations by the early 4th century, although there is no obvious reason why this should apparently have been more rigorously adopted in Winchester than elsewhere.

The inclusion of hobnails has been associated with the use of coffins on some, but not all sites (Philpott 1991, 170). Philpott (ibid.) uses Lankhills as a key example of this correlation, but while the fact that at Lankhills most of the excavated inhumation burials were coffined and over one third produced hobnails makes the relationship obvious it is less clear that it has significance beyond this site. Hobnails have also been linked to status, in this case inversely. Philpott (ibid., 172) suggests that hobnailed shoes are often rare or absent from inhumations of higher status individuals and associates them, inter alia, with 'a middle-ranking rural population'. The negative correlation with higher status burials may receive slight support from the absence of hobnails in Grave 1846.

It is necessary to consider the symbolism of including shoes in inhumation burials. The custom of ritual deposition of shoes dates back to the Neolithic and may be identified with the persona of an individual (van Driel-Murray 1999, 135). The Roman practice of including shoes in inhumation graves is traditionally seen as a pagan feature thought to reflect the belief that the dead needed equipment for their journey to the underworld or activities therein. This interpretation is to some extent reinforced by contemporary literature and may explain their abundance at Lankhills. Therefore, the position of shoes in the grave may offer an insight into these ideas, although in the context of the earlier Lankhills excavation Macdonald (1979, 406-7) argued that shoes were intended for the use of the dead regardless of whether they were worn or unworn. At Lankhills as at many other cemetery sites most hobnailed shoes appear to be worn, but the presence of unworn and unusually placed shoes may be easier to explain in the light of beliefs about the journey to the underworld. Van Driel-Murray suggests that the direction in which the shoe is pointing is significant (ibid., 131). She suggests that the norm is to have the toe pointing towards the head and where possible this is observed at Lankhills, although one set of shoes from Grave 635 was set at right angles to the body, possibly indicating deviance of some kind.

Van Driel-Murray (1999, 132) has also argued, however, that the idea of the 'journey to the underworld' may be a modern perception and inclusion of shoes may represent other beliefs such as provision for a return home. As with all funerary rituals it can be argued that this practise is for the benefit of the living alone and may not even be a conscious form of ritual behaviour. In the earlier Roman period when cremation was the predominant funerary rite, unworn pairs of shoes were sometimes placed on the funerary pyre (eg Philpott 1991, 172; Dawson 2004, 55). It is possible that their inclusion in later inhumation graves is simply a continuation of this practice (ibid.), its original purpose forgotten.

In conclusion, the evidence at Lankhills suggests that most people, if not all, were interred fully clothed, the clothing including shoes. The symbolic significance of inclusion of shoes is illustrated by the placement of unworn shoes in the grave, though it is unclear what this significance truly is. The symbolic nature of the presence of shoes in inhumations is often argued on the basis of the common inclusion of adult shoes in childrens' graves. At Lankhills, however, where it is possible to discern, children were buried in or with child-size shoes, reinforcing the idea that this was simply the accepted form of dress for burial.

Hobnails and boot plates from cremation burials

A minimum of 574 hobnails and 12 boot plates were recovered from 16 of the 24 (67%) cremation burials including urned, un-urned and *bustum* burials and one cremation-related deposit (Table 4.37). The number of nails per cremation varied

Table 4.37: Hobnails from cremation deposits

Cremation type	*Group number*	*Minimum number of hobnails*	*Length range*
Urned	510	9	16-18
Un-urned	895	5?	frag
	915	16	16-17
	945	3	16
	1060	131	14-24
	1160	12	17-19
	1527	1	15
	1724	9	15-16
	1786	11	13-16
Bustum	655	24	13-19
	1180	7	17
	1195	168	13-21
	1215	87	13-19
	1806	72	15-20
	1845	9	
Cremation-related deposit	1798	15	15-18
Total		574	

from 1 to 168 and overall dimensions ranged from 13-24 mm long with a head diameter of 7-12 mm. Dimensions varied considerably within each grave group, possibly in part as a result of the burning process. The condition of the hobnail assemblage from cremations was not unlike that of the inhumations, although there were occasional collections of well-preserved hobnails, also with traces of red, presumably again related to the cremation process.

Hobnails from simple urned and un-urned cremations

A single urned cremation (510) produced a relatively well-preserved assemblage of nine hobnails, measuring 16-18 mm long and 9-11 mm in head diameter. In addition, a minimum number of 183 hobnails was recovered from eight un-urned cremation burials, these measuring 13-24 mm long with a head diameter of 8-12 mm; dimensions were variable within grave assemblages. Numbers of hobnails per grave ranged from 1 to 131. In both the urned and un-urned cremations hobnails are likely to have been interred in the burial along with the human remains as part of a collection of material from the pyre, the varying number of hobnails undoubtedly the result of irregular collection. This indicates that even in the late Roman period shoes were burned on the pyre, either worn by the individual or placed as an unworn deposit.

Burial 1060 produced 5 boot plates measuring 26-52 mm long and 13-20 mm wide, examples being both oval and sub-rectangular in shape. This variation may indicate differing functions or simply that boot plates did not necessarily have to match. Based on the fact that this burial also produced 131 hobnails it is possible that more than one pair of shoes was included on the pyre, or possibly within the burial pit.

An additional assemblage of 16 hobnails was recovered from two cremation-related deposits from pits 847 and 1695, also probably representing collection of pyre material with incidental hobnails. Overall, little other information can be obtained from such assemblages owing to their inherently disturbed nature.

Hobnails from grave-shaped **(bustum)** *cremations*

A minimum of 367 hobnails were recovered from six *bustum* burials. The hobnails measured 13-21 mm long, with head diameters of 7-12 mm and were found in assemblages numbering 7 to 168; dimensions varied between and within grave groups. Due to the 'in situ' nature of this group of cremation burials there is potential to obtain more information from the hobnails as shoes may remain in positions associated with their original placement on the pyre. The majority of the hobnails were retrieved from samples, although the assemblage from Grave 1195 is recorded as being found in two discrete collections at the very eastern end of the grave cut. This suggests that if the corpse was wearing shoes at the time of cremation or if shoes were otherwise associated with the feet, the body was laid out in a west-east alignment.

Hobnails from Graves 655, 1180 and 1806 were collected from samples which can be related to body position. The hobnails were generally evenly distributed between the samples. Remarkably in Grave 655 only the sample from the foot area failed to produce hobnails. In Grave 1180 the few hobnails were evenly distributed and in Grave 1806 most came from the torso area. Overall this suggests that the bodies in these burials were not wearing shoes, but that the shoes were placed separately on the pyre. However, it is also possibility that these deposits have been disturbed and may not reflect the original shoe positions.

Grave1806 also produced nine boot plates. These were standard Roman boot plates, all were sub-rectangular with one oval example.

Discussion

The nature of cremation deposits, which are mostly disturbed and removed from their original pyre site, makes interpretation of hobnails as the remains of shoes difficult. In addition, few contemporary examples exist to compare with Lankhills. However, the inclusion of shoes in cremation burials has many of the same associations as inclusion in inhumations. In both cases shoes can be worn or unworn, although this is much more difficult to discern in cremation deposits. In addition, shoes can be either placed or worn on the pyre or added to the burial pit as a grave good.

In general it is difficult to tell whether hobnails have been burnt or not. However, with the exception of Grave 1060, the numbers of hobnails recovered from simple urned or un-urned cremation burials were relatively small, suggesting that these were nails randomly collected from the pyre with the ashes of the individual. The pyre, rather than secondary interment is thought to be the main focus in cremation rituals in the Roman period (Barber and Bowsher 2000, 80), therefore pyre goods are likely to have been more common than later additions to the burial pit. Noticeably more hobnails were recovered from the *bustum* cremations. This is not unusual since, owing to their more stationary nature, these deposits should be less disturbed and more indicative of funerary ritual. This is clearly illustrated by the discovery of a two discrete groups of hobnails at one end of the pit in Grave 1195, presumably the location of the feet of the deceased.

In general the considerations of patterns relating to age, sex and status are also more confused when it comes to cremation burial as these characteristics are more difficult to ascertain. However, the potential symbolic nature of shoe inclusion as opposed to the straightforward explanation that the corpse was burnt fully clothed remains an unknown factor, as discussed above in relation to inhumation burials. It is generally acknowledged that unworn pairs of shoes were placed on the funerary pyre in earlier Roman rituals (see Philpott 1991, 172; Dawson 2004, 55), although whether this tradition continued into the later Roman period is unknown.

Hobnails from non-funerary features

A minimum of 25 hobnails were found in two pits (1671 and 1680). The hobnails measured 13-20 mm long and 8-12 mm in head diameter. The groups of hobnails numbered 19 and 6 respectively. These assemblages may represent discarded or deliberately placed shoes, often found on Roman sites. However, at least one of these features truncated a burial and it is possible that many or all of these hobnails were redeposited or disturbed from funerary features. The same is probably true of the 34 unstratified hobnails, most of which come from topsoil.

STRUCTURAL NAILS AND COFFIN FITTINGS *by Kelly Powell*

Introduction

A minimum number of 4125 structural nails or similar fastenings were recovered from the excavation. As shown in Table 4.38 the majority of the nails (90%) derived from inhumation burials, although a number were also recovered from cremation deposits, pits, ditches and unstratified contexts.

The minimum number of nails was calculated on the basis of number of heads remaining in addition to inspection of site records. All the nails were x-radiographed to form a basic, durable record. They were quantified, measured where appropriate and their current condition was noted; the resulting information was recorded on an access database available in the site archive. Subsequent analysis was undertaken in the form of basic statistics and distributions in addition to examination of digital three-dimensional locational data. Where possible, results of these analyses were recorded in an Excel spreadsheet. Further analysis excluded large groups of clearly modern nails collected during the course of the excavation, many of which are likely to have derived from Clarke's excavations conducted between 1967 and 1972.

As an overall assemblage the nails were unusually complete, although groups varied from grave to grave. Corrosion was generally heavy, but varied in scale from moderate to very heavy. The majority retained adhering mineralised wood, and this was also recorded in terms of approximate quantifica-

Table 4.38: Nail quantification by feature type

Feature type	*Minimum no of nails*	*Percentage of overall assemblage*
Inhumation burials	3706	90
Cremation burials	133	3
Non-funerary features	20	0.5
Unstratified	266	6.5
Total	4125	100

Table 4.40: Analysis of nail types by length

Nail Type	*Length range (mm)*	*Average length (mm)*
Type 1b	18-147	75
Type 1a	148-250	166
Type 2	76-275	133

Table 4.39: Quantification of nail types from stratified features

Nail type (after Manning 1985)	*1b*	*1b?*	*1a*	*1 (length unclear)*	*1b/3*	*1b/2*	*1/5*	*2*	*2?*	*5?*	*4?*	*Unknown*
No.	3093	128	28	22	3	2	2	130	5	1	1	444
%	80	3	1	1	<1	<1	<1	3	<1	<1	<1	11.5

tion. Many of the nails had a coating of chalk which appears to have aided preservation. Conversely those that were entirely encased in mineralised wood had lost much of their integrity and remained only as products of mineralisation.

The nails were classified using Manning's (1985) typology incorporating Types 1 to 10, on the basis of head types and shank sections. (Type 10 refers to hobnails which are discussed separately below). The majority of the identifiable nails in this assemblage were classified as Type 1 or 2 (Table 4.39), both are rectangular sectioned nails, the former with a flat or pyramidal circular head, perpendicular to the shank, the latter with a triangular head on the same alignment. Of these, the vast majority could be classified as Type 1b (according to Manning less than 150 mm long; Fig.4.15). This nail type was ubiquitous in Roman Britain and is found in large quantities from a range of sites. The fact that Type1a and Type 2 nails are the next most numerous nail type at this site is also not unusual, although potentially remarkable in this context (see below).

Complete or near-complete examples of all nail types ranged in length from 18 mm to 275 mm, with an overall average of 79 mm and the majority falling between 50 and 100 mm (Fig. 4.15). Analysis of nail lengths when divided into types is shown in Figures 4.16-4.18 and Table 4.40. These data are similar to those published by Clarke, who found nail lengths ranging from 20 mm to 220 mm, most falling between 40 and 110 mm (1979, 332).

It is clear that the Type 1b nails form the most significant element of the assemblage and the average length reflects this. However, the presence of much larger Type 1a and Type 2 nails is remarkable on a cemetery site where coffins are the most likely origin. In particular, Figure 4.18 shows that the Type 2 nails fall into two groups including a cluster measuring between 230 mm and 280 mm, which would logically be assumed to be unwieldy in coffin construction. This is discussed in more detail below. It is notable that these nails far exceed the size of nails found in the earlier excavation.

It should be noted that Manning places the division between Type 1a and Type 1b nails on the basis of length at 150 mm. The current analysis has followed this classification as standard (the slightly lower cut off point of 147 mm shown in Table 4.40 is based on collections of nails per context, clearly manufactured as a group), however, the recording

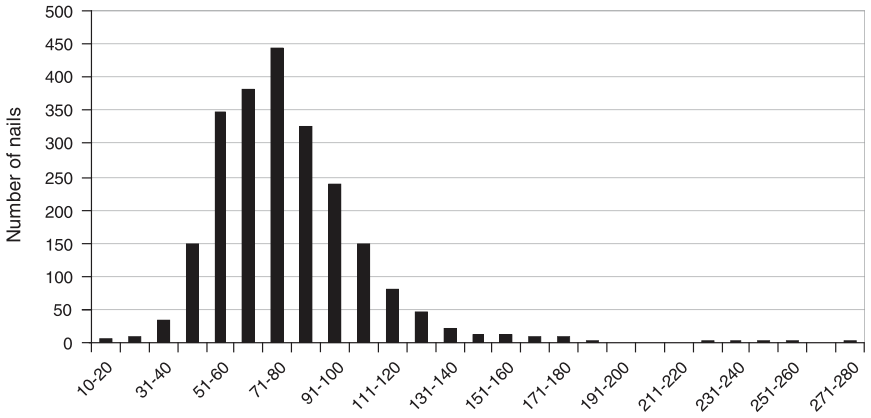

Fig. 4.15 Numbers of nails by length (10 mm units)

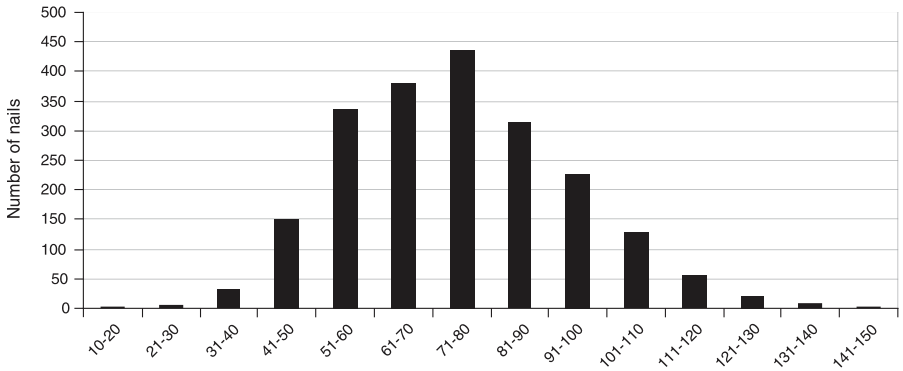

Fig. 4.16 Length of Type 1b nails

and analysis has suggested that this distinction is quite arbitrary. In fact the division between the two nail sizes (effectively small-medium and large) may be more accurately placed in this assemblage at around 120 mm. This separation at 120 mm was also identified by Clarke (1979, 332) prior to the publication of Manning's classification and may be specific to Lankhills or Winchester more generally. In addition, it is clear that the classification of Type 1 nails could be further refined; for example, some have thick or square heads while some have the shank set to the side. It is doubtful, however, whether these subdivisions would be meaningful and all could result from variation in manufacturing or (less likely here) post-depositional processes. Head diameter has often been used as an indicator of nail type based on size. The results from the current assemblage indicate that while this may be true of averages, it cannot always be used with certainty (Table 4.41).

Table 4.41: Head diameters by nail type

Nail Type	*Diameter range (mm)*	*Average diameter (mm)*
Type 1b	9-44	18
Type 1a	24-45	35
Type 2	13-32	21

Nails from inhumations – coffins

On a cemetery site such as Lankhills, one of the main considerations and assumptions when dealing with the nail assemblage is that nails and accompanying metal fittings are often the only remains of wooden coffins which survive post-depositional processes. These artefacts can also be accompanied by coffin stains and mineralised wood, as was often the case at Lankhills. A total of 3706 nails or fastenings were recovered from 268 of the 313 excavated inhumation burials (85.6%, or 88% if the graves effectively destroyed by later features are excluded), only three of which also contained coffin fittings. Of these 268 individual or groups of nails and fittings, 245 appear to represent the remains of coffins. Fifteen of the graves which produced nails were so badly truncated that it is unclear whether they originally contained coffins. Nails collected from the remaining eight graves were considered to be intrusive or not to have belonged to coffins, and 44 graves produced no nails.

It is possible that graves which did not produce nails may have originally contained coffins which employed an alternative form of construction less

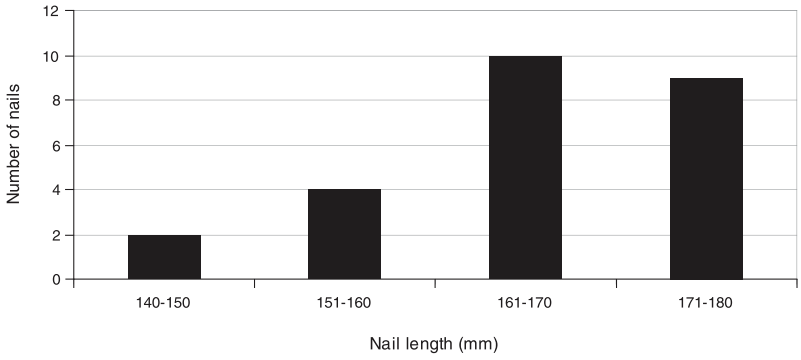

Fig. 4.17 Length of Type 1a nails

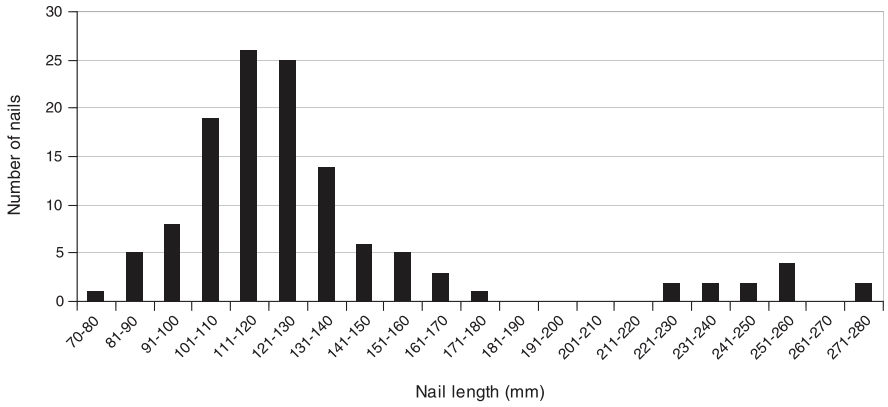

Fig. 4.18 Length of Type 2 nails

Table 4.42: Quantification of nails from inhumation burials by type

Nail type	*1b*	*1b?*	*1a*	*1 (length unclear)*	*1b/3*	*1b/2*	*1/5*	*2*	*2?*	*5?*	*4?*	*Unknown*
No.	2963	128	28	22	3	2	2	130	5	1	1	425

likely to survive, for example, using joints or wooden pegs or even using a single hollowed out piece of wood. However, no coffin stains were identified or mineralised wood recovered from graves which did not produce nails, as in the earlier Lankhills excavation and at contemporary cemeteries such as Butt Road, Colchester and Kempston, Bedfordshire. Consequently only those graves which contain nails or fittings will be considered here.

Nails from inhumation burials made up 90% of the overall nail assemblage and were the only group to include nails other than of Type 1b (Table 4.42). As such the percentages shown in Table 4.39 are also representative of the inhumation assemblage in isolation.

The number of nails per grave varied from 1 to 62 suggesting that coffin construction was by no means uniform. In many cases the occurrence of very low numbers of nails was a result of truncation or lack of preservation, but there are genuine examples of coffins which on the basis of their plans appear to have been constructed using very small numbers of nails. For example Graves 430 and 237 produced 6 and 7 nails respectively and were in no way disturbed or truncated. Because of this variation there has been no use of minimum numbers of nails to identify the presence of coffins as has been done elsewhere (eg McWhirr *et al*. 1982, 88).

In contrast, a number of graves had much larger nail assemblages; the majority of the 62 nails from Grave 73 seem to have been incorporated into the coffin structure. However, Grave 99 produced 46 nails, a large proportion of which were recovered from backfill. Several authors have suggested that graves which produced a large nail assemblage may have had an additional wood lining (for example Farwell and Molleson 1993, 33; Rodwell 1988, 37-41), although in these instances the distinction between the coffin and an outer chamber or 'vault' is clear in plan. It is therefore the case that large assemblages of nails may not simply be representative of coffin construction, and could include for example non-structural nails, intrusive or residual finds. For this reason each grave was considered individually when assessing coffin construction.

As an overall indicator, where relevant information was available from the accompanying skeleton, number of nails per grave were compared to broad age/sex categories as shown in Table 4.43. This illustrates that overall the average number of nails for children's graves was smaller, which would be expected if individual size equates to coffin size. However, some of the largest assemblages of nails from single graves came from children's coffins. The average number of nails from coffins of males and females are not only similar, they are the reverse of what may be expected on the basis of size (and potentially status within the community) with female graves having more nails on average. It is therefore likely that the number of nails used in coffin construction was not dependent on who was buried within, although it is possible that the sample of sexed individuals may not be representative of the population as a whole.

Lengths of complete or near-complete nails found in inhumations ranged from 18 mm to 275 mm overall and tended to vary from grave to grave. In many cases this variation was not very large within a single grave, at around 20 mm, for example groups with size ranges of 49-62 mm, 67-84 mm and 81-102 mm. However, in some cases the ranges were far larger (65-105 mm in Grave 28; 44-122 mm in Grave 277). It is possible that this disparity may indicate different functions of nails within a single grave, for example nails for securing a coffin lid or fitting and those for the main coffin structure. These data in combination with sexing data (Table 4.44) do show a more typical pattern of bias, although average nail lengths in male and female coffins are again very similar.

Coffin construction

Overall, analysis indicated that the standard technique of coffin construction at Lankhills exemplified the Roman approach to woodworking, using sawn oak planks and iron nails (see eg Watson 2003,

Table 4.43: Number of nails per grave by sex

Sex	*Male*	*Female*	*Unsexed child*
No of nails (range)	1-43	2-55	2-56
Average no of nails	14	16	12

Table 4.44: Coffin nail lengths (mm) by sex

Sex	*Male*	*Female*	*Unsexed child*
Nail length (range)	49-165	49-119	43-96
Average nail length	79	76	64

33). The coffins comprised opposing end boards usually placed on the base board(s) and attached by nails hammered from the base upwards, although some seem to have been placed beside the base boards and were therefore nailed to the base with horizontally-driven nails. The two side boards were generally attached to the base board from each side (often at the corners) and measured the full length of the coffin. Many of the coffins seem to have been reinforced at different heights at the corner. It is likely, if suitable wood was available, that both side and base boards consisted of single large planks of wood. However, two planks attached by means of joints may have been an option if timber was in short supply. A similar method was suggested by Rodwell for the structures at Kelvedon (1988, 31) and for a number of coffins from Butt Road. At least one of the Lankhills coffins (Grave 550) appears to have a line of nails along the centre of the base consistent with the use of two planks joined using a third overlapping piece.

Coffins were subject to a number of post-depositional processes within the ground such as compression and collapse, therefore the positions of nails recorded in excavation may not be firm indicators of coffin dimensions. However, coffin measurements were estimated on the basis of coffin stains and nail placement to give a general idea of the range of coffin sizes. Coffin lengths varied from *c* 0.6 m to 2.16 m and widths from 0.17 m to 0.65 m. The latter dimension, some records of which seem extraordinarily narrow, is particularly likely to have been influenced by collapse of the coffin as a result of decomposition (figures for coffin height given in the grave catalogue will also have been affected by these processes and should be regarded as minima). In fact only 12 coffins had a fairly confidently-recorded width of less than 0.30 m; seven of these belonged to infants, and the other five contained children (one an adolescent). The only three coffins apparently less than 0.25 m wide were in Graves 1205 (0.17 m), 1410 (0.19 m) and 1030 (0.23 m), this last containing the poorly-preserved remains of a child of uncertain age. The records indicate that most coffins were parallel-sided, although a number may have tapered, as suggested by Clarke (1979, 337). Opinion on coffin shape in Romano-British cemeteries varies (eg Barber and Bowsher 2000, 93; Clarke 1979, 337; McWhirr *et al*. 1982, 88) but in many cases it is simply not possible to tell.

Evidence from the Butt Road cemetery indicated that in some cases coffins were not made for specific individuals, some corpses appear to have been "stuffed in", whereas some children were buried in long coffins (Crummy 1993, 120). Comparison of skeleton stature and coffin length from Lankhills suggests that the majority of coffins do appear to have been constructed for the associated individual, with a few possible exceptions. A small number of corpses were placed in positions which may have saved room in relatively small coffins, such as that from Grave 640 which lay on its side with bent legs. However, this is as likely to represent a preferred form of burial rite. A number of Lankhills coffins seem to be quite long for the interred individual; examples include Graves 22, 52 and 1220 which have observable gaps at the feet. However, several other coffins contain grave goods such as pots in the foot area (eg Grave 1362) and it is possible that these examples originally contained organic grave goods which did not survive, as was also suggested for the East London cemetery (Barber and Bowsher 2000, 93). Notably none of the children were buried in adult-sized coffins, which certainly suggests that their coffins were custom-made. Similar observations at other contemporary cemeteries such as Kelvedon indicate that the phenomenon of 'off-the-peg' coffins may be confined to Butt Road alone.

Where adhering mineralised wood was extensively preserved it was sometimes possible to determine the thickness of the boards. This appeared to vary from *c* 20 mm to a remarkable 75 mm. The majority of the measurable boards fell within the range of 20-40 mm, with a small number of apparently very substantial coffins consisting of boards measuring 60 to 75 mm thick, which are discussed below. The common thickness range of 20 to 40 mm is exactly the same as that noted by Clarke (1979, 337), although his lower and upper limits were 10 mm and 56 mm respectively. Coffin board thickness may have varied from cemetery to cemetery. The average thickness of oak coffin boards at Butt Road was about 44 mm (Crummy and Crossan 1993, 120), while those from Radley, Barrow Hills were 20-27 mm (Chambers and Boyle 2007, 30). In the East London cemetery boards were between 15 mm and 50 mm thick, though an average figure is not given (Barber and Bowsher 2000, 94), while surviving timbers from Atlantic House, London, were 40 mm, 42 mm and 45 mm thick (Goodburn 2003). Coffin board thickness generally falls between 20 mm and 50 mm, making the Lankhills examples, and some of those from Butt Road, which were up to *c* 64 mm thick (Crummy and Crossan 1993, 120), notably large.

A number of samples from different coffins were submitted for species analysis of the adhering wood. All of the samples were identified as definitely or probably oak (Challinor below) and it is likely that oak was used extensively, if not exclusively in the manufacture of coffins at Lankhills. Similar dominance of oak is also seen at other cemeteries across southern Britain including Alington Avenue, Dorchester (Walker and Heaton 2002, 160) and in the Period 2 cemetery at Butt Road, where all but one of the examined samples (from a coffin with thin boards probably of willow or poplar) were of oak (Crummy and Crossan 1993, 120). The surviving timbers from Atlantic House, London were all of oak, although some of these were reused (Goodburn 2003), while single identified instances from Poundbury (Mills 1993b, 114) and Trentholme Drive, York (Wenham 1968, 39) were also of oak.

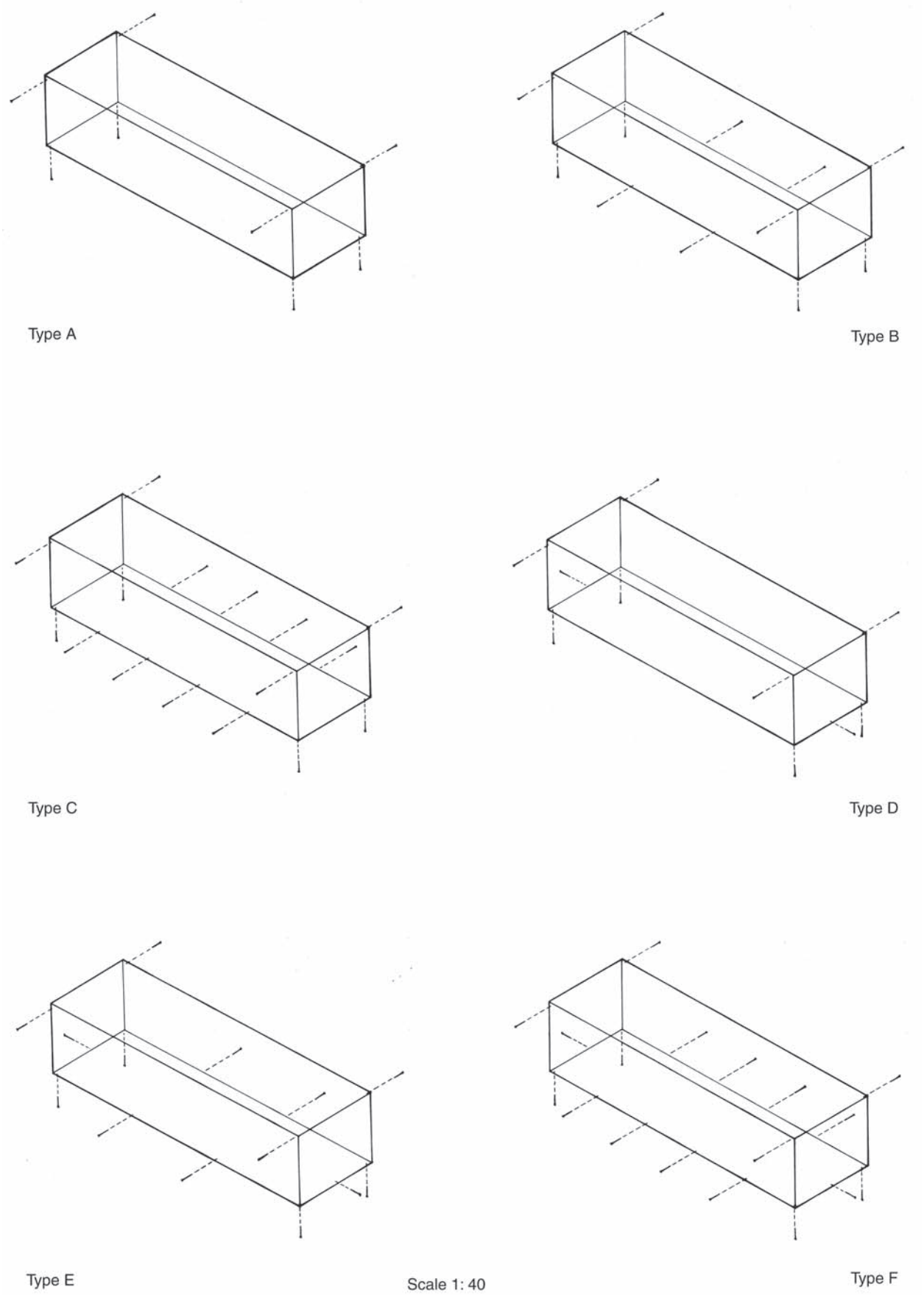

Fig. 4.19 Classification of coffin types

Examination of numbers and lengths of nails per grave, in combination with grave plans indicated that potential patterns were recognisable in coffin construction from the cemetery. The greatest variable appears to have been the placement of the fastenings. Nails tended to cluster around the corners of the coffin, and more generally at the coffin ends. Recognisable patterns were also noted in nailing at the sides of the coffin. Consequently a coffin classification system was established for the cemetery as outlined below (Table 4.45) and illustrated in Figure 4.19. The classification was quite broad to account for movement of nails within the ground, particularly those nails which may have originally secured the coffin lid. Notably similar clusters and patterns were recognised at Poundbury, Kelvedon, Atlantic House, Alington Avenue and Bath Gate, Cirencester and a similar classification system was devised for the latter cemetery (McWhirr *et al*. 1982, 88). This suggests that similar methods of coffin manufacture were commonly used over wide areas.

Three-dimensional plots of the Lankhills coffin nails were examined using GIS to elucidate these classifications and the presence of a lid was posited where a series of nails remained some distance above the other coffin nails. These were cross checked with plans and photographs where possible to ascertain the direction of the nails *in situ*. However, it must be borne in mind that some coffins may have had lids which were not attached using nails but were simply placed on top of the coffin.

As one would expect, not all coffins could be classified in this way owing to factors such as truncation or disturbance; some could only be classified to one of a number of types and one or two fell outside this general classification and will be discussed below. Of the 249 posited coffins, 141 could be classified to a single type (Fig. 4.20), with a further 91 classified to a possible type or range of types. Figure 4.20 shows that a large proportion of the classified coffins were of types A or B. A further 17 examples were considered to be A? or B? These are coffins either fastened only at the corners (Type A) or with a few additional nails on each side (Type B) suggesting that most coffins were constructed using the most efficient and practical method in terms of nail use.

Rodwell (1988, 31) has pointed out that at Kelvedon, coffins which were only fastened at the corners (Type A) would leave the full length of an adult coffin unsupported and suggests that this structural weakness may have been resolved with the use of jointing or wooden pegging. However such evidence does not survive at either site and it has been argued that wooden pegging for fixing timbers in coffins was rare in the Roman period (Watson 2003, 34). The very small numbers of Type D coffins suggest that it was not often deemed necessary to fasten the ends when the corners were otherwise secured. Additionally the smaller numbers of Type E and F coffins suggest that nails were generally used sparingly and elaborate or numerous fastenings were not the norm in coffin construction.

Comparison of the coffin types with other aspects of evidence from the cemetery shows a disappointing lack of patterns. Coffins of all construction types seem to have been used or created for men, women and children of all ages. No male burials were found within Type D coffins, although the tiny number of coffins of this type probably makes the observation meaningless. Only one Type C coffin burial was of a child, though this is likely to relate to practical issues – fewer nails would be required for smaller coffins. Where dating evidence existed it indicated that most of the coffin types were used throughout the 4th century. No particular spatial distribution patterns were found with reference to coffin type, although a cluster of Type A coffins existed on the eastern side of the cemetery, around the area of ditch 450, a grouping which might have had chronological significance. Clarke argued that the earlier Lankhills evidence showed that coffin use declined over time and nail lengths were reduced (1979, 341), but the dating scheme for the OA excavation is not detailed enough to either confirm or contradict this observation.

Table 4.45: Coffin classification

Type	*Features*
A	Fastened at the corners only
B	Fastened at the corners with a few nails on the side (maximum 2 per side)
C	Fastened at the corners with many nails on the side (more than 2 per side)
D	Fastened at the corners and ends
E	Fastened at corners and ends with a few nails on the side (maximum 2 per side)
F	Fastened at corners and ends with many nails on the side (more than 2 per side)

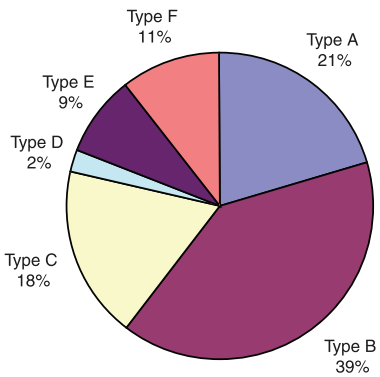

Fig. 4.20 Chart showing percentages of coffin types where classifiable (n = 141)

In terms of coffin construction alone, the evidence for presence or absence of a nailed lid was split almost evenly within each coffin type, suggesting that this was a matter of preference, although as mentioned above, it is possible that coffin lids were not always secured with nails. The number of nails by coffin type was somewhat more predictable, with most Type A coffins containing 1-15 nails, most Type B and E coffins containing 10-20 nails, Type C coffins produced 10-30 nails and most Type F coffins had 20 or more nails. As outlined above the majority of nails used in coffin construction were of Type 1b. Coffins in which Type 2 or Type 1a nails were used predominantly were generally of Type A or B, suggesting that the larger nails were used more sparingly. Where these nail types

Fig. 4.21 Nails from Graves 870 and 1638

were used in combination with the more common Type 1b nails a range of coffin types was observed. Similarly, coffin dimensions do not appear to have been particularly influenced by coffin type (or vice versa), although those constructed using predominantly Type 1a or Type 2 nails were often around or over 2 m long.

Most coffins for which information was complete fell into one of the above classifications, but two coffins in particular may have been different. One of these was the coffin from Grave 550, mentioned above, which seemed to have a central row of nails along the base, many of which had their tips turned over to secure them. This may have been a Type F coffin with two planks along the base, rather than one, and therefore has not been classified separately; alternatively it may represent an entirely different and unrecognisable construction technique. In addition, the coffin from Grave 3026 appears to have had no nails at the corners, only one at each end and a few on each side. If this is so it might constitute a separate type (?G), but there is the danger that potentially unrecognised truncation or disturbance altered nail distribution patterns.

Special coffins?

Possibly the most interesting phenomenon highlighted by the analysis is the presence of a small number of very large coffins made using abnormally large nails (Type 1a and the larger Type 2) albeit sparingly, to secure boards up to 75 mm thick. Overall, around 20 graves produced relatively large nails, for example Graves 1170 and 1440 contained coffins constructed from predominantly Type 2 nails measuring 106-132 mm and 104-125 mm respectively. Groups of larger Type 1b nails were recovered from several graves including 1846 (90-140 mm) and 1403 (106-138 mm). While these may be slightly oversized for coffin construction they can be considered to be within a normal length range for a large assemblage of nails.

The coffins which stand out noticeably are those from Grave 870 (Fig. 4.21) and Graves 1349, 1250 and 1638 (Fig. 4.21). The last two coffins were constructed using Type 1a nails measuring 142-180 mm and 147-180 mm, on average 165 and 166 mm long respectively, with large thick heads up to 45 mm in diameter. Grave 1349 had a coffin constructed predominantly from Type 2 nails measuring 120-160 mm long, on average 142 mm, while Grave 870 produced a group of Type 2 nails measuring 223-275 mm, an average of 248 mm long. Mineralised wood on nails from Grave 1250 showed the boards to be up to 75 mm thick, which would explain the large size of the nails. However, it is difficult to imagine how enormous nails such as those from Grave 870 could have been used to fasten coffins efficiently. No board thickness data survive for this coffin, although nail 1981 appears to have a horizontal grain for its entire length. It is possible that these nails may have been used to fasten a number of thick boards diagonally.

All four coffins were at the larger end of the scale, measuring 1.81-2.04 m long and 0.49-0.6 m wide, although larger coffins were found (such as that from Grave 1200 which was 2.15-2.16 m long and was constructed using Type 1b nails, the longest of which measured 104 mm). Philip Crummy has estimated that a large empty coffin made from boards 45 mm thick could have weighed 200 kg (Crummy and Crossan 1993, 34-5). Therefore such coffins would be extremely heavy, particularly once they contained a corpse and perhaps grave goods as well. No particular pattern could be discerned in the distribution of these large coffins.

A total of 19 graves also contained small numbers of larger Type 2 or Type 1a nails within an assemblage of predominantly unremarkable Type 1b nails. These graves included a range of coffin types, some with lids, some without, and contained a mix of both male and female individuals, with one unsexed child. Occasionally these appear to have performed a specific function. For example, the four possible Type 2 nails in Grave 1230 (coffin type A/D) seem to have been used to reinforce the corners of the coffin and the two in Grave 1805 (coffin type A) may have secured the coffin lid. However, the majority of these occurrences have no obvious purpose and probably represent opportunistic use of nails which were available at the time of manufacture. For example, Grave 710 contained a mixture of Type 1b, 1a and 2 nails. The coffin was probably of type B, fastened at the corners and with one nail in each side. On the northern side the corners were fastened with Type 2 nails and on the southern side with Type 1a nails, Type 1b nails appear to have been used for the sides and lid.

Coffin fittings

Iron coffin fittings were recovered from a minimum of three graves, in contrast for example to Poundbury, where 40 graves had iron fittings (Mills 1993b, 117-127). At Lankhills, Grave 545, which

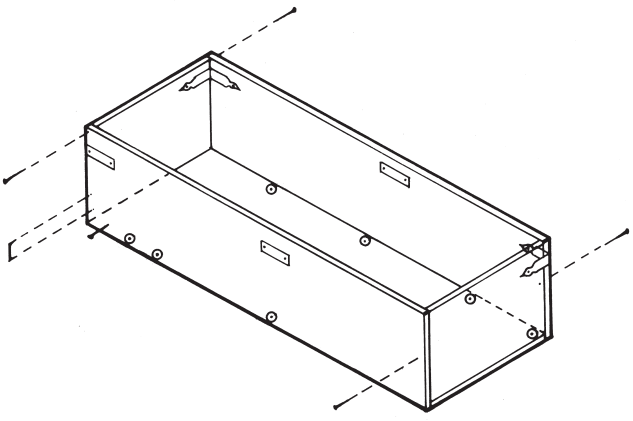

Fig. 4.22 Coffin in Grave 1370

housed the remains of an adolescent female, produced an unidentified iron fitting, 29 mm long and 12 mm wide, broken at one end with a D-shaped section, flaring to form a sub-rounded and more flattened end. This may have been part of a handle but was too fragmentary to tell. Grave 660 also produced a potential fragmentary iron handle or decorative fitting *c* 105 mm long. This had a square shank similar to a nail which had been driven into the wood but was bent at a right angle

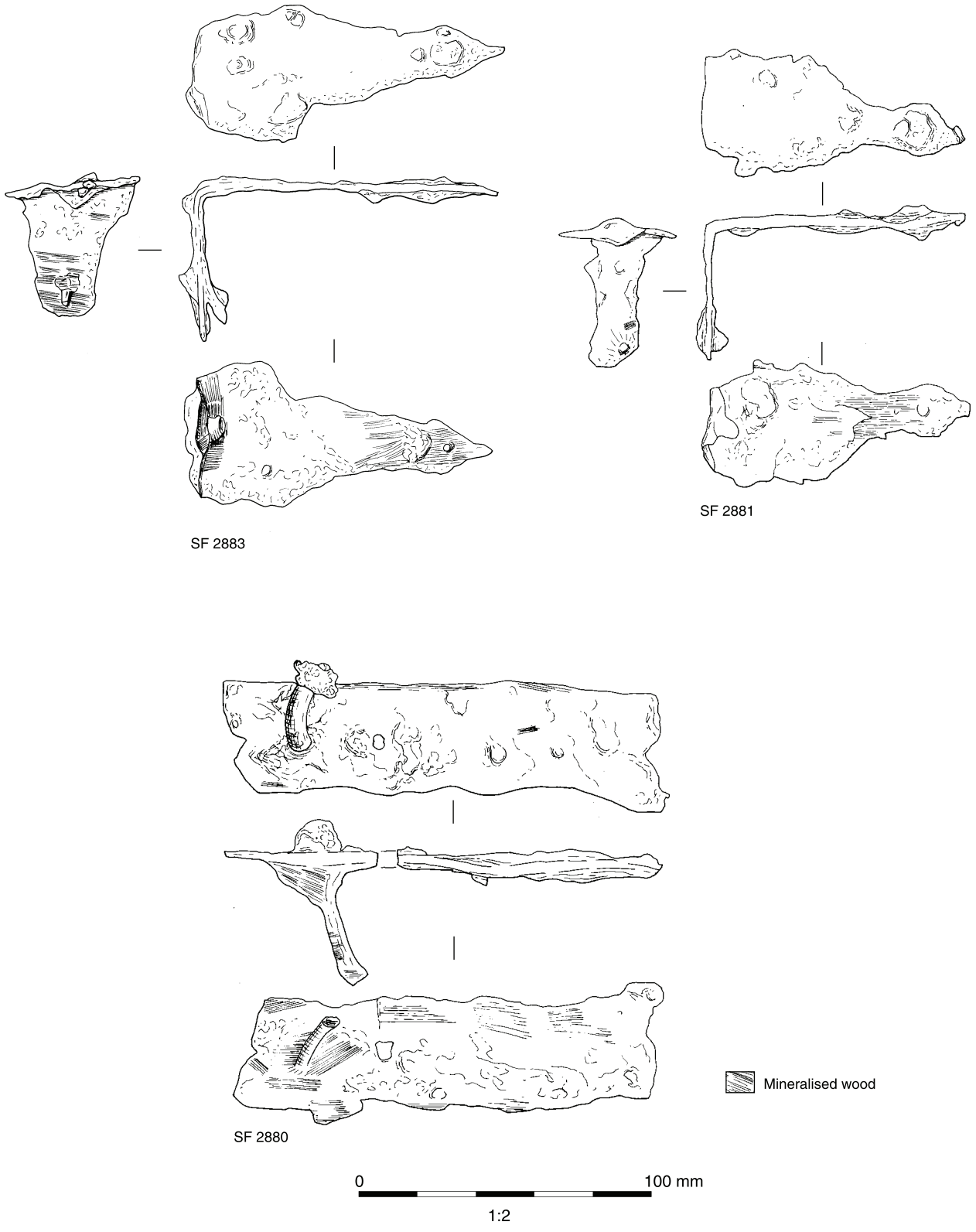

Fig. 4.23 Coffin furniture from Grave 1370

and flattened into a sub-oval 'head'. A small triangular fragment of iron with mineralised wood recovered from Grave 1941 may have been part of a plate but was too fragmentary to be identified.

The only grave which produced notable coffin fittings was Grave 1370, which contained the remains of a child about 10 years old, probably female on the basis of associated bracelets. The coffin shape was defined by a rectangular area of dark fill, and the position of nails and fittings (Fig. 4.22). Six small finds from this grave were identified as definite or possible coffin fittings (Fig. 4.23). In particular two ornate brackets (SF 2881 and SF 2883) were recovered from the corners on the northern side of the coffin. These objects were almost identical, measuring 147 mm and 150 mm in total and still bent at right angles at a broader, sub-oval central part, 40 mm and 45 mm wide respectively. These tapered into narrower arms with ornate 'ace of spades' terminals. SF 2883 clearly has an elongated point but SF 2881 is less complete, and each terminal is pierced by a single nail. These are similar to the ornate brackets from Poundbury (Mills 1993b, 124-5), although the Poundbury examples lack the wider central element.

In addition, a parallel-sided strip, SF 2880 (Fig. 4.23), either broken at both ends or terminating in slightly scalloped ends, came from the south-western corner of the coffin. The strip measured 153 mm long and 38 mm wide with three possible holes, one still pierced by a Type 1 nail, bent over on the outside. SFs 2792 and 2882 from the centre of the sides of the coffin probably also represented a similar plate or plates but had deteriorated leaving only irregular fragments, some pierced by nails and all with mineralised wood one on side. Finally SF 2886, a sheet fragment 21 mm long and 12 mm wide may either be the remains of a joiner's dog or similar or a rectangular boot plate (see below). With the exception of the possible joiner's dog it is likely that these fittings were decorative rather than functional and Clarke suggests that coffins with such fittings were of high status (1979, 336). Such a coffin could have been appropriate for the adolescent girl within, as such children were often buried with extravagant goods or furniture (Hilary Cool, pers. comm.).

Other grave structures

In notable contrast to contemporary cemeteries such as Cirencester Bath Gate, Poundbury and Butt Road, no stone, lead or lead-lined coffins were found at Lankhills. Instead four stepped graves were recorded (Graves 82, 635, 1349 and 1907). These are in addition to the possible 17 stepped graves found by Clarke in the earlier Lankhills excavation. It is presumed that the coffin would have been lowered into the grave and a plank-built platform would have been erected at the level of the step, creating a void in which the coffin remained. Grave goods seem to have been placed on the platform in some cases (Philpott 1991, 69) before the upper grave was backfilled. Nails were recovered at the level of the step from all of the graves except Grave 635. These ranged in number from one (1349) to 14 (82), but none formed coherent patterns and it is difficult to envisage what the planks would have been attached to, other than perhaps to one another. This may indicate the reuse of wood which already contained nails or, perhaps less likely, the presence of other grave goods which had nails attached.

Discussion

A large percentage of the excavated graves from Lankhills contained coffins (88%) illustrating that extended burial within wooden nailed coffins was a significant part of the predominant funerary ritual. Although other large contemporary cemeteries such as Poundbury and Butt Road also had large numbers of coffins, Lankhills contrasts with these sites in terms of the relatively large quantities of other grave furniture.

Regrettably few observable patterns in age, sex and distribution can be identified in relation to the Lankhills coffins. In addition, the dating for this part of the site is not robust enough to allow any clear chronological patterns relating to coffin use to be determined. Although a predominance of males buried in coffins has been observed occasionally (eg at Kempston; Dawson 2004, 55), this lack of patterns is echoed in other cemeteries and seems to suggest that coffin construction and use were not dictated by most social factors.

One factor which may be more influential is the status of the individual or the family left behind. It has often been suggested that those individuals buried without coffins may be lower in status. This may be supported by isotope analysis from Lankhills (see Cummings and Hedges below), which suggests that those individuals who were less well nourished were not buried in coffins. However, it is always possible that burial in coffins was dictated by tradition or fashion, expense, availability of materials or ritual significance, not always recognisable in the archaeological record.

Whatever the impetus for coffin manufacture, it is clear that coffins from Lankhills were generally custom-made for the individual. Relatively little evidence survives for the wood used to construct them, but what there is suggests the widespread and possibly exclusive use of oak. The wide availability of oak may explain its excessive use and the sometimes remarkable size of planks used. The most obvious aspect of coffin manufacture is usually the nails used, and a number of conclusions can be drawn about these. The large proportion of type 1b nails suggests that in most cases typical rather than special nails were used in coffin construction. The nail sizes recorded within each grave suggest that in some cases nails were specially made in batches while in others they were used more opportunistically.

This may also be true of the timber used. Excavations at Atlantic House, London uncovered

two complete coffins preserved through waterlogging. These were constructed using similar techniques to those hypothesised for Lankhillls, but were shown to be quite crudely constructed from reused timber with no evidence of more sophisticated woodwork techniques such as dovetailing; instead they were loosely fastened with nails (Goodburn 2003). Barber and Bowsher have suggested that coffin construction overall was probably determined by what materials were available in the workshop and by the thickness of the planks (2000, 94). 'Tide marks' discovered on some of the bones from Lankhills (see Clough, this volume) may suggest that the Lankhills coffins were better constructed than this as they appear to have retained fluid for some time.

Unusual coffins were clearly present at Lankhills. These may indicate either the status or wealth of the individual or their family, or opportunistic use or reuse of materials. This is especially noticeable in the coffins constructed using very large nails. Construction of coffins the size of that in Grave 870 must have been a significant undertaking and could have been a statement indicating wealth or status. However, the grave goods which accompany these burials do not suggest that they were particularly unusual individuals. Grave 870 produced a coin and animal bone, Grave 1349 a pot and Grave 1638 four coins held in the left hand, none of which was remarkable within the assemblage (see Cool this volume). The only individual in this group (from Grave 1349, also notable as one of the stepped graves) to have been subject to strontium and oxygen isotope analysis proved to be 'local', so intrusive burial ritual is not likely to have been a factor influencing coffin construction directly.

The large coffin size may simply represent the size of the interred individual. The older male from grave 1638 has been calculated to have been *c* 1.88 m tall and correspondingly broad, but the individuals within Graves 1250 and 1349 were female. A further possibility is that, as posited above, the coffins were constructed using reused wood and nails, possibly from larger structures such as buildings.

Nails from cremation burials and related deposits

A total of 123 nails was recovered from 16 of the 24 cremation burials (67%; Table 4.46), including urned, un-urned and *bustum* burials. All were classified as Type 1b or possible Type 1b nails with the exception of those which were not identifiable (Table 4.47). An additional 18 nails came from cremation-related deposits. The number of nails per cremation varied from 1 to 22 and overall the complete or near-complete nails within the cremation assemblage

Table 4.47: Nail types within cremation burials

Nail type	*Type 1b*	*Type1b?*	*Unknown*	*Total*
No	105	3	15	123
% of the total	85.2	2.5	12.3	100

Table 4.46: Nails from cremation burials

Cremation type	*Group no.*	*Number*	*Type 1b*	*Type 1b?*	*Unknown*	*Length range (mm)*	*Length average (mm)*
Urned	510	5	3		2	70	70
	845	6	5		1	45-52	49
	1055	2	1		1	min 35	min 35
Un-urned	895	3			3	min 28	min 28
	1060	22	19		3	39-83	54
	1160	2	1		1	65	65
	1320	7	7			47-85	64
	1527	3	3			55	55
	1724	6	6			59-68	62
	1786	4	4			67-76	72
	1904	3	2		1	84-104	93
Bustum	655	8	8			75-99	87
	1180	11	10	1		63-72	68
	1195	9	8	1		35-71	58
	1806	11	10		1	43-63	55
	1845	19	16	1	2	35-66	57
Cremation-related deposit	847	6	5		1	45-70	57
	1798	11	9		2	54-84	73
	1123	1	1			77	77
Totals		139	118	3	18		

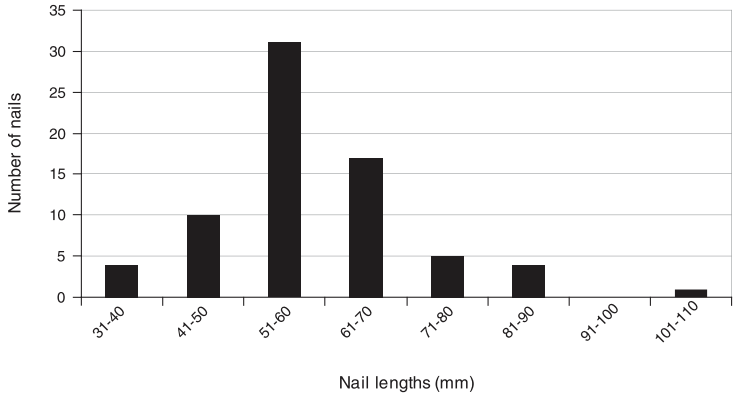

Fig. 4.24 Lengths of nails in cremation graves

ranged in length from 35 mm to 104 mm with an average length of 59 mm (Fig. 4.24). A large number of these nails fell within the range of 50-60 mm. Therefore the assemblage from cremation deposits clearly contained generally smaller nails than those from inhumations. In most cases length ranges within each cremation were relatively consistent, again bordering on the 20 mm range. However, a number of cremations produced nails with a wide range of lengths. For example deposit 1060 produced nails ranging from 39 mm to 83 mm. This may indicate inclusion within the cremation of nails with differing functions, for example deriving from a number of objects fastened with nails.

The nails from cremations were generally better preserved than those from inhumations. Several of the better preserved nails exhibited traces of red staining, also seen from cremation assemblages at the Ryknield Street cemetery, Wall, Staffordshire (Powell 2008). It is likely that both of these phenomena result from the burning process.

Nails from urned cremations

Three urned cremations produced nails ranging from two to six in number (Table 4.46) and 45 to 70 mm long. The nails presumably represented the remains of items included on the pyre which were collected with the remains of the individual for placement in the urn. These items are likely to be biers used to carry the corpse to the pyre but may include boxes or caskets placed on the pyre as grave goods.

Nails from un-urned cremations

Nails were recovered from eight un-urned cremations (Table 4.46). The assemblages varied in number from 1 to 22 and the nails were 39 mm to 104 mm long. These nails are likely to be similar in nature to those from urned cremations and represent items buried on the pyre and collected together with the body for interment. It is notable that these nails have a higher upper size limit, possibly indicating the presence of significant pyre furniture. Both Graves 1060 and 1724 were truncated or cut inhumation graves, therefore the nails may be residual or intrusive. However, it is notable that the nails from Grave 1060 were partly recovered from a small area at one end of the burial pit and may be the remains of an item such as a small box placed in the pit with the cremated remains, also seen in the cemetery of Eastern London (Barber and Bowsher 2000, 107).

Nails from **bustum** *burials*

Nails from grave-shaped cremations were particularly interesting as they may give a good illustration of the grave furniture and by extension the rites associated with this type of cremation. As a result of the cremation process the nails are likely to have fallen from the pyre into the pit below and therefore become displaced, although possibly not too far from their original positions. Nails were recovered from five in situ cremations, ranging from 9 to 19 in number and 35-99 mm in length; they are therefore similar to those from urned and un-urned cremations. In many cases the nails appear to form two approximate lines, occasionally with an isolated nail at each end, suggestive of a bier. However, child cremation 1845 appears to have had some form of wooden lining or possibly a coffin, with nails distributed around the edges of the cut at varying heights. Although the oxidisation of the bone makes cremation in a coffin unlikely this may indicate an unusual form of burial rite.

Nails from cremation-related deposits

A total of 18 nails were also recovered from three cremation-related deposits which did not form part of formal cremation burials. These included deposit 1628 from pit 1695 (11 nails), deposits from pit 847 (6 nails) and deposit 1124 from feature 1123 (1 nail). The nails ranged in length from 45 to 84 mm and are also likely to form the remains of grave goods and furniture from funeral pyres which has been redeposited or disturbed.

Discussion

Few contemporary comparisons exist for the Lankhills cremation burials as this form of

disposal of the dead had ceased to be the predominant burial ritual throughout most of Roman Britain by the 3rd and 4th century. In addition, where nails have been recovered from cremations elsewhere they have often been ignored due to their unremarkable nature. Nails included within cremation deposits can represent a number of objects. These include biers to carry the deceased to the pyre, or even coffins burnt on the pyre with the deceased inside. They can also represent boxes and caskets burnt on the pyre as grave goods or buried containing or alongside the collected ashes. The latter are less likely to occur as the pyre rather than the burial was generally the focus of the cremation ritual (Barber and Bowsher 2000, 80). It should also be noted that nails from cremations could result from reuse of wood in the funeral pyre. A number of the nails from Lankhills cremations were bent at the tip or bent at varying angles indicating structural use. A more extensive discussion of the type of structures likely to be included in cremation burials throughout the Roman period can be found in the report from Brougham (Cool 2004, 439-440).

At the Roman cemetery of East London it was noted that the presence of nails was more common in un-urned cremations than urned deposits, suggesting that they were associated with containers for the collected ashes (Barber and Bowsher 2000, 106). This observation is also true of Lankhills and it is noticeable that the nails from Grave 1060 form a coherent box-like pattern indicating the presence of such a container. Other un-urned cremations from Lankhills, as well as the urned cremations, overall produced small numbers of nails which may have been pyre goods or even intrusive from nearby inhumation graves.

It is the *bustum* burials that are perhaps the most interesting category, appearing to show the remains of biers or possibly coffins. Burial 1845 is particularly unusual as it was noted during excavation that the cremation appeared to have been placed and presumably burnt within a wood-lined pit. This type of funerary ritual is potentially extremely rare, though perhaps paralleled at Brougham (Cool 2004, 465).

Overall, the nails from cremation burials at Lankhills are noticeably abundant compared to contemporary cemeteries and may represent a variety of cremation practice hitherto ignored or unknown. However, the nature of the cremation ritual with potential scattering of pyre goods and furniture, and the poor survival of a number of the Lankhills burials as a result of truncation, means that relatively little can be said about these practices.

Nails from non-funerary features

A minimum of 14 possible nails were recovered from five features considered to be non-funerary including pits and a ditch (Table 4.48). Like the assemblage from cremation deposits all the identifiable nails were of Type 1b or Type 1b? The nails ranged in length from 52 to 78 mm, with an overall average of 62 mm, therefore falling within a standard range for Roman nail assemblages. The number of nails within each feature varied from 1 to 6 and most were consistently of similar lengths.

Table 4.48: Nails from non-funerary features

Feature	*No of nails*	*Length range (mm)*	*Length average (mm)*	*Head diameter range (mm)*	*Head diameter average (mm)*
Pit 306	1		min 57		min 10
Ditch 450	1/2		min 39		17
Pit 1261	1		frag		
Pit 1645	6	52-77	61	13-21	16
Pit 1671	5	60-78	65	12-22	15

On a site which is predominantly funerary in nature it is likely that a number, if not all, of these nails are re-deposited from funerary features, therefore a discussion of their significance would have little value. It is notable that the assemblage is very similar to that recovered from cremation graves and it is possible that many of these groups originated from such features or that the pits were in some way associated with cremation-related activity.

An additional 266 nails were found in unstratified contexts, the majority of which were from topsoil and often in large groups. In most cases these nails tended to be a mixture of potentially Roman and modern nails (some probably left by Clarke's excavations in the 1960s and 1970s). Due to their uncertain date and origin these nails were excluded from the overall analysis and are considered to be of little archaeological significance, although some may have been redeposited from funerary features. The nails were recorded and the data are available in the site archive. Typically the majority of those which were not clearly modern were of Type1b and all fell within the normal size ranges for this site.

A NOTE ON THE IDENTIFICATION OF COFFIN WOOD *by Dana Challinor*

Mineralised wood was frequently preserved through attachment to iron coffin nails. One nail per grave from a random selection of 23 graves was examined at low magnification (x7 to x45) to provide a species identification. The preservation was good, although anatomical structure was visible in transverse section only. All of the wood exhibited large pores characteristic of ring porous species. Oak (*Quercus* sp.) was identified on the basis of wide rays and flame-like patterning of the late wood. Where only one of these characteristics was apparent, the identification was given as cf. *Quercus* sp., although it is highly likely that all of the wood was oak. Wood attached to 17 nails was

identified as *Quercus* sp., while there were six identifications of cf. *Quercus* sp.

Fragments of coffin wood recovered in 15 samples from the fills of 11 graves (Groups 10, 14, 47, 73, 89, 120, 129, 141, 150, 256 and 291, all from the 2000 excavation) were also examined. The quantities present were very variable, ranging from 2 g in Group 73 to 250 g in Group 14 (only two graves had less than 10 g, however). This material was dessicated rather than minerally preserved and had lost most of its anatomical structure. A random selection of pieces from 10 samples was examined. The presence of large pores in some fragments indicates ring-porous species, and occasional large rays suggest that the wood was *Quercus* sp.

CERAMIC AND STONE BUILDING MATERIAL *by Cynthia Poole*

Introduction

The assemblage of ceramic building material totalled 181 fragments weighing 17,622 g, of which 56 fragments (4638 g) were post-Roman in date. The assemblage is small, though this is unsurprising for a cemetery with no evidence of buildings or structures. The material is well preserved with little or no abrasion on much of the tile and despite the fact that the overall mean fragment weight (MFW) of 88 g is rather low, more so for the post-Roman (MFW: 77.5 g), than the Roman (MFW: 94.5 g). The latter includes two complete imbrices and a large part of a tegula. The assemblage has been has been fully recorded on an Excel spreadsheet, which forms part of the archive.

Fabrics

The fabrics have been characterised using a stereomicroscope at x15 – x25 magnification. The Roman and later tile fabrics have been identified according to the fabric series developed for the Northgate House/Cultural Centre Roman, medieval and post-medieval assemblages (Poole and Shaffrey in prep). No detailed descriptions have been made of the post-Roman fabrics, but brief notes have been made in the archive record. The Roman fabrics have been compared to the Winchester Museums fabric type series (prefixed here Wincm) for ceramic building material, but this does not include post-Roman fabrics although some of the later types are similar to the Roman ones.

The Roman fabrics

Fabric C: defined by common medium-coarse quartz sand content. Similar to fabrics Wincm 15/31, 23 and Group 1 fabrics 13, 14, 15, 22 and 27

Fabric C1: characterised by a high density of medium quartz sand. Equivalent to Wincm 26

Fabric C2: frequent coarse quartz sand. Equivalent to Wincm 46

Fabric D: fine sandy micaceous clay. Similar to fabrics Wincm 6, 29, 31, 38 or 41

Group E fabrics: sandy laminated fabrics with varying quantities of buff and ferruginous red clay pellets. Equivalent to Foot's (1994) Group 1 and 2

Fabric E1.5: characterised by angular unwedged buff silty clay or siltstone. These pieces are noticeably smaller in the imbrex found at Lankhills compared to the very coarse examples found in brick from other Winchester sites. Equivalent to Wincm 5 (Group 2)

Fabric E2: laminated sandy clay with fine-medium quartz sand and frequent rounded buff silty clay and/or red ferruginous clay pellets. Equivalent to Group 1 fabrics 6, 7, 10, 16, 24 and fabric 19

E2.1: sandy clay with fine cream clay pellets and red ferruginous grits 1-2 mm Equivalent to fabrics 6 (Group 1), 29 and 33 (Micaceous group)

E2.2: similar to E2, but dominated by red ferruginous clay pellets

E3.3: pale cream – pink laminated clay. Equivalent to Wincm 3 (Group 2)

The variety of fabrics is limited when compared to other assemblages from Winchester, which reflects the assemblage size, limited forms and the period of activity relating to the character of the site, rather than production and sources. The fabrics are a mix of earlier and later varieties according to evidence from The Brooks (Foot 1994) and the Northgate House/Cultural Centre sites (Poole and Shaffrey in prep.). Foot has linked his Group 1 fabrics to tileries in the Bishops Waltham area close to the Winchester-Chichester road and one kiln site excavated at Shedfield (Holmes 1989) produced fabrics which fall within Group 1. Group 2 fabrics come from the same general area, and Foot has linked these with the Braxells Farm kiln. Fabric C is mainly equivalent to early fabric types relating to the Group 1 fabrics at The Brooks, though fabrics C1 and C2 are identified with late types Wincm 26 and 46, which may both have been produced close to Winchester. Fabric D equates with both early and late fabrics in the Winchester type series and occurred throughout all phases at the Northgate House/Cultural Centre site. The Group E fabrics are equivalent to Groups 1 and 2 at The Brooks, where they were identified as early and late respectively. Fabric E1.5 and E3.3 are later types, as are fabrics E2.1 and E2.2, which both occurred only in the later 3rd- to 4th-century deposits at the Northgate House/Cultural Centre site. Fabric E2 is equivalent to Winchester Group 1 fabrics and fabric 19, which are all early.

The Roman tile

The Roman tile is fully quantified by form in Table 4.49. The majority of this material was ceramic,

Table 4.49: Quantification of Roman ceramic and stone building materials

Forms	*Count*	*% count*	*Weight (g)*	*% wt*
Imbrex	67	52%	9198	59%
Tegula	10	8.5%	2063	13.3%
Brick	9	7%	1063	7%
Flue/tessera	1	0.8%	28	0.2%
Flat	14	11%	396	2.6%
Unidentified	24	18.75%	276	1.8%
Stone roofing	3	2.3%	2460	16%
Total	128		15484	

apart from three pieces of stone roofing. Abrasion of fragments was generally low or moderate and a number of large pieces of ceramic tile were present, including two complete imbrices from the same grave. The variety of identifiable types is very low, comprising mainly tegulae and imbrices, and a tessera made from flue tile. The remainder is classified as unidentified or flat, most of which was of a similar thickness to the tegulae and imbrices and is likely to derive from the same forms, though some of the thicker pieces may be from bricks.

Tile types

Imbrex

Imbrices formed just over two thirds of the Roman tile and include two complete tiles from Grave 256 (Fig. 4.25, Nos 1 and 2). They both measured 14-15 mm thick and were made in fabric C1. One (SF724) measured 330 mm long by 117-168 mm wide by 80 (top)-84 mm (base) high and weighed 1705 g. The second (SF725) measured 394 mm long by 134-168 mm wide by 64-98 mm high and weighed 2130 g. Both had areas of white mortar adhering. SF724 has a band of combing across one end. SF725 has two incised lines on the top by the lower corner forming a cross, which may be a tally mark or possibly a type of signature.

All the remaining pieces are partial, measuring between 10 and 19 mm thick. Sufficient profile survived on several to obtain width estimates and height measurements. Widths measured 130 mm, 140-150 mm, 150-160 mm, 160 mm and 180 mm and heights 73, 80, 85 and over 90 mm. Many of the tiles were quite roughly finished with irregularities to the surfaces and edges. A majority have a fairly curving semi-circular profile, while a more angular profile with flat splayed sides was also recorded but was less common..

Mortar was present on several tiles, some clearly around the top edge indicating an overlap of *c* 70 mm. A few were burnt. A few small plain fragments that measured 15 and 18 mm thick probably come from imbrex.

Tegula

Three contexts produced tegula and there were joining fragments across two of these. In fact all the pieces from all three contexts are so similar they could represent a single tile. Certainly no more that two tiles are represented. All are in fabric C and measured 20-21 mm in thickness. The largest example from layer 194 had an estimated width at the tile top of 290 mm, assuming the nail hole to be symmetrical, and a length in excess of 245 mm. The flange was of rectangular form (type A) with a slightly rounded inner top angle and with a double finger groove running alongside the base of the flange.

The flange clearly tapered, measuring 16->22 mm wide by 44 mm external height. A second piece had a flange with the same profile measuring 22-24 mm wide by 42 mm external height. One upper cutaway survived of simple rectangular form (C/A: type A2), where a section of flange has been blocked out by the mould, measuring 40 mm long by 22 mm deep. A finger had been pressed along the angle at the inner end of the cutaway forming an undercutting groove. The tiles were even and well finished, though not knife trimmed. The base was striated. Foot (1994) found these characteristics on the earlier tile from phases 1 and 2 in Group 1 fabrics at The Brooks.

Most of the plain flat fragments measuring 20-24 mm thick are likely to derive from tegulae. They were made in fabrics C, D and E2 and one had a wide knife cut margin on the base.

Brick and flat tile

Most of the flat tile was greater than *c* 20 mm thick and probably derived from tegulae, while a few thinner pieces may have been from imbrices. A few thicker fragments measuring 30-33 mm thick may be brick, though this is not certain as this size can overlap with other tile forms.

Flue/tessera

A single small fragment of flue tile, the surviving area of surface covered in combing, had apparently been chipped to shape for use as a tessera. It was orange in colour, trapezoidal in shape and measured 37 mm long by 27-31 mm wide by 20 mm thick. The inner surface of the original flue tile was used uppermost in the floor, based on the presence of wear on this surface.

Signatures

A signature mark in the form of an 'S'-shaped finger groove with a long tail was found on the top surface of an imbrex (Fig. 4.25, no. 3). Similar signature marks have been recorded on tile from the Isle of Wight (Tomalin 1987, fig. 21), from the bath house at Beauport Park (Brodribb 1979) and Foot (1994) has noted them on imbrices in his Group 2 fabrics from The Brooks, Winchester.

A signature or a tally mark in the form of an incised cross X was found on the top of one of the

complete imbrices (SF275) from Grave 256. Both lines measured 90 mm long and had been cut close to the lower right corner, just off the tile apex. Large incised marks such as this are not common and have variously been interpreted as tally marks or signatures. Similar crosses, which were certainly tally marks, occurred on tiles from Northfleet Villa, Kent (Poole 2010). A similar incised cross has been found on an imbrex from Building 5 (second half of 4th century) of the villa at Abbotts Ann (Durham 2008), together with other varieties of incised lines on imbrices, which could all form Roman numerals and so are more likely to be tally marks than signatures.

Combing

Two pieces had combing. One of the complete imbrices (SF274) had a band of combing measuring 130 mm long running horizontally across the upper surface 25-35 mm from lower end. The combing was 30 mm wide with ten or possibly more teeth. Though combing is occasionally noted on imbrices for keying this is not a logical position as this part of the tile would remain exposed and it may therefore be a combed signature or a decorative feature (Brodribb 1987, 24-5. Foot (1994) noted combing across imbrices in the late Group 2 fabrics from The Brooks site and also observed that combed signatures were confined to this group. Similar combing was found on imbrices at Grateley villa (Cunliffe and Poole 2008) from the late 3rd- to late 4th-century phase. There it was interpreted as keying, though it was unclear whether the combing occurred at the top or lower end of the tiles.

A small fragment of flue tile, re-used as a tessera had parts of two bands of combing at an acute angle of 54 degrees, possibly part of a saltire, a commonly found pattern in Winchester (Foot 1994). The comb used was 30 mm+ wide with 5+ narrow teeth, each 1-2 mm wide and widely spaced (5 mm apart).

Discussion

This assemblage is not large, but it is clear that the material must have been deliberately brought to the cemetery. The low levels of abrasion indicate it had not been introduced into the soil as a result of agriculture or other activity prior to the development of the cemetery. It is also clear from the evidence of mortar or wear that the material had been previously used and had been recycled from elsewhere.

The notable feature of this collection of tile is the unusually high proportion of imbrices, which account for approximately two thirds of the Roman ceramic building material, and the virtual absence of non-roofing material. The proportion of imbrices to tegulae is not that normally found in situations where tile can be related to buildings. There is a distinct contrast between this cemetery and areas of habitation within Winchester and elsewhere. Brodribb (1987, 21-22) records the use of both tegulae and imbrices in the construction of graves, but such constructions were not found in the Lankhills cemetery and the tile that was found does not suggest that any ever existed. This is not surprising as tile cists are generally of 2nd- to 3rd-century date (Phillpott 1991, 66-7).

Other functions must therefore be considered. Where buildings or structures present a ready source of material, tile was used in conjunction with stone as packing around burials or coffins. At the eastern cemetery of Roman London (Barber and Bowsher 2000, 109) there is some evidence that tile may have been used as covers or grave markers with pieces of tile placed over some of the cremations or fragments used to outline the grave. Some form of grave marker may be the most likely function of some of the tiles found at Lankhills. The large piece of tegula (194) found on the surface of an unexcavated grave (possibly Grave 277) and the large pieces of limestone roof slab (Graves 790 and 1310) may fall into this category.

The same may apply to the imbrices. Nearly two thirds (60%) of imbrex fragments were found in the fills, usually the upper fill or backfill of graves. The material is clearly reused having originally served as roofing from the pattern of mortar adhering to some tiles, but in the absence of any evidence for funerary structures it is unlikely that these came from structures or mausolea (imbrices can be used alone in the Laconian system of roofing) within the cemetery.

Most of the fragmentary imbrices were found in the backfill of graves, together with a few in a pit and the fill of ditch 450. The imbrex fragments are distributed across the site and there is no particular concentration to suggest that their use was preferred by a particular group. A possible interpretation is that the imbrices were set up on the surface or set slightly into the fill of graves as a grave marker. An alternative more prosaic explanation of their use might be that they were set on end in the cemetery to mark the alignment of rows or the position of the next grave. In either case the fragmentary character of most imbrices is not surprising, and the expectation that any would survive in situ is minimal. The likelihood of breakage would account for fragments being incorporated in the backfill of graves.

The two complete imbrices found in Grave 256, which is dated to AD 300-350, provide the only firm evidence on which to assess function. These were lying flat in the centre of the grave close to the north edge at a slight angle to each other (Fig. 4.25, nos 1 and 2). They were *c* 0.3-0.35 m below the top of the grave, which might be consistent with slumping when the coffin rotted and caved in. SF 724 was lying on its top surface and SF 725 with its top uppermost. The impression gained is that they may both have originally stood on end edge-to-edge together to form a tube, which may have been a simple grave marker or seen as a means of communication or for pouring libations to the underworld, or a combination of all these.

Roman stone roofing material

Three pieces of Purbeck limestone slabs had the appearance of the lower ends of roof slates of hexagonal or pentagonal form. One with some wear on the surface may have been reused as paving. Stone roofing became more prevalent in the 3rd and 4th centuries.

The post-Roman assemblage

The majority of the later material is of 19th- to 20th-century date (Table 4.50). A range of bricks occurred, mostly quite fragmentary, in Victorian and modern fabrics. They ranged in thickness from 60-68 mm and included one yellow London stock type with a shallow frog, which measured 65 mm thick by 106 mm wide.

Table 4.50: Quantification of post-Roman building materials

Forms	*Count*	*% count*	*Weight (g)*	*% wt*
Brick	28	46.6%	2827	57%
Floor: quarry tile	3	5%	512	10%
Floor: stone tile	1	1.3%	205	4%
Roof: peg	5	8.3%	106	2%
Roof: peg/nib	1	1.3%	73	1.5%
Roof: flat	17	28.3%	483	10 %
Roof: pantile	1	1.3%	612	12.4%
Roof: slate	3	5%	82	1.6%
Sewer pipe	1	1.3%	25	0.5%
Total	60		4925	

Fig. 4.25 Tiles from Grave 256 (Nos 1 and 2) and tile signature from Grave 790 (No 3)

Roofing was predominantly flat tile, which included pieces with circular and square peg/nail holes, a modern nib tile with blind nail hole and a fragment of 19th-early 20th-century pantile. A few pieces of the peg tile were thicker and more abraded than the other roof tile and the fabric was closer to medieval fabrics. These are possibly medieval tile incorporated into the soil though agricultural activities, before the 19th-century development of the area. There were also a few pieces of Welsh grey roof slate of 19th- to 20th-century date. A ceramic quarry tile, a stone floor tile and a fragment of glazed stoneware sewer pipe were also found.

The majority of the post-Roman material was found in the overburden (1), the original topsoil layer (4) and Clarke's excavation backfill (100) and clearly represent building materials relating to the construction of Lankhills House and later alterations and provision of services. Two of the bricks and the stone floor tile had been used to pack posthole 1458.

Illustrated tile (Figure 4.25)

1. Imbrex. Complete tile with incised cross, probably a tally mark, close to lower right corner. Length: 330 mm; width (top): 117 mm; width (base): 168 mm; height (top): 84 mm; height (base): 80 mm; thickness 15 mm; fabric C1. Phase: AD 300-350, Grave 256, fill 258, SF 724
2. Imbrex. Complete tile with band of combing, possibly a signature mark, across the lower end. Length: 394 mm; width (top): 134 mm; width (base): 168 mm; height (top): 64 mm; height (base): 98 mm; thickness14-15 mm; fabric C1. Phase: AD 300-350, Grave 256, fill 258, SF 725
3. Imbrex. Fragment of imbrex with signature mark in the form of an elongated S. Length: >110 mm; width: >60 mm; thickness 13 mm; fabric C. Phase: AD 364-380+, Grave 790, fill 752

STRUCK FLINT *by Hugo Lamdin-Whymark and Kate Cramp*

A total of 113 struck flints and 15 pieces (309 g) of burnt unworked flint were recovered from the excavation (Table 4.51). The struck flint was recovered from numerous archaeological contexts and usually occurred as single finds; no deposit contained more than four pieces. The flintwork is in variable condition. Several pieces are relatively fresh, suggesting they have been minimally disturbed, while other pieces are rolled and damaged, and have clearly been redeposited. Most flints display some cortication, which ranges from a light incipient speckling to a dense white discoloration. Calcium carbonate concretion is present on several pieces. The raw material exploited was a good quality chalk flint, which is available locally in the middle and upper chalk. The cortex was generally fresh and unweathered, measuring up to 10 mm thick.

Table 4.51: Quantification of the struck flint assemblage

Category	*Total*
Flake	45
Blade	4
Bladelet	1
Bladelike flake	5
Unclassifiable waste	5
Chip	48
Core on a flake	1
Partially-worked nodule	1
Retouched flake	1
Notch	1
Backed knife	1
Total	113
No. of burnt struck flints	3
No. of broken struck flints	52
No. of retouched flints	3

The assemblage is dominated by flakes (45 pieces) and chips (48 pieces). A small number of blades, bladelets and blade-like flakes are also present. The blade debitage frequently exhibits platform-edge abrasion and dorsal blade scars, and appears to have been detached using a soft hammer percussor, such as antler. This blade debitage is typical of Mesolithic and early Neolithic blade-orientated industries; the flake debitage is not chronologically diagnostic.

Three retouched pieces were recovered from the site. A heavily rolled backed knife from context 4 has abrupt retouch along the left hand side and an unretouched cutting edge on the right hand side; this tool dates from the Neolithic or early Bronze Age. An edge-retouched flake (context 195) and notched flake (context 265) have retouch on the ventral surface at the bulbar end; in the case of the notched piece, this creates a shallow, concave edge. Neither piece can be closely dated.

The struck flint assemblage reflects the presence of some earlier prehistoric activity in the landscape, although no contemporary features or deposits were identified in these excavations. Mesolithic/early Neolithic and Neolithic/early Bronze Age activity is well documented on the chalklands of southern Britain, and recent excavations in Winchester – on the Northgate House/Staple Gardens and Winchester Discovery Centre sites – yielded a comparable low-density flint scatter.