(Microfiche) Chapter 5

The finds of the Roman and post-Roman periods

5.2 The Romano-British pottery

by Sarah Green

5.2.a The archive

The unpublished archive consists of the material in the list below. All items are deposited at the Ashmolean Museum, where the pottery itself is deposited.

1. Pottery Recording Forms
2. Fabric type series
3. Fabric recording sheets and coding lists
4. Computer-printed catalogues in order of

   (a) Context
   (b) Fabric
   (c) Form
   (d) Drawing numbers

5. Unused drawings
6. Colour transparencies of fabric type series
7. Correlation lists (see main text for explanation)
8. Catalogue of medieval and post-medieval sherds by context
9. Coding lists—for handles, bases, decoration types

5.2.b Catalogue of samian ware

by Grace Simpson

Table 42 Samian by context and type

Context	Source	Form	Comments
22	CG		Scrap
40/1	SG	15/17	70–90
40/5	SG	15/17	
53/1	CG	37	Probably Les Martres-de-Veyre, *c* 100–120
53/2 i	SG	27	Neronian–early Flavian
53/2 ii	CG	31	Antonine
53/3	SG?		Wall sherd
54/6 i	CG	27	100–150
54/6 ii		27?	
54/6 iii	SG	18/31	Flavian. Stamped OFNIG. Joins 160. Fig. 81.14.
54/6 iv	SG	18/31	
62/1			
62/2			
82/1	CG	31	Antonine
82/1	CG	42	
82	CG	42	Antonine. Fig. 81.8.
88	CG		

Table 42 Samian by context and type (continued)

Context	Source	Form	Comments
91 i	SG	29	c 75–85
91 ii	SG	37	Flavian
114	CG	37	
117	SG	37	
132/2 i	CG	Dech 74	Hadrianic. Fig. 80.4.
132/2 ii	CG	37	Stamped ALBVCI. Fig. 80.1.
132/2 iii	CG	37	Criciro. 140–180. Fig. 80.3.
132/2 iv	CG	18/31	Antonine
132/2 v	CG	33	Antonine.
132/2 vi	CG	33	Stamped MARCI[. Fig. 81.16.
132/3 i			
132/3 ii		18/31	
132/3 iii	CG	18/31	Antonine
132/3 iv	CG	31	Antonine
134		36?	
135	CG	31R	Antonine
159	CG	31	Antonine
160 i	CG	31	Antonine
160 ii	CG	38?	Antonine?
161	CG	31	Antonine
162	CG	33	Antonine?
166	CG	33	Antonine
169	CG	33	Antonine. Stamped NAMILI[. Fig. 81.15.
171	SG	18/31	1st half 2C
173	CG		Wall scrap. Lezoux.
176		27	
192	CG	31	Antonine
193/2		37	Sherds from same vessel in 1010. Fig. 81.5.
200 i	SG	18	65–90
200 ii	SG	18?	55–80
200 iii	CG	18/31	
200	CG	Drag 30	Hadrianic-Antonine. Rogers P68. Fig. 81.12.
200 iv		31	
200 v	CG	31	Antonine
200 vi	SG late	31?	Rivet in base
200 vii		33	
200 viii	CG	33	Antonine
200 ix	CG	33	Stamped]INIS. Fig. 81.20.
200 x		36	
200 xi	CG	37	Ovolo resembles Criciro, cf. 132/2 iii. Fig. 81.9.
200 xii	SG	37	80–100
200 xiii	CG		Lezoux
202	SG?	27	With yellow mortar, cf. 1508
276/1			Burnt
285	SG?		Three sherds with yellow mortar cf. 202
288	SG	27?	
299		27	100–150
320/1		Curle 11	Fig. 80.2
320/1		27	100–150
337		35–36	
400 i	CG	37	100–120. Fig. 81.10.
400 ii	CG	18/31	
400 iii	CG	18/31	
400 iv	CG	18/31	150–200?
400 v	CG	18/31	150–200?
400 vi	CG	38	
402 i	CG		Micaceous Lezoux base
402 ii	CG		Rim
403 i		33	
403 ii		36	
409	SG	18?	

Table 42 Samian by context and type (continued)

Context	Source	Form	Comments
416/6	CG		
416/8			
418/1	CG	79	Antonine
480 i	CG	35–36	
480 ii	EG		Rheinzabern
481/1 i	SG?	18/31	Very worn
481/1 ii	SG	18/31	
481/1 iii	CG	18/31	Les Martres-de-Veyre?
481/1 iv	CG	31	Thick wall
481/1 v	CG	31	Lezoux, orange slip
481/1 vi	CG	31	Slightly burnt
481/1 vii	CG	31R	140–180, with rounded foot cf. 817. Possibly Ludowici Tg
481/2 i	CG	33	Two vessels
481/2 ii	CG	18/31	
481/2 iii	CG	31R	Six base sherds. Lezoux, late 2C
489	CG		
491 i	CG		
491 ii	CG	31	
492	CG		
493	CG	31	
495	CG		
497 i		37	
497 ii	EG	31	
500	CG		
501 i	CG	37	
501 ii	CG	18/31	
504 i	CG		
504 ii	EG	31	Rheinzabern?
509	CG	79–80	Antonine
510 i	SG?		
510 ii	CG		
511 i	CG		
511 ii	CG		
511 iii	CG	36	
512 i	CG		
512 ii	CG		
514 i		37	Apollo
514 ii	CG	37	Ovolo Rogers B77
526	SG	27	
528 i	CG		
528 ii	CG	33	
528 iii	CG	18/31	
528 iv	CG	37	Fig. 81.6
529	CG		
532 i	CG		
532 ii	CG	33	
532 iii		37	
533 i	CG	37	Rivetted rim
533 ii	CG	18/31	
534	CG	37	Rivet holes. Other sherd in 1507. Fig. 81.11.
535 i	CG	35–36	
535 ii	CG	18/31	31?
535 iii	CG	37	Joins sherd in 534
535 iv	CG	37	Ovolo Rogers B89 and fragmentary stamp. Fig. 81.7.
536	CG		Slightly burnt
539 i	SG	27?	
539 ii	CG		
541	CG	31	
543			2C
545 i	CG	37	Burnt

Table 42 Samian by context and type (continued)

Context	Source	Form	Comments
545 ii	CG	18/31	
545 iii	EG		Rheinzabern
550 i	CG		
550 ii	EG?		
558 i	CG		Burnt
558 ii	CG		
559 i	CG		
559 ii	CG		Stamped MATERNVS. Fig. 81.18.
559 iii	CG	37	cf. Albucius
560 i	SG		Neronian?
560 ii	CG	18/31	
560 iii	CG	31	
560/3	SG?		
565	CG		
572	CG		
574	CG		
579	CG		
582 i	CG	37	
582 ii	EG	43	Rheinzabern. Very worn
589			
590			
592	CG		Large platter, probably Lezoux
602	CG?	45	
604		45?	
611 i	CG		
611 ii	CG		
611 iii	CG		
611 iv	CG	18/31	
612	CG		
619	EG?	33	
625	CG		
626	CG		
627	CG	37	
628	CG		
629 i	CG	37	Butrio?
629 ii	CG	37	
630 i	CG	18/31	
630 ii	EG?		Rheinzabern?
630 iii		45	3C?
642 i	EG?	Curle 11	
642 ii	CG	37	Docilis
645	CG	31	18/31 or 31?
650	SG?	33	
654	CG	31	
660	SG?		
661 i	CG		Les Martres-de-Veyre?
661 ii	SG	18/31 or 31	Seven joining sherds
661 iii	EG	Curle 21	Joins 664
661 iv	CG	31	
661 v	CG	44	
661 vi	CG	37	Seated figure
661 vii	CG	37	cf. Albucius
661 viii	CG		Two rim sherds tiny 'cut-glass' vase.
661	CG	37	16–190 AD. Fig. 81.13.
662 i	SG?		
662 ii	CG		
663	CG		
664	SG	27?	
664	CG	Curle 21	Joins 661 iii
668	SG		
668	CG	31	

Table 42 Samian by context and type (continued)

Context	Source	Form	Comments
668	CG	33?	
669/3	SG		
763	SG?		
774	SG?		
787			
817 i	CG	31	Antonine
817 ii	CG	31R	
830 i	CG		
830 ii	CG		Footring sherd
830 iii	CG	33	Stamped REBVRIOO. Fig. 81.17
830 iv	CG	38	Tip of flange
831	CG	18/31	
837	CG	Curle 23 (Ludowici Tz).	Lezoux. Mid 2C
841 i	CG	33	
841 ii	EG	31	Rheinzabern?
843			Chip
846			Chip
848	CG		
855	CG	79	
859 i	CG		
859 ii	EG	31	Rheinzabern
865 i	CG	37	
865 ii			
868 i	CG		?Les Martres-de-Veyre. Stamped]NS (?)
868 ii	CG		
868/1 i	CG		Les Martres-de-Veyre. Stamped]ATINIA[Fig. 81.19.
868/1 ii	CG	36	
868/1 iii	CG	Footring	
873	CG	37	Hadrianic. Heavily burnt
875	CG	33	
876	CG	18/31	
884 i	CG		
884 ii	CG	37	
966	CG		
1010	CG	37	Same vessel as 193/2. Fig. 81.5
1221/1	SG	33	
1403	CG		
1404	CG	27	*c* 120–150
1412	CG	18/31	Les Martres-de-Veyre. Early 2C
1431	CG	Globular vase	Hadrianic–early Antonine. See 1452
1434	CG		Large bead rim. Lezoux
1435 i	CG	18/31	Les Martres-de-Veyre. *c* 100–130
1435 ii	CG		Chip. Lezoux
1438	SG	27	
1446	CG?	31	Two sherds from different vessels
1449	SG?	37	Tendril
1451 i	SG		
1451 ii	CG	33	Lezoux
1452	CG	Globular vase as 1431	
1453	CG	18/31	Les Martres-de-Veyre. Probably = 1412
1461	SG	27	
1464	SG	27?	Burnt
1465 i	CG?	35?	
1465 ii	CG?	Base of tiny cup	
1467	CG?	Rim of 27 or small 18/31	
1468	SG?	27	

Table 42 Samian by context and type (continued)

Context	Source	Form	Comments
1477	CG	Globular vase with groove below neck	
1480	SG	Footring	
1503	EG?	Footring	?Rheinzabern
1504	CG	37	Tiny fragment. Lezoux
1506	CG	18/31	Two vessels
1507	CG	37	Same vessel as 534. Fig. 81.11.
1508	SG		Footring with mortar, cf. 202
1514 i	CG	33	
1514 ii	CG	31	
2000	CG	37	
2004/B	Lezoux	Scrap	2nd century
2008/A	Lezoux	44	Antonine
	Lezoux	31 (base)	Fragmentary stamp of Teddillus (*c* 140–155)
2008/B	Lezoux	18/31	Hadrianic–Antonine
2015	Lezoux	18/31	Hadrianic
2020	Lezoux	31	Hadrianic–Antonine
2023	Lezoux	Scrap	?Antonine
2027/B	Lezoux	18/31	Hadrianic
2029/A	Lezoux	?37	Hadrianic/Antonine
2029/B/9	Lezoux	18/31	Hadrianic/Antonine
2029/C/3	?Lezoux	Fragment	Hadrianic/Antonine
2030	Lezoux	Scrap	Hadrianic/Antonine
2040	Lezoux	Fragment	Hadrianic/Antonine
2040/A/1	Les Martres-de-Veyre	Scrap	100–130
2403/D/1	Lezoux	33	Antonine
2410/B/1	Lezoux	18/31	Hadrianic/Antonine
2410/C/1	Lezoux	Scrap	Hadrianic/Antonine. ?Decorated.
	Lezoux	31R	?Antonine
2411	Lezoux	?31	Hadrianic–Antonine
2412/B	Lezoux	Scrap	Hadrianic–Antonine
2413	Lezoux	37	Hadrianic–Early Antonine. With damaged ovolo. cf. 2429/A
	Lezoux	18 or 27 (rim)	Hadrianic–Early Antonine
	Lezoux	27	Hadrianic–Early Antonine
	Lezoux	Beaker	Hadrianic–Early Antonine. 'Cut-glass' decoration'
	Lezoux	Barrel-shaped beaker	Hadrianic–Early Antonine. cf. Stanfield 1929, 131, nos 30–32
	Lezoux	Scrap	Hadrianic–Early Antonine. Same vessel as above
	Lezoux	2 fragments	
2421/H	Lezoux	?37 (min)	Hadrianic–Antonine
	?Lezoux	Fragment	Hadrianic–Antonine
2426	Lezoux	27	Hadrianic–Early Antonine
2428	Lezoux	31	?Antonine
2429/A	Lezoux	27	Hadrianic
	Lezoux	37	Hadrianic–Early Antonine. Damaged ovolo cf. Rogers B228 cf. 2413
2429/A/1	Lezoux	18/31 (2 sherds)	Hadrianic–Early Antonine. 1 sherd joins 2429/a/2
	Lezoux	31 (2 sherds)	Hadrianic–Early Antonine
	Lezoux	?31 (2 sherds)	Hadrianic–Early Antonine
2429/A/2	Lezoux	18/31	Hadrianic–Early Antonine. Joins 2429/A/1 above
2429/A/9	Lezoux	33	Antonine
2432/2	Lezoux	18/31	Hadrianic. Small
2434	Lezoux	Curle 15	Antonine
	Lezoux	35/36	?Antonine
	Lezoux	Globular cup	?Antonine
	Lezoux	2 fragments	?Antonine
2434/B	Lezoux	33	Antonine
2439	Lezoux	37	?Early Antonine. Sea bull, close to D35
2441	Lezoux	Scrap	Hadrianic–Antonine
2449	Lezoux	?37	Hadrianic–Antonine

Table 42 Samian by context and type (continued)

Context	Source	Form	Comments
2456	Lezoux	?31 (2 sherds)	Hadrianic–Antonine
	Lezoux	?31	Hadrianic–Antonine
	Lezoux	2 scraps	Hadrianic–Antonine
2460	Lezoux	?31	Hadrianic–Antonine
	Lezoux	Fragment	Hadrianic–Antonine
2461/A	Lezoux	Walters 79	Probably 170+
2466	South Gaulish	18	Flavian
	Lezoux	Fragment	Hadrianic–Antonine
2472/A/1	La Graufesenque	37	*c* 75–85
2475	Les Martres-de-Veyre	Footing	100–130
	Lezoux	37	?Antonine. Acanthus leaf cf. Rogers K16
2478	Lezoux	Base	Hadrianic–Antonine
2483	Les Martres-de-Veyre	18/31	100–130
	Lezoux	33	Hadrianic. Small
	Lezoux	37	Antonine. Ovolo Rogers B17
	Lezoux	4 fragments	Hadrianic–Antonine
2502/A/1	Les Martres-de-Veyre	18/31 (4 fragments)	100–130
2610/A/1	Lezoux	Curle 21	Antonine. Probably after *c* 170

5.2.c Catalogue of amphorae sherds

by David Williams

Dressel 20 Dressel 20 amphorae come from the Guadalquivir region of Spain, between Seville and Cordoba, where they were used principally for the transportation of olive-oil. This type of amphorae has a wide date-range, from the pre-Roman period 1 levels at Camulodunum to the third century AD. One of the handles (161) contained part of a name-stamp **IS**... Sherds: 132/2, 161, 279/1, 433 × 2, 481/1, 481/2, 511, 533, 604, 611, 661, 1428, 1429, 1430, 1462.

Pelichet 47 Wine-amphorae, probably from southern France. In Britain, these vessels date from the latter half of the first century AD to the beginning of the third century, with the main concentration occurring during the second half of the second century. Sherds: 132/2, 168, 200, 416/8, 575, 528, 619, 1449

Unassigned Sherds: 574, 830, 1413, 1435, 1446.

5.2.d Mortarium Fabrics

by Kay Hartley and Sarah Green

5.2.d.1 Mortarium Fabrics

Fabric 2.1 Oxford potteries: workshops at Cowley, Headington, Sandford etc.

Slightly sandy, off-white fabric, with a pink, or grey core; it can also be fired to a brownish-buff. It may have a cream to buff slip and has a little ill-sorted, opaque red-brown and quartz temper. Very distinctive, mixed, transparent, pinkish and brownish quartz trituration grit. Fig. 89.24 & 25, part of illiterate stamp.

Fabric 2.2 Oxford potteries: workshops at Baldon, Cowley, Dorchester, Sandford etc.

A fine-textured, slightly micaceous, orange-brown fabric, sometimes with grey core and a very little, very fine quartz temper. Trituration grit as for Fabric 2.1. This fabric usually has a thin white or cream slip in contrast to Fabric 2.3 but three of the Rough Ground Farm pieces were self-coloured which is very unusual for Oxford mortaria in orange-brown fabric (Contexts 200, 497 and 542).

Fabric 2.3 Oxford potteries: as for Fabric 2.2.

As Fabric 2 in all respects except in having a red-brown samian-like slip.

Fabric 2.4 Probably Lower Germany.

Hard, fine-textured, off-white fabric with abundant, finely fragmented, transparent quartz temper; the trituration grit consists of abundant transparent quartz. The single fragment has a pinkish-buff slip. Fig. 89.29.

Fabric 2.5 Mancetter-Hartshill potteries, Warwickshire.

Hard, fine-textured, creamy white fabric with a very small amount of very fine quartz temper; blackish and/or red-brown trituration grit. Fig. 89.26.

Fabric 2.6 Castor-Stibbington area of the lower Nene valley.

Hard, off-white or cream fabric with a little very finely fragmented quartz and red-brown temper with occasionally larger red-brown inclusions; buff-cream slip and black iron rich trituration grit (Other fabrics were used in this area). Fig. 89.27.

Fabric 2.7 South Gloucestershire or north Wiltshire.

Granular, orange-brown fabric with grey core, white slip and much fairly well-sorted quartz temper with occasional blackish or red-brown iron-rich particles; the trituration grit is mainly transparent and pinkish quartz with some black, and brown haematite and very occasional calcareous fragments. Fig. 89.22, 23 & 28.

Fabric 2.8 Verulamium region—workshops known at Brockley Hill, Radlett, Bricket Wood and Verulamium.

This is always a granular fabric packed with quartz temper; it is most commonly greyish-cream in colour with cream or cream-buff slip. It may have a pink or, like the example from 132/8, a blackish core. It may also be brownish-buff in colour like that from 200. Neither of the Roughground Farm examples have any trituration grit surviving (usually flint with some quartz and a little red-brown material).

5.2.6. Other fabrics

The fabric definitions given below follow the guidelines found in Peacock 1977a. Munsell soil values are used for colour descriptions. The fabric descriptions include a list of form types to be found in each fabric (see also Fig. 146 on Fiche 2#19). For full details of fabric distribution by site period and form/fabric correlation see microfiche tables. The provenance and date range of each fabric is given when possible; detailed descriptions and fabric parallels can be found in the Archive.

4. Rhenish

Description A very fine smooth wheelthrown fabric, orange (2.5YR 5/6) with dark glossy colour-coat (5YR 3/1) Greene 1978.

Forms Body sherds only, one of rouletted, indented beaker.

5. Rough-cast wares

Description A group of fine wheel made fabrics, buff (5YR, 5/6, 6/8) with brown slip surface (5Y 5/4, 2.5YR, 4/4), characteristically sprinkled with fine sand or fine clay particles. Anderson 1980.

Forms Beakers 4.1/25, 4.1/26, 4.1/39.

6.1 Oxfordshire red/brown colour-coat:
Young 1977, p.123

Forms C8, C12, C13, C14, C22, C27, C41, C47, C48, C49, C50, C51, C52, C55, C71, C73, C75, C81, C82, C84, C86, C95, C96, C97, C100, C113 (cf. Fabric 2.3).

6.2 Oxfordshire Parchment Ware:
Young 1977, p.81.

Forms Jars P8, P9.
Bowls P24.

6.3 Oxfordshire White colour-coat:
Young 1977, p.117

Forms WC1, WC3, WC4, WC7 (cf. Fabric 2.2)

7. New Forest colour-coat
Description A fine very hard wheelthrown fabric with dark reddish/grey exterior (10R 4/1, 4/3) and grey core (5 YR, 6/1) Fulford 1975.
Forms Beaker—Fulford Type 39.

8. Nene Valley colour-coat
Description A moderately fine, wheelthrown fabric, white with brown or orange brown matt colour-coat (2.5 YR 4/6, 5 YR 5/4). Anderson 1980; Howe *et al* 1980.
Forms Flagon—1
Jars—3
Beakers—4/25, 4/26, 4.6
Bowls—7.1
Misc.—12.1

9. Miscellaneous colour-coats

9.1 Oxidised white colour-coat:
South Glos., North Wilts. (cf. description of Mortaria Fabric 7):

Description A moderately fine, wheelthrown fabric orange/red—(2.5 YR, 5/8) with grey core and cream slip (7.5 YR 8/6, 9/6) characterised by abundant quartz inclusions.
Forms Flagons—1, 1.5
Mortaria—10.3, 10.7

9.2 Oxidised white colour-coat
Description This fabric is probably from the same area as 9.1, fabric description is similar—the only difference is that this is generally a coarser fabric.
Forms Flagons—1, 1.4, 1.8, 1.9
Bowls—6.1/47

9.3 Oxidised white colour-coat
Description Of unknown provenance (but possibly from same general area as 9.1, 9.2 above). A moderately coarse wheelthrown fabric, orange (5 YR 6/6) with cream slip (10 YR 7/4) with quartz and ironstone inclusions.
Forms Flagons—1
Jars—3 /5

9.4 Oxidised burnished and/or red/brown colour-coat
Description Similar to 9.1 and 9.2 above, presumed to have same source; differs in having a highly burnished or red/brown slipped exterior.
Forms Flagons—1, 1.5
Bowls—6, 6/26, 6.1, 6.1/42, 6.2/29

10. Miscellaneous white firing wares

10.1

Description Fine, moderately hard white wares (10 YR, 8/2) which could not generally be assigned to known industries. Fine white Oxford ware is included in this group. (White ware forms from Young 1977, are prefixed W).

Forms Flagons—1, 1.8 (W10, W3)
Jars—3/40 (W29)
Beakers—4/46
Bowls—6/14, 6.1/20 (W43)
Plate—8.1

10.2

Description A group of coarse white wheelthrown wares, whose provenance was impossible to determine with any confidence. It is possible that some sherds of Oxford burnt white ware (Young 1977, p. 113) come under this heading. Fabric varies in colour from 7.5 YR 7/2 pinkish grey to 5YR 7/4 pink with abundant quartz inclusions.

Forms Jars—3/46, 3.4/2, 3.4/3, 3.4/56
Bowls—6.1/31

11.1 Black burnished 1 (BB1)

Description Gillam 1976;Williams 1977. A sandy handmade fabric, generally black or dark grey/brown with highly burnished surface.

Forms Jars—3, 3/2, 3/4, 3/14, 3/43, 3/52, 3.4/1, 3.4/2, 3.4/3, 3.4/11, 3/4/43, 3.4/52, 3.4/55, 3.5/2, 3.6/43
Beakers—4/12, 4/14
Bowls—6, 6/47, 6.1/41, 6.2/1, 6.2/16, 6.1/41, 6.2/42, 6.2/47, 6.2/52, 6.2/54, 6.2/61, 6.7/16
Dishes—17/47, 7.1/1, 7.1/16,7.1/47, 7.2/1
Bowls/Dishes—6/7/1, 6/7/12, 6/7/16, 6/7/41, 6/7/42, 6/7/45, 6/7/47

11.2 Black burnished ware

Description A hard reduced wheelthrown ware with abundant quartz tempering. The surfaces are very dark grey to black (2.5 YR 3/0), the interior varies from 7.5 YR 6/2 to 5 YR 5/4, with a grey (5 YR 5/1) or pinkish grey (5 YR 6/2) core. Both surfaces are normally burnished.

Forms Jars—3, 3/2, 3/3, 3/21, 3/42, 3/52, 3/55, 3/56, 3/57, 3/65, 3.2/4, 3.4/2, 3.4/3, 3/4/6, 3.4/19, 3.4/21, 3.4/43, 3.4/52, 3.4/56, 3.6/2, 3.6/52, 3.7/55
Beakers—4/35
Cups—5/42
Bowls—6/6, 6/23, 6/29, 6/42, 6.1/1, 6.1/22, 6.1/23, 6.1/53, 6.1/54, 6.2/1, 6.2/16, 6.2/20, 6.2/41, 6.2/42, 6.2/54,6.2/82, 6.4
Dishes—7.1, 7.5
Lids—9.1, 9.2, 9.6
Bowl/Dish—6,7/1; 6,7/14; 6,7/16; 6,7/47, 6,7/53

11.3 Black burnished ware

Description A very fine wheelthrown hard reduced fabric, black (5 YR 2.5/1) with dark grey core (5 YR 4/1). The surface is slightly rough when not burnished, with a hackly fracture. It is tempered with abundant quartz grains under 1 mm in size.

Forms Jars—3, 3/4, 3/6, 3.5/2, 3.7/84
Bowls—6/34

12 Reduced Wares

12.1

Description A moderately hard fine sandy fabric with reduced surfaces (10 YR 4/1, 6/1) and core (10 YR 3/3, 10 YR 6/1). Surfaces can be burnished or untreated—the sherds are generally smooth when well preserved. Quartz grains, measuring under 1 mm, well sorted and sub rounded are the major inclusions. Provenance is not given for this fabric as inclusions and forms are undiagnostic; it is likely that several production centres are represented, the kilns at Swindon being one such source.

Forms Flagons—1
Jars—3/2, 3/3, 3/4, 3/5, 3/6, 3/7, 3/9, 3/13, 3/14, 3/19, 3/21, 3/24, 3/27, 3/28, 3/30, 3/33, 3/36, 3/43, 3/45, 3/46, 3/49, 3/52, 3/55, 3/56, 3/57, 3/60, 3/82, 3.1/65, 3.2, 3.2/2, 3.2/3, 3.2/8, 3.2/10, 3.2/15, 3.2/24, 3.2/27, 3.2/30, 3.2/37, 3.2/41, 3.2/43, 3.2/56, 3.2/57, 3.2/59, 3.2/60, 3.2/64, 3.3, 3.3/2, 3.4/2, 3.4/3, 3.4/4, 3.4/6, 3.4/7, 3.4/8, 3.4/10, 3.4/12, 3.4/13, 3.4/14, 3.4/19, 3.4/21, 3.4/24, 3.4/27, 3.4/28, 3.4/30, 3.4/35, 3.4/36, 3.4/39, 3.4/42, 3.4/43, 3.4/52, 3.4/55, 3.4/56, 3.4/57, 3.4/64, 3.5, 3.5/2, 3.5/3, 3.5/?, 3.5/56, 3.5/64, 3.6/3, 3.6/6, 3.6/16, 3.6/36, 3.6/51, 3.6/56
Beakers—4/3, 4/25, 4/55, 4.6
Tankards—5/14, 5.2/14, 5.3/1, 5.3/14
Bowls—6/16, 6/29, 6/33, 6/58, 6.1/1, 6.1/16, 6.1/17, 6.1/19, 6.1/22, 6.1/42, 6.1/53, 6.1/62, 6.2/1, 6.2/3, 6.2/14, 6.2/16, 6.2/23, 6.2/41, 6.253, 6.2/58, 6.2/59, 6.2/61, 6.4, 6.6, 6.7/16, 6.7, 6.7/63, 6.10/3
Bowl/Dishes—6,7/1, 6,7/42, 6,7/58
Dishes—7.1, 7.1/19, 7.1/42, 7.1/58,
Lids—9, 9.1, 9.4, 9.5, 9.6, 9.1/47, 9.2,

12.2

Description A hard wheelthrown reduced fabric similar to the above but differing in that it is less fine with abundant quartz and moderate ferrous inclusions up to 1 mm in size. The fabric is grey or grey brown (10 YR 5/1, 7.5 YR 5/4) with grey core (10 YR 6/1). The provenance of this fabric is thought to be North Wiltshire — possibly the kilns near Swindon (Anderson 1979). Again it is possible that more than one kiln site is represented.

Forms Flagons—1.1
Jars—3/2, 3/3, 3/4, 3/6, 3/64, 3.2/8, 3.2/1, 3.2/56, 3.4/27, 3.4/3, 3.4/28, 3.4/52, 3.4/55, 3.4/56, 3.4/73
Cups—5.2
Lids—9.7
Miso.—12.5

12.3 Savernake type

Description A fairly hard reduced wheelthrown fabric with irregularly lumpy surfaces, colour range from (7.5 YR 4/0) dark grey, to 5 YR 7/1, usually with a grey core (5 YT 5/1). Abundant inclusions of quartz sandstone and black angular material up to 3 mm in size can be seen in section.

Forms Jars—3/3, 3/8, 3/12, 3/19, 3/24, 3/56, 3/57, 3/62, 3/64, 3/67, 3.2/4, 3.2/6, 3.4/2, 3.4/3, 3.4/4, 3.4/6, 3.4/8, 3.4/8, 3.4/12, 3.4/13, 3.4/19, 3.4/21, 3.4/24, 3.4/27, 3.4/30, 3.4/43, 3.4/45, 3.4/46, 3.4/52, 3.4/57, 3.4/62, 3.4/64, 3.4/66, 3.4/68, 3.4/69, 3.5/2, 3.7/11, 3.7/12, 3.7/38
Bowls—6.2/62
Lids—9.1

12.4 Savernake type

Description A moderately hard wheelthrown reduced fabric, colour varying from light grey core (7.5 YR 7/0) through reddish yellow (5 YR 6/1) interior to a grey surface (7.5 YR 5/0). The surface feels rough generally and the fracture is hackly, the inclusions consisting of quartz sandstone, iron ore and grog in varying proportions Swan 1975.

Forms Jars—3.4/2, 3.4/13, 3.4/30, 3.4/52, 3.4/56, 3.4/64, 3.4/69
Lids—9.7

12.5 Savernake type

Description Closely related to 12.4 above but surface and core are lighter in colour (5YR 6/1 and 10 YR 7/1 respectively) and there is a greater proportion of quartz, and less grog or iron ore.

Forms Jars—3.7/12 12.6

12.6

Description A very fine hard wheelthrown fabric with a soapy feel. The surface treatment is generally a light burnish and ranges from dark brown or black (4.5 YR 3/2 to 3/0) in colour to an inner core of yellowish red (5 YR 4/6) with a grey (5 YR 4/6, 5/1) margin. Inclusions are very sparse—quartz, iron ore and mica. The fabric appears to be a local imitation of Gallo Belgic wares — confirmed by the range of forms in this fabric.

Forms Jars—3/4, 3.7/12
Misc.—12.2

12.7

Description A fairly hard fine reduced ware. The surface feels smooth and is variable in colour—grey/ brown (10 YR 5/3, 4/2, 5/2) with a dark grey core (10 YR 3/1) and lighter margins (5 YR 5/2 and 5 YR 7/6 for the exterior and inner margins respectively). Quartz is the major inclusion—abundant and under 1 mm in size. Possibly a local imitation of Terra Nigra.

Forms Jars—3/8, 3/56, 3.2/45, 3.2/64, 3.4/2, 3.5/3
Bowls—6.1/29, 6.2/16, 6.2/18

12.8

Description This fine hard wheel made fabric is distinguished by the mica dusting on both surfaces, of which the exterior is black (7.5 YR 3/0), the interior very dark brown (7.5 YR 3/2) and slightly rough. Abundant fine well sorted quartz is the only visible inclusion.

Form One sherd only, fragment of a bowl or platter—6/14

13 Oxidised Wares

13.1

Description A hard wheelthrown fabric normally reddish yellow (7YR 7/6, 5YR 7/6, 6/8) throughout, occasionally with a pinkish grey core (5YR 7/2). The surfaces are slightly rough, sometimes burnished. Abundant quartz grains are the major inclusions, but small quantities of poorly sorted iron ore and grog are present. This ware, like 12.1, probably covers undiagnostic fabrics from more than one source, though because of the utilitarian nature of the ware it is assumed that they are reasonably local to the site, the kilns at Purton, Swindon being one such source.

Forms Flagons—1, 1.1, 1.4
Jars—3, 3/2, 3/3, 3/4, 3/6, 3/55, 3/64, 3.2/3, 3.2/64 3.3, 3.4/2, 3.4/55, 3.4/56, 3.4/64, 3.6/6
Beaker—4.6
Cups—5, 5/1, 5/14, 5.2/1, 5.3/14
Bowls—6.4, 6.45
Dishes—7.1/14
Lids—9.5, 9.8

13.2

Description A fine wheelthrown fabric, reddish yellow in colour (5YR 6/6), the surface having a soapy feel. The inclusions are sparse—only mica and red brown are being visible macroscopically. It is possible that this fabric could be described as a Severn Valley Ware with Gloucester suggested as a source.

Forms Flagons—1
Jars—3, 3/35
Cups—5/1
Bowls—6.1/70, 6.2/64, 6/14

13.3

Description A soft, fine wheelthrown fabric, reddish yellow (5YR 7/6) in colour with a dark grey core (5YR 3/1). The fabric has a soapy feel, inclusions are sparse—chalk flecks, red iron ore, grog and mica being identified macroscopically. Like 13.2 this comes under the umbrella of Severn Valley Ware.

Form Body sherds only.

13.4

Description A soft fine wheelthrown fabric with a light brown exterior (7.5YR 6/4) and reddish yellow (5YR 7/6) interior, it has a grey core (5YR 5/1) with reddish yellow margins (5Y 6/8). This fabric is distinguished by its organic tempering (charcoal) and corresponding voids up to 1 mm in size which occur in moderate amounts; quartz and mica are also present in small quantities. A source within the Severn Valley in the Gloucester area is suggested for this fabric.

Forms Jars—3/52, 3.3
Cups—5/1

13.5

Description A soft, fairly fine wheelthrown fabric generally reddish yellow in colour (5Y 7/6), but sometimes with a light reddish brown core (5YR 6/4) with light red margins (2.5YR 6/8). The fabric has a slightly rough or sometimes soapy feel with few visible inclusions. Macroscopically iron ore, grog, mica and some calcareous material can be distinguished—all sparse and poorly sorted. It is suggested that this is another Severn Valley Ware.

Forms Jars—3/2, 3/27, 3/30, 3/42, 3/71, 3.2/46, 3.3, 3.4/2, 3.4/3, 3.5/2, 3.6/27, 3.6/30, 3.6/73
Cups—5, 5/14, 5.2/14
Bowls—6/72, 6.1/14, 6.1/67, 6.1/72
Lids—9.6

13.6

Description A fairly hard wheelthrown fabric with a slightly rough surface generally reddish brown in colour with yellowish red (5YR 5/6) margins round a reddish brown core. Visible inclusions are iron, quartz and mica all moderately frequent. North Wilts is possibly the source of this fabric.

Forms Jars—3.4/2
Cups—5
Bowls—6.1/76
Lids—9.5, 9.6

13.7

Description A fairly hard smooth wheelthrown fabric, light red (2.5YR 6/8) with reddish yellow surfaces (5YR 6/8—7.5YR 7/6). The inclusions consist of moderate amounts of quartz, iron ore and grog and the interior surface is thickly mica dusted. This is possibly a N. Wilts product.

Forms Bowl—6.2/65

14. Brown

14.1

Description A moderately hard fabric, reddish brown (5YR 5/4) with dark grey surfaces (2.5YR 3/0). The fabric is slightly rough, sometimes having a burnished surface. Abundant fine quartz forms the major inclusion with small amounts of red iron ore and mica.

Forms Jars—3.2/6, 3.4/19
Bowls—6.2/41

14.2

Description A similar fabric to 14.1, but coarser with light brown core (7.5YR 6/4), dark brown margins (7.5YR 4/2) and outer surface and a lighter reddish yellow inner surface (7.5YR 6/6).

Forms Jars—3/2, 3.3, 3.4/6
Bowls—6.1/65, 6.1/75
Lids—9.7

14.3

Description A moderately hard micaceous fine fabric, reddish brown (5YR 5/4) in colour and characterized by its dark grey or black highly burnished surfaces. Quartz and mica are present in moderate amounts and small quantities of red and black particles (iron ore?)

Forms Jars—3/3, 3.4/2, 3.5/2, 3.5/3
Bowls—6.1/1

14.4

Description A coarse moderately hard fabric, generally hand made, red (2.5YR—4/6, 5/6, 7/2) with rough dark brown surfaces (7.5YR 4/2). Quartz and organic tempering are found abundantly with small amounts of red iron ore and sandstone. The size of inclusions varies from under 1 mm for the quartz grains, and up to 2 mm for the other inclusions.

Forms Jars—3/3, 3.4/6

14.5

Description A sandy moderately hard wheelthrown fabric with a smooth finish. Sherds show great variation in colour within a single vessel having a reddish grey core (5YR, 5/2) with reddish brown exterior margin and surface (5YR/5/?, 5Y 5/1), and grey interior margin and interior surface varying from 5YR 4/1—5/3—6/4. Abundant sub-angular quartz up to 1 mm in size is the major inclusion with moderate amounts of red iron.

Forms Dish—7.5

15. Shell tempered

Description All sherds containing shell as the major inclusion are included under this fabric heading. An examination of the forms produces a polarisation into jar and bowl forms of characteristically early Roman/late Iron Age types and the late Roman rilled, hooked rim jars. The two elements of this fabric group have in common the temper which is varying amounts of moderate/abundant crushed fossil shell. The fabric is moderately hard, rough in texture, the

surface and core colours vary between orange-brown to black and grey. The size of inclusions is from under 1 mm to 6 mm, the larger inclusions generally occur in the early forms where they are often somewhat sparser, and the sherds are generally thicker.

Forms Jars—3/2, 3/3, 3/8, 3/10, 3/49, 3/55, 3/56, 3/64, 3/66, 3.4/2, 3.4/3, 3.4/6, 3.4/8, 3.4/10, 3.4/24, 3.4/27, 3.4/30, 3.4/56, 3.4/57, 3.4/64, 3.7/12, 3.7/38, 3.8/79
Bowls—6.1/63, 6.2/1
Dishes—7.1/1

16. Limestone tempered

Description A soft generally wheelthrown fabric with smooth black or dark grey surfaces and pinkish grey interior (7.5YR 6/2). The core is generally dark grey with brown margins (7.5YR 5/4). The laminated fracture discloses abundant, sometimes angular, poorly sorted limestone up to 3 mm and moderate amount of quartz.

Forms Jars—3/2, 3/10, 3.4/76, 3.6/52, 3.7/77, 3.8/12, 3.8/78
Bowls—6/17

17. Oolitic limestone

Description A moderately hard fabric, dark grey with a dark brown (10YR 2/2, 75YR 4/2) exterior surface and reddish brown or grey (5YR 5/4, 4/2) interior. The surface is soapy to feel and the fracture is hackly with abundant oolites up to 2 mm and sparse quartz and shell.

Forms Jars—3/1, 3.4/5, 3.7/38

18. Not used.

19. Chalk tempered

Description One sherd only was recorded which has a soapy feel and is dark grey throughout with slightly lighter surfaces. Inclusions are poorly sorted, sparse up to 6 mm and consist of chalk and black organic material; voids of similar size and shape could be discerned.

Forms Jars—3.5/81, rim distorted.

20. Organic/grog

Description A very distinctive soft moderately fine, generally wheelthrown fabric having a soapy feel and slightly laminated fracture. There was some colour variation on both surfaces which varied between dark brown (5YR 3/1) and dark reddish brown (5YR 4/4—3/2) with several different colours appearing on the same vessel. Inclusions consisted of abundant organic material with sparse clay pellets, red iron ores and quartz.

Forms Jars—3/3, 3/81, 3.2, 3.3, 3.4/2, 3.4/8, 3.4/49, 3.4/50, 3.5/2, 3.5/81, 3.5/82, 3.7/12, 3.5/55
Dish—7.5

21. Flint gritted

Description A soft moderately fine fabric with dark grey core (7.5YR 3/0) and dark brown surfaces (7.5YR 4/2). Angular flint up to 2 mm occurs in moderate amounts and is the characteristic inclusion of this fabric, organic material, quartz and sandstone being present in moderate to sparse amounts. The surface is sometimes burnished.

Forms Jars—3.4/8, 3.7/12

22.

(see Early Iron Age pottery, Ch. III.B.2)

23.

Description A moderately hard, fine fabric dark brown (7.5YR 4/2) with lighter core (7/5YR 3/0) dark grey interior and black exterior surface. This fabric is slightly rough and lightly burnished with a slightly laminated fracture revealing abundant well sorted quartz under 1 mm in size and

some mica.

Forms Misc.—12.3, One sherd only.

24.

Description A moderately hard fine fabric with grey core and smooth oxidised reddish yellow (5YR 6/6) surfaces. Quartz is the major inclusion type, sparse and up to 1 mm in size. Small amounts of poorly sorted iron ore occur.

Forms One body sherd only—see drawing (Fig. 90.11) and form description.

25. Campanian

Report by David Williams

Description A slightly rough, hard sandy fabric, pink throughout (5YR 7.5/4). Inclusions are frequent medium sized fragments of dark augite, with some plates of golden mica and small white pieces of limestone. This is Peacock's (Peacock 1971, Peacock 1977a) 'black sand' fabric, more usually associated with Dressel 1 and 2-4 amphorae and Pompeian Red Ware. Suggested origin is the Latium region, on the basis of the presence of yellow garnet in this section (Courtois & Velde 1978). However, yellow brown garnet is also a feature of the sands further south and a Campanian origin, in particular the area around Pompeii and Herculaneum has been more convincingly argued by Peacock (Peacock 1977b).

Form Base of jug/flagon—possibly comparable to flagon type Camulodunum 139 (Hawkes & Hull 1947), which is in a similar fabric. This form and fabric does not appear to be common in Roman Britain. Rimsherds which may be of Camulodunum 139 type and in a 'black sand' fabric have been recognised by the writer from Gatesbury Track (Williams 1977), Cleavel Point and Colchester-Sheepen. The dating evidence from Britain would seem to point to the first century AD for this fabric and form. At Cleavel Point a sherd of this fabric was found in early first century AD contexts (similar material associated with second/third century layers may be residual). The Gatesbury Track material is first century AD, while both the Camulodunum and Colchester-Sheepen finds are dated to the period AD 43–61/65.

Acknowledgements

The writer is grateful to Peter Woodward and Paul Sealey for their permission to mention the material from Cleavel Point and Colchester-Sheepen ahead of their respective publications.

5.2.f Major form definitions

1	Plain
2	Grooved
3	Double Grooved
4	Triple Grooved
5	Strap
6	Countersunk
7	Lug

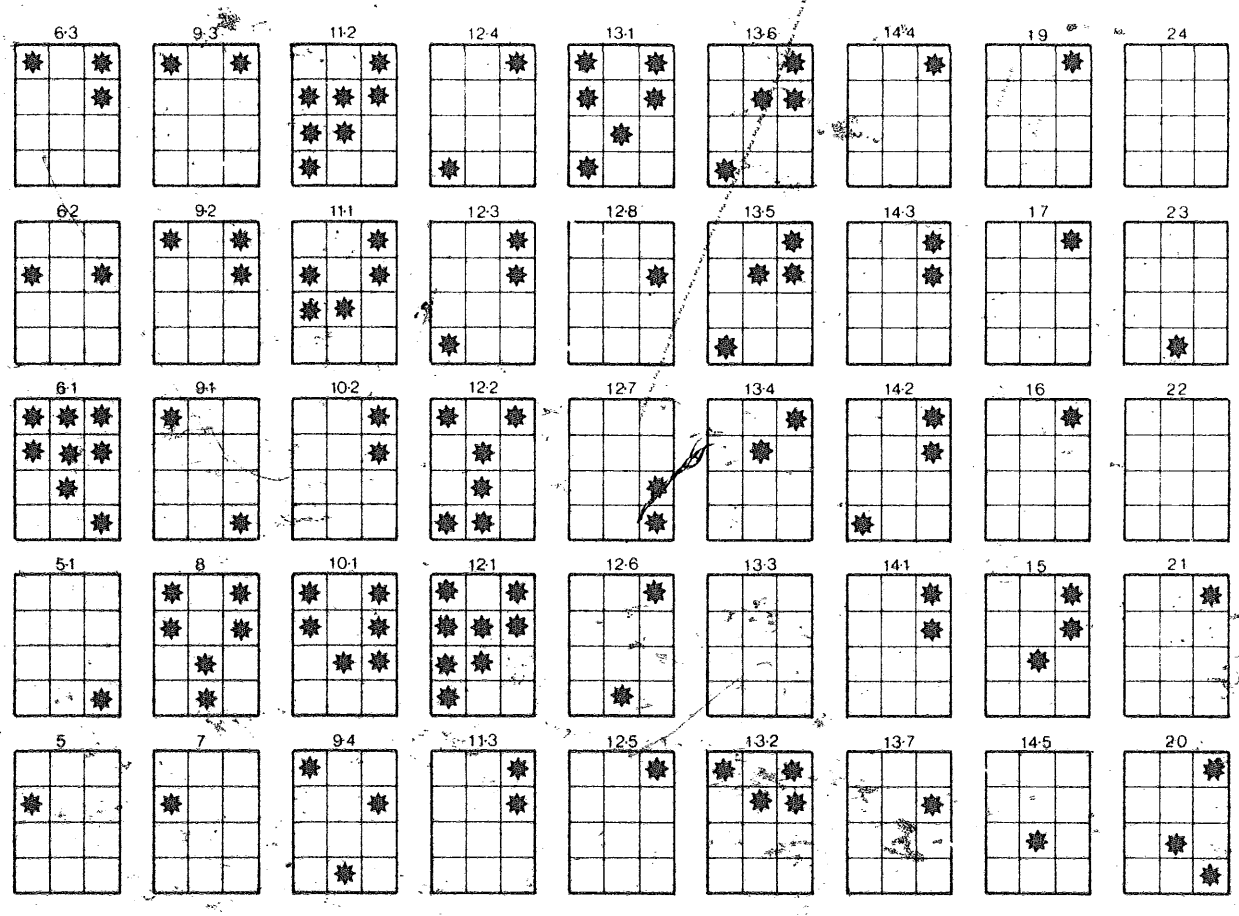
Table 43 Roman pottery: codes for handles

1	Flat
2	Foot ring
3	Pedestal
4	Sagging
5	Chamfered
6	Flat with groove
7	Concave

Table 44 Roman pottery: codes for bases

1	**Burnish**	27	Humans
2	Burnished lines—horizontal	28	**Stamped**
3	Burnished lines—vertical	29	Rosettes
4	Chevrons overlapping	30	Comb
5	Burnished lattice—acute	31	Roundels
6	Burnished lattice—obtuse	32	Ovolos
7	Burnished wavy lines	33	Wheels
8	Burnished intersecting arcs	34	Leaves
9	Burnished lattice, at right angles	35	Herring bone
10	**Incised**	36	Squares
11	Incised grooves	37	**Paint**
12	Incised lattice	38	**Rusticated**
13	Incised wavy lines	39	**Moulded**
14	Burnished scrolls	40	**Applied**
15	**Rouletted**	41	**Stabbed**
16	**Cordoned**	42	**Indented**
17	**Grooves**	43	**Perforated**
18	**Barbotine**	44	**Inlaid**
19	Dots	45	**Roughcast**
20	Circles	46	**Rilled**
21	Dots and circles	47	Demi Rosettes
22	Lines	48	**Burnish**
23	Scrolls	49	Deep vertical grooves
24	Scales	50	Grooves in groups
25	Animals	51	Slashed cordon
26	Plants		

Table 45 Roman pottery: codes for decoration types



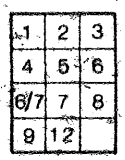


Figure 146 Roman pottery: diagram showing the major vessel forms present in the fabrics

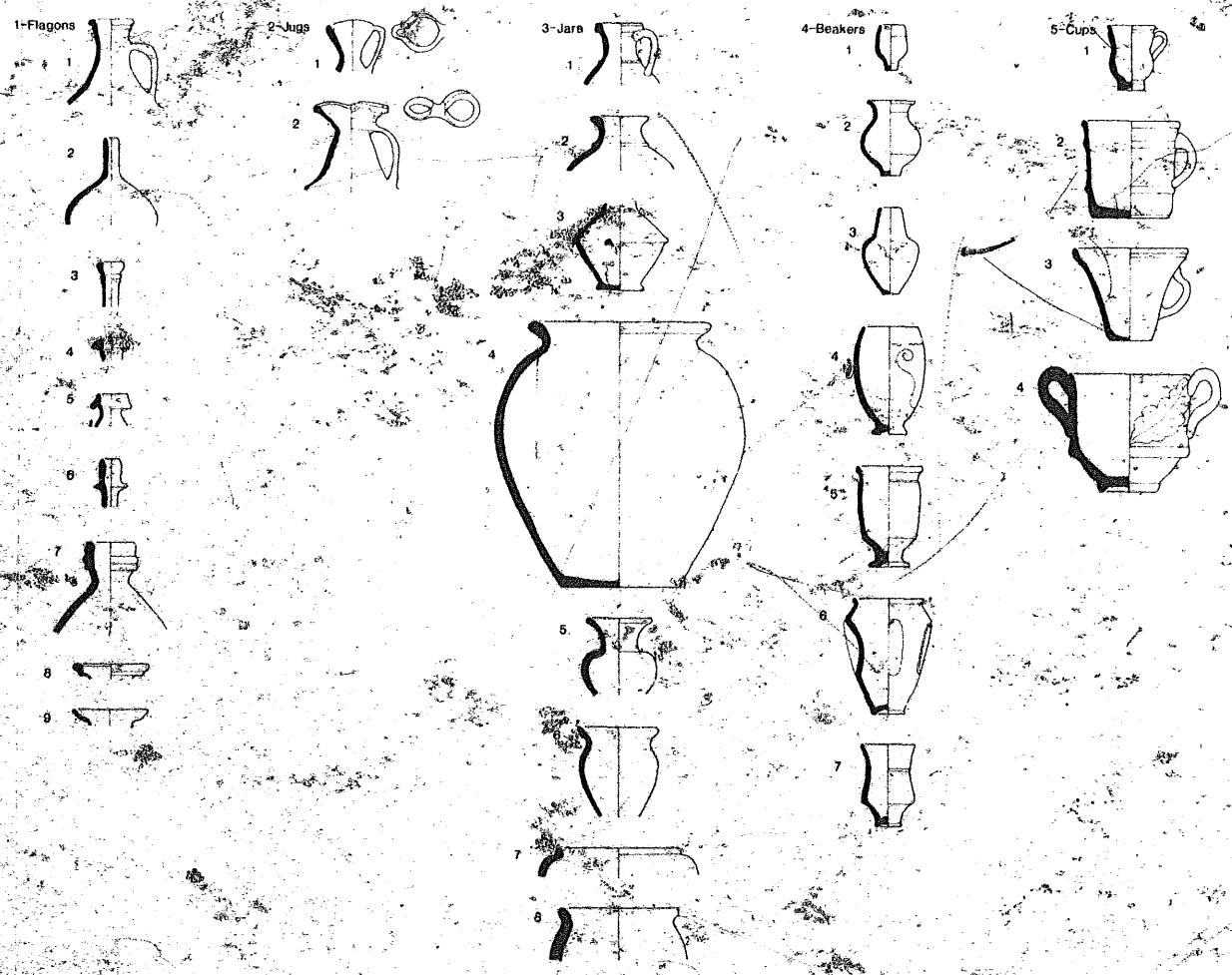


Figure 147 Roman pottery: Vessel Types I

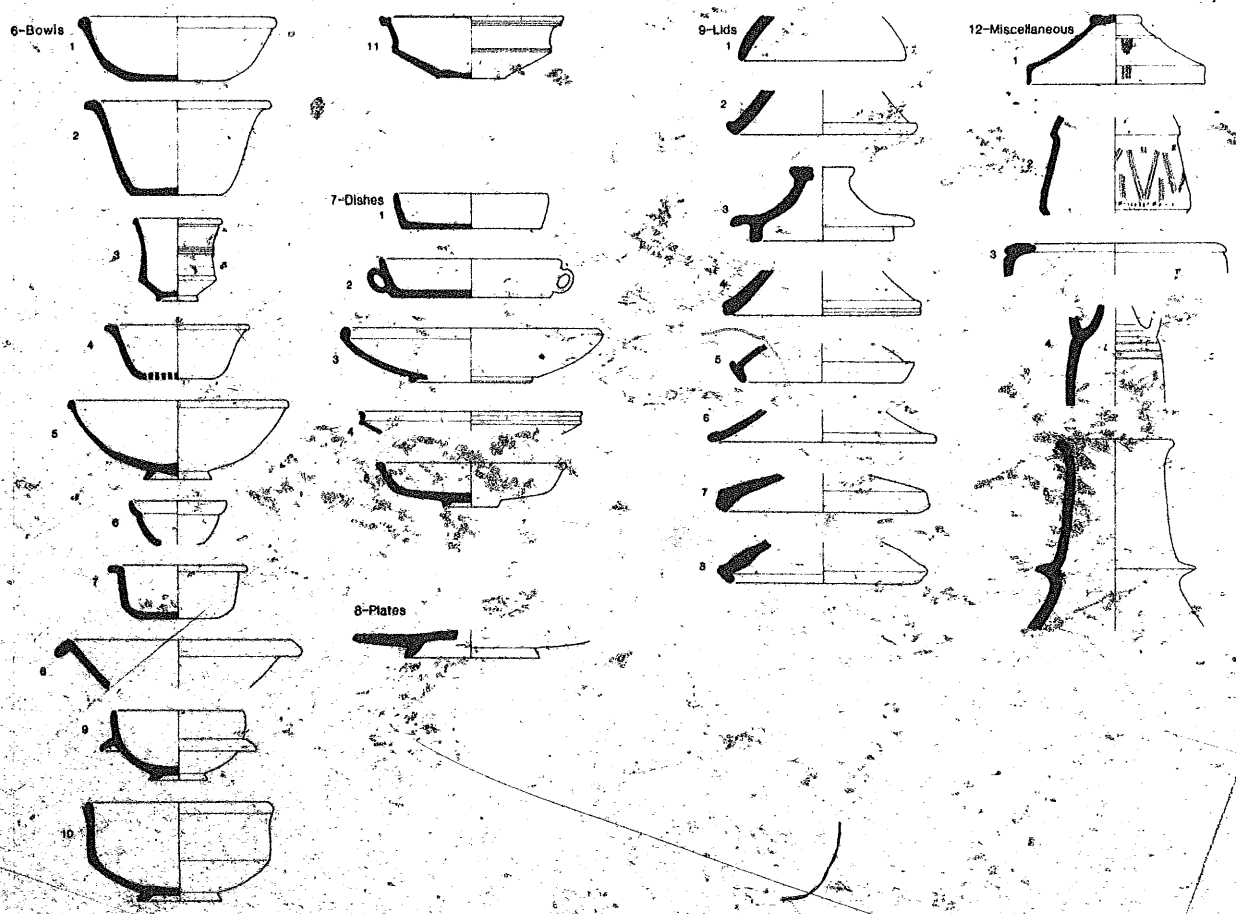


Figure 148 Roman pottery: Vessel Types II

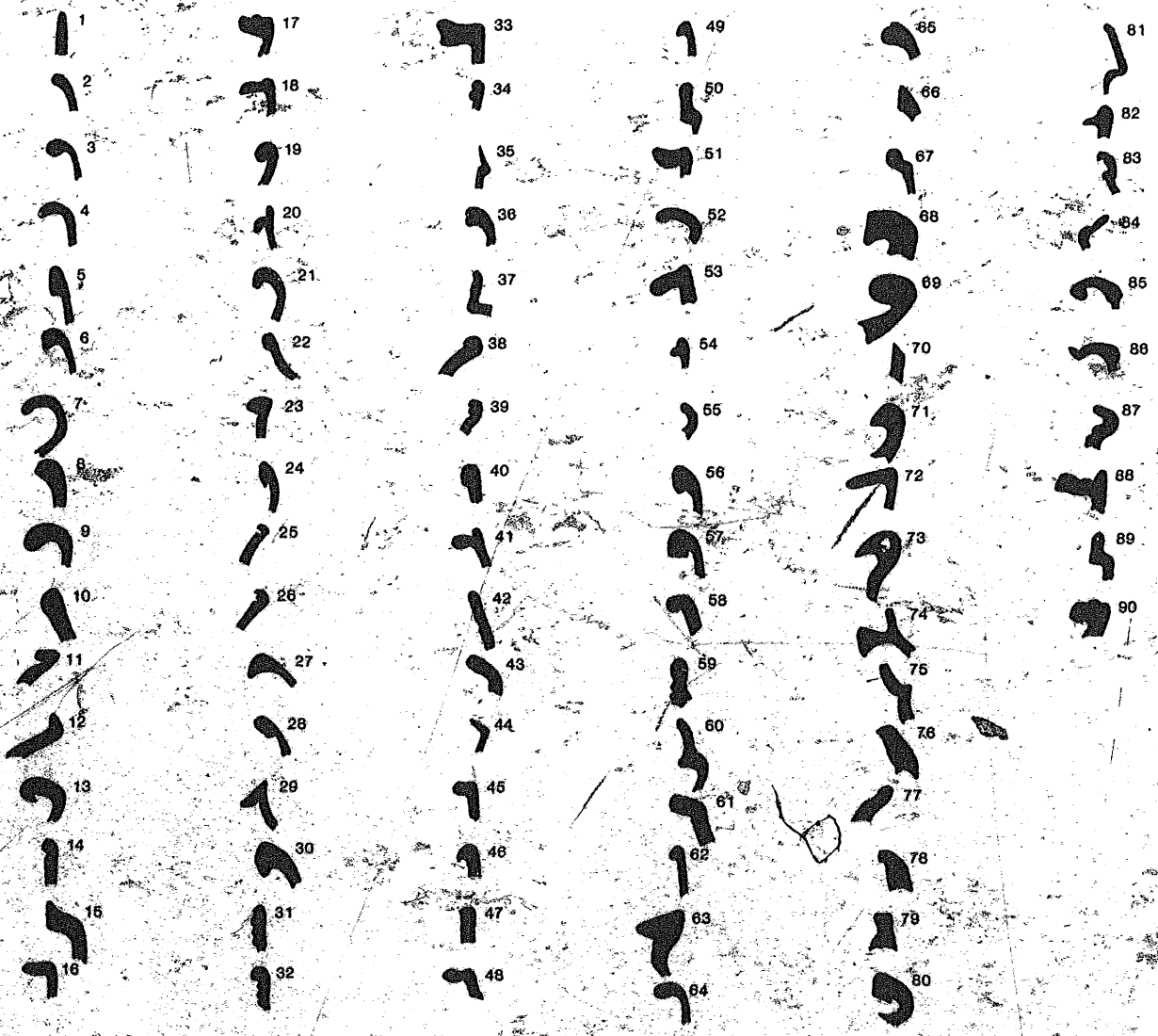
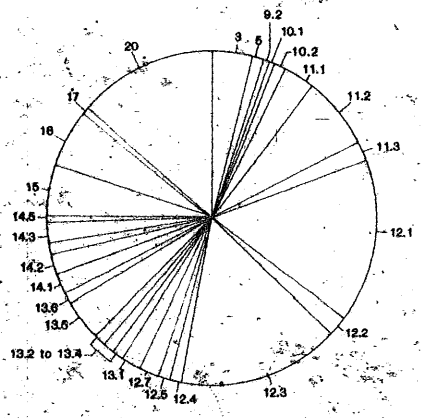
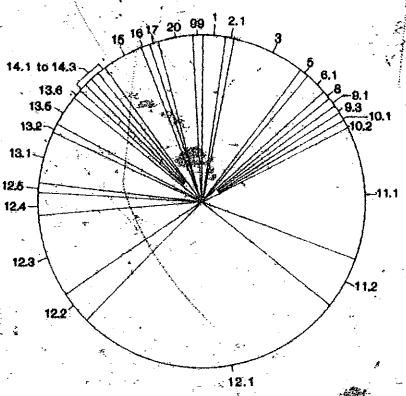


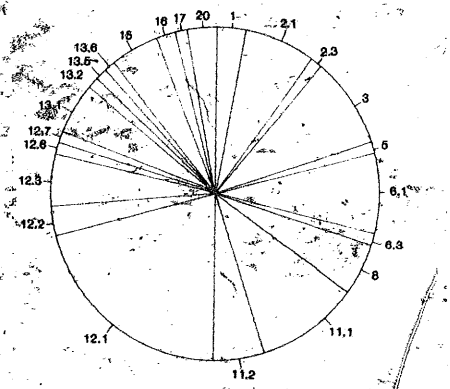
Figure 149 Roman pottery: rim forms



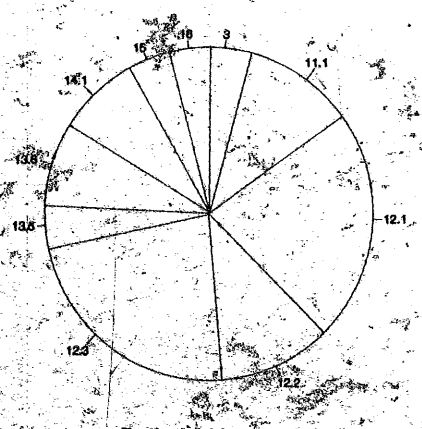
Period 3



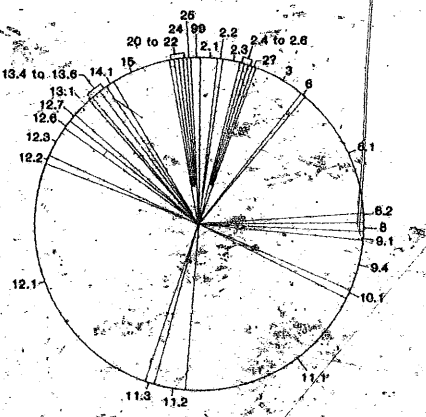
Period 4



Period 4/5



Period 3/4



Period 5

Figure 150 Roman pottery: pie diagrams showing proportions of fabric by period

5.2.g Pottery from the 1990 excavation: tables

by Paul Booth

	General correlations	Detailed correlations
S	3	
F	4, 5, 6.1, 7, 8, 9.4	F31 = —; F44 = 4; F51 = 6.1; F52 = 8; F55 = 5; F60 = ?9.4; F61 = 9.4
A	1	A11 = Dr 20; A13 = ?Pelichet 47; A21 = ?Dr 2–4; A31 = —
M	2	M21 = 2.8; M22 = 2.1;M31 = 2.2; M41 = 2.3
W	6.2, 10	W10 = ?; W12 = 10.1; W21 = ?10.2; W22 = 10.2; W23 = 10.2; W30 = 10.1
Q	6.3, 9.1–9.3	Q20 = ?; Q22 = 9.1; Q24 = 9.3; Q30 = —
E	20, 21	
O	13, 24	O30 = 13.1, 13.6, 13.7; O40 = 13.2–13.5; O80 = 12.3 (variant)
R	12, 14, 23	R10 = ?12.6; R20 = 12.1—12.2; R30 = ?; R50 = ?12.1; R90 = 12.3, 12.4
B	11	B11 = 11.1; B20 = 11.2; B30 = ?11.3
C	15, 17, 19	C10 = 15; C11 = 15

Table 46 Correlation of fabrics used for 1990 Roman pottery recording with fabric numbers assigned to pottery from the earlier excavations

Fabric	Number	Fabric group total	
		Number	%
Samian ware		23	4.4
Finewares		1	0.2
F31	1		
Amphorae		1	0.2
A11	1		
Mortaria		5	1.0
M21	3		
M22	2		
White wares		8	1.5
Unspec.			
W12	2		
W21	1		
W22	1		
W23	3		
White-slipped wares		1	0.2
Q22	1		
'Belgic type' wares		6	1.1
Unspec.	6		
Oxidised coarse wares		21	4.0
Unspec.	6		
O30	11		
O40	2		
O80	2		
Reduced coarse wares		380	72.9
Unspec.	215		
R10	24		
R20	10		
R50	97		
R90	34		
Black-burnished wares		65	12.4
B11	63		
B20	2		
Calcareous tempered wares		6	1.1
C10	3		
C11	3		
'Prehistoric' (Middle Iron Age) fabrics		6	1.1
Unspec.	6		
Total		523	

Table 47 Roman pottery from 1990 excavation: numbers and percentages of fabrics in 'early' group of features. The total of 523 sherds is 24.1% of the total number of sherds.

Fabric	Number	Fabric group total	
		Number	%
Samian ware		52	3.2
Finewares		71	4.3
F44	5		
F51	52		
F52	4		
F55	3		
F60	2		
F61	5		
Amphorae		16	1.0
A11	5		
A13	8		
A21	2		
A31	1		
Mortaria		19	1.2
M22	13		
M31	2		
M41	4		
White wares		10	0.6
W10	1		
W12	1		
W22	7		
W30	1		
White-slipped wares		13	0.8
Q20	3		
Q22	7		
Q24	2		
Q30	1		
'Belgic type' wares		9	0.5
Unspec.	9		
Oxidised coarse wares		94	5.7
Unspec.	26		
O30	41		
O40	25		
O80	2		
Reduced coarse wares		911	55.4
Unspec.	695		
R10	5		
R20	24		
R30	2		
R50	57		
R90	128		
Black-burnished wares		401	24.4
B11	394		
B20	4		
B30	3		
Calcareous tempered wares		45	2.7
Unspec.	1		
C10	8		
C11	36		
'Prehistoric' (Middle Iron Age) fabrics		4	0.2
Unspec.	4		
Total		1645	

Table 48 Roman pottery from 1990 excavation: numbers and percentages of fabrics in later Roman features. The total of 1645 sherds is 75.9% of the total number of sherds.

5.4 Copper alloy objects

Fig. 93, Fig. 94, Fig. 95, Fig. 96. Table 22.

Initial identifications of the 1957–9 finds were made by M R Hull. Sarnia Butcher updated the brooch catalogue and included the brooch found in 1982, and Martin Henig has commented upon the other finds. The finds from the 1990 excavation of the villa (including brooches SF 1421 and 1565) are described by Robin Brunner-Ellis. The finds from the villa and its immediate surroundings are described first, then those from the later Roman enclosures to the east. Within each section the description of the material follows the order of the summary table (Table 20) presented in print. An analysis of the metals of some of the other objects by Justine Bayley follows the catalogue.

5.4.a Catalogue of copper alloy objects

The first entry in the catalogue is the context number, then, if the object is illustrated in the text, comes the figure number or the words 'not illustrated'. In the case of finds from the 1990 excavations this is followed by the small finds (SF) number.

5.4.a.1 Villa and Environs

Dress articles

299 Fig. 93.1. One-piece brooch with spring of four turns; the narrow bow is badly damaged but bears cross-mouldings on the upper part. There is a long opening in the rectangular catchplate. Generally similar brooches appear in pre-AD 50 contexts in the south of England (eg Maiden Castle, Wheeler 1943, Fig. 83, several, of which Nos 9 and 10 are close parallels). Length *c* 64 mm.

324 Fig. 93.2. Very long thin one-piece brooch with short plain arms protecting the spring. The catch-plate is broken off but probably had fretted openings. The general type, known as the 'Colchester' brooch, was dated *c* AD 10–65 at Camulodunum and it is common on both pre- and post-Conquest sites in the southern half of Britain; as Mr Hull remarked, however, this example is likely to be early. Length *c* 80 mm.

307 Fig. 93.3. The upper part of a brooch in which the spring was made separately and attached by means of the chord passing through a crest on the top of the bow. This development occurred about the middle of the first century AD (Mackreth in Partridge 1981, 130).

1438 Fig. 93.4. A very narrow bow, plain catchplate, and wide crossbar covering a spring of 10 turns held by the chord passing through the crest. cf. Fig. 93.3 above for the dating of the type. Length 50 mm.

21 Surviving length 43 mm. Fig. 93.5. The plain bow is thicker and slightly humped at the head which carries a crest and a hook for the chord of the spring. The catchplate is plain. A slight typological advance on Fig. 93.3 above, and probably mid 1st century AD, or slightly later.

48 Fig. 93.6. Very similar in general shape to Fig. 93.5 above but shows a further typological development: the spring is held more securely by an axial rod which passes through the solid ends of the crossbar, as well as by the chord passing through the crest. No closely dated parallels are available, but the date is probably *c* AD 50–75 as Mr Hull suggested. Length 43 mm.

150 Fig. 93.7. The long plain tapering bow joins a wide crossbar with decoration of raised spots to a large catchplate with elaborately fretted decoration. A spring of 11 turns is secured by a rod through the ends of the crossbar as in Fig. 93.6 above, but the general shape of the brooch is that of the early Colchester type. Presumably a mid-1st century hybrid. Length 76 mm.

39 Fig. 93.8. A plain tapering bow with right-angled profile at the head, on which a crest holds the chord of the spring, which is also secured by a rod through the solid ends. The catchplate has a triangular opening. Again probably third quarter of 1st century AD. Length 52 mm.

360 Not illustrated. Fragment consisting of half of a crossbar and the top of the bow. Although unusually thick and heavy this must be part of a finished brooch since part of the rod for a hinge

is visible in the end of the bar.

2428 Not illustrated. SF 1421. Dolphin brooch. The head curls around a rectangular crosspiece, whilst the plain bow curves sinously towards the tail which tapers then flares vertically to form the catchplate. The pin is missing. The dolphin's head forms a 'rearward claw' which held the pin spring (missing) in place (Hattatt 1987, Fig. 2, no.10). This type of brooch emanated from the eastern counties and exhibits a short-lived modification to the spring mount which can be dated to *c* AD 40–55 (Hattatt 1985, Fig. 30, nos. 350–51). 32 mm × 5 mm (dolphin), 19 mm × 5 mm × 1 mm (cross bar)

2001 Fig. 95. SF 1565. Bow brooch. The catchplate has a single opening. The spring is encased by wings at the head of the bow, and is held by a crest projecting from the top of the bow. The bow has serrated teeth along both edges, and the central ridge is decorated with a line of raised lozenges ending in a projection on the highest part of the bow. A similar example was found at Gadebridge Park Roman Villa (Neal 1974, p.125, fig.54, no.15). 40 mm × 7 mm max. thickness (bow), 15 mm × 4.5 mm maximum diameter (spring head).

2429/A/1 Fig. 95. SF 1445. Decorated pin, point broken off. The head is decorated in three zones. At the end is a small 2 mm dia. spherical knob. Below this is a knurled zone 2 mm long of cylindrical cross section and below this is an elongated bead. This is separated from the shaft by a double groove. The shaft has a rectangular section 2 mm × 1.5 mm. Similar pins with banded heads have been found at Colchester and are thought to have been introduced in the early 2nd century (Crummy 1983, 30–31 and Fig. 31). 37 mm × 1.5 mm dia.

2040 Fig. 95. SF 1016. Decorated pin. Shaft of circular section, complete except for its point. The head consists of a small spherical knob, below which the shaft is decorated with a zone of spiral grooving 9 mm long. 69 mm × 2 mm dia.

2413 Not illustrated. SF 1418. Pin head. Large domed head of a pin, shaft broken off 5 mm below the head. Compare Brodribb *et al* 1971, p.113, fig.49, no.94. 13 mm × 9 mm dia., 4 mm max. dia. of shaft

2426 Not illustrated. SF 1431. Fragmentary pin. Shaft of circular section, slightly bent and snapped at broader end. 42 mm × 1 mm max. dia.

109 Curved band. Fig. 93.9. This appears to end in a stylised representation of the 5 toes of a foot on the outer side, but the curvature of the object and lack of modelling suggest that this may have been the end of a bracelet rather than part of a figure.

2030 Not illustrated. SF 1012. Three-strand twisted wire bracelet, nearly all of which survives in three fragments. In places the bracelet appears to have been pressed into a semi-square section. It was fastened by one of the wires from either end in a 'hook and eye' fashion. Once fastened, the bracelet's internal diameter would have been approx. 450 mm. 160 mm (length of coil) × 3 mm max. dia.

2008/D/1 Not illustrated. SF 1019. Two-strand twisted wire bracelet. Two fragments comprise one third of the bracelet, which is formed from two strips of rectangular section wound together. These strips were then compressed on three sides to flatten the section, whilst the outer edge of the bracelet retained its half round section. Preservation is good, the original patina surviving in places. A third small strip-like scrap is badly corroded, and may not belong to the bracelet. (a) 51 mm × 4 mm × 3 mm, (b) 15 mm × 1.5 mm × 1 mm

2410 Fig. 95. SF 1412. Half of a 'Snake's head' bracelet, one terminal surviving. The bracelet tapers down towards the surviving terminal from 6 mm at its thickest point to a narrow 2 mm neck before opening out into a stylized snake's head 14 mm long and 8 mm wide. This head is bent back 180 degrees to touch the band; this was probably deliberate. 62 mm × 6 mm × 3 mm (thickness)

2509 Fig. 95. SF 1564. Bracelet fragment. A simple narrow band of rectangular cross-section decorated with regularly-spaced transverse grooves. 28 mm × 4 mm × 1.5 mm

2427 Not illustrated. SF 1420. Bracelet fragment, plain band of rectangular section, slightly curved and tapering from 7 mm max. thickness down to 2.5 mm at one end. 33 mm × 7 mm × 5 mm

2426 Not illustrated. SF 1458. Finger ring. Small fragment of a plain finger ring of circular section of varying thickness. 20 mm × 2 mm max. dia.

Toilet Articles

299/307 . Fig. 94.16. Pair of tweezers with zone of cross-hatched decoration at neck. cf. Partridge 1981, p 105–6 No 10. 2nd or early 3rd century AD.

360 Fig. 94.17. Nail cleaner of elaborate type. cf. Leach 1982, 252, Fig. 119.79.

409 Not illustrated. Thin rod of sub-circular cross-section flattened and broken at one end. Very slightly curved, but probably not deliberately. Spatula or ligula. 67 mm long and 1.5 to 2 mm across.

2004/D Not illustrated. SF 1004. Ear scoop. This object is slightly curved along its entire 45 mm length. The main shank has a circular section of 2 mm dia. Both ends splay out, one splay forms a shallow concave bowl of thin metal, possibly an ear-scoop or spoon. The opposite end is broken off longitudinally, but also appears to be semi-concave, and to have been perforated, possibly for suspension from a ring. Compare Brodribb *et al* 1971, p.113, fig.49, no.90. 45 mm × 5 mm max. width × 2 mm dia.

419 Fig. 94.18. Part of circular mirror of white bronze. Later 3rd century.

201 Not illustrated. Fragment of silvered bronze with one elliptical curved edge. Possibly part of mirror or spoon, but very flat for the latter. Surviving fragment 20 × 16 mm, less than one quarter of ellipse, and 0.3 mm thick. cf. Rowley & Brown 1981, 44 and Fig. 20.17.

193/2 Not illustrated. Fragment of thin ?silvered bronze with curved edge. Possibly from a mirror or spoon. cf. 201 above.

361 Fig. 94.19. Length of chain, very small links closely meshed. Probably decorative; possibly for toilet set. Late Roman.

Domestic Utensils

2429 Not illustrated. SF 1562. Key fragment. The shank has a rectangular cross section. It is broken at one end and thickens from its squared end up to the 'bit'. The bit is 1 mm thick and rises perpendicular to the shank. The shank is broken off 6 mm beyond the bit. 28 mm × 6 mm × 4 mm (shank), 6 mm × 4 mm × 1 mm (bit)

? Fig. 95. SF 1020. Bowl rim fragment, surviving as a curved strip, with a flat C-shaped section. The rim has a scalloped decoration consisting of alternating concave hollows and grooves radiating out from the object's inner edge, a decorative device simulating the architectural 'tongue and dart' motif. The estimated diameter of the bowl is only 90–100 mm, and it is alternatively possible that this was a decorative mount. 46 mm × 8 mm × 0.5 mm thickness

2413 Fig. 95. SF 1417. Spoon bowl. Two-thirds of a small concave object 5 mm deep, in thin sheeting in the shape of a scallop shell. It is decorated with linear grooves radiating out from the 5 mm × 4 mm 'hinge' to the outer edge of the shell. This object may have been the bowl of a small spoon or possibly a box fitting. Two other fragments of similar convex sheeting are plain, and need not be part of the same object; one has a ?lime-based accretion on its outer surface. Scallop: 28 mm × 25 mm × 0.5 mm, Others: 17 mm × 6 mm; 22 mm × 14 mm.

2402 Not illustrated. SF 1407. Bowl or box fragment. Two small pieces of very thin sheeting, 0.25 mm thick, riveted together with a 3 mm dia. circular stud. Possibly part of a small vessel or box. 17 mm × 7 mm × 0.25 mm

Casket Fittings

1414 Fig. 94.21. Cast object, possibly a knob handle from a casket, with perforated shaft to hold a securing pin. The hole through the front plate was probably for an additional rivet, perhaps to stop the knob from rotating, and may not be original; the mark of another blow on the underside of the plate just next to it shows where the craftsman placed the punch too close to the edge of

the plate. Unusually the shaft is tapered in the middle; possibly it was intended to pass through a flexible material such as leather rather than wood. cf. Stead 1976, 214 Nos 129, 130, Cunliffe 1968, 105 pl XLVIII No 222 and Brodribb *et al* 1973, 108–9 Fig. 53.186 for similar examples but with shafts of iron. Discarded — mid 4th AD on last villa yard floor.

1432 Fig. 94.22. Conical stud from a casket. Square rivet hole probably on damaged side — indentations on the opposite side possibly indicate the intended position of another. Slight concentric scoring marks, possibly guidelines for manufacture. Projection inside probably indicates a central welded shaft for attachment. cf. Stead 1976, No 123, 3rd century AD.

187 Fig. 94.23. Small stud or boss for a casket. This had a ridge around the rim with rectangular rivet holes on opposite sides. Earth attached to this object bore the impression of fine-grained wood. cf. 272 Fig. 94.24 and Partridge 1981, pl 07 No 25. Late Roman.

82/4 Not illustrated. Fragments of sheet bronze stud filled with solder. Similar shape to 187. Probably from a casket. Diameter *c* 17 mm, height *c* 10 mm.

272 Fig. 94.24. Conical sheet metal object with hole at apex. Discarded later 4th century AD.

2413 Not illustrated. SF 1451. Stud. Shallow dome-headed stud with a square section pin. Crumpled and snapped into two pieces. 28 mm dia. × 0.35 mm thickness, 15 mm × 1.5 mm (pin)

Casket/Harness Rings

89 Not illustrated. Simple ring, flattened interior, rounded on other sides. Harness or casket ring, not finger-ring. External diameter 22 mm, internal 16 mm. The thickness varies from 2.5 mm to just over 3 mm, from one side to the other.

2460 Fig. 100. SF 1441. Ring and fitting. Bronze ring to which is attached an iron fitting (cf. Catalogue of Iron Objects). The fitting is attached to the ring by a looped iron cross-bar, the loop presumably allowing the ring to swing loosely. Whilst the ring is perfectly preserved, the iron fitting is badly corroded. This composite object attached a pivoting ring to another surface; this could have been the side of a box or a vessel, or it may have been leather, forming part of a horse harness, eg a 'terret'. Compare with casket rings in Borrill 1981, 315, Fig. 120, k–n. The ring is 30 mm dia. × and 4.5 mm thick.

Decorative mounts

299 Fig. 94.25. Triangular decorative mount. There are traces of grooves down both long sides, marginal ornament, and a series of small oblong holes for attachment. These were replaced along one side by larger circular holes, a crude repair. M R Hull draws the similarity to more elaborate silver mounts on Romano-British temple furniture, such as those found at Barkway, Herts (Page 1920, 149 and Plate I0).

There is a closer parallel in Brodribb *et al* 1972, Vol III, 70–73, Fig. 31.140. Late 2nd or early 3rd century AD.

151 Not illustrated. Scrap of sheet bronze with one straight edge, others broken. Possibly large crude rivet hole close to straight edge; small pinhole further in may also have been for attachment. A mount of some sort. 27 mm × 23 mm × <0.25 mm thick.

2402 Not illustrated. SF 1406. ?Box fitting. Sub-triangular piece of thin sheeting. A 2.5 mm dia. perforation is cut at the narrow end of the isosceles triangle. The object is slightly concave on its long axis. Possibly part of a box binding. 40 mm × 17 mm × 1 mm thick.

2004/A/1 Not illustrated. SF 1001. ?Box fitting. Small rectangular fragment, originally flat, now slightly bent. Part of a square perforation 2 mm × 2 mm has been punched through the object at one end. At the opposite end a tiny scar ridge runs at 1 mm parallel to edge. This suggests that the piece may have been part of a right-angled corner bracket or other similar box fitting. 10 mm × 7 mm × 1 mm thickness

204 Not illustrated. Three fragments of sheet bronze, parts of decorative mounts or waste from manufacture of the same. The most complete is diamond shaped, the others are acute and obtuse angles possibly from some larger object, but more probably from another diamond-shaped mount

of identical size. All were bent over towards the middle. The largest of the three possibly has a small circular rivet hole. 26 mm long, 10 mm wide and <0.25 mm thick. Very similar pieces occur at Gadebridge Park (Neal 1974, 137 and Fig. 59 Nos 104–6). Interpreted as improvised split-pins or rivets for leather.

2486 Fig. 95. SF 1408. Bar mount. Cast rectangular bar of triangular section, wider in the middle where it surrounds a central hole 2.5 mm in diameter, and perforated at either end by pin-holes, one of which still contains a very slender pin. Preservation is good. 15 mm × 6 mm × 2 mm. Probably medieval; compare Egan & Pritchard 1991, Fig. 34, 1154–58.

2401/B Not illustrated. SF 1413. Stud fragment. Piece of very thin convex sheeting. Possibly part of a stud or decorative mount. 15 mm × 9.5 mm × 0.5 mm thickness

2001 Fig. 95. SF 1568. Scabbard mount? Sword-shaped cast strip 88 mm wide, the edges of which project at right-angles as if to grip another object. One end survives: at this end the strip widens from 15 mm to 19 mm, and is decorated with grooves across the width, and finished with a solid conical knob. The strip is pierced by two 4 mm dia. holes down the central axis, one of which still retains the copper rivet. This is itself decorative, the end being in the form of a 6 mm dia. flower. The strip is broken at the second rivet hole. 99 mm × 19 mm × 7 mm deep, 1 mm thick.

2434 Not illustrated. SF 1432. Lace tag. See similar tag from 2454. Only one of the folded points survives on this example. 21 mm × 15 mm × 0.5 mm (thickness)

2454 Not illustrated. SF 1465. Lace tag. Diamond-shaped piece of sheeting, the points of the long axis folded inwards and then outwards again. One of the points of the short axis is broken off. 18 mm × 12 mm × 1 mm

Binding

271 Not illustrated. Length of binding with keyhole-shaped rivet hole towards one end. Other end broken, probably across second rivet hole. A pinhole towards this end may also have been for attachment. Length 66 mm, width *c* 15 mm, <0.25 mm thick. Discarded later 4th century. (Curved slightly along length, possibly binding of a large bucket).

271 Not illustrated. Short narrow strip, broken at both ends. The strip was bent into an acute angle; where the ends were broken it appeared that the angle was widening abruptly. There were no holes for attachment on the surviving fragment. *c* 30 mm long and 9 mm wide × 0.3 mm thick.

338 Not illustrated. Curved piece of sheet bronze with two iron rivets through it. Rivet holes are 4–5 mm in diameter and *c* 23 mm apart. The rivet heads are large. One of the long edges was rounded off, but the other had been cut or broken. It appeared that the sheet was curving over and had broken along the thin corner edge; possibly this came from a wheel of some sort. 40 mm long, 14 mm wide and 0.75 mm maximum thickness.

Tubing

132/2 Fig. 96.27 and 28. Four lengths of sheet metal tubing, all of 6 mm diameter with overlapping soldered seam. Probably from one object. One length has numerous pin-holes, but these are not likely to have been deliberate. Two lengths illustrated. Others are 114 mm and 216 mm long. 4th century AD.

82 Fig. 96.29. Tapering length of sheet tubing, diameter decreasing from *c* 11 mm to 7 mm. Probably from similar object to 132/2 No. 28, perhaps funnel end. 4th century AD.

120 Fig. 96.30. Slightly tapering length of sheet tubing, diameter decreasing from 7 mm to 6 mm. Similar to 82 and 132/2 Nos 28 and 29, possibly even forming linking piece of the same object. 4th century AD.

2008/1 Not illustrated. SF 1022. Tubing. Straight piece of tubing of flattened circular section with slight grooves running the length of the flat sides. Very little corrosion with patches of the original patina (?tin or silver) surviving. There is no sign of a weld and this may be a modern cast object. 70 mm × 4.5 mm × 0.5 mm (thickness of sheeting)

Cast fragments

1414 Not illustrated. Fragment of thick cast bronze, cut edges on two sides. 38 mm × 11 mm × 4.2 mm thick. Waste?

72 Not illustrated. Fragment of cast bronze with roughly finished and torn edges. One surface has striations in one direction. 26 mm × 25 mm × 3 mm thick. Waste?

119 Not illustrated. Small fragment of cast bronze with torn edges. 19 mm × 8 mm × 1.8 mm max. thick. cf. 72 above.

Strips

207 Not illustrated. Cast bronze strip. 10–11 mm wide and 1 mm thick, 23 mm long. Both ends broken. cf. 119 above.

36 Not illustrated. Fragment of curving strip. 13 mm long × 5 mm wide × 1.2 mm thick. Possibly from bow of brooch or bracelet.

Sheet bronze

109 Not illustrated. Two fragments of sheet bronze. The larger has one straight edge, other torn. 33.5 × 6 mm The other is curved and has no original edges. 9.5 × 7 mm *c* 0.3 mm thick.

53 Not illustrated. Scrap of sheet bronze. One straight edge. 12.5 × 7.5 mm × <0.25 mm thick.

203 Not illustrated. Thin sheet of bronze, probably decorative mount. One edge is straight, the other is slightly concave, but this may not be the original edge. Several small slightly irregular holes along straight edge could be for attachment; there are also more regular pin-holes along both edges that may have been for stitching. 34 × 13–14 mm × <0.2 mm thick.

212 Not illustrated. Several scraps of sheet bronze. The largest fragment has an obtuse angle, and scratched lines parallel to one of the sides. Also the end of a small oblong rivet hole. cf. both 299 Fig. 94 No. 25 and the pieces from context 204 above. The largest fragment is 10 mm × 8 mm × <0.25 mm thick.

Miscellaneous

38 Not illustrated. Decayed fragments. 15 mm × 12 mm. Curved edge? Coin.

503 Not illustrated. Disc or 'ratchet' with central hole. One third of the circumference is notched with 4 cog-teeth and one deeper notch at one end. Probably modern. Diameter 31 mm, hole 4.5 mm in diameter and disc 1 mm thick.

1506 Not illustrated. Ring made of two sheet bronze rings clasping material. Some material still survived between the two pieces of bronze. External diameter 27 mm, internal 17 mm. Probably modern.

5.4.a.2 The Late Roman enclosures east of the villa

Dress articles

764 Not illustrated. Bronze bracelet of two intertwined wire strands with hook fastening. cf. Shakenoak (Brodribb *et al* 1968, 88–9, Fig. 30 Nos 25 and 26; 1972, 69 and Fig. 71.132; 1973, 110–111, Figs. 54.193 and 54.197–8, and Barnsley Park (Webster 1981, 52, Fig. 12.14 from late 3rd century context). Mid 4th century AD.

612 Fig. 93.10. Curved thin band, probably a bracelet. Decorated with incised transverse lines on the outer side. One end tapers towards a point, the other is missing. For similar designs see Brodribb *et al* 1973, 110–111, Figs. 54.189, 54.190, 54.192; Bushe-Fox 1949, 142–3, Plate XLIX.177. Possibly for a child. Mid 4th century AD.

528 Not illustrated. Plain thin band, broken at both ends. Possibly part of a bracelet. cf. Fig. 94.13.

582 Fig. 93.11. Child's bracelet. Thinner than No. 10, this too is a narrow band decorated on the outer side with alternate notches on either edge, but these notches are square-sectioned. The decoration only covers half of the bracelet, the rest is plain. Each end of the bracelet is wound round the opposite length twice, forming a looped sliding-adjustment. This type of attachment is similar to that found at Lankhills (Clarke 1979, 304, Type IA). Middle to late 4th century.

480 Fig. 93.12. Child's bracelet. This is a narrow strip decorated on the outer side with alternate V-shaped notches on either edge. One terminal is flattened into a wider square end with an opening in one side, the other tapers and turns out into a hook. For the decoration cf. Brodribb *et al* 1971, 112, Fig. 48 Nos 73 and 77, late 3rd century AD; Leach 1982, 248, Fig. 117.41. The fastening is an adaption of the type found at Shakenoak in the later 4th century, with a pierced plate and hook, Brodribb *et al* 1973, Fig. 54 Nos 189 and 191, possibly to make it easier for the child to fasten.

975 Fig. 94.13. Wire bracelet of one single thick strand. At one end the wire was flattened out into a disc, at the other it had been looped back inside itself and twisted round three times to finish off. The end of this loop was made circular to take the disc.

582 Not illustrated. Bracelet consisting of narrow strip, partly decorated with a parallel set of V-shaped indentations, one along either edge of the strip. The ends of the strip were each wound round the opposite length of strip twice, forming a looped sliding adjustment. This type is similar to that found at Lankhills (Clarke 1979, 304 Type CIA), and is there dated 350–370 AD. Mid 4th century or later.

582 Fig. 94.14. Curved strip, plain, probably a bracelet. cf. 528 and 612 Fig. 93.10 above. One end is simply square off with a 1 mm diameter hole through the middle just short of the end, the other end was probably broken off. cf. Cunliffe 1968, 142–3, No 177, p XLIX, and Brodribb *et al* 1968, 88–9, Fig. 30.23; 1973, 110–111, Fig. 54.189 for type of attachment.

858 Fig. 94.15. Wire bracelet of a single strand. Sliding adjustment similar to Fig. 93.11, with the ends wrapped round numerous times. For an adult.

629 Not illustrated. Small wire loop. Possibly a small earring cf. Shakenoak (Brodribb *et al* 1968, 90 and Fig. 31.420, but the ends are not sharp, as they usually are in such objects.

Toilet articles

837 Fig. 94.20. One arm of a pair of tweezers. Decorated with one central row of incised dots flanked by two narrow grooves. The decoration only covers the upper two thirds of the arm.

Casket/harness rings

1100 Not illustrated. Plain ring of circular cross-section. External diameter 25 mm, internal 20 mm. ?Harness ring. Within prehistoric round-house area but possibly modern.

Decorative mounts

511. Fig. 94.26. Fragment of triangular sheet, decorated along the middle with a pair of incised lines on either side. The lines are not parallel, converging slightly towards one end. To either side of these are a series of matching incised chevrons, incised alternately on one face or other of the sheet. At one end the sheet was curving over as if round a corner, and the sheet had broken along this. At the other end the sheet was also broken, this time in an irregular edge across two rivet-holes, which were visible as semi-circular holes one either side of the central incised lines. This was probably part of a votive leaf, see Toynbee 1978, 129–147 and locally cf. Case & Whittle 1982, 147 Fig. 81 No. 12. Similar to Fig. 94.25 from context 299.

Tubing

774 Fig. 96.31. Short length of tubing with 5 parallel grooves around one end. The other end is missing. Halfway along there is an oval hole cut through both edges of the join, probably for attachment. Another paid of such holes may exist close to the decorated end, where bronze corrosion may be masking a rivet. Mid 4th century AD.

Strips

841 Not illustrated. Strips joined at right angles by rivet. Other circular rivet holes *c* every 1.2 mm along strip.

5.4.a.3 The post-Roman copper alloy finds

272 Fig. 96.32. Half of a post-medieval spectacle-buckle. Analysis of this object confirmed that it was of an alloy not paralleled among Roman bronzes (see Table 49 on Fiche 2#36 and Ch. 5.4.b below).

272/1 Not illustrated. Small brass ring — probably modern. External diameter 18 mm, internal 15.5 mm.

2000 Not illustrated. Crushed thimble. Top missing, two grooves frame / undecorated band frames. 5 registers of punches. Medieval or early modern cf. Williams 1979, 257–8 Nos CU 84–CU 87. Diameter approx 18 mm, height 16 mm, *c* 0.5 mm thick.

1240 Not illustrated. Button, plain front, motto on hidden side inscribed between two concentric grooves. Loop for attachment. This side gilt or gilded.

2000 Not illustrated. SF 1403. Collander base, consisting of two fragments of evenly perforated (?tin) sheeting. One piece has a cut straight edge, the other has been folded over; these two fragments probably originally joined at the fold. The perforations form at least three concentric ares in the sheet and appear to have been punched rather than drilled. These pieces, along with a third much smaller fragment, apparently formed part of a circular strainer or colander. This object is thought to be modern. (a) 46 mm × 39 mm × 0.5 mm thickness, (b) 49 mm × 41mm, (c) 16 mm × 9mm

2400 Not illustrated. SF 1481. Bowl. Part of the rim is reinforced by an iron ring, only a small section of which survives (cf. Catalogue of iron objects). Most of the body of the bowl survives. The whole object has been folded in half and heavily crushed. This object is thought to be modern. Approx. 160 mm dia. × 1 mm thickness, 7 mm rim dia.

838 Not illustrated. D-shaped buckle, possibly for a sandal. Found with 17th century pottery.

830 Not illustrated. Silvered brass uniform button, inscribed 'LONDON MARK' below a crown. The whole design is surrounded by a circular inscribed line. No thread hole or shank.

5.4.b Analytical results for some copper alloy objects

by Justine Bayley

5.4.b.1 Summary

Three of the brooches were sampled and analysed quantitatively by atomic absorption (AA). The rest of the brooches and the other objects were analysed semi-quantitatively by energy-dispersive X-ray fluorescence (XRF). The results are given in Table 49 on Fiche 2#36. The elements which determine alloy type are zinc, tin and lead which are present in addition to the copper. Bronze is a copper-tin alloy, brass copper-zinc and gunmetal copper-tin-zinc. Lead is additionally found in some bronzes and gunmetals. Most of the objects contain detectable amounts of all three elements but the relative quantities determine the category to which any given object is assigned, although it should be remembered that there are no hard and fast boundaries. The results can only be approximate, as the analyses were made on the corroded surfaces which have a somewhat different composition to that of the uncorroded bulk metal.

Apart from the major elements discussed above, minor amounts of silver were detected in some objects (marked in the table), probably at the percent or so level. The composition of the post-Roman spectacle buckle (Fig. 96.32) was quite distinct from that of the Roman objects as it contained both zinc and arsenic together with traces of tin and lead. This does not correspond to any commonly used alloy of the Roman period.

5.4.b.2 The brooches

Most early 1st century types, both one-piece brooches and those with a hinged pin (eg Aucissa), are commonly made of brass though some of these types are also found made of low-lead or 'leadless' bronze. It therefore comes as no surprise that Fig. 93.1 is a bronze and Fig. 93.2 a brass. I know of no

analyses of objects directly comparable to Fig. 93.1, but large numbers of one-piece Colchester-type brooches from both Richborough (Bayley & Butcher 1981, Fig. 5 and St Albans (Bayley 1989) have been analysed: the former were a mixture of bronzes and brasses, though with brass predominating, while the latter group were all brass.

Later 1st century types with a separate sprung pin are usually made of leaded bronze with a few examples being leaded gunmetals (Bayley & Butcher 1981, Fig. 6). Heavily leaded alloys such as these cannot be used to make one-piece brooches as the metal is not springy enough and would fracture in use, so a new design with a separated spring and pin assembly made of a more suitable alloy was adopted. The economic advantage of this system was that most of the copper alloy could be diluted with lead which was a relatively cheap metal. Whether economic pressures dictated the change in design or the design permitted the economies cannot be determined, but the two factors are clearly linked. The compositions of most of the later 1st century brooches from Roughground Farm fit in with the expected pattern, Fig. 93.6, 5, 3, 4 and 8 all being leaded alloys. The exception is Fig. 93.7 which is a brass, but Miss Butcher has noted in her descriptions of the brooches that it is an intermediate type; perhaps it can be seen as an experiment with the new design while keeping to the old alloy type.

As the brooch from 360 cannot be tied to a well-defined typological group it is difficult to know what to compare it with analytically. Its closest affinities appear to be with the general group of T-shaped brooches, but most of these are leaded bronze while the example from 360 is a bronze containing a few % of zinc.

5.4.b.3 Other objects

One piece of unique composition is the mirror fragment Fig. 94.18 which is of speculum metal, a high tin bronze containing over 20% tin and a few % of lead, which is commonly used for cast mirrors in the Roman period.

All the tubes made of rolled up thin sheet metal, Fig. 96.27, 28, 29 and 30 are of similar composition, bronze containing a little zinc but with very low lead levels. The rest of the objects are a mixture of different alloys, mainly 'leadless' or low lead ones as might be expected since most of the objects appear wrought rather than cast. Leaded alloys are not suitable for wrought metalwork as the lead collects in droplets rather than being evenly dispersed through the copper and so produces weak spots where the metal tends to crack when hammered.

Context	Object	Fig. No.	AA results			Alloy type (by XRF)	Minor elements
			% Zn	% Sn	% Pb		
48	brooch	93.6	0.1	10.9	13.6	leaded bronze	
21	brooch	93.5	0.9	12.3	7.8	leaded bronze	
89	brooch	93.8				leaded bronze	
120	tubing	96.30				bronze	
187	stud	94.22				bronze	Ag
82	tubing	96.29				bronze	
150	brooch	93.7	16.4	1.8	0.2	brass	
132/2	tubing	96.27				bronze	
132/2	tubing	96.28				bronze	
360	brooch					bronze	
360	nail cleaner	94.17				bronze	
361	chain	94.19				brass	
419	mirror	94.18				(leaded) bronze/speculum	
409	spatula					leaded gunmetal	
271	binding					leaded gunmetal	
271	binding					bronze	Ag
272	boss/stud	94.23				brass	
272	?buckle					?	
307	brooch	93.3				(leaded) gunmetal	
272/1	lost					(leaded) gunmetal	
299	stud	94.24				bronze	
299	brooch	93.1				bronze	Ag
324	brooch	93.2				brass	Ag
299	tweezers	94.16				?brass	
338	binding					bronze	
1438	brooch	93.4				(leaded) bronze	

Notes
Fig. 93.4 from context 1438 has a tinned surface
Binding (271) has a layer of lead-tin solder on one side
'(leaded)' means less lead than 'leaded'

Table 49 Results of analyses of copper alloy objects

5.5 Lead objects

by Tim Allen and Robin Brunner-Ellis

There were 23 lead finds, including one conical weight, two fishing weights, one probable junction collar seal and a corner of a lead-lined tank. The other pieces comprise nine fragments of sheet, a lead nail and a lead-headed iron nail, a sealing plug, three lumps of run-off and three pieces of slag. These are listed below.

5.5.a Catalogue of Lead Objects

87 Not illustrated. Two offcuts of waste lead sheet. Both bear cut marks where they had been pared off, and one had twisted. (a) 63 mm × 15 mm maximum width × 3 mm maximum thickness. (b) 63 mm × 14 mm maximum width × 2.5 mm maximum thickness.

70 Not illustrated. Triangular fragment of waste sheet. Cut edges on all three sides. 40 mm × 16 mm × 2 mm thick.

132/4 Not illustrated. Triangular piece of lead sheet, the hypotenuse slightly convex, and all three edges crudely bevelled. Possibly decorative, but without holes for attachment.

133 Not illustrated. Lead sheet fragment lining the inside of a 90 degree corner. Iron corrosion and mortar adhering to the outer side, limescale to the inner side. This may indicate that this was part of a water container, perhaps a small tank. 44 mm × 36 mm × *c* 0.5 mm thick.

550 Fig. 96.33. Rounded conical weight with a flat base of oval shape and a central suspension hole. Weight 20 gms. cf. Shakenoak I 1968, p 92 and Fig. 32 Nos 1 and 6.

511 Not illustrated. Disc-shaped run-off. 40 mm × 31 mm × *c* 7 mm thick maximum.

582 Not illustrated. Narrow strip rolled into a tapering flattened cylinder. One end bent over, probably fortuitously. Length overall *c* 66 mm (straight length 53 mm) × 6–12 mm × 4–5 mm thick.

774 Not illustrated. Crumpled length of sheeting.

One edge serrated by series of ?chisel cuts. Length *c* 83 mm × *c* 45 mm width × *c* 1 mm thick.

764 Not illustrated. Oval flat lump presumably used to seal a gap, and later overlain by a larger sub-rectangular flat lump which fused onto it. Oval 42 mm × 31 mm × 2–3 mm thick, rectangle 60 mm × 42 mm and 2–3 mm thick.

606 Not illustrated. Narrow strip rolled into a cylinder. Curved, possibly to plug gap or seal join, or simply waste. cf. object from 582 above. Length 77 mm, diameter 5–7 mm.

873 Not illustrated. Length of thick strip sealing the join between two flat edges. There is a ridge down the join and both joining objects were notched. The outer flat side is roughly smoothed and there appears to be one circular small hole through the middle. Possibly sealing the junction-collar of a water-pipe. Not illustrated. SF 1011. Small circular nail-head. At the apex of the shallow dome there is a small patch of iron staining, and another in the centre of the flat underside. Presumably an iron nail with a leaded head to prevent rusting. 7.5 mm × 17 mm dia.

2029/A/1 Not illustrated. SF 1561. Disc-headed nail or rivet, very slightly domed, with a shank of square section. Probably used to join together lead sheeting. 15 mm × 13 mm × 2 mm (head), 16 mm × 4 mm (shank)

2450/B/1 Not illustrated. SF 1444. ?Fishing weights. Two rolls of lead sheeting, tightly rolled and tapering in thickness to 3 mm dia. at either end. Because of their similarity to curse tablets like those found at Bath (Cunliffe 1988, p.270, Plate xxi), one of these was unrolled, but was found to be blank. (a) 51 mm × 9 mm max.dia.; (b) 55 mm × 10 mm max.dia.

2413 Not illustrated. SF 1452. Sheet 'off-cut'.

Squarish piece with two of its adjoining sides with smooth, rounded edges and the opposite adjoining two with rough edges. It has apparently been broken away from a larger sheet. One side of the fragment is relatively flat, the other irregular. 17 mm × 14 mm × 5mm

2478 Not illustrated. SF 1461. Strip. Short strip with diamond cross-section. 34 mm × 6 mm × 3.5mm

2401/B Not illustrated. SF 1410. Slag. Small irregular piece. 35 mm × 20 mm × 10mm

2413 Not illustrated. SF 1455. Slag. Sub-rectangular piece with varying section. 39 mm × 12 mm × 7mm

2454 Not illustrated. SF 1457. Slag. 25 mm × 17 mm × 8mm.

U/S Not illustrated. SF 1459. 'Run-off'. Large fragment, one side fairly flat, the underside exhibiting a pattern derived from the surface upon which it cooled (possibly a floor tile). 70 mm × 52 mm × 10 mm max. thickness

U/S Not illustrated. SF 1480. 'Run-off'. Amorphous piece which has cooled over something having a groove next to a ridge (possibly a floor tile). 43 mm × 25 mm × 10 mm max. thickness

Two fragments from the mortar make-up of the floor in Building I, context 87, were clearly offcuts left over in construction. Another fragment from the area of the supposed hypocaust (see Ch. IV.C.4) was part of the inside lining of a container; it had iron and mortar staining on the outside and limescale on the inner surface, and so was perhaps part of a small tank.

5.6 Iron objects

by Tim Allen and Robin Brunner-Ellis

5.6.a Catalogue of iron objects

Fig. 97, Fig. 98, Fig. 99 and Fig. 100

The finds from the villa and its immediate surroundings are described first, then those from the later Roman enclosures to the east, and finally those considered to be post-Roman. The finds from the 1990 excavation are described by Robin Brunner-Ellis. Within each section the description of the material follows the order of the summary table (Table 23) presented in print.

5.6.a.1 Villa and environs

Dress articles

(Identification of the brooches by M R Hull)

182/1 Fig. 97.34. Hinged fibula with head of bow turned up to clasp hinge pin. No apparent decoration. Length 51 mm. Hinged brooches, whether of iron or copper alloy, are usually dated after the Roman conquest. Iron brooches however are rare by the Flavian period, so this piece may be dated 40–70 AD.

41/1 Not illustrated. Head and part of shank of pin probably from a larger hinged brooch. The head is flattened out into an oval to one side of the shank, and has a small circular hole through it. 39 mm long width at head 10 mm, thickness 1–1.5 mm. Shank of circular cross-section, 3 mm diameter decreasing to 2 mm. Point of pin missing.

49 Fig. 97.35. Triangular foot and part of bow of large iron fibula with flattish bow. Bow is of rectangular cross-section, 4 mm × 3.5 mm maximum at top of bow. Foot 18–19 mm long and 9 mm across at the widest point. Date as Fig. 97.34. Undecorated.

2016 Not illustrated. Brooch spring. SF 1503. Fragmentary coil of a spring from a fibula brooch. 15 mm × 12 mm × 3 mm

361 Fig. 97.36. Square-sectioned rod bent into circular open loop, ends cut off at an angle. 22 mm internal diameter, 28 mm external. Looped around one side is a strip tapering towards both ends, 9 mm maximum wide at the top of the loop. The two ends meet to form a closed loop, but both then curve back outwards. One is broken off, the other ends in a small hook only 2 mm wide at the tip. A belt-fitting perhaps. (cf. Brodribb *et al* 1968, 104–5 and Fig. 35 Nos 41 and 42).

361 Fig. 97.37. Shoe-plate, flat with small curved spikes at either end. Length of plate 43 mm, width 17 mm, thickness 1–1.5 mm. Parallel-sided, ends taper to a point where the spikes project up. Height of spike 10 mm.

361 Box B. Fig. 97.38. Crescent-shaped shoe-plate, flat with spikes projecting up at either end. Both spikes are broken. 50 mm long, maximum width 11 mm, 2 mm thick. cf. Brodribb *et al* 1971, 121–2, Fig. 51.117.

70 Not illustrated. Small shoe-plate. Oval, spikes at ends of long axis. Length *c* 36 mm, width 23 mm maximum. Thickness 1–2 mm. Both spikes broken off. cf. Brodribb *et al* 1971, 121–2, Fig. 51.118 and shoe-plates from 533, 628 and 836 below.

Building materials

201 Fig. 97.41. Wide strip bent into circle and ends welded to form cylindrical hoop or collar with one central external rib. Wheel nave-hoop or gutter-collar. Internal diameter 100 mm, width of collar 36 mm, thickness including rib 7–8 mm. cf. Manning in Neal 1974, 165 Fig. 70 Nos 374–7, water-pipe junction collars.

164 Not illustrated. Short length of curving thick strap, 60 mm long × 20 mm wide × *c* 7 mm thick. Mortar adhering to outer side of curve, much limescale on inner side. Possibly part of a

water-pipe collar.

160 Not illustrated. Angle-iron. Rod of rectangular section 9 × 4 mm. Clamped around 3 sides of a rectangular object, 38 mm wide and at least 48 mm long. Only the very corner of the 3rd side is present, the rest has broken off. cf. object from 868/1 below.

114 Fig. 97.42. Washer or rove with large hole of side em c 9 mm in centre, square with rounded corners. The washer is not exactly square, more diamond-shaped, as two adjacent sides are longer than the other two. 49 × 52 mm × 3–4 mm thick. cf. 299 below. These were used to protect timber, eg wooden shingles, from splitting. (M Dawson pers comm.).

299 Not illustrated. Washer or rove with sub-rectangular hole in centre, 7 × 9 mm across. Slightly diamond-shaped, 39 × 41 mm, cf. 114 above. *c* 3 mm thick. Brodribb *et al* 1971, 129–130, Fig. 63.479.

132/2 Not illustrated. Fragment of sheet with straight edge and possibly obtuse-angled corners. One acute corner of hole in middle. Just possibly a multi-faceted washer.

Household fittings

270 Fig. 98.45. Lever-lock key. Stem of circular section and thickened handle/bow of rectangular section. There is a circular hole through the bow close to the head end, probably for suspension, and the bow comes to an obtuse point at the top end. cf. Brodribb *et al* 1972, 94 and Fig. 44. Late Roman, probably from Building III.

364 Not illustrated. Padlock key. The stem tapers evenly from 18 mm to 9 mm wide towards the top, which is rolled over to form an open loop. The loop is wider than the stem just below it, 15 mm maximum. The bit, 20 mm long × 19 mm wide, is at right angles to the stem on the side opposite the loop, and has two rectangular holes in it, 5 × 5 mm and 6 × 10 mm. Compare Miles 1986, 104 and Brodribb *et al* 1973, 123–5 Fig. 60.429. Probably from Building III.

28/1 Fig. 98.46. Thin bar of rectangular section 5 × 3 mm, angled 134 mm from one end, and with the other end rolled over into a closed ring of internal diameter 4 mm. Possibly a latch-lift. Length 124 mm, external width at loop end 15 mm. This is probably 1st century.

1431 Fig. 98.47. Length of rod (ring-headed pin?), middle part of square section *c* 6 mm across, one end thins abruptly to square section 4 mm across, then flattens to 5 mm × 2 mm and is rolled over into a closed loop of *c* 11 mm internal diameter. At the other end the bar also tapers abruptly to a narrow flat end which is rolled back on itself into a tiny loop, less than 2 mm across internally. Smaller loop possibly not deliberate, simply knocking end back over. Function uncertain, but possibly driven through wood and larger loop hammered out from projecting nail end afterwards. cf. similar objects called Ring-headed Pins. Manning 1976, Fig. 26.186.

361 Not illustrated. Wall-hook. Square-sectioned and 5 mm maximum across at nail end, of circular section along curved hook end. cf. Manning 1976, Fig. 25.156 and p 40. Nail end 38 mm, hook is 31 mm deep and projects 30 mm from the wall.

200 Fig. 98.52. Trivet or pot stand. Made of two lengths of bar or rectangular cross-section 10 × 15 mm, the longer of which formed all three legs and the linking 2/3 of the sub-circular ring at the top. The other third of the ring was made by welding on a shorter bar of slightly greater thickness; this was of poorer quality iron and had corroded much more than the other bar. 165 mm high, internal diameter 115 mm, external diameter 135 mm, legs project *c* 30 mm outside the ring, and descend almost vertically. Small feet project outwards *c* 15 mm and vary from 3–6 mm thick.

This trivet is on display in the Ashmolean Museum, Oxford. It was found on a spoil heap before excavation began, and therefore need not have been Roman. An almost identical trivet, also on display in the Ashmolean Museum, Oxford, came from Alchester, but its provenance is unknown and there is again no proof that it is Roman. Another was found at Great Chesterford (Liversidge 1968, 155 Fig. 65c).

2414/B Not illustrated. SF 1492. Object consisting of two arms of unequal length joined by a semi-circular spring (inner dia. 17 mm). Both arms taper from 12 mm at the spring to 7–8 mm

at the ends. The flat arm is broken but survives 60 mm long and 2 mm wide all the way along; the arm on whose side is the spring is 73 mm long and tapers from 5 mm down to 2 mm thick. This was probably the hinge or spring for a door or gate, the arms perhaps driven into a wooden jamb or post. 100 mm × 18 mm × 6 mm.

2429/A/1 Not illustrated. ?Latch-lifter. SF 1427. A length of curving rod of circular cross-section 5–6 mm dia. One end is broken, the other is tapered on both sides to a squared end of rectangular cross-section. Possibly part of a bucket-handle. See Barton Court Farm (Miles 1984, Microfiche: IV.8.1, fig. 112, nos. 6 and 7). 98 mm long, arc of curve 20 mm deep

2434 Not illustrated. SF 1433. Peg. Tapering square-sectioned peg, bent and splayed at the narrower end. Possibly a wall hook or a tool. 78 mm × 12 mm × 10 mm

2465/B/1 Fig. 100. SF 1447. Split pin. Large rectangular strip folded over at the head end to enclose the straight side of a D-shaped ring of circular cross-section. The 'pin' is a tapering bar 120 mm long and 21 mm wide at the narrow end, widening to 26 mm where it is rolled around the D-shaped ring. Welded onto one side at the narrow end are two further strips, each 7–8 mm wide and between 63 and 70 mm long. These strips run up the bar flush with its edges, thickening towards the ring end, and are 5 mm wide where they stop. The ring is 31 mm by 21 mm internally, of circular cross-section 4 mm in diameter. 120 mm × 25–43 mm × approx.10 mm

Furniture fittings

132/2 Fig. 98.51. Casket or drawer handle. Wide U-shaped handle of even thickness with bulbous everted ends. At each end the handle passes through a ring-headed split pin. The size of the split pins perhaps suggest that this was attached to a large piece of furniture. cf. Partridge 1981, 161.

161 Not illustrated. Boomerang-shaped flat pieces of sheet with 3 circular nail holes. That at the angle has a short flat-headed nail in it. The arms of the sheet are of equal length, but one comes to a point and is slightly curved, whereas the other has a square end and does not taper. It closely resembles a modern blaikie. ?Box or casket fitting?

2460 Fig. 100. SF 1441. ?Casket/harness ring. Composite iron and copper-alloy object. This consists of an iron plate from the centre of which is suspended a short rod terminating in a loop, through which passes a copper-alloy ring (cf. Catalogue of Copper Alloy Objects). At the ends the plate is 2 mm wide and of rectangular cross-section, in the centre it widens to an oval, with a rectangular opening through it 2 mm by 5 mm long. The central oval section projects from the plane of the ends in a hoop. The rod, which is of circular cross-section, passes through the central opening and its end is hammered over to prevent it slipping back through. At the other end the circular loop loosely clasps the copper-alloy ring. The iron plate must originally have been attached to a flat surface, perhaps the side of a box or a piece of leather; the central projecting hoop was to allow the attached rod to swivel freely. Because of the rectangular shape of the opening in the plate however movement is only likely to have been possible in one plane. This object may have been either a casket-fitting or part of a horse harness, eg a 'terret'.

Compare with casket rings in Borrill 1981, 315, fig. 120, k–n. 37 mm × 33 mm × 3 mm (backplate), 28 mm × 4 mm dia. (cross bar).

Tools: Knives

1413 Not illustrated. Narrow knife with handle and blade of the same width. The cutting edge is straight, the back changes angle 35 mm from the tip and narrows to a point. The end of the handle is oblique, the back being longer that the cutting edge side, and a loop runs from the back edge round to the other side, forming an almost closed and virtually circular loop. The handle is slightly wider than the back of the blade, 4 mm as opposed to 3.5 tapering to 3 mm, and there are no rivet holes. The type is considered post-Roman, and the end loop and handle suggest it is medieval or later. However cf. 868/1 below, and cf. Manning in Neal 1974, 167 Fig. 72.406.

169 Not illustrated. Flat fragment with straight parallel edges 29 mm wide and one oblique end. One edge is thinner than the other and appears to taper to a point. Possibly this is the top of a knife blade. At the top the 'cutting' edge curves round to meet the back of the blade at an angle.

Length 40 mm, 30 mm wide, 1.5 mm thick at back edge of blade.

361 Not illustrated. Thin tapering bar of rectangular section coming almost to a point at one end, broken at the other. Too thin for a nail, probably a knife tang. 73 mm long × 9 mm tapering to 3.5 mm wide, 3 mm decreasing to 0.5 mm thick.

2004/D Not illustrated. SF 1007. Knife blade and tang. The blade is broken at the point, but survives 65 mm long and is up to 16 mm wide. It appears to be flat rather than tapering towards the cutting edge, which is slightly curved. The tang is 3–4 mm wide, of square section, and is 17 mm long; the base of the blade tapers gradually down to the tang. 82 mm × 16 mm × 4 mm

2485 Fig. 102. SF 1437. Clasp-knife. The knife is decorated with a bone handle carved in the shape of a leaping panther (cf. Catalogue of Bone Objects). The blade is approx. 78 mm long and 12 mm wide at its widest point. It has a slightly curved cutting edge which closes against the length of the bone handle as with a modern pen-knife. The point of the blade, when closed, rests between the paws of the panther. The blade back is straight and flat, and appears to be 5 mm wide, incorporating a protective flange on one side to help in opening and closing the blade. At the point the back curves round and narrows down to meet the cutting edge. At the hinge end the blade is squared off, and the tang is only 5 mm wide. This squared shoulder is seen on modern pen-knives and allows the blade to rest neatly against the butt of the handle when extended for use. The blade is attached to the bone handle by means of a simple hinge. The butt of the handle has a central 2 mm wide channel for the tang, and is covered and strengthened by a thin iron 'sheath'. The sheath, handle and tang are secured by a 2.5 mm dia. rivet around which the blade rotates. The sheath covers the butt of the handle for 11 mm, ending against a bone 'collar' standing out in relief 1.5 mm high from the handle. It is possible that on the side on which the blade closes the sheath was flanged over this collar to give it extra purchase. 86 mm × 35 mm × 10 mm.

Other tools

361 Box D. Not illustrated. Pointed flat object, both long sides almost straight, broken straight across 50 mm from point, where is 27 mm across and still widening. Up to 3 mm thick, both sides have flaked to sharp edges in places, but there is no consistent cutting edge. Possibly the tip of a spearhead rather than a knife.

1511 Not illustrated. Bar tapering from 19 mm wide to *c* 7 mm at end, broken off at wider end. Thickness 7 mm at wide end, one side runs straight, the other tapers *c* 34 mm from the end down to 1–2 mm. Probably end of masonry nail, just possibly the tip of a chisel.

2008/D/1 Fig. 100. SF 1027. Pair of tongs. The tongs are made from a single piece of metal bent over in the middle to form two flat arms of rectangular section. Each of the arms is 160 mm long, 8 mm wide and 3 mm thick, both being slightly curved in the same direction. Compare with a pair of shears with blades set at an angle found at Barnsley Park, (Webster 1981, Fig. 34, No.140). 160 mm × 8 mm × 3 mm (thickness).

2413 Not illustrated. SF 1490. ?Tool. Piece of square-sectioned peg or nail driven into the side of a cow's metacarpal/metatarsal (cf. Catalogue of Bone Objects). 15 mm × 4 mm × 4 mm.

2429/A/2 Fig. 100. SF 1425. 'Spoon' bit. The bit is flattened and shaped at one end to form a concave point 29 mm long, 11 mm max. width, 3 mm thick. The circular sectioned shank has an 8 mm dia. and is 58 mm long. The shank thickens out to a 10 mm × 12 mm square sectioned tang which itself narrows down to a 4 mm dia. blunt point which would have been gripped by a wooden handle. 148 mm × 7–10 mm.

2481 Fig. 100. SF 1462. Pointing trowel. The tang, stem and blade are all formed from one piece. The blade is trapezoidal like that of a modern trowel, 116 mm long and a maximum of 65 mm wide. The stem and tang are of the same 6 mm thickness. The 50 mm long stem is flat, not circular like modern examples, and is 37 mm wide where it leaves the the blade, tapering to 15 mm wide where it becomes the tang. The tang narrows along its 67 mm length from 7 mm to 4 mm wide, ending in a blunt point. Compare this trowel with other contemporary examples

from Verulamium whose stems vary from flat to circular cross-sections (Frere 1984, p.84, Fig. 37, Nos. 6–8). 200 mm × 65 mm × approx. 70 mm

2485 Fig. 100. SF 1535. Chisel or stylus point. Short length of square-sectioned rod with splayed and tapered end. The rod is 7 mm across, the end is 8 mm long and 14 mm wide and is squared off, tapering to a cutting edge. The taper is much steeper on one side than the other. 29 mm × 7 mm × 15 mm max. dia.

Horse-gear, rings, etc

1421 Not illustrated. Thin rod of square-section 4 mm across bent into U-shaped loop with ends of U turned in at right angles towards one another. Ends possibly broken short. Possibly belt or harness-loop. Height of U-loop 31 mm internally, width 30 mm maximum at top of U. cf. Brodribb *et al* 1973, 129–131 and Fig. 64.497.

1506 Not illustrated. Ring of circular section, internal diameter 40 mm, external 50–51 mm. cf. Brodribb *et al* 1972, 90–93, Fig. 41.190.

337/1 Not illustrated. Fragment of curving rod of circular section *c* 10 mm across probably part of a large ring.

2014 Not illustrated. SF 1559. D-shaped penannular ring of curved section, possibly a buckle or harness ring. There is a gap 18 mm wide midway around the curved side; both ends appear to be broken, suggesting that this gap was not intentional. 55 mm × 42 mm × 10 mm dia.

2410/B/1 Not illustrated. SF 1446. Circular ring of circular cross-section 5–6 mm in diameter. A knob of corrosion may correspond to a slight thickening on one side. 43 mm external dia. × 7 mm thick.

2413 Not illustrated. SF 1424. Circular ring of rectangular cross-section, 3 mm thick and 4 mm wide. As found it is broken, but the ends appear to join to form a continous ring. 5 mm (thickness of ring) × 40 mm (external dia. of ring)

Straps

271/2 Not illustrated. Piece of strap with S-curve, probably from loop similar to 361, Fig. 97.36 above, but larger. Width tapers from 12 to 8 mm, 3 mm thick. Remaining length *c* 38 mm.

264 Not illustrated. Strap with one small rectangular rivet 5 × 2.5 mm towards one side at one end and two larger circular bosses or other protrusions 7–8 mm in diameter, on the other side, slightly to one side of centre. There also seems to be a central circular rivet hole *c* 5 mm in diameter across which the strap had snapped. 58 mm long, 16 mm wide, 1–1.5 mm thick.

271/2 Not illustrated. Short length of flat strap, slightly tapering from 14 to 12 mm long and 1–2 mm thick.

132/3 Not illustrated. Wide strap, one end rounded but jagged, possibly broken, the other broken across a central rectangular rivet-hole. 115 mm long, 35–6 mm wide and 3–4 mm thick.

272/2 Not illustrated. Short length of flat strap with one squared and one broken end. 24 mm wide × 50 mm long, 1.5–2.5 mm thick.

163 Not illustrated. Narrow thick strap or bar, remaining length 108 mm, width 18 mm and thickness 5 mm. Possibly smith's stock, or blank for water-pipe collar (see 164 above).

2004/D Not illustrated. SF 1006. Flat strip 85 mm long, 5 mm thick at one end tapering down to 1 mm at the other end. One side is straight, the other runs parallel for 40 mm, then tapers for 43 mm, at which point the end is snapped off. The wide end finishes or is snapped off square, and there is a circular rivet-hole 6 mm in diameter central to the strip 12 mm from this end. 85 mm × 33 mm × 5 mm

2028 Not illustrated. SF 1015. Flat fragment of sheet iron of 'foot-and-ankle' shape, broken at both ends. The broader end is 36 mm wide adjacent to the 'foot', tapering to 28 mm at the other end. The 'ankle' survives 42 mm long, and may consist of two strips hammered together; this end is 6 mm thick as opposed to 4 mm elsewhere. The 'foot' is 15 mm wide where it leaves the 'ankle', tapering to 6 mm at the end. It is 36 mm long, and is bent towards the end. 61 mm × 43 mm × 6 mm.

Sheet iron

210 Not illustrated. Small fragment of flat iron 1–1.5 mm thick with two edges converging at an angle of *c* 70 degrees. Both appear to be flat. Probably sheet binding, but just possibly part of a knife blade cf. context 169 above. 25 mm × 9 mm.

109 Not illustrated. Scrap of sheet metal with thicker ridge across it. 41 × 21 mm, thicker bar 41 × 12 mm wide. Thicker part 6 mm thick, thinner 2–3 mm, but both sides have suffered from flaking.

210 Not illustrated. Fragments of sheet iron with right-angled corners. Largest 31 mm × 26 mm × 1–1.5 mm thick.

2429/A/2 Not illustrated. SF 1478. ?Window catch.

Flat rectangular piece of sheet iron, curving up at one end. 35 mm × 28 mm × 6 mm.

Miscellaneous

190 Not illustrated. Square-sectioned bar with rectangular headed rivet passing through one end. The end is extremely corroded, but it appears that the end may be wider with an oval end. On the side of the object is another similar rivet; this may be corroded onto the bar, but more likely passed through a loop on the side of the bar. It seems that the rivet may similarly be a rounded expanded end to the second side of the rivet at the end, but this is very corroded.

135 Not illustrated. Short length of ?bar, 48 × 18 mm × *c* 9 mm thick.

132/2 Not illustrated. Lump of small rectangular bar 26 mm wide. Survives up to 7 mm thick but both surfaces have flaked. Remaining length 46 mm.

109 Not illustrated. Lumps of iron, largest 12 mm thick and 23 × 32 mm across.

132/2 Not illustrated. Lump of large object. Heavily flaked, present size 40 × 36 × 4–11 mm thick. If the tapering thickness was original this might be the blade of a wedge or chisel, but it could be part of a bar.

5.6.a.2 Later Roman enclosures east of the villa

Dress articles

959/960 Not illustrated. Rectangular buckle with a slight indent at the middle of one of the longer sides. 53 × 38 mm across. The indent was probably where a pin was looped round to prevent it from slipping sideways.

533 Not illustrated. Shoe-plate. Oval with projecting spikes, longer than illustrated examples cf. 70 above. Plate 24 × 17 mm, spikes 19 mm long, diameter 2.5 mm.

628 Not illustrated. Shoe-plate. Oval but one side partly flattened, with long projecting spikes cf. those from 533 above and 836 below.

836 Fig. 97.39. Shoe-plate. Oval with projecting spikes cf. especially 533 above. Plate 28 mm × 11 mm × 2 mm diameter, spikes 10 mm long.

894 Fig. 97.40. Shoe-plate. 30 mm long with short spikes at either end. Sub-rectangular with slightly concave longer sides. From a burial.

Building materials

837 Fig. 97.43. Joiner's Dog or Masonry Cramp. Square-sectioned rod with both ends turned at right angles, one tapering to an almost pointed end, the other to a thin rectangular section, square ended, probably finished not broken. cf. Brodribb *et al* 1978, 104 and 107 Fig. 44.537. 158 × 60 mm. There were six of these found together in one pit, all very similar and all unused. The dimensions of the others were 138 × 57 mm; 146 × 50 mm; 146 × 57 mm; 159 × 63.5 mm; and 159 × 70 mm.

All cf. Brodribb *et al* 1968, 106 and Fig. 36.74.

868/1 Not illustrated. Thin strap bent at right angles round 3 sides of a rectangular object. Angle strap cf. 160. 45 × 12 mm long, width 14 mm narrowing to 11 mm × 2 mm thick.

666 Fig. 97.44. Approximately circular washer or rove 38 mm in diameter and 4–10 mm thick, with a rectangular hole 6 mm × 5 mm across.

876 Not illustrated. Half a washer. cf. 830 below. Surviving length 27 mm, width 2–3 mm thick. Hole 9 mm diameter.

830 Not illustrated. Fragment of sheet with corner of a large rectangular rivet hole. Possibly half of a washer cf. 87 above, or part of a strap. Surviving length 28 mm, width 28 mm, 4 mm diameter.

978 Not illustrated. Fragment of sheet with part of rivet hole. Washer fragment or part of a strap. Remaining length 23 mm, width 34 mm, hole 6 mm diameter.

Household fittings

582 Not illustrated. Short length of straight rod with a short projection midway along one side and another on the opposite side just short of the squared end. Both projections appeared to have been broken off, as did the shank. 68 mm × 8 mm × 4 mm thick. Projections 2–3 mm either side. Possibly a key-shank.

559 Fig. 98.48. Plate and spring-clip of a lock, consisting of a wide rectangular plate with narrower strip welded to it at one end. Length 83 mm.

2000 Not illustrated. Unstratified small barrel-padlock. The top plat is circular, 38 mm in diameter and 5 mm thick. There are 3 rectangular sectioned shafts riveted through it, each with two thin spring plates welded to it on opposite sides of the shaft. The shafts are 68 mm long and 9–10 mm wide, and taper slightly from 5 mm thick at the plate end to 2–3 mm wide at the other where the spring plates are attached. The spring plates stop 7–10 mm short of the plate, and are 4–6 mm from the shaft at this end. Two of the springs are parallel, the third spring is at right angles to these.

Barrel-padlocks are common on Roman sites, but also continue into medieval and modern times. This example was in very good condition and may not be Roman.

868/1 Fig. 98.49. Long thin curving rod, broken into two. Possibly a latch-lifter.

873 Not illustrated. Ring-headed pin, 100 mm long, loop 1 × 3 mm.

559 Fig. 98.50. Wall-hook. Square-sectioned rod with squared ends, from one of which projects a curving hook of only half thickness of the rod. Unclear whether the other end was complete or broken. 70 mm long, 10 × 8 mm section, hook 5 × 3 mm section.

Furniture fittings

500 Fig. 98.53. U-shaped object, one arm broken short, the other curved back upon itself at the top into a loop and then curving outwards again. Possibly part of a drop-handle? Handle 88 mm wide × 62 mm high. Metal itself 18 mm wide narrowing to 13 and 10 mm, 24 mm wide at surviving end. cf. Partridge 1981, 161.

865 Fig. 98.54. U-sectioned handle, only one tang remaining. The concave side of the U is on the outside. Estimated full length of handle is 170 mm.

Tools — Knives

868/1 Fig. 98.55. Knife with straight back and curved blade end, narrow long tang with circular closed loop at the end, the loop at right angles to the plane of the knife blade. cf. 1413. Hande 55 mm long, 5 × 5 mm section. Blade 51 × 10 mm, loop 16 × 17 mm externally, 6 mm diameter internally.

868/1 Fig. 99.56. Wide tapering knife with short narrow tang. Humped back of blade, straight tapering cutting edge. The tip of the blade may be broken off: if not, the back projects in a short point beyond a squared end running from the cutting edge. Blade 91 mm long and 27 mm wide, tapering to 21 mm × 3 mm thick. Tang 15 mm (broken off) × 5 mm thick.

660 Not illustrated. Possible knife blade of narrow triangular section, tapering and folded over. At the point the back of the blade slopes obliquely to meet the straight cutting edge at a point. 78 mm long, width 15 mm tapering to 8 mm, thickness 2.5 mm.

1010 Not illustrated. Blade of knife with straight back and tapering cutting edge curving at the tip to a point. Tang and handle end of blade missing. 77 mm long × 21 mm wide × 2–3 mm thick. Possibly Roman but narrow blade.

Other tools

865 Fig. 99.57. Straight shank with twisted end. 75 mm long, shank 9 mm across, twisted but 41 mm long, 2 mm across. 1–2 complete turns. Margaret Jones suggested that this might have been part of an Archimedes screw. However twisted decoration is common on parts of the handles of fire shovels, ladles or even lamp hangers. For fire shovels cf. Brodribb *et al* 1973, 132–3 Fig. 65.514. Manning 1976, 39 and Fig. 23.149 on p 56; for a ladle Liversidge 1968, 155 Fig. 65.

559 Fig. 99.58. Bar of circular section with end tapering to a sharp edge. A small chisel or punch. cf. Manning 1976, Fig. 21 nos 105 and 111. 110 mm × 10 mm diameter.

764 Fig. 99.59. One blade and arm of a pair of sheep-shears. The blade is narrow and triangular, the back having a slight convex curve and the flat arm is at right angles to it. The arm widens out to 19 mm wide at the end furthest from the blade. cf. Ralegh Radford 1936, 57 and Plate X No. 35. Similar shears were also found at Shakenoak but were misinterpreted as knives (Brodribb *et al* 1973, 120–121 Fig. 57.374).

764 Fig. 99.60. Short bar of rectangular section tapering to wide flat end of sheet thickness, bent up at right angles on one side (and possibly also on the other). In the middle of the end was a square rivet hole. The socket and shaft of a tool of some sort.

528 Fig. 99.61. Ox-goad. A think strip curved once round a shaft of circular section, with a short point sticking up at 90 degrees at one end. cf. Brodribb *et al* 1968, 104–5 Fig. 35 Nos 47 and 48, also Webster & Smith 1982, 116 Fig. 25.37.

590 Not illustrated. Ox-goad. Thin flat strip curved twice round a shaft of circular section, with a short point at 90 degrees at one end. cf. Fig. 99.61 above.

669 Not illustrated. Possibly ox-goad. Spiral around shaft of circular section, broken off at one end, possibly where the point had been. 20 mm diameter externally, 7 mm × 10 mm internally. Metal 10 mm × 3 mm, wound round twice.

868/1 Not illustrated. Possibly ox-goad. Corroded spherical object with small point protruding from one side. Suggested that this was originally a socketed goad on top of a stick. 39 mm long, 22 × 15 mm section.

865 Fig. 99.62. Small spatula-like object with short square-sectioned tang. 86 mm × 23 mm wide × 4–7 mm thick. Shank 7 × 8 mm.

481 Fig. 99.63. Small trident or fork. The outer prongs are of rectangular section, and finished squarely — one is broken off. The central prong is of circular section at the end, and of square-section nearer the tang, but is set at 45 degrees to the plane of the fork. The tang narrows to a point. Probably the outer prongs were welded onto the central tang and prong, but it is not possible to see the join even under X-ray. Total length 136 mm, length of fork 78 mm, width of fork 108 mm. Prongs 6 mm tapering to 3 mm.

830 Fig. 99.64. Cooper's Croze. Crescent-bladed object with saw-teeth along one side and a central narrow pointed tang on the side opposite the teeth. The set of the saw is quite pronounced. The tang is square-sectioned and long. One end of the blade was broken off. Said to have come from 1.5 m down in a pit in the southern group of enclosures. The croze has been published with others from the Lechlade area in Antiquity (Hedges & Wait 1987).

903 Fig. 99.65. Rod of rectangular section with one end beaten out into a wide triangular transverse blade, 93 mm long and 6 mm wide. Blade 13 mm wide at the end. Possibly a small chisel or a stylus.

526 Fig. 99.66. Rod of square section with rounded corners, tapering at one end, broken at the other. Possibly a puncher or chisel, but may be simply a very large nail missing the head. Length 108 mm, width 10 mm.

Straps

550 Not illustrated. Short length of slightly curved strap. 46 mm × 15 mm × 2 mm thick.

669/4 Not illustrated. Three pieces of sheet iron or strap. 29 mm × 38 mm, 30 mm × 32 mm,

35 mm × 27 mm. 1.5 mm thick.

558 Not illustrated. End of rectangular strap with circular rivet hole towards one side. 24 mm × 18 mm × 2 mm thick.

582 Not illustrated. Length of rectangular strap bent at right angles. The longer side has a circular rivet through the centre, and traces of another rivet hole where it had broken off. 43 mm × 10 mm long, 28 mm wide, 2 mm thick.

582 Not illustrated. Length of rectangular strap bent at right angles. The longer side has a circular rivet through the centre, and traces of another rivet hole where it had broken off. 43 mm × 10 mm long, 28 mm wide, 2 mm thick.

841 Not illustrated. Two lengths of rectangular strap, both incomplete, with one squared and one rounded end. One was 78 mm long, the other 48 mm long, both 18–20 mm wide, and they had one and two square rivet holes respectively. There was also a thinner piece of strap 42 mm × 10 mm tapering to a pointed end, 3 mm wide.

868 Not illustrated. Thin length of strap, rectangular, 179 mm long.

664 Not illustrated. Strap 126 mm long with circular rivet hole towards one end. Width 23 mm.

Sheet iron

868 Not illustrated. Fragment of sheet with broken edges, 35 mm × 21 mm.

500 Not illustrated. Folded fragment of sheet with one straight edge.

Miscellaneous

579 Not illustrated. Rod, one pointed end and expanded bulbous shaft part of the way along. 65 mm long, 5 mm × 5 mm section, 8 mm × 7 mm in middle. ?Spike.

865 Not illustrated. Rod of square-section with bulbous circular head, and evidence of a projection from one side of head. 88 mm long, section 9 mm × 8 mm. Head 22 mm wide × 17 mm long. Nail or spike.

481/1 Not illustrated. Length of square-sectioned thin rod with one end cut across obliquely, the other broken. Towards the broken end it was bent at a slight angle. Halfway down the longer straight section there is a rounded bulge on all sides. Total length 128 mm, section 5 × 5 mm, thickens to 8 × 9 mm. Function unknown.

873 Not illustrated. Thin rectangular-sectioned rod 115 mm long. 7 × 3 mm section, tapering to 5 × 2 mm.

5.6.a.3 Post-Roman finds

190 Fig. 99.67. Decorated object of ?cast iron consisting of a length of rectangular sectioned rod which turns at right angles at one end and ends in an expanded ring. At the other end there are two pairs of projections on either side, from the second of which springs are two arms of a loop, but both arms are broken, as they were very thin. Along the rod on the outer side are a series of eight rectangular impressions, possibly punched. These vary in size. Possibly a decorative handle or part of horse harness, and probably not Roman.

2000 Not illustrated. Blade of knife. Back and cutting edge almost parallel, both curve inwards at the tip to a point. Broken at other end. 16 mm maximum width, length 62 mm, back of blade 1.5 mm thick. Not Roman.

2000 Not illustrated. Found in the area of the enclosures E of the villa were two large U-shaped loops of wide sheet of concave U-section with the ends rolled over into closed circular loops of thick but narrower rectangular section. Through the loops were attached triangular and oblong rings of square-sectioned rod, the end links of a large chain made up of similar links. On each of the U-loops the sequence of loops was the same; from on hung a single large oblong, from the other a triangular ring attached to a smaller circular ring and then smaller oblong rings after that. One chain had two of these, the other only one. That with two also had a small circular ring around the second oblong loop, rusted on halfway along one side. These were probably stirrups, and as such post-Roman.

2000 Not illustrated. One stirrup of U-shaped circular-sectioned rod with a flat thin oval plate at one end. This plate has 3 oblong holes in it, 2 side by side and one above. At the other end is attached a cylindrical clasp across the top of the stirrup, which presumably was spring-clipped into the holes in the plate at the other side. All that remains of the clasp is part of the sheeting of the hollow cylinder enclosing the spring mechanism, and half of the circular plate at the hinge end which closed off the cylinder. ?19th century.

2004/C Not illustrated. SF 1548. Collar. Part of a collar 15 mm thick and 66 mm wide, slightly curved with a projecting rib 13 mm high on the outside. The rib is trapezoidal in section, 22 mm wide at the base tapering to 10 mm at the top. Post-medieval. 105 mm × 66 mm × 15 mm thickness

2400 Not illustrated. SF 1481. ?Bowl rim. Small length of a ring of circular section forming the reinforcement within the rim of a shallow copper alloy ?bowl, the bowl is curled around the ring (cf. Catalogue of Copper Alloy Objects). Post-medieval. 42 mm × 7 mm dia.

5.6.b Nails

In addition to the objects described above there were many nails of varying types and sizes. Some were sandal nails, found both with burials 585 and 974 and in other pits both close to the villa and in the enclosures to the east. Three groups of 25, 60 and *c* 96 studs in features 585, 611 and 545 must represent the loss of whole shoes. From the evidence of leather shoes found at Barton Court Farm, (Miles 1986, Fiche IV.5.1) there were up to 60 nails on the sole of a single adult shoe, so probably the find of 96 nails in 545 indicates a discarded pair.

Masonry or wooden nails occurred in quantity, in particular in the later black fills of ditch 132, layers 132/2–4 (Fig. 41) and in the black fill of feature 409 (Fig. 134 on Fiche 1#38). Both of these probably relate to the destruction of buildings. Both Manning's Type I and Type II nails occurred, though only a handful of the latter among the 8 lb or so that were kept. These were generally *c* 60 mm long. The Type I square-sectioned tapering nails almost all had expanded flattish circular or squared heads. They ranged in length from as little as 30 mm to at least 100 mm long and were from 3 mm across to 10 mm across. The heads of the largest nails tend to be circular; some are 24 mm across. There were however relatively few of either the largest or smallest nails, the vast majority being from 50–80 mm long. One tapering bar 15 × 7 mm in section from the debris of Building III, which was covered in gravel mortar was probably a masonry nail; another similar-sized fragment was found below the 2nd phase yard floor just outside in later 1511.

In some cases the nails were bent round one or two right angles as if around rectangular sectioned bricks. These were anything from 20 mm to 65 mm wide, but 45 mm was particularly common. Probably these were knocked into walls to keep bonding courses in position. No nails are illustrated.

A group of 3 or 4 very small thin nails came from the burial pit of the early Roman cremation 1138 (Fig. 30). One of these had a conical square head, another a circular head, but both had square shanks *c* 2 mm across and the one complete example was 24 mm long. These were probably from a small box and may indicate either that the burial was placed in a box or that a casket of some sort was deposited with it. Alternatively they could derive from the structure represented by the postholes around the grave, but are very small for this.

5.7 Glass objects

by John Shepherd and Cecily Cropper

Fig. 101

The glass from the excavations carried out from 1957–65 and from 1981–2 is reported upon by John Shepherd, that from the 1990 excavation by Cecily Cropper in consultation with John Shepherd. Catalogues of these are presented separately below. The vessel glass is listed first, then the window

glass; each section is arranged according to the colour of the metals — monochrome, naturally coloured (ie greenish-blue, etc) and poor colourless or greenish colourless. Within each category the fragments have been grouped chronologically and according to the different areas of the site. The post-medieval glass is not described in the catalogue. Each catalogue number is followed by the context number and Figure No. where illustrated; for the 1990 excavation the catalogue number is the unique Small Find number issued on site.

5.7.a Catalogue of glass objects

5.7.a.1 Vessel Glass

Monochrome glass **1** 271 Fig. 101.68. Fragment from the rim of a jar or bowl (Isings 1957, 111, form 94; 113f, form 96). Free-blown, pale amber glass. Rim thickened and fire-rounded.

Naturally Coloured Glass **2** 560 Fig. 101.69. Fragment of the base and side of a bulbous-bodied flask or jar (Isings 1957, form 67 or 52). Free-blown, greenish-blue glass. Pushed-in and cut-out base.

3 830. Fragment of the shoulder of a bulbous oil flask (aryballos) (Isings 1957, 79, form 61). Thick greenish-blue glass. Part of an applied handle is visible.

4 272. Fragment from the rim of a bottle or flask. Greenish-blue glass free blown? Rim folded out and under, with flattened hollow tubular section.

5–37 46; 70; 114 (× 3); 132/5; 132/2 (× 20); 175; 201; 273/2; 425; 582; 668. Thirty-three fragments from the sides, base and neck of square-sectioned bottles. (Isings 1957, 63, form 50). Mould-blown, all greenish-blue glass.

38–52 85; 200; 360 (× 2); 364; 514; 536; 864; 1413; 1416 (× 2); 1451; 1504 (× 2). Fifteen fragments of thick (1.5–2 mm) greenish-blue glass from free-blown vessels.

52–59 70 (× 2); 132; 481; 558 (× 2); 536; 535. Seven fragments of thick bluish-green or greenish-blue glass from the sides of an indeterminate number of vessels.

60–65 70; 132/2 (× 2); 271; 361; 1515. Six fragments of thin greenish-blue glass, flat, possibly from the base of a vessel.

Poor colourless and greenish colourless glass **67** 132/3 Fig. 101.70. Fragments from the rim and part of the side of a bowl. Free-blown, colourless glass with a greenish tint. Thickened and fire-rounded rim. Horizontal trailed and marvered rib of the same metal below the rim.

68 132/2 Fig. 101.71. Fragment from the rim of a bowl or beaker (*eg* Isings 1957, 111, form 94; 113f, form 96). Free-blown, colourless glass with a faint greenish tint. Thickened, fire-rounded and outsplayed rim.

69 132/2 Fig. 101.72. Small fragment from the rim of a bowl or beaker (*eg* Isings 1957, 103, form 86). Free-blown, colourless glass. Thickened, fire-rounded and slightly outsplayed rim, upright neck. Decorated with a trailed rib at the base of the neck.

70 132/2 Fig. 101.73. Over 20 fragments of the footring-base of a bowl (Isings 1957, 37, cf form 20). Thick colourless glass. The fragments of No. 71 below may be from the same vessel.

71 132/2 Fig. 101.74. Six fragments from the base and sides of a vessel. Thick colourless glass. Two are decorated with incised grooves. Probably from the same vessel as No. 70.

72 132/2 Fig. 101.75. Fragments making up the base of a bowl or beaker (Isings 1957, 113, cf form 96). Free-blown, colourless glass. Pushed-in base. This side is decorated with horizontal wheel-cut lines.

73 132/2 Fig. 101.76. Thirteen fragments from the side of a beaker (Isings 1957, 48, form 34, 136 form 109a). Free-blown colourless glass. Decorated with a horizontal rib, trailed and marvered, of the same metal.

74 132/2 Fig. 101.77. Six fragments from the side of a very thin-walled vessel. Free-blown, colourless glass. Decorated with bands of horizontal wheel-cut lines.

75 132/2. Three fragments of the neck and shoulder of a cylindrical bottle. Colourless glass.

Diameter of neck 27 mm, diameter of body *c* 80 mm.

76 132/2. One fragment from the shoulder and neck of a bottle. Colourless glass. Possibly from the same vessel as No. 75 above.

77 132/3. Three fragments of thin poor-quality colourless glass from the sides of a bowl or beaker. Two are decorated with an incised horizontal line. Possibly from bowl No. 72.

78–81 132/2. Several fragments (c. 1 mm thick) from the sides of an indeterminate number of vessels. Colourless glass, milky.

82 134 Fig. 101.78. Fragment from the rim and side of a beaker or bowl (Isings 1957, 113f, form 96). Free-blown, colourless glass with a faint greenish tint. Knocked-off, rough, slightly outsplayed rim.

83 134 Fig. 101.79. Fragment from the base of a bowl or beaker. Free-blown, colourless glass with a faint greenish tint. Slightly pushed-in base.

84 133 Fig. 101.80. Fragment from the rim of a bowl or beaker. Free-blown colourless glass. Knocked-off, rough rim.

85 133 Fig. 101.81. Fragment from the side of a beaker or bowl. Free-blown, colourless glass with a greenish tint. Decorated with a trailed and marvered rib and dot.

86 109. Two fragments of thin colourless glass from the side of a vessel. One fragment is decorated with four parallel incised lines 1 mm apart. cf. Fig. 101.77.

87 82. One fragment of the side and shoulder of a cylindrical vessel. Colourless glass, milky. Possibly from cylindrical bottle No. 75 above.

88–93 132/2. Six fragments of clear colourless glass (1 mm+ thick) from the sides of an indeterminate number of vessels.

94–99 132/2. Six very thin fragments of thin poor quality colourless glass from the sides of vessels.

100 1478 Fig. 101.82. Fragment from the rim of a beaker (Isings 1957, 113, form 96). Free-blown, colourless glass. Thickened, fire-rounded and outsplayed rim.

101 1451 Fig. 101.83. Fragments from the rim and part of the side of a small bowl or beaker. Possibly the bowl of 102 below. Free-blown, colourless glass with a faint greenish tint. Thickened and fire-rounded rim.

102 1451 Fig. 101.84. The base of a small stemmed goblet (*eg* Isings 1957, 139f, form 111). Free-blown, colourless glass with a faint greenish tint. Thickened and fire-rounded lip to the foot. Centre of base thickened. Trail of same metal applied at foot of stem. Pontil scar ground smooth.

103 1426. Fragment from the base of a beaker or bowl. Free-blown, poor colourless glass. Solid folded base-ring.

104 285 Fig. 101.85. Fragments from the side of a straight-sided bowl or beaker. Free-blown, colourless glass. Sides curve sharply into the base round which a trail of colourless metal runs.

105 271 Fig. 101.86. Fragment from the rim of a funnel-shaped beaker (Isings 1957, 126f, form 106). Free-blown, poor colourless glass. Rim knocked off and left rough.

106 285 Fig. 101.87. Fragment of the rim of a beaker (Isings 1957, 126f, form 106). Free-blown colourless glass, very thin. Knocked off, rough rim. Decorated with two bands of horizontal incised lines.

107 270. Small fragment from the rim of a bowl (Isings 1957, 126f, form 106 or 116c). Free-blown colourless glass. Knocked off, rough rim, outsplayed. cf. Fig. 101.78. Decorated with wheel-cut horizontal lines at 0.5, 1, 2 and 5 mm below the rim.

108 271. Fragment from the rim of a bowl (Isings 1957, form 116). Very thin colourless glass. Rim knocked off and smoothed. Decorated with horizontal incised lines at 5 and 6 mm below the rim, cf. Fig. 101.78.

109 271. Small fragment from the side of a beaker (Isings 1957, 127f, form 106b). Mould-blown and reinflated, greenish colourless glass. Body decorated with diagonal low-relief ribs (Wrythen body).

110 285/2. Fragments from the side of an indented beaker (*eg* Isings 1957, 142f, form 114a). Free-blown, colourless glass.

111 60 Fig. 101.88. Fragment from the base of an unguentarium. Free-blown, greenish colourless glass. Pushed-in domed base.

112 409. Fragment for the base of a bowl. Free-blown, bluish-green colourless glass. Pushed-in base, with flattened hollow tubular section.

113 361. Fragment from the side of a folded beaker. Free-blown, colourless glass with a greenish tint. Late Roman.

114 361. One fragment from the rim of a beaker (Isings 1957, 129, form 106c). Free-blown, greenish colourless glass. Rim knocked off and left rough, slightly outsplayed. Late 3rd–4th century AD. cf. Fig. 101.80.

115 361. Fragment from the side of a bowl. Free-blown, colourless glass with a greenish tint. Late Roman.

116 361. Fragment probably from a beaker (Isings 1957, 136, form 106c). Free-blown, thick greenish colourless glass. Decorated with wheel-cut horizontal lines. Late Roman.

117 830 Fig. 101.89. Fragment of the base of a footed beaker (Isings 1957, 129, form 109b). Free-blown, greenish colourless glass. Pushed-in base with flattened hollow tubular section.

118 868. Fragment of the rim of a beaker (Isings 1957, form 106c). Very thick colourless glass with a greenish tint. Knocked off, rough rim, slightly outsplayed.

119 582 Fig. 101.90. Fragment of the rim of a beaker. Free-blown, colourless glass. Knocked off, rough rim, outsplayed. Decorated with wheel-cut horizontal lines on the li[illegible] just below the rim and in a group of 3 lines 18, 21 and 23 mm below the rim.

120–126 271 (× 4); 361; 558/1; 1400. Seven fragments of greenish colourless glass from the sides of an indeterminate number of vessels. Two fragments from 271 are from the same bubbly vessel.

127–129 285/2 (× 2); 498. Three fragments of free-blown colourless glass from the sides of an indeterminate number of vessels. Those from 285/2 are fire-distorted. See also no. 158 below.

Window Glass 130–144 120; 132/2 (× 4); 160; 271; 403; 409; 528; 875; 1450. Fifteen fragments of window glass in thick greenish-blue glass of the cast, matt-glossy variety. One fragment from 132/2 is very highly distorted by burning.

145–150 109; 203; 361; 550; 582 (× 2). Six fragments of window glass in greenish colourless glass of the cast matt/glossy variety.

151–157 272/1 (× 2). 1961: 21-876; 30-643; 41 (× 2)-876. Seven fragments of window glass in greenish colourless glass of the free-blown, double-glossy variety.

158 774 Fig. 101.91 . One fragment of a vessel, now missing. This is probably from the rim of an unguentarium or small flask, with rim folded in and flattened out. The rim however seems exceptionally wide, and just possibly this might be from the base of a small stemmed goblet with a pronounced central depression, similar to Fig. 101.84 (Isings 1957, 139, cf form 111). Free-blown; natural greenish-blue glass.

5.7.b Catalogue of glass objects from the 1990 excavation

The catalogue is written in order of small find numbers, with context numbers following.

5.7.b.1 Vessel glass

1005 2004/B Two fragments of the rim and neck of a thin-necked vessel of a natural green, free-blown glass. Rim is fire-rounded, everted and flattened. Possibly post-medieval. Approximate diameter is 20 mm. Body fragment of flat, colourless, amber-tinted, free-blown glass.

1435 2434/B (Fig. 101.1435) Three fragments of base of a thin-walled bowl or flask with a hollow tubular footing in a colourless, free-blown glass. Approximate diameter of the foot-ring is 60 mm.

1436 2434/B Fragment of body and neck of a large globular vessel of colourless, green-blue tinted, free-blown glass.

1448 2429/A/1 (Fig. 101.1448) Fragment of rim and body of a vessel of colourless, slightly blue-tinted, free-blown glass. Rim is hollow and tubular with the lip rolled over to the inside and flattened. Diameter is 60–70 mm.

1468 2456 Rim fragment of a vessel of natural green-blue, free-blown glass. The rim is hollow and tubular, the lip rolled from inside to outside and flattened on the upper side. Possibly from a bottle or unguentarium.

1482 2483 Body fragment of a globular vessel of natural green, free-blown glass.

1494 2030 Two body fragments of a thin-walled vessel of colourless, free-blown glass. Body fragment of a vessel of colourless, slightly green-tinted, free-blown glass, with horizontal wheel-cut decoration 1 mm wide. Body fragment of a vessel of colourless, green-blue tinted, free-blown glass. Two body fragments of a vessel of thin, colourless, free-blown glass.

1558 2040 Fragment from the pushed-in base of a vessel of colourless, green-blue tinted, free-blown glass.

1563 2429/A/1 Fragment from the pushed-in base of a vessel of colourless, green-blue tinted, free-blown glass.

5.7.b.2 Bottle glass

1026 2008/D/1 Body fragment of natural blue-green, free-blown glass.

1423 2413 Fragment of side of a mould-blown, prismatic bottle of colourless, blue-green tinted glass.

1430 2434 Body fragment of a square/cylindrical bottle of natural blue-green, free-blown glass. Distorted on surface by burning.

1440 2460 Body fragment of a hexagonal mould-blown bottle of colourless, blue-tinted glass.

5.7.b.3 Window glass

1003 2014 Edge fragment of natural green, free-blown, double glossy window glass. Edge is rounded and narrower than rest of piece. Thickness 3 mm.

1429 2413 Fragment of colourless, blue-green tinted, cast, matt-glossy window glass. Thickness 3 mm.

1434 2420/B/1 Fragment of colourless, green-tinted, free-blown, double glossy window glass. Thickness 1.5 mm.

1450 2410/B Fragment of rounded edge of natural blue, cast, matt-glossy window glass. Thickness 1.5 mm.

1456 2467 Fragment of colourless, green-tinted, cast, matt-glossy window glass. Grazed along one edge. Thickness 3.5 mm.

1467 2434 Fragment of colourless, green-blue tinted, cast, matt-glossy window glass. One edge cut. Thickness 3.5 mm. Fragment of colourless, green-blue tinted, cast, matt-glossy window glass. Thickness 1.5 mm.

1468 2456 Three fragments of colourless, cast, matt-glossy window glass. Thicknesses 1 mm, 1.5 mm, 2.5–3 mm.

1494 2030 Fragment of colourless, green-tinted, free-blown, double-glossy window glass. Thickness 2.5 mm.

Window glass makes up almost 50% of the Roman assemblage.

5.7.b.4 Miscellaneous

1493 2013/B Lump of dark opaque tank metal, or raw glass. Uncertain date.

5.7.b.5 Post-Roman Glass

1487 2406 Fragment of the pushed-in base of a mould-blown bottle, green glass. Part of factory legend remains. Modern.

1556 2613 Neck fragment from a bottle of greenish-brown, mould-blown glass. Two shallow vertical grooves on outer surface. Post-medieval.

1557 2411 Body fragment from a bottle of colourless, slightly yellow-tinted, free-blown glass. Post-medieval.

1555 2434 Fragment of modern, colourless, double glossy window glass. Thickness 2.5 mm.

1557 2411 Fragment of modern, colourless, double glossy window glass. Thickness 3 mm.

5.8 Worked bone and ivory objects

Fig. 102

There were 11 pins or needles, a clasp-knife handle and another knife handle, a polished ivory disc, and 5 other artifacts from the Romano-British occupation, plus a small number of sawn or otherwise worked pieces from manufacture. All the artifacts belong to the villa phase of the occupation, most coming from the building areas themselves. The worked debris seems also to belong with the villa phase, but a fragment from 1467 may be earlier.

5.8.a Catalogue of worked bone and ivory objects

1435 Fig. 102.93. Pin with conical head and three narrow grooves round neck. Late 2nd/3rd century AD. Almost identical pins from Shakenoak in 3rd and 4th century contexts (Brodribb *et al* 1968, 110–111 Fig. 37 Nos 9 and 10) and compare Type 5 pins at Colchester Crummy 1983, , 23–24 and Fig. 21.

361 Fig. 102.94. Pin with anthropomorphic head, two collars below around neck. A similar style of carving was used at Shakenoak (Brodribb *et al* 1968, 110–111 Fig. 37.5), but there the head element had been made into a nail-cleaner, and the face replaced by a simple incised design. 4th century AD.

132/5 Fig. 102.95. Plain pin, tapered head.

286 Part of shank of pin, stained green. Oval section 3 mm × 2.5 mm tapering to circular section 2 mm across. Length 27 mm.

1430 Fig. 102.96. Roughly smoothed length of bone, circular section, with one end squared off, the other broken. Probably a crude pin. 4th century. Compare Claydon Pike 1981, 520, from context 504 (Miles and Palmer in prep.) and Shakenoak (Brodribb *et al* 1971, 124–6 Fig. 53.19 and Type 1 pins at Colchester Crummy 1983, 20 and Fig. 17.113).

535 Part of the shank of an ivory pin, highly polished. The cross-section is oval, 3 × 2.5 mm tapering to 3 × 2 mm. Length 32 mm.

559 Fig. 102.97. Pin with a large conical head, and two triangular notches projecting from opposite sides of the neck just below. The point has broken off, but the tapering break was used instead, as can be seen from the wear along its edge. Mid to late 4th century AD. cf. Webster & Smith 1982, 113 Fig. 22.14 dated AD 375–80 AD.

763 Fig. 102.98. Complete pin from pig fibula. The expanded head is hardly thicker than the shank, but is much wider, and is formed from the unworked end of the fibula. Polish on the shank probably indicates that the pin was used in this form. The head is very similar to those of pagan Saxon pins or 'needles' which are perforated, such as those at Barton Court Farm (Miles 1986, IV.2.4.2 Fig. 61 Nos 2–5) and at Shakenoak (Brodribb *et al* 1972, 128–9 Fig. 64 Nos 105–6) and may therefore originally have been designed for a hole. Roman parallels are hard to find; this pin, with its slightly curved shank and undecorated head, would be much happier in an

Anglo-Saxon context.

1450 Two pieces of needle stained green, the point and part of the shank with the lower part of an eye. The cross-section of the needle is oval, tapering from 3.5 × 3 mm to 2.5 × 1.5 mm. There is no perceptible bulge around the eye, which is 1.5 mm wide and at least 1.2 mm long. The two fragments are 26 mm and 30 mm long; these do not join.

1453 Fig. 102.99. Cattle rib shaped into flat lozenge with one long tapering end and the other almost square-ended. Smooth exterior surface, other side broken and the cancellous tissue exposed. Possibly a spatula or polisher of some sort. Compare Shakenoak (Brodribb *et al* 1972, 122–3, Fig. 59.11). 2nd/3rd century AD.

1446 Broken bone with two sawn facets at one end, very slight traces of a third. Possibly discarded during manufacture. cf. piece from 208 below and Shakenoak (Brodribb *et al* 1972, 122, Fig. 61.81). 2nd/3rd century AD.

1446 Highly polished scrap, one end of which had been cut down into what may have been the shank of a pin. However the broken shank end also seems worn.

272 Fig. 102.100. Knife handle, slightly curved. Circular hole for tang at one end, the other solid. Undecorated. cf. Barton Court Farm (Miles 1986, IV.8.13 Fig. 83 Nos 3 and 4). 4th century AD.

612 Fig. 102.101. Hollow sheep metacarpal sawn straight across at both ends and decorated with a band of criss-crossing incised lines at either end bordered by single grooves. The decoration was crudely executed, as the criss-cross lines ran beyond the outlined zone of decoration. Presumably this had one or more lengths of leather or string threaded through it; the inner surface was smooth and polished by wear. Possibly a small handle for a thong-suspended object, or the guard for a bowstring. Mid to late 4th century AD. cf. Shakenoak (Brodribb *et al* 1968, 110–111, Fig. 37.3) in late 3rd century or early 4th century context.

208 Fig. 102.102. Worked antler piece, one end tapered, narrow lengthways facets all round. Presumably an unfinished handle or similar object. 2nd century AD.

2429/A/1 Not illustrated. SF 1426. Pin. Shaft of circular section with point missing. The head is decorated with a simple groove 1 mm from the top. 38 mm × 4 mm max. dia.

2429/A/1 Not illustrated. SF 1428. Needle. Shaft of a large needle of circular section, the point and the upper half of the eye broken off. The eye is 1 mm wide. 47 mm × 2 mm dia.

2413 Not illustrated. SF 1490. ?Tool. Mature cow's metatarsal/metacarpal with a small iron peg driven into the side. The peg may be a broken tang, all that remains of some form of tool head. 90 mm × 68 mm × 40 mm

2485 Fig. 102. SF 1437. Knife handle. Decorated bone handle of an iron clasp knife (see also Catalogue of Iron Objects) handsomely carved in the form of a panther leaping from a calyx of ?acanthus leaves, its forepaws extended. The paws are turned down at the end to encase the sharp point of the blade. The torso and raised surfaces of the calyx are polished. The handle is sheathed in iron at the hinge end, and one rivet serves to attach the sheath, handle and tang of the blade, as well as acting as the pivot for the blade. At the foot of the calyx is a raised collar of bone 2 mm wide, against which the iron sheath ends. There are several examples extant of this type of decorated clasp knife (Toynbee 1964, 360), a particularly close parallel coming from an early 2nd century context at Wroxeter (Bushe-Fox 1913, pl.22, fig.10). It shows a tiger emerging from a cup of leaves in the act of eating something between its forepaws. Martin Henig believes that the floral calyx could be seen as a stylized representation of life. Tim Allen has suggested that the springing beast/calyx of life motif is a metaphor for the springing action of the knife blade — a visual talisman for the knife's owner, as one might say. The same motif is also employed on a copper alloy key handle in the shape of a lion emerging from a calyx found at Verulamium (Frere 1984, p.46, fig.18, no.165). 86 mm × 35 mm × 10 mm

2043 Fig. 102. SF 1560. Ivory disc. Half of a lathe-turned and polished ivory disc. It has a drilled central hole 7.5 mm in diameter and is decorated with an incised concentric groove 3.5 mm from the outer edge. The back of the disc is flat, the front surface is oblique, tapering from 2.5 mm

thick around the central hole to 1 mm at the rim. The disc may have formed the back plate of a knob or handle of a drawer, or may perhaps have been a gaming counter. 30 mm outer dia. × 2.5 mm thickness, central hole 7.5 mm dia.

There were also 5 sawn pieces of bone, the identifiable pieces being horse or red deer antler, and several other finds of antler that may have been kept for bone-working. Two other pieces showed marks from either skinning or working (for full list see archive). Most of the pins came from the villa area, as did the other artifacts. Bone working debris was found in the southern group of enclosures and also probably in the northern, in both cases in only one or two instances. A little also came from the yard area close to Building IV. The finding of a deer skull in a late ditch (419) west of the villa was probably kitchen debris, the antlers having been taken elsewhere for working.

5.9 Jet and shale objects

Fig. 103

Three objects of jet were recovered. These were:

350 Fig. 103.103. A fragment of a flat object at least 3.5 mm thick with one straight edge. The surviving surface is highly polished and along the edge a border 2.5 mm wide has been etched to create a sinuous motif. This was possibly decorative inlay on furniture or a casket.

361 Fig. 103.104. Point and part of the shank of a pin.

866 Fig. 103.105. Head and part of the shank of a pin. The head is wider than the shank and is multi-faceted; this is is a common motif both on jet and bone pins.

One object of shale was found:

U/S Fig. 103.1567. Shale. Spindle whorl, lathe-turned. The disc has flat sides, the thickest part of which is around the central aperture. The sides slope down towards the outer edge where the thickness diminishes to *c* 5 mm. 20 mm max. thickness × 39 mm dia., aperture 9 mm dia.

5.10 Stone objects

5.10.a Summary

Fragments of eighty-one stone objects were found, of which two are now missing. These comprised both saddle and rotary querns, quern-rubbers or pounding stones, whetstones and sharpening slabs, spindle whorls and loomweights, oven or cooking bases, a small selection of building fragments and a variety of troughs, mortars, gate-posts and hollowed stones. A summary table of the incidence of these types indicating their findspots and dates is given in Table 50 on Fiche 2#55.

	Saddle querns	Rotary querns	Pestles/ rubbers	Archi-tect-ural frag-ments	Gate-pivots	Mortars/ troughs	Oven bases and potlids	Whet-stones	Dished slabs	Spindle whorls
Pre-villa	3	5	2(2)		3			2		1.
Buildings I and II		3								
Building IV							1	1		
Building III		4+1	2	2				1		1
Southern enclosures		6+1				1		3(1)		
Northern enclosures	(1)	7+4	1(1)	1		1	2	3	1	
Circular ditched feature								2	1	
Working hollows		1				5		1		
Quarry 660		1+1								
Total objects	3(1)	27+7	5(3)	3(0)	3(0)	7(0)	3(0)	13(1)	2(0)	2(0)
80	4	34	8	3	3	7	3	14	2	2

Numbers given in brackets are only tentatively identified.
In some instances the rotary querns have been divided into two groups, to distinguish firstly the minimum number and secondly other fragments.

Table 50 Stone objects by type and area

5.10.b Catalogue of querns and 'rubbers' or pestles

Fig. 104 and Fig. 105

35 fragments from 27 rotary querns, 5 fragments from 4 saddle querns and 5 possible 'rubbers' or pestles were recovered. A detailed catalogue of the fragments large enough to supply information as to Upper or Lower Stone, diameter etc is given, following the formula employed in Crummy 1983.

5.10.b.1 Catalogue of Rotary Querns

49 Coarse red quartzitic conglomerate, ?from Pennine area. Fig. 104.106. One fragment comprising 10% of an upper stone of a rotary pot-quern. The thickness at the circumference is 60 mm and the estimated diameter 0.34 m. A groove has been pecked out around the circumference at the top; this was probably to accommodate an iron band to which a handle would have been attached (Phillips 1950, 75–82). A similar quern has been found in the region at Mount Farm (Lambrick in prep). Above this groove the top surface of the stone was broken off but was at least 72 mm thick. The grinding surface was flat and shows signs of rotary motion. The outside edge of the quern was also worn smooth; this suggests that it was rubbing against the sides of a lower stone with upstanding sides. Such querns are called 'pot-querns'.

132/3 Coarse quartzitic conglomerate, probably from Welsh Borders. Fig. 105.117. One fragment comprising 25% of the upper stone of a rotary quern. The thickness at the circumference varies from 40 mm to 58 mm and the overall diameter is 0.42 m. There is a central eye 72 mm in diameter, at whose edge the thickness of the stone is 34 mm. The grinding surface is concave with an angle of slope of 9 degrees and is unevenly worn, most wear being concentrated in a band around the middle of the stone. Part of the outside edge is also worn; possibly this upper stone sat inside its counterpart, and rubbed against it in places.

409 Millstone Grit from Pennine area. Fig. 105.116. One fragment comprising 11% of the rim of an upper stone of a rotary quern. The thickness at the circumference is 56 mm and the estimated diameter is 0.65 m. Both top and bottom of the stone are flat. There is virtually no wear on the grinding surface, except for small patches at the very edges, but both upper and lower surfaces have grooves running diagonally across them, 5–7 mm wide and 2–3 mm deep. The upper face also has a groove 10 mm wide and 5 mm deep running radially in from the edge. The size of this quern

makes it likely that it was a small millstone rather than a hand-operated quern. The grooves and the absence of wear suggest that its surfaces had only just been re-ground when it was discarded.

416 Millstone Grit from Pennine area. One fragment of quernstone. Most surfaces are rough and irregular, but one, which is concave, is slightly worn. The opposite face to this is flat and approximately parallel to the worn surface; these may be the top and bottom of a fragment of a rotary quern. The worn groove may be caused by gradual wear; the grinding surface would then rise both towards the centre and the circumference of the stone. This would suggest that the upper stone was smaller than the lower one, hence the absence of wear at the very edge of the lower stone. The thickness of the quern is 70 mm at one edge, 60 mm at the groove and 67 mm surviving edge; this stone may have been part of an upper or lower quernstone.

465/1 Fine-grained sandstone, probably from Pennine area. Fig. 104.107. One fragment comprising 24% of the upper stone of a rotary quern. The thickness at the circumference was 110 mm and the diameter 0.35 m. There was a central eye 60 mm in diameter, within a circular hollow of 55 mm radius. At the edge of the eye the thickness of the stone was 100 mm, and at the edge of the hollow 118 mm. The grinding surface was slightly concave both radially and laterally; both the outside and parts of the top of the quern were worn smooth. Possibly this was the upper stone of a pot-quern rubbing against the sides of a lower stone, but the wear on the top suggests it may at some stage have been inverted.

465/1 + 465/4 Coarse quartzitic conglomerate probably from Welsh Borders. Fig. 104.108. Two fragments comprising 48% of the lower stone of a rotary quern. The thickness at the circumference varies from 50–61 mm, and the stone has an estimated diameter of 0.40 m. There is a central rounded socket 40 mm in diameter and 35 mm deep, with smooth worn sides and bottom. The maximum thickness of the stone is 126 mm at 44 mm from the centre; there is a slight slope from this radius inwards towards the central socket, where the thickness is 120 mm. The grinding surface has an angle of slope of 11 degrees, and shows traces of rotary motion. Wear is concentrated in bands towards the inside and outside edges.

465 Felspathic Sandstone. Fig. 104.109. Four fragments comprising 30% of the lower stone of a rotary quern. The thickness of the stone is 53 mm at the circumference and the overall diameter is 0.30 m. There is a central socket 38 mm deep and 35 mm in diameter, which tapers to a point. At the edge of the socket the stone is 70 mm thick. The grinding surface is very slightly convex, and is unevenly worn. The outside edge and bottom of the stone were left rough, but part of the edge had been used as a sharpening stone, probably after it had broken.

465 Felspathic Sandstone (? from Coal Measures). Fig. 104.110. Two fragments comprising part of the centre of the lower stone of a rotary quern. The stone has no edge visible, but was at least 0.29m in diameter; the thickness at the outside edge of the surviving fragments was 66 mm. There was a central socket 39 mm in diameter and 45 mm deep, tapering to a point. At the edge of the socket the thickness of the stone is 60 mm. The grinding surface is very little worn, and appears to be slightly higher towards the circumference than in the middle. The bottom of the stone is flat and parallel to the grinding surface. A thin V-profiled groove running obliquely across the grinding surface was probably produced by knife-sharpening after the quern had gone out of use.

487 Millstone Grit from the Pennine area. One fragment of the rim of a rotary quern. The thickness at the circumference is 22 mm and the estimated diameter 0.28–0.30 m. The grinding surface is worn very smooth, and is slightly concave laterally. The stone increases in thickness towards the centre, being 27 mm thick at the innermost surviving point 40 mm from the edge.

512 Unknown. One fragment comprising 12.5% of the rim of the upper stone of a rotary quern. The thickness at the circumference is 38 mm and the estimated diameter 0.48 m. The grinding surface is concave laterally, and very slightly so radially as well. Most of this surface is worn, but especially the outermost 40 mm. The stone decreases in thickness towards the centre, being only 34 mm at the innermost surviving edge and the angle of slope of the grinding surface is *c* 5%. The upper surface of the quern is flat and bears pock-marks.

517 Coarse quartzitic conglomerate, probably from the Welsh Borders. One fragment comprising *c* 25% of the lower stone of a rotary quern. The thickness at the circumference is 42–44 mm and the diameter 0.41 m. There is a tapering central rounded socket on the underside, 46 mm in diameter and 54 mm deep; its sides are not exactly regular but are slightly worn. The grinding surface is mostly flat, but the innermost area for a radius of *c* 65 mm is slightly raised. This area is unworn, and only the outermost 70–80 mm shows appreciable wear. The grinding surface has an angle of slope of approximately 10 degrees, and the rough underside is concave, so that the stone is thickest at the centre, where it is 104 mm thick.

524 Coarse quartzitic conglomerate, probably from the Welsh Borders. One fragment comprising *c* 10% of a rotary quern. The thickness at the circumference varies between 48 mm and 55 mm, and the diameter is *c* 0.4 m. There was a central eye running right through the stone, but the small part that was present appeared more like the corner of a square than part of a circular hole. The grinding surface was flat, and the outermost 60–70 mm was worn. The opposite side was rough and convex, sloping down both towards the circumference and the central eye. The maximum thickness was 85 mm. On analogy with more complete examples, (eg. Fig. 104.114), this was probably a lower stone.

581 Probably Millstone Grit from the Pennine area. One fragment of the rim of a rotary quern. The thickness at the circumference is 36 mm, and both the upper and lower surfaces are flat and parallel. The grinding surface is worn, particularly in a band 45 mm wide around the outside, while the opposite side has shallow pock-marks. Possibly an upper stone.

611 Coarse quartzitic conglomerate, probably from Welsh Borders. Fig. 104.114. Two fragments comprising 47.6% of the lower stone of a rotary quern. The thickness at the circumference varies between 22 mm and 32 mm, and the estimated diameter is 0.37 m. There is a central eye of hour-glass cross-section narrowing from a diameter of 68 mm at the grinding surface to 36 mm, and widening again to 75 mm on the underside. The upper part of the eye is smooth, the lower part less so. The thickness of the stone at the edge of the eye is 80 mm. The grinding surface has an angle of slope of 15 degrees, and has traces of circular grooving from rotary motion; wear is concentrated around the outside.

617 Coarse quartzitic conglomerate. One fragment of the rim of an upper stone of a rotary quern. The thickness at the circumference is 58 mm; the diameter is 0.32–0.34 m. The top is flat, the grinding surface concave with an angle of slope of 6 degrees. Both faces and the outside edge are worn; possibly the quern was used on both sides.

661 Coarse quartzitic conglomerate, probably from Welsh Borders. One fragment comprising 14% of the lower stone of a rotary quern. The thickness at the circumference is between 35 mm and 45 mm and the diameter 0.34 m. Part of a central eye survives extending 50 mm deep from the grinding surface. The underside is broken, so it is uncertain whether the hole went right through the stone. The grinding surface is flat and shows traces of wear; its angle of slope is between 8 and 12 degrees. The maximum thickness of the stone, just outside the eye, is 85 mm.

876 Millstone Grit from Pennine area. One fragment comprising 10% of the rim of the upper stone of a rotary quern. The thickness at the circumference is 38 mm and the estimated overall diameter is 0.33 m. The stone increases in thickness towards the middle, the maximum surviving being 47 mm. Both surfaces are worn, and bear traces of transverse or radial grooving.

876 Coarse quartzitic conglomerate, probably from Welsh Borders. Fig. 105.115. One fragment comprising 26% of the upper stone of a rotary quern. The thickness at the circumference varies from 25 mm to 37 mm and the overall diameter is 0.41 m. There is a central eye 80 mm in diameter, into which a wider hollow slopes down from the flat top of the quern. At the edge of this hollow the thickness of the quern varies between 34 mm and 38 mm. A rectangular slot has been carefully cut out of the top to take a handle. This extended 86 mm in from the outside edge and was 26 mm deep. The stone had broken along this line, so the full width of the slot is unknown. The grinding surface of the stone was concave and unevenly worn, with an angle of slope of 1.5 degrees; only.

its outer part showed continuous heavy wear.

876 Coarse quartzitic conglomerate, probably from Welsh Borders. One fragment of the rim of a rotary quern. The thickness at the circumference is 50 mm, and the estimated diameter is very approximately 0.36 m. Both top and bottom of the stone are flat. The grinding surface is unevenly worn, more so at the circumference. The other face is also slightly worn.

2030 Coarse pinkish quartzitic conglomerate from Welsh Borders. SF No. 1013. Not illustrated. Almost complete lower stone of a rotary quern.

The stone is 0.42m in diameter, 52 mm thick at the rim increasing to 90 mm at its centre. It has a rough, convex underside, greater in thickness towards its centre. The grinding surface is even and concave with an angle of slope of 8 degrees, rising more steeply at the centre. The quern has a central circular socket which is 48 mm deep, and tapers from 32 mm in diameter at the grinding surface to 8 mm at its bottom. 0.42 m dia. × 40–90 mm thickness

One further quern from the site, an almost complete lower stone of thin Late Roman type, is in the Filkins Museum, Gloucestershire.

A table showing the frequency of each rock type and the date of the contexts in which they were found is shown in the printed report (Table 24).

5.10.c Full catalogue of stone objects

A catalogue of all the stone objects recovered (with the exception of those of shale and jet) is given below. The categories of Pestles, Architectural Fragments and Spindle Whorls include items which do not appear in Table 25 and 50. These comprise dressed masonry, probable roofing materials and unmodified objects of natural origin, which are listed here for the sake of completeness. Querns are not described in detail; for these see the Catalogue of Querns in Ch. 5.10.b on Fiche 2#55 above.

Table 51 Catalogue of stone objects

Context	Type of stone	Fig. No.	Description
Saddle querns			
70	Sarsen	—	One rectangular corner, smooth grinding surface underside rough. 150×75 mm and 45 mm thick.
190	Red Sandstone	Fig. 104.111	One rectangular corner, smooth grinding surface.
467	Felspathic Sandstone	—	Flat slab, one tapered edge. 100×72 mm and 40 mm thick.
654	Lower Greensand	—	Flat slab, concave worn surface, edges broken. 116×85 mm and 45 mm thick.
Rotary querns			
49	Red Quartzitic Conglomerate	Fig. 104.106	Upper Stone. See Cat.
132/3	Coarse Quartzitic Conglomerate	Fig. 105.117	Upper Stone. See Cat.
160	Italian Lava	—	No details, missing.
191	?Millstone Grit	—	One worn surface, ? edge of a central eye. 113×80 mm and 40 mm thick.
294	Millstone Grit	—	Frag. Lower Stone with edge of central hole. 36 mm deep. 85×38 mm and 36 mm thick.
403	Lower Greensand	—	Frag. ? edge of Upper Stone. 100×85 mm and 80 mm thick.
409	Millstone Grit	Fig. 105.116	Upper Stone. See Cat.

(Table 51 continued)

Context	Type of stone	Fig. No.	Description
416	Millstone Grit	—	One surface slightly worn, edges broken. 90×75 mm and 70 mm thick.
464	Felspathic Sandstone	Fig. 104.109	Lower Stone. See Cat.
464	Felspathic Sandstone (from Coal Measures?)	Fig. 104.110	Lower Stone. See Cat.
465/1	Sandstone Conglomerate	104.107	Upper Stone. See Cat.
465/1 & 465/4	Coarse Quartzitic Conglomerate	104.108	Lower Stone. See Cat.
487	Millstone Grit	—	Frag. Vertical edge of an Upper Stone. See Cat. 70×45 mm and 27 mm thick.
512	Unknown	—	Upper Stone. See Cat. 175×95 mm.
517	Coarse Quartzitic Conglomerate	—	Lower Stone. See Cat. 190×180 mm.
524	Coarse Quartzitic Conglomerate	—	Probably a Lower Stone. See Cat. 185×110 mm.
536	Millstone Grit	—	Flat stone with worn surfaces, broken edges. 97×88 mm and 38 mm thick.
545	Millstone Grit	—	One worn surface, broken edges. 73×70 mm and 45 mm thick.
559	Millstone Grit	—	Frag. Upper Stone with a steeply sloping edge. 61×35 mm and 30 mm thick.
581	?Millstone Grit	—	Frag. Flat stone, probably an Upper Stone, with a vertical edge. One worn surface. 105×85 mm and 40 mm thick.
582	Millstone Grit	—	Frag. Broken edges. 55×50 mm and 30 mm thick.
582	Millstone Grit	—	Two frags. Both have one worn surface, edges broken. 70×50 mm and 37 mm thick. 55×50 mm and 30 mm thick.
611	Coarse Quartzitic Conglomerate	104.114	Lower Stone. See Cat.
617	Coarse Quartzitic Conglomerate	—	Upper Stone. See Cat. 95×80 mm.
661	Millstone Grit	—	Worn surfaces but no edges. Probably re-used as a rubber. 51×50 mm and 40 mm thick.
661	Coarse Quartzitic Conglomerate	—	Lower Stone. See Cat. 340×300 mm.
830	Millstone Grit	—	One worn surface, edges broken. 90×65 mm and 60 mm thick.
857	Millstone Grit	—	One surface heavily worn, the other slightly so. Broken edges (one possible a cut-out for a handle. 68×66 mm and 35 mm thick.
876	Millstone Grit	—	Frag. Flat Upper Stone with vertical outside edge. 95×90 mm and 55 mm thick.
876	Millstone Grit	105.115	Upper Stone. See Cat.

(Table 51 continued)

Context	Type of stone	Fig. No.	Description
876	Millstone Grit	—	One worn surface, edges broken. 60×55 mm and 45 mm thick. Possibly part of Fig. 105.115.
876	Millstone Grit	—	Three frags. Flat Upper Stone with a vertical edge. Both sides worn. 110×105 mm and 48 mm thick. 110×43 mm and 40 mm thick. 95×58 mm and 48 mm thick.
885	Millstone Grit	—	One worn surface, broken edges. 50×42 mm and 38 mm thick.
2030	Coarse Quartzitic Conglomerate	—	Lower Stone. See Cat.
Pestles, hammerstones and rubberstones			
70	Quartzite Pebble	—	Oval, worn at both edges and one longer side. 95×80 mm and 37 mm thick.
465/4	Sarsen	104.112	Worn around the edges.
465/4	Great Oolite: Limestone	—	Irregular with several worn faces. Burnt. 88×80 mm and 60 mm thick.
464	Great Oolite: Forest Marble	—	Tapering slab with worn surfaces 95×80 mm and 30 mm max. thick
273/2	Great Oolite: Bath Stone	104.113	Worn on one side and at the ends.
646	Quartzite Pebble	—	Sub-rectangular, worn at one end and pitted on the sides. 83×70 mm and *c* 5 mm thick.
500	Quartzite Pebble	—	Broken, sub-rectangular, battered on one corner. 40×38 mm and 34 mm thick.
645	Quartzite Pebble	—	Triangular, oval in section. Burnt, with possible worn areas. 65×58 mm and 50 mm thick.
774	Quartzite Pebble	—	Broken. Burnt, but no signs of wear. 41(min)×65 mm and 2 mm thick.
788	Quartzite Pebble	—	No signs of wear. 60×39 mm and 28 mm thick.
Architectural fragments			
274	Great Oolite: Bath Stone	—	Dressed block with chamfered edge. 125×125 mm and 95 mm thick.
271	Great Oolite: Taynton Stone	105.118	Roof ridge 185 mm across and 97 mm high.
270	Great Oolite: Taynton Stone	105.119	Block with concave moulding or part of a drain.
612	Great Oolite: Forest Marble	105.120	Slab with square socket, possibly for a column.
Statuary			
U/S	Great Oolite: ?Taynton Stone	105.121	Figure of ?Dionysus holding a cornucopia (Taylor 1948, 76; Toynbee 1964, 90).
Hollowed stones: gate pivots			
414	Great Oolite: Forest Marble	105.122	Deep hollow worn very smooth.

(Table 51 continued)

Context	Type of stone	Fig. No.	Description
465.3	Great Oolite: Forest Marble	—	Roughly circular, 295 mm across but broken in half. Central circular hollow 115 mm across and 35 mm deep. Probably the other half of Fig. 106.124.
465/3	Great Oolite: Forest Marble	106.124	Hollows on both sides; re-used.
Hollowed stones: lamps and troughs			
582	Great Oolite: Taynton Stone	106.130	Obtuse-angled corner of trough.
560	Great Oolite: Taynton Stone	106.126	Sub-rectangular block, broken, with part of a shallow hollow. The hollow was probably originally only slightly larger.
560	Great Oolite: Taynton Stone	106.127	Complete circular stone lamp.
558	Great Oolite: Taynton Stone	105.123	Corner of trough
550	Great Oolite: Taynton Stone	106.128	Broken sub-rectangular block, possibly a lamp.
560	Great Oolite: Taynton Stone	106.125	Square corner with circular hole. The bottom may have broken off.
876	Great Oolite:	106.129	Block with straight sides meeting at obtuse-angled corners, possibly hexagonal, and with a circular hole through the middle. There may originally have been a bottom, now broken off.
Oven bases and potlids			
647	Stonesfield Slate	106.131	Circular plate with bevelled circumference.
?830	Stonesfield Slate	—	Similar size to Fig. 106.131, but broken
U/S	Potlid	—	Circular flat disc with a bevelled circumference 100 mm dia. × 7 mm thick.
Whetstones			
160	Unknown	—	One worn surface, broken. 20 × 17 mm and 13 mm thick.
487	Purple Sandstone: ?Trias	—	Flat slab, worn surface with slight needle-sharpening grooves. 137 × 70 mm and 24 mm thick.
655	Purple Sandstone: ?Trias	—	Flat slab worn very smooth. 78 × 75 mm and 26 mm thick.
481/1	Purple Sandstone:	—	One right-angled corner of a flat slab, the other edges broken. Needle-sharpening grooves. 78 × 73 mm and 13 mm thick.
481/1	Blue-grey Sandstone:	—	One right-angled corner, the other edges broken. Deep needle grooves. 34 × 25 mm and 12 mm thick.
854	Purple Sandstone: ?Trias	107.132	Broken. Underside rough.
830	Scandinavian Schist	—	Rod-shaped hone. One end squared, the other broken. 76 × 18 mm and 10 mm thick.

(Table 51 continued)

Context	Type of stone	Fig. No.	Description
559	Purple Sandstone: ?Trias	—	Rod-shaped hone. One end squared, the other broken. Needle grooves on both sides. 45×19 mm and 18 mm thick.
?494	Unknown	—	Rod-shaped hone. One end squared, the other broken. Worn in the middle. 47×20 mm and 14 mm thick.
1504	Unknown	—	Rod-shaped hone. One end squared, the other broken. Slight needle grooves. 95×25 mm and 16 mm thick.
876	Purple Sandstone: ?Trias	107.133	One right-angle corner. Needle grooves on both sides.
876	Purple Sandstone:	—	Broken slab. One side worn smooth, the other has needle grooves. 72×70 mm and 25 mm thick.
876	Purple Sandstone:	107.133	One right-angled corner. Needle grooves on both sides.
876	Purple Sandstone:	—	Broken slab. One side worn smooth, the other has needle grooves. 72×70 mm and 25 mm thick.
Dished slabs			
481/1	Blue-grey Sandstone:	—	One right-angled corner, other sides broken. Part of worn hollow in centre. 95×92 mm, 21 mm thick at edge, 12 mm in hollow.
612	Great Oolite:	—	Broken slab with part of worn hollow in centre. 138×95 mm, 44 mm thick at edge, 18 mm in centre.
Spindle whorls and loomweights			
470	Upper Greensand	107.134	Crudely finished.
364	Great Oolite	107.135	Well-finished.
49	Great Oolite	—	Two-thirds of a circular slab 90 mm in diameter with a central hole 9 mm across. Unfinished; rough edges. 2.5 mm thick.
619	Flint Pebble	—	Sub-oval, 46×32 mm with a central hole 3×4 mm across. Probably natural.

5.11 Fired clay objects

by Alan Palmer and Tim Allen

Fig. 108

5.11.a Introduction

In total 9.826 kg were kept from the excavations, of which 1.108 kg were from pre-historic contexts and 8.718 kg were from Roman contexts. The site drawings and records suggest that the majority of fragments from the enclosures north-east of the villa, which were largely from collapsed ovens, were discarded, but in contrast most fragments from the sites around the villa were kept.

5.11.b Fabrics

Fourteen fabrics were identified which can be grouped into 6 main groups, A–F. These are described below:

Group A Mixed Clays

1a Red and white streaked clays, with ferrous lumps and streaks. Occasional other inclusions. Dense clay with soft soapy feel.

1b As 1a but very dense and less-obviously streaked.

5 Common ferrous lumps and streaks and organic voids. Occasionally streaked with white clay. Dense clay with soft texture. Similar to Fabric 1 but lighter and less soapy feel.

Group B Mixed clays and quartz

14 Dense red and white streaked clays, with sparse white calcareous inclusions and common rounded quartz. Few ferrous inclusions. Soft soapy feel, similar to Fabric 1.

Group C Organic

4a Clay with abundant organic voids and impressions, grass, straw and cereals. Light, fired hard and pink.

4b Abundant organic impressions as 4a with common small calcareous inclusions. Light and hard.

7 Common organic grass and straw voids, sparse to common limestone gravel and sparse quartz. Dense and hard-fired.

Group D Calcareous

6a Abundant limestone gravel with common quartz and sparse ferrous streaks. Soft dusty feel.

6b Abundant limestone gravel with sparse quartz and occasional ferrous specks. Soft dusty feel.

6c Abundant coarse limestone gravel, with common ferrous lumps and streaks and very occasional quartz. Dusty crumbly feel.

9 Abundant coarse limestone gravel and common to abundant rounded quartz. Very few ferrous inclusions. Soft dusty feel.

Group E Iron-rich clay with quartz (and organic voids)

3a Abundant fine rounded quartz, translucent and opaque grains, visible ×10 magnification. Common to abundant ferrous lumps and streaks and sparse voids. Dense sandy feel.

3b As 3a but including sparse calcareous inclusions of limestone gravel and occasional flint. Sometimes the clay is mixed and streaky.

3c As 3b but including possible chalk lumps.

2 Common fine rounded quartz, translucent and opaque grains, visible ×10 and ×20 magnification. Common ferrous lumps and streaks, sparse voids, probably straw or grass. Dense sandy feel. This is very similar to Fabric 3.

8 Common rounded quartz grains and small limestone gravel inclusions with sparse voids. Some ferrous staining but not common. Light clay with a soft dusty feel.

(This fabric group corresponds to the daub fabric analysed by thin-section, sample N 410. See Microfiche Ch. 2.B.2 on Fiche 1#11).

Group F Quartz

10 Common fine quartz grains, largely angular, visible ×20 magnification. Sparse to common large ferrous lumps. Hard sandy feel.

Others (occurring very infrequently)

11 Abundant ferrous streaks and lumps with sparse organic voids. Light sandy feel.

12 Abundant grog inclusions. This corresponds to Fabric 4 in the Early Prehistoric Pottery report (Ch. II.B.2).

13 Fine micaceous inclusions, visible ×10 and ×20 magnification. Very dense hard feel.

Three fabric groups were common:

A a dense clay with much iron and few other inclusions
D with abundant calcareous inclusions
E with abundant quartz

A table of the fragments by context and fabric indicating the types of object is shown below (Table 52 on Fiche 2#64).

Table 52 Fired clay: weight by fabric and type of object for all periods

Context No.	A(1+5)	B(14)	C(7+4)	D(9+6)	E(3+2+8)	F(10)	Crucible	Total
Neolithic								
1260				115 (*)	400 (d)			515
Total					(including 13 grams of Fabric 12)			528
Bronze Age								
967	115							115
969	25							25
998	2 (*)							2
1001	440 (d)							440
Total								582
Early Iron Age								
996	3							3
1141 (or 959/60)	20							20
1162						5		5
1245			3 (d)					3
1272							?2	2
Total								33
Romano-British								
11/5		11 p						11
36					480			480
49				40				40
54/6					30			30
56	85 (o)				1075 (o)+(*)			1160
132			165 *					165
163	5							5
190	10						20	30
276					90			90
299	30 p							30
328					490			490
341	10 p							10
409					10 p			10
416/7	15 m							15
433	10 (d)							10
452					85			85
453	650 m							650
471					660			660
490	90		35 (m)					125

(Table 52 continued)

Context No.	A(1+5)	B(14)	C(7+4)	D(9+6)	E(3+2+8)	F(10)	Crucible	Total
491	20 *				5 *			25
528			50 (m)					50
530				35				35
550					12			12
533	50 (m)							50
558	280 (m)							280
559						20 (m)		20
560					250 *(*)	75		325
560/3				75				75
619	15 p							15
662	60 (*)							60
781				2210 ****				2210
788						30 (m)		30
798	115 m							115
813				175 *				175
841					25			25
865			25					25
878				80 *				80
979	15 (m)							15
1416				775				775
1438			10 (*)					10
1446			5 (*)					5
1480				120 m				120
Flute		70 f						70
Total (gms)	1975	81	293	3715	3612	130	20	9826
Total %	20.1	0.9	3.0	37.8	36.7	1.3	0.2	100.0

m Loomweight f Flute p Sling pellet
* Daub d Mould o Oven structure

Figures in brackets refer to additional possible identifications. Thus there were four loomweights and seven possible identifications, making a total of 11.
Two spindle whorls, one made from Roman pottery, the other from tile, have not been included in this table.

5.11.c Types of object

The fragments were divided into sling pellets, loomweights, moulds, flute, solid clay oven structure, wall or oven daubing material, spindle whorls and unidentified. These are shown in Table 53 on Fiche 2#66.

Object	Fabric						Total
	A(1+5)	B(14)	C(7+4)	D(9+6)	E(3+2+8)	F(10)	
Sling pellets	3	1			1		5 (0)
Loomweights	2 (4)		1 (1)	1		(2)	4 (7)
Moulds	(1)						0 (1)
Flute?		(1)					0 (1)
Solid clay from oven structure	(1)			1	8 (4)		9 (5)
Wall or oven Daub from wall or oven	(2)		(3)	5	3 (1)		8 (6)
Crucible					2		2
Unidentified	6		3	3	5	1	18

Figures refer to numbers of examples identified. Figures in brackets refer to additional possible identifications. Thus there were four loomweights and seven possible identifications, making a total of 11.
There are also two spindle whorls, one made of Roman pottery, the other of tile.

Table 53 Fired clay: types of object and fabrics

The sling pellets and loomweights occur mostly in fabric A, the possible moulds in A, C and E, the solid clay oven structure is confined almost exclusively to E, whereas the oven or wall daubing material is well represented in most fabrics.

There is some correlation between fabric and function. Objects are generally made from the dense group A fabric, solid clay oven structure from E, and the wide range of fabrics used for daubing material suggests and indiscriminate use of whatever material was available.

5.11.d Spindle whorls

Fig. 108

The spindle whorls were both made from re-used materials, one from a body sherd of a second or third century decorated jar and the other from a brick or tile. Such re-use of materials to produce spindle-whorls is common on Romano-British sites.

5.11.e Sling pellets

Fig. 108.136–8

Five sling pellets were found of which three were complete or nearly complete and two were fragments.

i Fig. 108.136. Length 43 mm, maximum diameter in section 23 mm Weight 30 g (complete)
ii Fig. 108.137. Length 33 mm, maximum diameter in section 20 mm Weight 11 g (complete)
iii Length 36 mm, maximum diameter in section 20 mm Weight 12 g (almost complete)
iv A very heavily fired fragment with a high level of iron in its fabric.
v Fig. 108.138 . Dimensions unknown.

Cynthia Poole has suggested that the use of such pellets might be determined by their size and weight. Larger pellets which have been discovered in the late Iron Age, as at Danebury, corresponding to times of strife, may well have been used in warfare. Smaller pellets, however, such as those from Glastonbury or All Cannings Cross, were probably used for gaming (Poole in Cunliffe 1984, (Vol II), 398). The pellets from Roughground Farm correspond approximately to the smaller category.

The date and distribution of the pellets is given in Table 54 on Fiche 2#67 below. Three of the pellets are from the early Roman period and the pellet from context 409 may be residual from the early Roman occupation adjacent. However, the pellet from context 619 may indicate that pellets were in

use into the later Roman period at Roughground Farm.

Context	Period	Location
11/5	late first/early second century	north of villa buildings
299	second century	below Building III
341	mid-second century	below Building III
409	third or fourth century	west of villa buildings
619	third or fourth century	enclosures east of villa

Table 54 Fired clay: distribution and date of sling pellets

5.11.f Loomweights

Fig. 108.142

Four definite and seven possible fragments of loomweights were identified, of which three were triangular loomweights and four were possibly so, one was a circular loomweight, and three were of unidentifiable form. The poor state of preservation makes any analysis of size impossible, except that the circular loomweight has a diameter of approximately 100 mm.

The circular weight is an unusual form in an Iron Age/Roman context, being more typically Saxon (Hoffman 1964). The remaining fragment might be a perforated oven plate, but the rim is approximately square to the remaining face of the object, and it would be more normal to have a rather acute angle at this point. A circular weight has been found at Winterton (Stead 1976, 226–7), although that example was considerably larger.

The loomweights are distributed fairly widely over the site. A group from first or early second-century contexts are concentrated in the area north of the later villa but several come from second century or later contexts in the northern group of enclosures east of the villa. (See ovens below Ch. 5.11.j for comparable distribution). One pyramid-shaped clay weight found unstratified on the site, which has a single perforation close to the apex, is in the Filkins Museum, Glouscestershire. This object is probably a scale weight, not a loomweight.

5.11.g Crucible

One tapered rim fragment and one base fragment of a probable crucible of triangular form (see for instance Wainwright 1979, 132 Fig. 99) were found in pit 190. Together they weighed 20 g. Both fragments were highly fired, but no trace of metal residue was present.

The fabric was sandy (similar to Type 3) but included large fragments of hammerscale from iron smithing. Pit 190 contained a large deposit of iron slag (see Slag Report) and much charcoal and was probably adjacent to an iron-smithing area. It seems likely that the crucible was manufactured and used in the same area.

5.11.h Moulds

One possible mould-fragment was identified. This appeared to be bowl-shaped, but was not complete enough to identify what had been moulded.

5.11.i Possible flute

Fig. 108.139

This is an unusual highly-fired cylindrical object weighing 70 g. A length of 0.10 m survives; one end is largely complete, the other is missing. In cross-section the external diameter ranges from 29 to 31 mm and the internal diameter from 18 to 24 mm. The clay was probably wrapped round a forme, though if the object was originally only slightly longer the bore could have been made using a finger. Before the object was fired three small holes each approximately 6 mm in diameter were made

through one side, the first one 37 mm from the complete end, and all three running in a line along the length of the cylinder about 7 mm apart.

About half of the external surface has been scored by four parallel lines down the length of the object and seven at right angles to these, creating a checked effect. The other half of the exterior has lost its surface, and even the surviving surface is deeply scarred by spalling. The object was subjected to further heating after it had been broken, as the broken end was blackened like much of the exterior.

I have found no parallels to this object. Two possible interpretations are discussed in the print report.

5.11.j Ovens

This section deals only with the fired clay fragments of oven superstructure: for details of the features interpreted as ovens and their operation see Ch. IV.F.2. Oven superstructures have been divided into two types, either built entirely of clay or formed of clay daubed onto a wattle framework.

1 Solid clay oven structure. Eight definite and five possible fragments were identified, which were broken down as follows:

3	stoking hole arches
2	oven plates
1	plate support
1	plate support (pedestal)
1	flue arch
3	fragments of oven wall
2	unidentified

The fragments called stoking hole arches may equally have been from the rim of an opening in the top of the oven, through which the oven could have been loaded.

Nearly all the fragments were classified as fabric E. The dense, hard quality of this fabric has meant that surfaces have survived, facilitating identification.

All but one of the fragments came from the early Roman occupation in the west part of the site, and there was a concentration in context 56, interpreted as the ditches surrounding a domestic building. Context 49, a cigar shaped feature adjacent to 56, which lay on the edge of the quarry, may have been part of an oven, and others may have been quarried away before excavation began.

The one fragment from a later Roman context, the pedestal plate support from pit 560, was also the only fragment of Fabric group D. This corresponds to the fabric used for the later Roman wattle ovens (see below).

2 Daubed Wattle

The only oven for which substantial remains survive is from the later period from context 781. This oven was located in the later Roman enclosures to the east of the villa, along with at least 32 others. Unfortunately, only samples from this one oven were kept; these were of fabric group D.

The largest surviving piece of daub is approximately 120 mm long and 110 mm broad with a probable thickness of 90 mm; the diameter of the wattle was up to 40 mm. The fragments suggest a domed-roof structure over a wattle framework.

On one fragment the wattles meet at approximately 45 degrees, but on another they do not meet, perhaps indicating that they were fixed in the ground as stiffeners for the daub structure to adhere to. This one example of a late Roman oven suggests a change both in oven manufacture and in clay fabric from the early Roman period, but this may have been an isolated instance. It is however matched by the only piece of oven furniture from a late Roman context, pit 560 (see j.1 above).

5.11.k Wall or oven daubing materials

Much of the daubing material was oven structure (see j.2. above). The diameter of the wattles range from 4 mm to 40 mm. On one fragment are two flat plank impressions at 45 degrees to one another,

possibly indicating that plank-built structures were daubed.

5.11.1 General conclusions

The shift in location of the loomweights and ovens suggests that there may have been a deliberate relocation of activity away from the main villa buildings to the east of the site.

5.12 Building materials: floors

by Tim Allen and Elizabeth MacRobert

Buildings I, II and III had been badly damaged either by robbing in antiquity, subsequent ploughing or pre-excavation stripping, and none of the final phase floors had apparently survived. In Buildings II and III floors as well as walls had been robbed in antiquity (see Ch. IV.C). For the later phases of the buildings all the evidence for floors, walls and roofing comes from disturbed material in destruction debris and redeposited contexts.

Flooring found in the destruction debris of a particular building can with reasonable confidence be taken to indicate that these types of floor were in use within it, though the redeposited material from just east of Building III should warn against assuming that pieces found within any particular room necessarily originated there (Ch.IV.C.8.d).

Types of flooring are divided into mosaic or tessellated and *opus signinum* or mortar.

5.12.a Mosaic and tessellated fragments

by Elizabeth MacRobert

5.12.a.1 Introduction

Only 414 tesserae were kept from the excavations. Of these 181 are single pieces, the rest form 42 groups of two or more tesserae. Some groups were recorded by Margaret Jones but are now missing. Four colours occur: white (oolitic limestone), light grey (oolitic limestone), red (tile), and blue (blue lias limestone), and the tesserae have been grouped into three approximate sizes: small — 11 mm × 8 mm to 13 mm × 12 mm, medium — 14 mm × 15 mm to 21 mm × 19 mm and large — 20 mm × 25 mm to 35 mm × 32 mm (the measurements given are of the upper surface).The totals of the different colours and sizes are as follows:

	Small	Medium	Large
White	4	90	140
Grey	0	5	0
Red	1	57	4
Blue	19	91	3
Totals	24	243	147

Table 55 Numbers of tesserae of different colours and sizes

Of 139 tesserae found in the 1982 excavations 108 were large white tesserae, whereas from the 1957–65 excavations the large white pieces were only 32 in a total of 275. This is probably due to different recovery strategies.

Most of the tesserae have traces of white mortar on them, the groups being set in white mortar usually with an *opus signinum* infilling on the surface. There are also instances of pink, cream and yellow mortar, but no mortar analysis has been done and the colour distinctions may not be significant. Most of the pieces show wear on the surfaces, which can be smooth or cracked and uneven, but a few may not have been used.

5.12.a.2 Distribution

Most of the pieces definitely or probably come from Building III, including all but two of the large white tesserae. The four large red tesserae are however not from Building III, and the five light grey tesserae are from Building I. References in the notebooks show a minimum of 37 tesserae from Building I. At least 8 tesserae are recorded from Building II but this number is insufficient to prove tessellation there. From Building III the greatest number are recorded from Room 2 (see below); a few tesserae possibly come from Rooms 1, 4, 5 or 6, and 7 or 8, but again not enough to prove that there had been tessellated floors in these rooms.

5.12.a.3 Designs

Fig. 151

The surviving groups show a limited range of geometric patterns, some of which may be grouped together. Most of these come from Building III, Room 2. Of the groups showing curves, the most extensive pattern is No. 4, which may form a corner, although on a similar sequence No. 1, the blue may be curving. This latter group from robber trench 246 was drawn by Margaret Jones but is no longer extant. Possibly of the same design are 2, 6 and 8. Fragments 1, 4 and 6 are all from Room 2, and although No. 2 comes from Room 8, it is from debris and may therefore be displaced from Room 2. No. 8 is simply recorded as possibly from Building III.

Nos. 3 and 15 have curving lines of blue, white, and then red, and the white and red on No. 5 might be linked with these or with another fragment which has red, white and blue. The other curve is on 7 which also has red and blue. 3, 5 and 7 are all from Room 2, and 15 is recorded as possibly from Building III so may also have come from Room 2.

The other more complex designs, eg. Nos 7, 10 and 11 are mostly also from Room 2. The other pieces from Room 2 are single tesserae, except for one fragment (no longer extant) with a square of four white pieces capped with a triangle of five blue or red tesserae.

Most of the remainder, eg. Nos. 9, 12, 13 and 14 show straight lines of separate colours, though one piece has two white, two blue, and then a blue and a white tessera. Nos. 16, 17 and 18 come from Building I. 16 has only three straight rows of different colours, but includes the only light grey tesserae from the site. 18 has two blue tesserae bounded by three larger white tesserae and 17 one white tessera bounded by three blue tesserae. The blue tesserae on 17 have one corner cut away in a curve, which may indicate that they were surrounded by a curving design.

In conclusion, Room 2 of Building III appears to have been floored with a mosaic incorporating a curving design, possibly part of a circular or a wavy pattern, and square or rectangular divisions. The site sported at least one other tessellated floor in Building I.

5.12.b *Opus signinum* and mortar

5.12.b.1 Introduction

Samples were kept from Building III, though they were attributed only by 3 m (10 feet) square, and rarely was it stated whether they came from debris or from in situ layers. Since 1st phase floors were only tentatively recognised, it is probable that none of the obvious floor surfaces were from in situ deposits. Hardly any samples were kept from Buildings I and II, and only two of these had specific labels, the rest were simply labelled Buildings I–III. For all three buildings it has been necessary to use the drawn sections, notes on the plans and comments in the notebooks to supplement the samples themselves. For the building materials the same problems with the notebooks have been encountered as for the painted plaster; not all entries are recorded in the same detail, some simply say 'mortar' or even 'building debris', and where details are given it is unclear what quantity is meant.

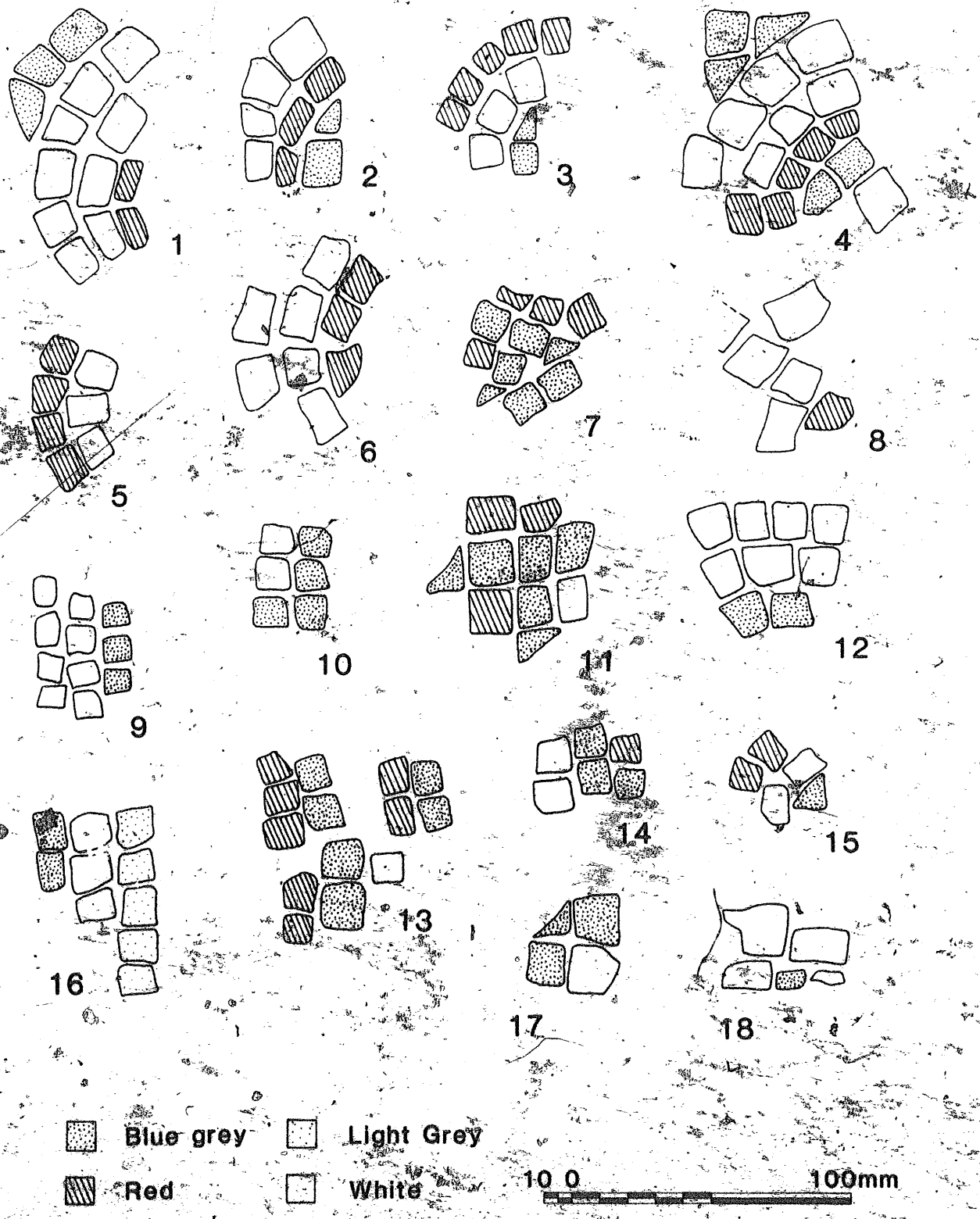


Figure 151 Mosaic fragments

5.12.b.2 Common mortar types from Building III

Most of the clearly attributable fragments came from the later phase of Building III. Here there were two common mortar mixes, both consisting principally of lime and fairly coarse limestone gravel: Type A was coarse, a crumbly yellow mortar with gravel pebbles up to 50 mm long, surfaced with a thin skin of bright red crushed tile. A similar mortar was used for floors in Building C at Shakenoak (Brodribb *et al* 1973, 16), where a pitched stone foundation was covered with coarse yellow mortar and then surfaced with a thin layer of pink mortar and pulverised tile.

Type B was a light pink or cream/pink mortar, similar but harder and more compact, and containing some coarsely crushed tile. This was an approximation to *opus signinum*, and in general the gravel was better sorted, the maximum size being 20 mm long, but the colour was only very light pink and the fragments of tile were sparse and gave a speckled appearance to the mix.

Fragments of the tile-surfaced mortar A were up to 72 mm thick, and floors made of this poor-quality mortar were probably thickly-bedded, indeed the recorded fragments came from Rooms 7 and 8 where the second phase make up was of clean yellow mortar up to 0.28 m deep. All the provenanced fragments of type B were thinner, from 35–48 mm thick, probably reflecting the higher-quality of this mortar. In the lumps found east of the building in 1982 the mortar mix contained very sparse tile lumps, but the surface had a higher density and was more pink, as if this mortar as well had had extra tile and slurry sprinkled on the surface to make it appear a better quality *opus signinum*.

Type C was another variant of the tile surfaced mortar, very coarse and gravelly cream or white mortar. This was denser and harder than the yellow mortar, and its pink surfacing was only 1 or 2 mm thick and contained only finely crushed tile fragments The sample was labelled only Buildings I–III. Very similar fragments came from the debris just east of Building III, but this mock *opus signinum* technique is also attested from Trench 2 between Buildings I and II, and this is probably the sample kept from there.

There were varying degrees of wear upon the floor samples. This probably simply reflects the parts of the floors from which these pieces came.

5.12.b.3 Quarter-round mouldings

A short length of quarter-round moulding came from Building III, Room 1 or 2, and another unlabelled piece of very similar mortar and curve was probably from the same room. The mortar was Type D — a pink mortar with crushed tile and a very little small gravel. The tile was very coarsely crushed, some fragments being as much as 20 × 18 mm, and included worn tile tesserae fragments, but was not a dense *opus signinum*.

A third fragment of quarter round moulding came either from Building II or the destroyed hypocaust north of that. This was also of light pink mortar with coarse crushed tile and some gravel, but was almost cream in colour unlike the Building III samples. There was also a flat-surfaced unprovenanced piece of Type B, at least 75 mm thick, probably from Building III.

5.12.b.4 Other mortars

The remaining fragments of mortar all come from secondary contexts and are redeposited. Some came from Building IV and the yard between it and Building III, but not from the floors of the excavated part of Building IV. The rest came from the north and south groups of enclosures east of the villa, and from the gravel pit area. There are several subdivisions of *opus signinum*: Type F, in which purple or black inclusions of crushed sandstone are common, Type G, with a high proportion of white mortar specks and very dense tile inclusions, and a somewhat softer more porous mix, usually with larger tile inclusions.

Two fragments from 1413 with a smooth curved surface may have been from a quarter round moulding, and the back of one of these bears the impression of a step with a 45 degree bevelled edge, as if the round moulding were replacing an earlier levelled kerb sealing the junction of wall and floor.

Two other fragments, from 481/1 and 611, have a flat surface coated with a blue-black and light

blue substance respectively. Both of these were of the same dense tile fabric, G, and most likely came from a bath; *opus signinum* was not normally painted except in baths, and blue paint imitating water was frequently employed, for instance at Rockbourne, Hants and at Sparsholt (Johnston 1979, 17–19). Similar fragments painted white were found in the yard levels between Buildings III and IV and others painted red labelled Buildings I or II. Several fragments consisted of two mortars, a deep pink *opus signinum* (Type F) and a lighter almost cream mortar with tile in it. One piece from 836 was bedded upon purple sandstone chips 15–20 mm long.

All of these mortars are unlike those in Building III, in particular the two denser fabrics with a bright or deep pink colour. Deep pink cement is mentioned several times on the plans of Building II, and in the notebooks, particularly in Room 2. *opus signinum*, without further definition, also occurs in debris found in the ditches west of the villa, perhaps from the uninvestigated west end of Building I; the painted plaster from this area was not similar to that from Building III.

Also from Building IV was one piece of pink crumbly mortar resembling Type B from Building III. At one end the mortar was cream, and the pink colour may have been caused by heat from the burnt clay deposit 1416 (Ch. IV.C.6.f).

5.13 Building materials: walls and ceilings

The painted plaster is considered first and then undecorated plaster and other building materials.

5.13.a Painted plaster from the 1957–82 excavations

by Elizabeth MacRobert

5.13.a.1 Introduction

In all 1289 fragments of painted plaster were kept from the 1957–65 and 1981–2 excavations. 176 of these come from excavations in 1957–1959 and from Building IV excavated in 1982. These are recorded separately from the remaining 1113, which form a more coherent group excavated just E of Building III in 1982.

The notebooks for 1957–1959 record plaster from or near all of Buildings I–III; some plaster was discarded and therefore the surviving sample can give only a qualitative, not a quantitative, assessment of the colours and designs. In addition many fragments were labelled simply 'Buildings I–III'. With the aid of Margaret Jones's draft report however contexts have been established for some pieces, and suggested connections between fragments give possible contexts for a number of others.

5.13.a.2 Methodology

The plaster fragments were washed and then the painted surface was treated with a dilute PVA solution (Davey & Ling 1982) to prevent the colours from fading. Each fragment was then numbered and recorded individually, and a set of colour slides was taken to show all the colours and shades (slide 23), the various mouldings (Slides 2 and 3) and all fragments with two or more colours, where possible arranged to show suggested links between designs (slides 11, 12, 13 and 15). Otherwise they were grouped according to similarity of design, eg. stripes (slide 22). The fragment numbers in the slides are used below to refer to individual pieces. The three fragments 2, 59 and 128 with earlier painted surfaces were then split with a chisel and the earlier decoration was recorded and photographed using the same number as for the later surface plus the Roman numeral i.

Note: The original intention was to publish the slides of the painted plaster on colour microfiche. Because of the cost this has not been possible. Some of the fragments were not described in detail in the original report, and where appropriate supplementary brief descriptions of these are given (by Tim Allen) in square brackets [ ]. The colours mentioned in these are not derived from a re-examination of the fragments using the colour chart, and are thus only approximate.

The painted plaster was considered from the following aspects:

Composition of the mortar (by macroscopic examination).
Colours of the paint (using the Stanley Gibbons Colour Guide (Branigan 1971, 96–9).
Designs (grouped into plain, stripes and patterns).
Mouldings.

No pigment analysis has been done.

5.13.a.3 Mortars

The mortars can be divided into three groups based on their colour, composition and texture.

1 A yellow or cream mortar with limestone gravel inclusions, occasionally as large as *c* 28 mm × 20 mm. In texture these mortars are fairly firm and compacted. This is the commonest type of mortar. Some fragments also contain small crushed tile inclusions, up to *c* 6 mm × 13 mm and/or chalk inclusions of a similar size. Often these fragments have a final application of a uniform thickness of 12 mm to 16 mm. Most of the provenanced fragments come from Building III, but at least one fragment from Building I, namely 55, has a final application of 13 mm.
2 Pink mortar which also contains limestone gravel inclusions up to *c* 10 mm × 8 mm in size with considerable crushed tile which can be as large as *c* 15 mm × 12 mm. The mortar is generally less compacted than the other mortars, although fragments 61, 129, 130 and 133 are more compacted, firmer, and have smaller inclusions. This type of mortar is found in contexts from all three buildings.
3 A white mortar containing limestone gravel inclusions which are generally very small — up to *c* 4 mm × 6 mm. It is very firm and compacted and some fragments also contain small pieces of crushed tile up to *c* 5 mm × 5 mm in size. Many of the fragments have a final layer of mortar (*c* 7 mm to 12 mm), thinner than that on the other mortars. All these fragments, except 106, come from the enclosures east of the villa or from Building IV. The fragments from the eastern enclosures may also come from Building IV. 106 is not definitely associated with any building.

The majority of fragments show only one application of plaster onto a flat, keyed surface. A few fragments have two or three applications which usually appear to be contemporary, although on fragments 2, 59 and 128 a fresh layer of plaster was applied to an earlier painted surface. In most cases the plaster fragments have been grouped on the basis of their designs, but a connection between 3 and 16 has been suggested on the basis of the mortars as well as the close resemblance in the paintwork. The mortars corroborated the possible links found in the designs with the following provisos:

Slide 1 the mortars of 126 and 127 are more granular and closely compacted than those of the other fragments.
Slide 6 The mortar of 56 is yellow and less compacted than on the other pieces.
Slide 13 the final application of mortar on fragments 19 and 73 is thicker by up to 9 mm. Slight variation in the thickness of the final application of mortars also occurs in Slide 11.
Slide 18 112 has a thinner final layer of mortar and no tile inclusions are visible. It is probably not connected with 109 and 111.

5.13.a.4 Paints and colours

The plaster surface was smoothed before painting, except in the case of a few of the dado fragments painted with spatter dash. Some other fragments have slight convex and concave surfaces, and 104 has one rounded edge, perhaps where it had been keyed onto a flue tile. The application of the paint was generally of a consistent standard; on two fragments with the same design, 77 and 100, lines incised on the plaster surface before painting may have been guide lines for the painters, particularly as one such line occurs where two colours meet. Only in two cases, 7 and 158, is the paint fugitive.

There were 35 colours identified (32 from the colour chart with the addition of white, cream and

black) but sometimes colours were a different shade from that given in the chart. The colours are as follows (number of occurrences in brackets):

white (60)	venetian red (46)	lake-brown (29)
cream (28)	flesh (28)	black (26)
yellow (24)	bistre-brown (22)	maroon (19)
turquoise-green (18)	buff (15)	yellow-brown (13)
rose (11)	red-brown (9)	ochre (9)
slate blue (7)	orange-brown (7)	brown (6)
dull green (6)	brown-purple (4)	lilac (4)
drab (4)	cinnamon (3)	brown-red (2)
grey-green (2)	dull purple (2)	purple-brown (1)
olive-brown (1)	sepia (1)	chestnut (1)
bistre (1)	turquoise-blue (1)	light blue (1)

The paints have not been analysed but it is likely that some colours are the same paint which has weathered differently. Such differential fading can be seen in fragments 40 and 41 which show the same yellow cable design on brown background, but on 41 the stripes are yellow, and on 40 cream. Brown-purple and purple-brown are probably shades of maroon and brown-red, lake-brown and red-brown shades of venetian red; on the spatter dash fragments the red has been recorded as all three shades, and on 123 as maroon (where overall the colours were darker). Bistre-brown and olive-brown may be grouped together as may cinnamon, buff and possibly ochre.

5.13.a.5 Decoration

Because of the very limited number of fragments and their uncertain provenance, only tentative connections between patterns can be suggested.

Slide 1 shows the spatter dash pattern with a pink ground and red, red and white, maroon, or white and turquoise-blue spatter. In the case of red and white spatter, the white was usually applied first, and the red often on top. Drips of paint show which way up the fragments were. By analogy with other sites — Gadebridge Park, (Liversidge, in Neal 1974, 200ff.), Shakenoak, (Brodribb *et al* 1973, 19, 91ff), and Silchester (Boon 1974, 211ff.) — the spatter dash may have formed part of the dado, but no fragment here links it with any other design. Some fragments definitely come from Building III, others are labelled from Buildings I–III. The notebooks refer to only one fragment of red splashes on white from layer 131, but Margaret Jones' draft report also mentions spatter dash from Building I. The fragments on slide 4, from Buildings I–III, have the same sequence of black, white and red stripes, the red, and perhaps the black, probably being part of broader bands or panels. Another sequence common to a group of fragments is illustrated on slide 5, with ochre stripes next to brown, venetian red and then buff, with a turquoise-green and white floral design on top of them all. This last could be a later addition to an earlier striped design. In the draft report turquoise is only recorded from Building III, but green is noted from I and II.

Fragments on slides 6 and 7 also share the turquoise-green and white design. Fragment 42 also has a trace of red under the white, which may indicate an earlier decoration; this is from Building III. With one exception the fragments on slide 6 from Buildings I–III have a buff ground with the floral design on top. Fragment 56 however has a pink ground and different mortar. Thus the only provenanced example of the floral design is from Building III, which gives a possible context for the other fragments, especially given the lack of reference to turquoise from Buildings I and II.

Slide 8 shows three types of diagonal stripes, cream on cinnamon, bordered by cream and maroon stripes, white on pink bordered by white and red, and lilac on pink. All come from Building III.

Fragment 55 on slide 9 is the one really distinctive design definitely not from Building III. It comes from trench 20 (Fig. 37). [This shows maroon stripes and patches, red leaf-shaped brush-strokes and yellow patches on a white background.] This may possibly have been a floral design without using

naturalistic colours, in contrast to the design on slides 5 and 6 described above.

Another individual design occurs on fragment 47, slide 10, from Building III. A pink ground has maroon and white stripes at one edge and perhaps a brown stripe at another adjoining edge. In the field is yellow surrounding a red area with two straight sides and one curving concavely facing the maroon and white stripes. The fourth edge does not appear on this fragment. On the red is a pink brush stroke ending in a whirl.

Fragments 67 and 68, slide 11, have the same sequence of green, pink, red/purple with the same width of pink. 68 shows a corner of one or two panels bordered by a brown stripe. Therefore possibly these two fragments represent the borders of a yellow and a green panel. Both have traces of a red design underneath as has 71, which may be linked as another border to one or other suggested panel. All three fragments are recorded as from Buildings I–III.

A further possible border for stripes within yellow panels from Building III is shown in slide 15. 88 is the most extensive fragment showing red, yellow and black, and perhaps linking with 84 and 99 to give further yellow on the other side of the black. 86 and 93 have more deliberate black spots than the spatter dash and 86 also has two black lines leading out at 90 degrees to each other from a larger spot. These two may form part of a decorated yellow panel or dado. Fragments 66, (wrongly numbered 99 on the slide), 72 and 17 on slide 20, all from Buildings I–III have three more borders, possibly to a yellow panel.

Fragments 3 and 16 are both labelled Buildings I–III. Fragment 3, which consists of six parallel stripes of different widths on a white background, may be a fragment described in the notebook from Building II. The central brown stripe on this piece, which is much wider than the others and varies in tone from dark at the edges to almost white in the centre, may have been an attempt to achieve perspective and could be a column. Although 16 only has a white ground with one narrow black line, this is of the same width as those on 3 and the quality of the painting is very similar. Given also the similar pink mortar of the two fragments they may have formed part of the same design.

The most extensive set of connections between fragments is suggested in slide 13. Four of the fragments, 38–41, definitely come from Building III, the others are labelled Buildings I–III. 38 and 39 both have a yellow cable between yellow lines on a brown ground. On one side of this is a black stripe and then two shades of pink. If 53 does have part of a cable design on it, the green on the edge gives a different border or panel to the pink, perhaps the opposite side. Fragments 20, 21, 4, 22, and 35 all have the same sequence of pink, black, yellow, and brown with green patches on top which may be part of a floral design. The two shades of pink on 21 suggest a link with 38 and 39, thus forming a pink band or panel, perhaps with pale pink diagonal stripes across it as seen on 21. Fragments 69 and 19 offer a somewhat tenuous link with the above as the green on the edge could be stripes rather than floral. It is followed by black, and one or two yellow or cream stripes on brown. 74 has three yellow stripes of similar width and distance apart, and 73 has two, followed by black and then white with a diagonal ochre stripe on top. This may link it with fragments 40 and 41, the latter also having white at one edge. A white band or panel would then have another yellow cable between yellow lines on brown on the other side. The cable is followed by an indeterminate design with yellow/cream and drab patches on the brown. In addition fragments 38, 39 and 74 all have traces of an earlier red design underneath that described.

Slides 14, 16, 19 and 17 all show various floral designs. [Fragments 76 and 78 on slide 14 are brown 'leaves' on a white background, 80, 87 and 92 on slide 16 are white long narrow petals on a maroon background, and 77 and 100 on slide 17 white petals and pink blossom on a black background.] Those on slides 14, 16 and 17 are from Building III. Fragments 124 and 102 on slide 19, both from Building III, show no determinate pattern, but the other four fragments 10, 31, 54 and 79 are very probably all floral. 31 and 79 are from Building III, 54 may be from Building I, feature 95. 10 is labelled Buildings I–III.

The remaining slides illustrate a variety of stripes and designs. On slide 18 all the fragments are from feature 558 except 116 which comes from feature 660. 113 and 114 are part of one design, and

may be connected with 108 and 118. 109 and 111 have the same brown speckling on white, which can also be traced on 112. 115 and 116 have similar white and drab/grey colours, but they form no distinct design, and also have red, and red and brown traces respectively.

Slide 21 has a series of separate striped fragments. 83, from Building III, has broad lilac, red and drab curving stripes with narrow white stripes between them. With one exception all the other fragments also come from Building III; the exception, 121, comes from 868/1 in the southern enclosure group E of the villa. On slide 22 fragments 12, 23, and 24 from Buildings I–III may all be borders to red/flesh panels. Fragment 15, also from Buildings I–III, has a brown ground with two yellow stripes on top which are largely covered by orange-brown leaving only 1 mm at each edge. And finally 70, from Buildings I–III, has two cream stripes on red, slightly overlapped by part of a turquoise-green design.

From the above descriptions, it can be seen that Building III contained more elaborate and floral designs than the other buildings.

In three cases an earlier painted surface was detected, and in two these proved to be from one design. Fragment 2 had an earlier maroon surface underneath the moulding. Fragments 59, possibly from Building I and 128, from feature 1413, Building IV, have parts of the same design (slide 25). [This consists of borders of purple and lake brown stripes at right angles surrounding lilac panels, with a running lilac scroll painted along one border, probably the vertical].

5.13.a.6 Mouldings

Of the concave mouldings (slide 2) two have an angle of 90 degrees, two 129 degrees, one 134 degrees and one 147 degrees. Three are painted maroon, one dull purple, one red, and fragment 59, on which the earlier surface is moulded and painted with a design (see above), has been filled in with plaster painted white and red on a rough surface. Fragment 2 also has an earlier painted surface, this time covered by the later moulding. These mouldings may have formed corners or parts of pilasters. On the basis of the draft report 2 and 59 have been identified as possibly from Building I, 25 and 49 possibly from III, and 26 and 60 from I–III.

The convex mouldings (slide 3) have angles of 100, 117, 123, 128, 129 and 133 degrees. Two are painted red, number 1 has a maroon stripe on white on one side of the moulding, 13 has cream, red and pink stripes, 129 has red with a patch of grey, and 86 is unpainted. Again following the draft report fragments 1 and 13 may have come from Building I and 46 from III. Fragment 85 definitely comes from III and 129 from IV, and 48 is left as from I–III. Again these fragments may be parts of pilasters or mouldings round windows or doorways.

5.13.b Painted plaster from the 1990 excavations

by Robin Brunner-Ellis

5.13.b.1 Summary

Further excavation in 1990 produced another 119 fragments, from Building III and from Building IV. These were described using the same colour scheme as the fragments from the earlier excavations, and were divided into monochrome and polychrome fragments, the polychrome examples being further subdivided (see below). A full catalogue will be found in the Archive.

5.13.b.2 Building III

A total of 90 fragments were recovered.

Monochrome panels A total of 60 fragments were found. The most common panels represented are brown-red and white.

Polychrome (panels/borders) A total of 21 fragments were found. The most common combinations present are yellow and brown-red borders over a white background. There are also composite borders with stripes of several colours, e.g. an ochre panel divided from a pale blue panel by a

double stripe of crimson and white.

Polychrome (elaborate decoration) A total of 7 fragments were found. As with the previous groups from Building III, these comprise oblique stripes on monochrome panels with borders, and floral motifs. A white panel is bordered by a mauve stripe and overlain by oblique mauve stripes; crimson and ochre leaves or petals occur on a white panel, and there is also a crimson garland or 'trail' hanging from a crimson border on a white panel.

Polychrome (dado) One example of brown-red 'spatterdash' on a white background occurs.

Mouldings One fragment of a splayed embrasure was found. The wall-face has an indigo stripe 14 mm wide, divided from a crimson panel by a white stripe. The angled face has crimson on a yellow panel. This fragment was painted on *opus signinum*, which may indicate that it came from a bathhouse.

5.13.b.3 Building IV

A total of 29 fragments were recovered.

Monochrome Amongst the 19 monochrome fragments the most common colour is vermilion, followed by brown-red and mauve. Two fragments of white on *opus signinum* may come from a bathhouse.

Polychrome (panels/borders) A total of 8 examples were found. Single stripes of black and grey occur on crimson panels, and yellow and brown-red stripes on white panels. Multiple stripes also appear, eg. black, white and green stripes on a vermilion panel and a blue-green border with narrow black trail over a flesh panel.

Polychrome (dado) Two examples of spatterdash on flesh background occur: one vermilion, the other slate blue, white and brown-red.

5.13.c Undecorated Plaster and Tufa

by by Tim Allen

5.13.c.1 Mortars at corners and on pilasters

Type E, a light pink mortar with smaller tile, softer and less compact, was used where two surfaces met at an angle of 105–110 degrees, possibly the edge of a pilaster or a window splay. This corresponds to the pink mortar recorded in the painted plaster report.

Another fragment has a very similar fabric to the quarter round moulding from north of Buildings I and II. It had one flat surface and seemed to come from the edge or corner of a wall.

5.13.c.2 Ceiling plaster

A white gravel mortar bearing the impression of a thin wooden lath 12 mm wide and of very slender twigs at right angles to the lath came from Building III, Room 5, and another fragment of the same type with straw or twig impressions through it from debris among the flues in Room 1. These pieces were very different from the yellow mortar backing to the wall plaster, and the lath and straw or twig impressions, perhaps as much to lighten the mortar as to strengthen it, suggest that these fragments were from the ceilings, which therefore appear to have been left white. Similar lath impressions were found at Shakenoak (Brodribb *et al* 1973, 97).

From Building II came a fragment of white light porous mortar with sparse crushed tile bearing the impression of a wattle 13 mm in diameter. The fragment seemed to have two flat edges at right angles. There were also holes approximately 5 mm in diameter, presumably twigs infilling between more substantial wattles. The association of white mortar (apart from Type E), with buildings other than the second phase of Building III is borne out by the painted plaster (see above).

Three fragments of an off-white lime mortar with much limestone gravel came from two silt-filled

pits 558 and 560 (see Ch. IV.F.3.a). This mortar is most like the possible ceiling fragments from Building III, and may have derived from the final destruction of this building. The painted plaster from these pits was however unlike that from Building III, resembling rather that of Building IV.

5.13.c.3 Tufa

One fragment of sawn tufa was also kept, and references in the notebooks indicate that several were found in debris in ditches 403 and 405 west of the villa. The surviving fragment had one flat smoothed surface, possibly coated with a very thin layer of white plaster. At right angles to this was another roughly flat surface, presumably one edge of the block. There was traces of *opus signinum* on the rough flat edge, and extending over the smooth surface in a band *c* 15 mm wide. Possibly this was the original bonding, but *opus signinum* also occurred along a broken edge, so the block may have been reused. Maximum thickness was *c* 68 mm. Sawn tufa was often used in ceilings because of its light weight; blocks were found at Shakenoak in the debris of Building C and of part of the bath-suite of Rooms VI and VII in Building A (Brodribb *et al* 1971, 25; 1974, 24). Tufa is common in the Upper Thames, deposited in hard-water springs, and specific sources are mentioned by Dr Philip Powell (Brodribb *et al* 1972, 153) on the course of the Evenlode. Both of the groups of tufa found at Shakenoak were associated with the roofs of bathhouses, as are other tufa blocks from Fawler, Oxon (Allen 1988, 310), and these pieces may be further evidence of a bathhouse at Roughground Farm. Norman Davey (Davey 1961, 201–203 and Fig. 114 B) refers to the use of specially shaped tufa blocks at various sites for the construction of hollow vaults in bathhouses, and at Sparsholt there were tufa voussoirs tapered in 2 directions used for the apse vault (Johnston 1978, 79–82 and Fig. 24).

5.14 Building materials: roofing slates and roofing and other tiles

5.14.a Stone slates and stone ridge-tile

Slates occurred in very large quantities all around Building III, and were also recorded as occasional finds around Buildings, II and IV. In particular, there are two references to slates below mortar spreads in Building I. In neither case were any kept, nor is it certain whether definite roof slates with holes were found, or simply thin slates, which need not have been used for roofing. It is however possible that part of Building I was at some time roofed with slates, as Building III certainly was.

From Building III whole layers of roof slates were recorded west of the building, and though imbrex and tegula fragments were found in some numbers these could have been reused for other purposes. Complete slates were generally hexagonal with two parallel straight sides and shorter pointed ends top and bottom. Most ranged from 0.35–0.46 m long and from 0.25–0.31 m wide, and the length of the tapering sides and the ends was from 0.18–0.21 m, except for one example with sides 0.23m long. There were also several smaller hexagonal slates, *c* 0.30 m long and 0.19m wide. The slates were from 15 mm to 30 mm thick. There was usually one small circular hole for attachment at one pointed end, sometimes central but often to one side or the other. One slate still had the nail through this hole.

One or two slates were more diamond-shaped than hexagonal, and were only 0.36m long. In addition where flat edges were required, at the valleys where the direction of the roof changed and possibly at the gable-ends, there were triangular slates with one straight side 0.35–0.41 m long and the shorter sides projecting to a mid-point angle, 0.18–0.25 m wide. The hole in these cases was halfway along one of the shorter sides and close to the edge. At the ridge the upper edge was cut straight across, and a band along this edge was lighter in colour where the ridge stone had been set. The sides of one example began to taper but were then cut straight across, as if a normal slate had had the point snapped off to adapt it. A second was approximately one half of a normal tile, but this had no hole for attachment. One or two slates showed mistakes, either where holes had been drilled in the wrong place and there were consequently two holes, or where the hole had been placed too close to the edge, and the slate had eventually broken.

Several of the smaller hexagonal slates which were recovered from the 1990 excavation lacked holes,

although they appeared to be complete. This may indicate that the holes were made, and possibly the slates dressed, on site rather than supplied as finished products from a quarry. It is however very difficult to judge whether the edges of these slates are original, and these smaller slates may have been broken fragments.

Roof slates were recorded and some kept from the groups of enclosures east of the villa, including some fairly complete examples, but not in sufficient quantity to suggest that they were used as roofing material in these areas; it is evident that slates were reused for ovens, pitched foundations and laid flat as yard floors.

A small number of slates were examined by Dr Philip Powell. All were of local origin, the majority of Forest Marble, but others were possibly Stonesfield or similar slates.

One stone semicircular roof-ridge of local Great Oolite was found and is illustrated (Fig. 105.118). This was carefully smoothed on the outside, but the inside was left rough and bears the marks of a chisel *c* 25 mm wide. A similar stone-ridge was found in association with the debris of the slate roof of Building A at Shakenoak (Brodribb *et al* 1968, Fig. 11, No. 12 and p. 38).

5.14.b Ceramic tiles from the 1957–65 excavations

(based on identifications by Mike Stone).

Hardly any tiles were kept from the 1957–59 excavations, but 30 were saved from the later Roman enclosure groups E of the Lechlade-Burford road. All tiles except very small fragments were kept from the Building IV excavation (1400 contexts) and from the area east of Building III (1502 onwards), and some were also recovered from the south end of Building III in 1982. The total comes to less than 150 identifiable fragments.

The very small sample limits analysis to identification of types and fabrics present. Thorough robbing of buildings at Roughground Farm and frequent reuse of tiles in floors urges caution in attributing the original function of any specific type of tile to the building in which it was found; since however tile manufacture produced types for specific functions, the presence of a particular type at Roughground Farm should reflect its use there at some stage.

The range of types present includes both types of roof tile, tegulae and imbrices, pilae and box flue tiles, evidence for hypocaust, and floor tiles which may also have been used on the sub-floor or as bridging tiles in a hypocaust. The following measurements were recorded:

Imbrex complete at narrow end — 142 mm wide by 47 mm high (internally), *c* 15 mm thick
Narrow Box flue tile — 45 mm between combed sides (internally), 14 mm thick
Wide Box flue tile — 77 mm between combed sides (internally), 19 mm thick
Tegula — 20 mm thick with flange 32 mm high (? early type)
Floor brick — 60 mm thick and at least 210 mm wide, with hole 20 mm in diameter partway through.

Fabric analysis identified products from the Minety kilns, from a kiln near Swindon known as the Shore Farm fabric (Mike Stone pers. comm.) and the others. One or two of this last group have affinities with tiles found at Barnsley Park villa, Glos., including a fabric containing grey grog (Mike Stone pers. comm.). While this assemblage cannot be regarded as typical of the site, the overall fabric proportions, 70–75% Minety, *c* 5% Shore Farm, does correspond to the general pattern of tile at villas where Minety occurs at all.

The tiles were divided into types, into fabrics and into types by fabric in three groups, the Building III material, the Building IV and yard material and the tiles from the later Roman enclosures. Table 56 on Fiche 2#81 below summarises the Types by Fabric in Context Groups. No significant variations are apparent. Even from this small sample it would appear that tiles of all the common types were coming from all the main sources, without apparent specialisation.

	Box			Imbrex			Tegula			Floor bricks			Pilae			Other		
	M	S	O	M	S	O	M	S	O	M	S	O	M	S	O	M	S	O
Building IV	17		1	7		2	7	1	2	1			4		1	7	1	
Building III	20		4	2	1	3	6	1	4				3	1	1			1
Enclosures east of villa	6	1	3	2		2	6		2	2		2			2			1
Totals	43	1	8	11	1	7	19	2	8	3		2	7	1	4	7	1	2
Totals	52			19			29			5			12			10		

M = Minety; S = Shore Farm (Swindon); O = Other.

Table 56 Distribution of types of tile by fabric from the 1957–65 and 1981–82 excavations

One unstratified fragment of an imbrex from the villa area had preserved a dog paw-print or track. The track width is estimated as 52 mm, which can be compared with impressions on tiles from Silchester with a track width range from 26 mm to 69 mm, and a mean width of 49 mm for the forefoot, 40 mm for the hindfoot. This is smaller than the range for modern dogs, generally between 31 mm and 86 mm, but on either reckoning the dog that left this print was of medium size. The closest comparisons to this print are those on the edge of imbrices 12339 and 12385 from Silchester and on imbrex CLC 18 from Colchester. (I am indebted to Leslie Cram of Reading Museum for this information.)

5.14.c Ceramic tiles from the 1990 excavation

by Tim Allen, with comments by Mike Stone

A further 32.5 kg of tile comprising 328 fragments was recovered from the 1990 excavation of Building IV and Building III. Table 57 on Fiche 2#81 summarises the types present and their percentages of the 1990 assemblage. Table 58 on Fiche 2#81 shows the percentage of different tile fabrics by weight.

Tile type	No.	%
A = Tegula	38	11.7
B = Imbrex	60	18.3
C = Box flue	29	8.8
D = Flat tile	81	24.7
E = Flat brick	8	2.4
M = Miscellaneous	112	34.1
Total	328	

Table 57 Numbers and percentages of different tile types from the 1990 excavation

Fabric	Weight in grams	% of total weight	Source of fabric
1	4504	13.85	Shore Farm, Swindon
2	4217	13.00	Minety, Wilts
3	17275	53.10	Minety, Wilts
4	4525	13.92	
5	557	1.70	Gloucester
6	1252	3.85	
7	100	0.30	
8	100	0.30	?Northants
9	20	0.07	
Total	32550		

Table 58 Weights and percentages of Roman tiles of different fabrics from the 1990 excavation

5.15 Metalworking slag

by Chris Salter

A total of 6.39 kilogrammes of slag was kept from the 1957–65 and 1981–82 excavations. Only 568 grammes was saved from the villa area, the rest being from the enclosures and hollows to the E, but it is known that at least 5 kilogrammes was found in pit 193 close to the villa. Adjacent to 193 pit 191 was filled with sand. Sand is commonly used as a flux in smithing, and both pits may have been part of a metalworking area, perhaps used during construction of the villa buildings. Other than this the notebooks suggest that very few deposits of slag were found in the villa excavations, and that slag was much more widespread in the enclosures to the E.

None of the slag excavated from these enclosures appears to have been discarded. Three further lumps of metalworking waste were found in the 1990 villa excavation: one (SF 1545) was an unremarkable fragment of smithing slag, but the other two, SF 1419 and SF 1495, were more unusual. An analysis of these samples is given below. SF 1419 was from copper-working, SF 1495 was a vitreous slag from iron-smithing.

Both samples came from late Roman contexts, 2413 a robber trench in Building IV and 2030 a destruction layer overlying a floor on the E side of Building III. The samples are of interest in that they appear to attest both iron smithing and copper-working in the late Roman period on the site.

5.15.a Sample SF 1419 from context 2413

This irregular fragment weighed approximately 17 g. The corroded surface showed signs of green copper corrosion products. A thin wedge sample was taken out this showed that the corrosion of the sample had been aided by the presence the large transparent needle crystals of tin oxide (composition confirmed by analysis RGF 5). The presence of the tin oxide crystal indicates that the alloy was originally a bronze. The bronze had been oxidised either during casting or due to a building fire. The presence of a fine dispersion of copper oxide particles throughout the metallic copper indicated that metal had been heated in oxygen rich atmosphere for some time. The composition of the slag trapped within the sample (RGF 13–15) had a relatively high iron content. This iron may have come from the crucible or from the metal itself, if the fragment was result of metal-working. There were also areas of lead silicate in the sample which probably resulted from the oxidisation of the metallic lead particles from the bronze, as bronze often contain a small proportion of lead.

The shape and nature of metal and the slag it contains would seem to indicate that the fragment formed during a metal-working process. However, it is impossible without further evidence of copper-working in the form of more metallic waste, crucible or mould fragments to be absolutely certain whether this fragment of oxidised leaded bronze was the result of a deliberate metal-working process, or the accidental melting of an artifact in a fire.

	Fe	Co	Ni	Cu	Zn	As	Ag	Sb	Sn	Au	Pb	Bi	S	Total
RGF 1	0.00	0.07	0.12	75.30	0.14	0.37	0.54	0.13	0.37	0.23	0.21	0.13	0.08	77.86
RGF 2	0.00	0.03	0.04	95.55	0.00	0.29	0.61	0.07	0.19	0.00	0.00	0.14	0.02	97.07
RGF 3	0.00	0.03	0.04	94.99	0.00	0.04	0.27	0.02	0.00	0.00	0.04	0.01	0.03	95.53
RGF 4	0.00	0.02	0.00	93.83	0.00	0.00	0.27	0.00	0.02	0.08	0.15	0.08	0.01	94.38
RGF 5	0.09	0.02	0.00	2.56	0.00	0.34	0.00	0.00	69.29	0.00	1.58	0.07	0.00	73.96
RGF 6	0.00	0.00	0.00	77.01	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.07

RGF 1 Heavily corroded region
RGF 2–4 Small area analyses on metallic copper/copper-oxide eutectic
RGF 5 Needle crystal
RGF 6 Copper-oxide dendrite in slag region

Table 59 Analyses of slag samples RGF 1–6 from SF 1419 from context 2413

	Na	Mg	Al	Si	P	S	Cl	K	Ca	Ti	Mn	Fe	Cu	O
element weight percent														
RGF 13	0.0	0.7	7.9	22.0	3.1	0.6	0.0	1.0	4.2	0.2	0.0	16.0	0.1	44.1
RGF 14	0.0	0.6	8.6	27.1	0.3	0.1	0.0	1.1	5.3	0.3	0.0	11.4	0.0	45.2
RGF 15	0.2	0.8	8.7	24.6	0.4	0.1	0.0	1.2	5.0	0.3	0.0	14.7	0.0	43.8
oxide weight percent														
RGF 13	0.0	1.1	14.9	47.1	7.2	1.6	0.0	1.2	5.8	0.4	0.0	20.6	0.2	
RGF 14	0.0	1.1	16.2	58.0	0.8	0.1	0.0	1.4	7.3	0.5	0.0	14.7	0.0	
RGF 15	0.3	1.4	16.4	52.7	1.0	0.3	0.0	1.4	7.0	0.5	0.0	18.9	0.0	

Table 60. Analyses of slag samples RGF 13–15 from SF 1419 from context 2413. Standardless analysis, element weight and % oxide by stoichiometry.

5.15.b Sample SF 1495 from context 2030

This small slag particle was sectioned and rough polished to reveal any metal prills to determine whether the slag was related to metal-working and if so, to what sort of metal working. Sectioning did indeed reveal a small metal prill 0.2 mm in diameter, as well as many much smaller. This prill had a two phase structure which would seem to indicate that at least one of the phases had been liquid. On analysis (RGF 8 & 9) this phase proved to be an iron sulphide of approximate formula Fe S. The metallic iron in this prill had been partially corroded which together with the relatively poor polish given to the sample explains the poor totals in the analysis table below.

The composition of the glassy slag (RGF 16–18) was consistent with it having formed by the melting of a clay hearth lining under the fluxing action of iron oxides shed from the metal during black-smithing. The presence of metallic iron prills in the slag is also normal for this sort of material. However, the high copper and sulphur contents recorded are definitely unusual and cannot be immediately explained.

	Fe	Co	Ni	Cu	Zn	As	Ag	Sb	Sn	Au	Pb	Bi	S	Total
RGF 7	94.42	0.13	0.20	0.34	0.00	0.12	0.00	0.00	0.01	0.00	0.10	0.00	0.13	95.43
RGF 8	56.53	0.05	0.24	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	41.16	98.90
RGF 9	58.80	0.02	0.22	2.21	0.00	0.07	0.00	0.00	0.00	0.00	0.21	0.00	42.72	104.25
RGF 10	88.08	0.11	0.24	0.41	0.00	0.21	0.03	0.00	0.05	0.00	0.11	0.00	0.00	89.25
RGF 11	92.96	0.07	0.16	0.38	0.00	0.20	0.03	0.00	0.04	0.00	0.12	0.00	0.00	93.96
RGF 12	91.48	0.01	0.22	0.38	0.00	0.21	0.01	0.00	0.06	0.00	0.06	0.00	0.07	92.50

RGF 8 & 9 on sulphide phase

Table 61 Analyses of slag samples RGF 7–12 from sample SF 1495 from context 2030. Weight concentration of metal/sulphide.

	Na	Mg	Al	Si	P	S	Cl	K	Ca	Ti	Mn	Fe	O
element weight percent													
RGF 16	0.5	0.9	9.7	28.6	0.4	0.2	0.1	1.7	3.5	0.4	0.0	7.4	46.8
RGF 17	0.0	0.5	8.1	24.6	0.3	0.1	0.0	1.1	4.7	0.3	0.0	17.1	43.3
RGF 18	0.0	0.7	8.7	24.6	0.4	0.2	0.1	1.2	4.8	0.4	0.1	15.2	43.8
oxide weight percent													
RGF 16	0.7	1.4	18.3	61.1	0.9	0.4	0.1	2.1	4.8	0.6	0.0	9.5	
RGF 17	0.0	0.8	15.3	52.7	0.6	0.3	0.0	1.3	6.6	0.4	0.0	22.0	
RGF 18	0.0	1.1	16.5	52.6	0.8	0.5	0.1	1.4	6.7	0.6	0.1	19.5	

Table 62 Analyses of slag samples RGF 16-18 from sample SF 1495 from context 2030. Standardless analysis, element weight and % oxide by stoichiometry.

5.15.c Other slag

All the other slag on the site is iron slag from smithing. Clay furnace lining suggests the use of shallow bowl furnaces at ground level; some smithing may also have been carried out at waist height. One or two lumps of slag were quite dense, but none sufficiently so to indicate smelting on the site. An analysis of one fragment from pit 193 will be found in the Archive. The quantities of slag found in the northern and southern enclosure groups E of the villa are shown in Table 63 on Fiche 2#84.

Northern group	1136 grams	Southern group	1789 grams
context 480	426 grams	context 830 (unstratified)	341 grams
silt-filled pits and context 774	880 grams	silt-filled pits	1960 grams
Total	2442 grams	*Total*	4090 grams

Table 63 Distribution of slag in the northern and southern groups of enclosures

The quantities of smithing slag from one smithing operation vary according to the temperature of the furnace and the type of work being carried out, but on average around 250 grammes might be expected. The amounts from the enclosure groups therefore represent upwards of 10 and 20 operations respectively. This hardly represents industrial use, and the difference in quantity between the two enclosure groups is not very great. However, given that the southern enclosure group was less extensively excavated than the northern, there may have been a greater emphasis upon iron-working in the southern enclosure.

5.16 Human bones

by Mary Harman

Table 64 Sex, age and height of each individual with other comments. Details of dental formula and incidence of caries, abscess and ante mortem tooth loss in numbers of teeth and tooth sockets found are recorded in Table 65 on Fiche 2#87.

Context	Bones present	Sex	Age	Height	Dental formula and condition	Comments
188	Largely complete		Neonatal infant			

Sex, age and height of each individual (Table 64 continued)

Context	Bones present	Sex	Age	Height	Dental formula and condition	Comments
206	Virtually complete	F	40+	5'3.5" 1.62m	see Table 65	Hypoplasia on the incisors and canine suggests some illness or deficiency at *c* 2 years. Slight O-A on most vertebrae and in L elbow. Healed fracture of R ulna towards distal end.
343	Skull and thorax, R shoulder		Neonatal infant			
478	see comments		Neonatal infants			Apparently a largely complete skeleton — an extra tibia but may be mingled remains of two incomplete skeletons
584	Largely complete		12–13		see Table 65	No epiphyses fused
584	Virtually complete		16–18		see Table 65	No epiphyses fused. At least 6 lambdoid wormian bones. Considerable calculus on the teeth on the right side even over the worn occlusal surfaces.
585	Skull, most vertebrae, both shoulders and upper arms, R pelvis and femur, L tibia, parts feet	F	40+	5'3" 1.60m	see Table 65	There is a dental pearl on the upper R M2, on the medial surface.
608	Several vertebrae and ribs, part scapula, R ilium, parts both lower legs	M	Adult			Signs of O-A on the R side of four thoracic vertebrae arches
643	Part skull, few vertebrae, scapulae, ulnae femora		Neonatal infant			
655	Largely complete		Infant birth — few weeks?			

Sex, age and height of each individual (Table 64 continued)

Context	Bones present	Sex	Age	Height	Dental formula and condition	Comments
782	Virtually complete	F	20–25		see Table 65	The upper L PM 1 is either lost ante mortem or not developed: the PM 2 partly fills the space. The left clavicle appears to have a healed fracture but Bayley notes that X-ray examination failed to reveal any trace of a fracture.
804	Parts femora, lower legs	M	Adult	5'9" 1.76m		
806	Largely complete	F?	40–50	*c* 5'4" 1.64m	see Table 65	Slight O-A on several vertebrae, moderate O-A on lower thoracic and lower lumbar vertebrae. Severe deterioration at proximal end of R metatarsal II. Cuts on mandible and axis.
807	Largely complete in poor condition	F	35+		see Table 65	Bayley considers there is O-A on most of the vertebrae and most of the joints of the upper limbs. There is a small pit in the distal articular surface of the left tibia.
808	Largely complete		7–8		see Table 65	
813	Virtually complete	F	35–40			Slight O-A on thoracic vertebrae, moderate to severe O-A on cervical and lower lumbar vertebrae. One lambdoid wormian bone.
834	Virtually complete	F?	16–18	5'2" 1.58m	see Table 65	There is a small inca bone and lambdoid wormian bone. There is a small pit in the surface of the medial condyle of the R femur.
894	Largely complete, missing cranium, cervical vertebrae, parts of both arms	F	40+	5'3" 1.61m	see Table 65	Slight O-A on vertebra L4. Bayley considers that all parts of the body show slight signs of O-A.
974	Largely complete, in poor condition	M	40+		see Table 65	There is one lambdoid wormian bone. Both femora have pits in the surface of the medial condyle.

Sex, age and height of each individual (Table 64 continued)

Context	Bones present	Sex	Age	Height	Dental formula and condition	Comments
975	Part skull, some ribs, scapula, clavicle, humeri		Adult		see Table 65	Bayley considers this individual to be over 30 years old. The left humerus is noticeably stouter than the right — maximum diameter at approximately the same point on the shaft: L: 24.0mm. R: 20.3mm.
982	Largely complete but very fragmentary.	M	30–40		see Table 65	There is a dental pearl on the labial surface of the upper R M3.
1140	Cremation. Wt 1.2 kg. Largest frag. 49 mm. long		Adult			No evidence of more than one individual.
1157	Fragments of skull and limb bones	M	30–35		see Table 65	In the mandible both PM 2s seem not to have developed: on the R side the final deciduous molar has been retained: on the L side the tooth in socket had recently been lost.
1215	Parts jaws, parts limb bones		18–23		see Table 65	
1275	Virtually complete	M	30–35	5'8" 1.73m	see Table 65	
1279	Cremation. Wt 60 g. Largest fragment 40 mm long		Adolescent/adult			No evidence of more than one individual. Probably disturbed.
1700	Skull, lower arms, pelvis, legs	M	20–30	5'9" 1.76m	see Table 65	Three wormian bones in the lambdoid suture.

Table 65 Dental formulae and condition of teeth (see Table 64 on Fiche 2#84)

Context	Dental formula			Caries	Abscess	Loss
206	A A A A X X / X / 3 / X 8 X X / 4 3 2 / c c		A X X 2 3 X X X X 8 1 2 3 4 X X X X	2/12	5/20	15/32
584	U O 8 7 6 5 4 3 2 1 8 7 6 5 4 3 2 1 U O		O U 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 O U	0/24	0/24	0/24
584	/ 7 6 5 4 3 2 1		1 2 3 4 5 6 7 /	0/29	0/32	0/32

Dental formulae and condition of teeth (Table 65.continued)

Context	Dental formula		Caries	Abscess	Loss
	/ 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8			
585	c 8 7 ——————— 1 ——X 5 / 3 / /	1 / / X X ——— / 2 / / 5 / 7 X A c	2/9	1/2	4/22
782	c 8 7 6 5 4 3 2 1 8 7 6 5 4 3 2 1 c	c c c 1 2 3 X 5 6 7 8 1 2 3 4 5 6 7 8 c	6/31	0/31	0/31
806	A ——X X / / / / 8 7 6 / / / / c c c A A	A A A / / / / 5 / —— ——/ 4 5 X 7 8 A	3/8	7/23	3/26
807	X X X 5 ——— c	/ / / / X X 8	1/2	0/7	5/12
808	U 7 6 ——————— 6 —— c / 1	——————— / / c d e 6 7 U	0/3	0/9	/
813	8 X / 5 4 3 2 / c A	Ac c Ac c / X 3 4 5 6 7 — / 2 / / / X X 8	5/12	3/18	4/23
834	8 7 6 5 4 3 2 / 8 7 6 5 4 3 2 1	/ 2 3 4 5 6 7 8 1 2 3 / 5 6 7 8	0/28	0/32	0/32
894	—— / X X 3 2 1 —— / 5 4 3 2 1 A c c	c Ac c 1 2 3 4 X / ——8 1 2 3 4 / X X X	6/17	2/20	6/27
974	X X X X 4 / X / X X X X 4 / X / c	/ / X X X ——— —— / 4 X X X X	1/2	0/7	12/19
975	——————— X X / 5 4 3 2 1		0/7	1/6	2/10
982	A Ac A 8 X 6 / / 3 2 1 8 7 6 5 4 3 2 1 Ac Ac	1 2 3 —— X X 8 1 2 / 4 5 X 7 8 c	4/23	5/27	4/32
1157	8 7 6 5 4 3 2 1 —7 6 e 4 3 2 1	1 2 3 4 5 6 7 8 1 / 3 4 X 6 7 N	0/28	0/8	0/28
1215					

Dental formulae and condition of teeth (Table 65 continued)

Context	Dental formula		Caries	Abscess	Loss
		1 2 3 —— 6 7 — / 2 3 4 5 6 7 N	/	/	/
1275	— 7 6 5 4 3 X 1 8 7 6 5 4 3 2 1 c	1 ——————— 8 / 2 / 4 5 6 7 8			
1700	8 7 —— —— / s / / / /	/ / / / / / / /	0/3	0/17	0/17

In addition to the individuals listed in the table, a small number of bones occurred in other deposits or as 'extra' bones in graves. The following were noted:

96 A pair of humeri, pair of femora, L femur, from two neonatal infants, one perhaps premature or rather small
642 Part adult phalanx
584 Two skull vault fragments, one vertebral body, scapula fragments and a metacarpal, all adult
806 Distal end of R tibia, adult
813 Distal half of neonatal femur
1408 Parietal fragment, adult or near adult

5.17 Animal bones

by Gillian Jones and Bruce Levitan

5.17.a Animal bones from the 1957–82 excavations

	N	Percentages of species					Percentage identified
		Cattle	*Sheep*	*Pig*	*Horse*	*Other*	
Phase 4	118	30	53	14		dog**, fowl*	52
Phase 3	128	41	39	14	2	dog*, fox*, fowl**, oyster	51

N = number of identified bones
* species represented by a single bone
** species represented by two bones
Oyster is not included in the total number of bones.

Table 66 Animal bones from 1982: percentages of species from Building IV and the courtyard by phase

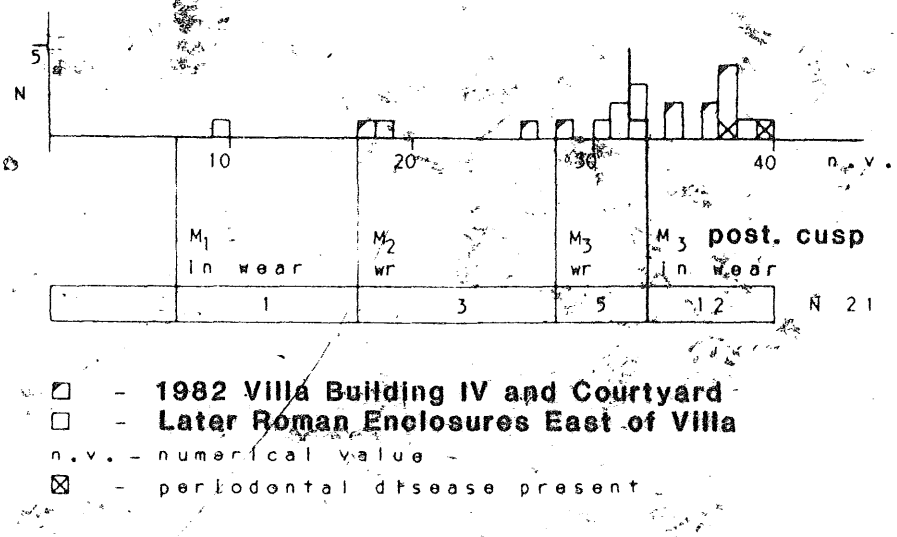


Figure 152 Romano-British animal bones: sheep mandible wear stages

Stage	Condition of teeth	Number	
1	M_1 not yet in wear	2	(+1)
2	M_1 in wear, M_2 not in wear	1	
3	M_2 in wear, M_3 not in wear	1	
4	M_3 in partial wear	1	(+1)
5	M_3 in full wear	5	(+2)
6	M_3 in heavy wear	0	(+1)

M_1 = first molar
Stages 3–4 correspond to modern cattle aged 2–3 years

Table 67 Animal bones: age data from Romano-British cattle.

	N	Percentages of species						Percentage identified
		Cattle	*Sheep*	*Pig*	*Horse*	*Deer*	*Other*	
Neolithic	97	24	*	58	—	red 16	dog/wolf*	33
Bronze Age	64	20	78	—	—	red*a		32
Early Iron Age	42	31	52	12	*	*a		28
Romano-British								
1 Building IV	263	37	44	14	3	—	dog, fox*, fowl**	52
2 Buildings I–III	396	48	26	12	13	1		—
2a	61	52	23	5	15	red 5		91
3 Enclosures east of villa	263	59	22	6	10	red 2, roe*	dog*, hare*, water vole**, oyster**	71
Total 1 & 3	526	48	33	10	6	1	other species 2	60

N number of identified bones * species represented by a single bone
a antler ** species represented by two bones
Oyster and water vole are not included in the total number of bones.

Table 68 Animal bones from 1957–82: percentages of species for all periods

5.17.a.1 Pathology

A few bones were anomalous in their form or were slightly pathological, as follows:

Cattle A humerus. Two areas on the anterior of the shaft just above the distal condyles had a woven appearance and the bone surface was somewhat raised.

A pelvis had a foramen 8 × 2 mm, parallel to and 8 mm from the acetabular border, at the point where the pubic and the iliac parts of the acetabulum have fused.

A metatarsal had some alteration of the proximal medial facet; part of the proximal lateral facet was overlaid with a thin layer of bone which showed some polish. There was no other extra growth of bone.

In two metatarsals and a first phalanx the muscle attachments were very marked suggesting that they were from old cattle.

Sheep/goat Presence of periodontal disease is noted above (Fig. 152 on Fiche 2#90).

In a metatarsal a short section of the anterior part of the shaft was raised higher than usual.

Pig Humerus. There is a split 14 mm long running between the distal condyles, similar to that described by Baker and Brothwell (Baker & Brothwell 1980, 111, Type 2).

5.17.b Animal bones from the 1990 excavation

	Building III		Building IV		Total	
	N	%	N	%	N	%
Cattle	20	49	10	26	30	38
Sheep/Goat	15	37	13	34	28	35
Pig	6	15	13	34	19	24
Horse			1	3	1	1
Cat			1	3	1	1
Subtotal	41	35	38	25	79	30
Domestic fowl	2	2	4	3	6	2
Unidentified						
Large mammal	50	68	38	35	88	49
Medium mammal	23	32	66	61	89	49
Small mammal			1	1	1	1
Bird			2	2	2	1
Fish			1	1	1	1
Subtotal	73	63	108	72	181	68
Total	116	44	150	72	266	

1 sheep from Building III, 9 sheep from Building IV.

Table 69 Animal bones from the 1990 excavation: comparison of assemblages from Building III and Building IV areas

5.17.b.1 Selected measurements

Cattle metacarpal: Bp 49.3; Bd 68.3

metacarpal: Gl 131.5; Bp 23.3; Bd 25.9

Sheep Gl 126.0; Bp 21.5; Bd 24.5

Gl 136.5; Bp 25.2; Bd 28.5

astragalus: GLl 29.0; Bd 18.1

GLl 27.5; Bd 17.9

tibia: Bd 25.2

Sheep/goat Bd 25.1

Bd 22.2

Bd 22.1

Horse humerus: Bd 68.0 Hmt 48.0 (pre/early villa)
metatarsal III: Bd 42.4
Red deer metacarpal: Bd 34.2
Domestic fowl humerus: Gl 71.5
radius: 68.5
64.4

All measurements in millimetres. Measurements defined in Driesch 1976. All specimens from late villa except where indicated.

5.18 Plant and Invertebrate Remains

by John Letts and Mark Robinson

Table 70 Charred cereal and weed seeds from the 1990 excavation. (All specimens were charred unless otherwise stated.)

Taxa (element if not a seed)	*Common name*	*Sample*			
		1016	*1014*	*1001*	*1017*
RANUNCULACEAE					
Ranunculus acris/bulbosus/repens L.	buttercup				1
CARYOPHYLLACEAE					
Silene sp.	campion	1		1	
Indet.			1		
CHENOPODIACEAE					
Atriplex sp.	orache		3		2
LINACEAE					
Linum catharticum L.	purging flax		1		
LEGUMINOSAE					
Vicia/Lathyrus sp.	vetch/tare/vetchling		1	1	2
cf. Vicia/Lathyrus sp.		1			
cf. Ononis sp.	restharrow	1			
Medicago lupulina L.	black medick	1			
Medicago sp.			1		
Medicago/Trifolium sp.	medick/clover				2
cf. Trifolium sp.				1	
POLYGONACEAE					
Polygonum persicaria L.	redshank			1	
Polygonum sp.	knotgrass	1			
Rumex sp.	dock	1	1		1
BORAGINACEAE					
Lithospermum arvense L. (MINERALIZED)	corn gromwell		1		
SCROPHULARIACEAE					
Euphrasia/Odontites sp.	eyebright/red bartsia	2	5	1	
PLANTAGINACEAE					
Plantago lanceolata L.	ribwort plantain		1		
RUBIACEAE					
Galium cf. spurium L.	false cleavers	1			

Charred cereal and weed seeds from the 1990 excavation (Table 70 continued)

Taxa (element if not a seed)	*Common name*	*Sample*			
		1016	1014	1001	1017
CAPRIFOLIACEAE					
Sambucus nigra L.	elderberry		1		
COMPOSITAE					
Tripleurospermum sp.	scentless mayweed			2	
CYPERACEAE					
Eleocharis sbgn. Palustres (MINERALIZED)	spike rush	77			
Eleocharis sbgn. Palustres		15	1		
Carex sp.	sedge	7	1	1	
GRAMINEAE					
Hordeum vulgare L. (grain)	barley			7	
H. vulgare L. (median grain)	barley			1	2
H. vulgare L. (rachis node)	barley			1	
H. vulgare sbsp. hexastichum* (lateral grain)	6-row barley (hulled)			1	1
H. vulgare sbsp. hexastichum* (rachis node)	6-row barley			2	
Triticum sp.L. (grain)	wheat			25	3
Triticum sp.L. (glume base)	hulled wheat	1			
cf. Triticum sp. L. (grain)	hulled wheat				4
T. spelta (grain)	spelt wheat			1	
T. aestivum s.l. (grain)	bread wheat			12	2
Avena sp. L. (grain)	oat	1			
Avena sp. L. (awn fragment)		2		2	
large cereal indet. (grain)		12	12	38	8
small unidentified grass (caryopsis)		4	6	9	9
small unidentified grass (culm)		1		1	
UNIDENTIFIED SEED				2	

5.18.a Introduction

Both hand-picked specimens and soil samples were examined from the site.

Sampling seems to have been undertaken in a rather idiosyncratic manner, and most of the samples contained no recognisable biological remains apart from the minute burrowing snail *Cecilioides acicula* (Mull.), which is believed to be a medieval introduction. The hand-picked land molluscs were much as would be expected: *Trichia hispida* (L.), *Cepaea nemoralis* (L.), *Helix aspersa* Mull., *Helicella itala* (L.) and *Helicella* S.L. (not *itala*). In keeping with the accepted dates of introduction of some of these species to Britain, *H. aspersa* was not present in any of the pre-Roman features and *Helicella* S.L. (not *itala*) were absent from the pre-medieval features.

Seven samples, each of about 1 kg, contained identifiable remains and the results are listed in Tables 71 on Fiche 2#94, and 74, Fiche 2#95 below.

5.18.b Mollusca

Roman Pre-Villa The three species of mollusc from 320 'Well' all live in marsh or staghant aquatic habitats, which suggests that the feature contained standing water for at least part of the year.

Mollusca	No. of individuals
Lymnaea truncatula (Mull.)	2
Anisus leucostoma (Milt.)	1
Succinea or *Oxyloma* sp.	1
Total	4

Table 71 Molluscs from Early Roman Well 320

5.18.c Carbonised plant remains

Carbonised Plant Remains	Pre-Building III black layer	Roman Enclosures east of the villa	
	323	612	560
Seeds			
Ranunculus S. *Ranunculus* sp.	—	1	—
Rumex sp.	—	2	—
Galium sp.	—	—	1
Eleocharis S. *Palustres* sp.	—	—	1
Cereal indet.	3	—	3
Varia	—	2	—
Chaff			
Triticum spelta L. (glume base)	—	14	—
Triticum sp. (glume base)	—	9	—
Triticum sp. (rachis node)	—	1	—
cf *Triticum* sp. (awn fragment)	—	1	—

Table 72 Carbonised plant remains from Roman contexts

The following hand-picked specimen was also identified:
522 Enclosures east of the villa Oven *Hordeum* sp. (hulled)

Later Roman Enclosures east of the Villa The spelt wheat chaff and weed seeds from 612 perhaps relate to the use of this oven. The 'corndrier' 590 did not contain any carbonised material.

5.18.d Charcoal

Roman Villa Many pieces of charred oak rods were discovered within ditch 132, including one with a cut end. These rods were mostly 15–30 mm in diameter and had been cut at an age of about seven years. Impressions of similar sized rods were present in some of the wall-plaster fragments from the site. The charcoal may have resulted from the burning of wattling.

Roman		
492	Oven	? *Prunus* type
591	Oven	? *Quercus*
522	Oven	*Quercus* — young

Table 73 Charcoal identifications from Roman contexts

Roman pre-Building III		
57/4	indet. diffuse pore	
Roman villa		
274	Flue	*Quercus* — older
133	? Flue	indet. diffuse pore
193	Pit	*Quercus* — older
162	Ditch	*Quercus* — younger
132	Ditch	*Quercus* — younger
132	Ditch	*Quercus* — younger
Later Roman enclosures east of the villa		
190	Pit	*Quercus* — older
522	Oven	indet. diffuse pore
593/2	Oven	indet. diffuse pore
624	Gully	?*Quercus*
665	Gravel pit	?*Quercus*
667	Gravel pit	indet. diffuse pore

Table 74 Charcoal identifications of hand-picked samples from Roman contexts

5.19 Coal

by Tim Allen (with identifications by R Neves and G Clayton)

Samples of coal from twenty seven contexts, both from around the villa and from the enclosure groups and gravel-pit further east, were sent for examination to the Ancient Monuments Laboratory. All, with the possible exception of that from feature 409 west of the villa, were characteristic of surface coal deposits in the Forest of Dean. A detailed breakdown of the composition of the samples examined under the microscope will be found below. There is no further information about the sample from 409.

Sample 9264	*Sample 9269*
Coal type — Clarian	**Coal type — Clarian**
Palynological assemblage	*Palynological assemblage*
Apiculatisporis abditus	Apiculatisporis sp.
Calamospora parva	Calamospora saariana
C. microrugosa	Cyclogranisporites sp.
Cirratriradites annuliformis	Endosporites globiformis
Crassispora kosankei	Latosporites latus
Florinites mediapudens	Laevigatosporites minor
F. millotti	Lycospora pusilla
Laevigatosporites minor	Punctatisporites sp.
L. vulgaris	Punctatisporites spp.
Mooreisporites inusitatus	Schopfites dimorphus
Punctatisporites obesus	Thymospora obscura
P. granifer	Triquitrites bransonii
P. oculus	Vestipora laevigata
P. rotundus	
Raistrickia aculeata	
Schipfites dimorphus	
Thymospora obscura	
Triquitrites bransonii	
Vestipora laevigata	

Table 75 Analyses of coal samples from Roman contexts

9264 A very rich and diagnostic assemblage which indicates a coal origin in the lower part of Westphalian D measures of the Forest of Dean. Probably the Woorgreen or Coleford High Delf.

9269 An abundance of small monolete spores of the genus *Punctatosporites* in association with *Schopfites dimorphus, Vestispora laevigata* and *Thymospora obscura* are diagnostic for a lower Westphalian D age and in particular the Woorgreen or Coleford High Delf seams of the Forest of Dean.

No quantification of the coal was undertaken, but most of the pieces were described as 'scraps'. Four separate samples however came from the black fill in the top of ditch 132, and some of the finds from this layer were coated with coal-dust, so there may have been large amounts in this deposit. Several samples also came from the black fills of pits 54 and 55 not far north of this. The infill of ditch 313 below Building III contained coal, which may indicate that the extensive black layer adjacent to it beneath the building was in part derived from coal-dust, but there were no further samples from this, and no explanation for the blackness is offered in the notebooks. Similarly the black fill of pit 409 and ditch 420 adjacent could have been coal-derived.

The coal all came from contexts dating after the mid-2nd century AD, that is, to the villa phases of occupation. Its concentration in extensive black layers close to the main domestic buildings on this

site perhaps suggests that it was used in the hypocausts. Coal was officially supplied to the forts on Hadrian's Wall for this purpose, and many villas in Gloucestershire, Somerset and Wiltshire were also supplied with it (Frere 1976, 279). The common use of coal in this area reflects the easy availability of surface outcrops in the Severn basin.

Samples also came from a wide range of pits (582), ditches (619, 630, 642 and 841), gullies (528, 575 and 606) and silt-filled hollows (560, 627, 873 and 877) in the enclosure groups further east. Almost all these contexts belonged to the late 3rd–4th century phase of use. Its ubiquity here perhaps suggests that coal was also used for semi-industrial and domestic hearths in the Late Roman period.