

Chapter 7: The Finds

FLINT by David Mullin and Rebecca Devaney

Introduction

A total of 4772 pieces of worked flint and 638 fragments (9872g) of burnt unworked flint were recovered from excavations along the route of the M1 (Table 7.1). In addition, 2000 pieces of worked flint and 141 fragments (5183g) of burnt unworked flint were recovered from the earlier programme of evaluations and fieldwalking, though these are not discussed in detail. The flint from the excavations was recovered from 294 contexts. Most contexts (a total of 217) contained less than ten pieces of flint, but a total of 65 contexts contained between ten and 100 pieces and 12 contexts contained over 100 pieces of flint. By far the largest assemblage from the site was that from Junction 9, where substantial amounts of Mesolithic material were recovered from a series of pits. This material was recorded and assessed by Rebecca Devaney. The present report, using the data, was compiled by David Mullin, who also considered the wider context.

Methodology

The worked flint was catalogued according to a standard typology. Information about burning, breaks, condition, raw material and technology was recorded. In addition, cores were weighed and burnt unworked flint was quantified by count and weight. The data were entered into an MS Access database.

Raw material

Where identifiable, the most predominant raw material is gravel flint. In general, these pieces have a thin and abraded cortex and are likely to be locally derived, perhaps sourced from river gravel deposits. A smaller amount of chalk-derived flints, which are identified by a thick white cortex, was also present. The sites are situated on chalk bedrock and so this material is also likely to be local in origin.

Condition

The condition of the assemblage is reasonably good. Of the worked flints, 35% are in a fresh condition and only 56% exhibit slight post-depositional damage. Only a small proportion of the assemblage

(8%) is more heavily damaged. Where present, the damage is most frequently seen on vulnerable unretouched edges and implies some post-depositional disturbance. The amount of surface alteration is minimal with the majority of the assemblage (81%) remaining uncorticated.

Technology and dating

The majority of the assemblage is technologically later prehistoric (later Neolithic and Bronze Age) in date. The presence of rejuvenation flakes, chips and irregular waste, and the relatively low number of larger flakes and tools, suggest that much of the assemblage is knapping waste.

Unretouched debitage dominates the assemblage (4611 pieces; 97%). Of this total, 3684 pieces are flakes and 256 are blades, blade-like flakes and bladelets. Technologically, the assemblage comprises pieces (mainly flakes) with clear points and cones of percussion, pronounced ventral ripples and hinge terminations. These characteristics are most commonly associated with the hard-hammer flint industries of later prehistory. A proportion of the assemblage (mainly blades) exhibits features such as platform-edge abrasion, punctiform butts and dorsal-blade scars, characteristics known to be associated with the more careful, soft-hammer, blade-based industries of the Mesolithic and earlier Neolithic.

In total, 116 cores (2% of the assemblage) were recovered. The majority were utilised for the production of flakes and range in size from a small unclassifiable/fragmentary core of 7g to a large multi-platform flake core of 339g. An opposed-platform blade core, which was neatly worked for the production of bladelets, is probably late Mesolithic or earlier Neolithic in date.

Forty-five retouched tools were recovered, which at 1% of the assemblage is an unusually low proportion. This material is dominated by microliths, half of which are scalene microtriangles (Jacobi 1978, 16) and all are typical later Mesolithic types. Although all of the microliths were recovered from excavations at Junction 9, only one context contained more than one microlith.

The chisel arrowhead is a small example and can be broadly dated to the later Neolithic (Green 1984, 19). The remaining tools are chronologically undiagnostic, but are consistent with the rest of the predominantly later prehistoric assemblage.

The assemblage

Small amounts of flint were recovered from Area M, Area P and the Borrow Pit Area, with more substantial assemblages from Junction 8N, Junction 8S and Junction 9. The sites are dispersed and will be considered separately, but their assemblages are summarised alongside each other in Table 7.1.

Area M

A total of 48 flints was recovered from this site, the majority comprising waste flakes, but one single platform core was also recovered from context 3039.

Area P

A total of eight flints, predominantly waste flakes, was recovered from this site. None was diagnostic of date, but the blade may be late Mesolithic/early Neolithic in date.

Borrow Pit Area

Two undiagnostic waste flakes were recovered from this site.

Junction 8N

The majority of the 113 flints recovered from Junction 8N comprised waste flakes, although the remaining material had a relatively high proportion of blades and blade-like flakes. These probably represent a late Mesolithic/early Neolithic presence.

Junction 8S

A slightly greater number of flints was recovered from the southbound section of Junction 8, but again these were dominated by waste flakes. A small number of blades, blade-like flakes and the presence of a single-platform core from context 5628 probably represent a late Mesolithic/early Neolithic presence. Context 5026 contained a total of 23

Table 7.1: Summary of flint by excavation area and flint category

Flint Category	Excavation area						Total
	Area M	Area P	Borrow Pit	Junction 8N	Junction 8S	Junction 9	
Flake	45	6	2	88	113	3430	3684
Blade		1		3	6	98	108
Blade-like flake				2	3	71	76
Bladelet				4	1	67	72
Core-face/edge-rejuvenation flake				2	1	5	8
Rejuvenation-flake tablet						1	1
Irregular waste	1	1		8	4	104	118
Chip	1			1	6	536	544
Opposed-platform blade core						1	1
Single-platform flake core	1				1	9	11
Opposed platform flake core						3	3
Multi-platform flake core				2	1	47	50
Keeled/non-discoidal flake core						6	6
Core on a flake						4	4
Unclassifiable/fragmentary core				1	3	19	23
Tested nodule				2		16	18
Microlith						18	18
Chisel arrowhead						1	1
End scraper						7	7
End and side scraper						3	3
Side scraper						2	2
Scraper on a non-flake blank						1	1
Retouched blade						1	1
Retouched flake					1	9	10
Serrated flake						1	1
Miscellaneous retouch						1	1
Total	48	8	2	113	140	4461	4772
Burnt unworked count	3	3		325	155	152	638
Burnt unworked weight (g)	9	14		2972	3550	3327	9872

worked flints, mostly undiagnostic flakes, whilst a retouched flake was recovered from context 5460. The flint was recovered from the fills of pits and tree-throw holes across the site, some from features which were otherwise without finds and could therefore be contemporary with the production of the tools themselves.

Junction 9

By far the largest assemblage of worked flint was recovered from Junction 9. This comprised 4461

items weighing 9594g (Table 7.1). The largest assemblages of flint were recovered from a series of 41 pits within a larger cluster of 69 pits (Table 7.2) and three gullies. All of the pit assemblages were dominated by waste flakes, which comprised as much as 97% of some of these assemblages, with a minimum of 80% from any one pit. Very few formal tools were present in the pits, with only a single scraper and four retouched flakes in the assemblage. Eighteen microliths were recovered from the pits (Table 7.3; see Fig. 5.4). Only one context contained more than a single example and never more than two were

Table 7.2: Pits containing flint from Junction 9

<i>Feature</i>	<i>Type</i>	<i>Dimensions (length x width x depth (m) /sides)</i>	<i>Worked flint pieces</i>	<i>Other finds/comment</i>
2094	Pit	1.65+ x 1.60 x 0.55, Sh	665	Late Mesolithic date
2064	Pit	1.75 x 1.50 x 0.38, Sh	411	Late Mesolithic date
2100	Pit	1.80 x 0.58 x 0.30, Sh	365	Late Mesolithic date
2090	Pit	1.80 x 1.24 x 0.40, Sh	234	Late Mesolithic date
2316	Pit	1.60 x 1.14 x 0.20, S	222	Late Mesolithic date
2052	Pit	1.50 x 1.11 x 0.57, S	208	Late Neolithic date
2189	Pit	1.60 x 0.80+ x 0.22, Sh	93	
2108	Pit	1.00 x 0.95 x 0.35, Sh	85	
2290	?Pit	1.20 x 0.70 x 0.35, Sh	71	
2384	Pit	3.00 x 1.60+ x 0.75, S	69	Two fragments of pot
2299	Pit	1.00 x 0.67 x 0.43, S	65	
2096	Pit	0.80 x 0.50 x 0.26, S	56	Late Mesolithic date
2058	Pit	1.03 x 0.80 x 0.34, S/V	48	
2324	Post hole	0.80 x 0.60 x 0.35, V	48	
2318	Pit	0.86 x 0.84 x 0.19, S/Sh	46	
2084	Pit	1.68 x 0.90 x 0.10, Sh	40	
2311	Pit	1.06 x c 0.85 x 0.19, I	37	
2076	Pit	1.35 x ? x 0.25, Sh	32	
2104	Pit	1.60 x 1.10 x 0.15, I	31	Chisel arrowhead
2370	Pit	0.80 x 0.72 x 0.40, S	30	
2358	Pit	1.90 x 1.00 x 0.25, S	27	
2297	Pit	2.26 x 1.05 x 0.42, S	26	
2062	Pit	0.85 x 0.64 x 0.47, V	21	
2320	Pit	0.69 x 0.67 x 0.16, Sh	20	
2398	Pit	1.14 x 0.97 x 0.19, Sh	20	
2068	Pit	0.70 x 0.58 x 0.14, Sh	14	
2381	Pit	1.02 x 0.98 x 0.25, S	12	
2360	Pit	2.20 x 0.80 x 0.30, Sh	11	
2074	Pit	1.30 x 1.08 x 0.18, Sh	10	
2454	Pit	1.40 x 0.57 x 0.16, Sh	7	
2234	Pit	1.30 x 1.22 x 0.30, I	6	
2510	Pit	1.45 x 0.50	6	
2102	Pit/Posthole	0.60 x 0.54 x 0.17, S	5	
2060	Posthole	0.59 x 0.47 x 0.28, V	4	
2544	Pit/ Posthole	1.70 x 0.85	4	
2570	Pit/ Posthole	1.00 x 0.60	4	
2366	Pit	1.54 x 0.84+ x 0.10, I	3	
2704	Pit	1.50 x 1.50 x 0.30, S	3	
2050	Pit	0.60 x 0.92 x 0.40, V	2	
2163	?Pit	0.75 x 0.47 x 0.07, Sh	2	
2222	?Pit	c 0.70 x 0.63 x 0.10, S	2	
2386	Pit	1.35 x 1.03 x 0.44, I	2	11 fragments of pot
2470	Pit/ Posthole	0.65 x 0.45	2	

present in any pit. A single microlith (SF 2025) does not fit easily into Jacobi's (1978) classification, but the majority (a total of nine) are scalene microtriangles of type 7a2. A further three are type 5c, three examples of type 6 and one of type 5b are also present. An obliquely blunted point completes the assemblage. Cores from the pits are dominated by multi-platform cores, mainly used for the production of blades and blade-like flakes.

Whilst large quantities of worked flint were recovered from 20 pits, with more than 2000 pieces being recovered from a total of six pits, the remaining 21 pits contained very few items (Table 7.2), predominantly non-diagnostic waste flakes (Tables 7.4-5). Assessing the date and function of these pits is extremely difficult and it is not possible to be certain if they form a contemporary group or are part of a long history of pit deposition. The late Neolithic assemblage and radiocarbon date from pit 2052 and the chisel arrowhead from pit 2104 may suggest the latter.

The richest pit was 2094 (contexts 2093, 2154 and 2162) which contained 662 worked flints weighing 665g (Table 7.4). These were dominated by waste flakes and chips, but ten cores were present, as were two microliths of Jacobi's (ibid.) 7a2 form, and narrow blades and bladelets, indicating a Mesolithic date. This is supported by a radiocarbon determination (NZA-32690) of 5230-4980 cal BC (95.4% confidence; or 5210-4990 cal BC, 68.2% confidence) from this feature. Further pits which returned Mesolithic radiocarbon dates included pit 2096, which contained a total of 56 worked flints (Table 7.4), again including blades and narrow flakes. This pit was radiocarbon dated (NZA-32691) to 5310-5000 cal BC (95.4% confidence; or 5230-5060 cal BC, 68.2% confidence). A total of 222

worked flints (Table 7.4) including blades, bladelets, cores and a microlith of Jacobi's (ibid.) 7a2 form were recovered from pit 2316 (context 2317), which returned a radiocarbon determination (NZA-32692) of 5220-4930 cal BC (95.4% confidence; or 5210-4990 cal BC, 68.2% confidence). Pit 2064 (context 2063) contained a total of 411 worked flints (Table 7.4), including a further microlith of Jacobi's (ibid.) type 5c and ten cores. A total of 32 (9%) of the items recovered from the pit were blades, bladelets and blade-like flakes (Table 7.5). This pit produced a radiocarbon determination (NZA-32800) of 5290-4940 cal BC (95.4% confidence; or 5220-5000 cal BC, 68.2% confidence).

The fills of at least seven other pits and a posthole were dominated by waste flakes and chips (Table 7.4), but the presence of microliths, alongside blades and blade-like flakes and the absence of other diagnostic implements, such as scrapers and arrowheads, suggest a probable late Mesolithic date. A total of 234 worked flints were recovered from pit 2090 (context 2089) and, although a small proportion (a total of 12) were classified as blades and blade-like flakes, the assemblage was dominated by waste flakes and chips which form 93% of the material recovered (Table 7.5). A total of 15 blades and blade-like flakes, a single microlith of Jacobi's (ibid.) 7a2 form and two core-rejuvenation pieces were recovered from pit 2100 (context 2099) which contained 365 worked flints, whilst microliths were also recovered from the fills of pits 2384, 2299, 2058 and 2318, where they occurred alongside blades and bladelets except in pit 2384, which had no bladelets (Table 7.4). Blade-based material also formed the majority of the flint recovered from pit 2311, where it formed 11% of the total contents of the pit (Table 7.5).

Table 7.3: Microliths from pits at Junction 9

Context	SF no.	Description
2057	2023	Jacobi 1978 7a2. Direct retouch on all edges; scalene microtriangle; tiny
2063		Jacobi 1978 type 5c. Lightly burnt
2067	2032	Jacobi 1978 type 5c
2087	2022	Jacobi 1978 7a2. Direct retouch on all edges; scalene microtriangle
2093	2010	Jacobi 1978 7a2. Direct retouch on all edges; scalene microtriangle
2093	2013	Jacobi 1978 7a2. Direct retouch on all edges; scalene microtriangle
2099	2033	Jacobi 1978 7a2. Scalene microtriangle
2539	2049	Obliquely blunted point; direct retouch distal right creates point at distal end
2195	2026	Jacobi 1978 7a2. Direct retouch on all edges; scalene microtriangle
2300	2025	Minimal direct retouch on both lateral edges; forms point at distal end
2317	2031	Jacobi 1978 7a2. Direct retouch on all edges; scalene microtriangle
2319	2029	Jacobi 1978 7a2. Direct retouch on all edges; scalene microtriangle
2331	2028	Jacobi 1978 type 6. Distal trimming
2355	2034	Jacobi 1978 Type 5c. Direct retouch on left side; point at proximal end; direct and inverse retouch at the distal end
2355	2036	Probably Jacobi 1978 Type 6. Direct retouch on both edges; point at proximal end
2361	2035	Jacobi 1978 Type 6. Direct retouch on both edges; point at distal end; light on ventral surface; reused flake?
2385	2038	Jacobi 1978 7a2, scalene microtriangle
2399	2037	Jacobi 1978 5b. Direct retouch on all edges

Table 7.4: Contents of Mesolithic pits from Junction 9 with more than 30 worked flints

Pit	Blade	Bladelet	Blade-like flake	Chip	Flake	Unclassifiable waste	Retouched flake	Flake core	Multi- platform core	Single- platform core	Unclassi- fiable core	Core flake rejuvenation	Microlith	Scraper	Tested module	Burnt unworked
2094	6	7	4	77	529	13	0	1	6	2	1	1	2	0	3	10
2064	13	14	7	41	307	11	2	2	11	0	0	0	1	0	1	1
2100	11	10	4	53	272	8	0	0	0	0	4	2	1	0	0	0
2090	7	4	1	68	150	3	0	0	0	0	0	0	0	0	1	0
2316	3	3	3	28	174	5	0	0	2	0	0	1	1	1	1	0
2189	2	0	0	14	75	2	0	0	0	0	0	0	0	0	0	0
2108	1	2	2	12	65	1	0	2	0	0	0	0	0	0	0	0
2290	1	0	0	6	58	2	0	0	0	0	0	0	0	0	0	4
2384	2	0	0	1	56	2	0	0	6	0	0	0	1	0	1	0
2299	2	1	3	6	50	0	1	0	1	0	0	0	1	0	0	1
2096	1	0	0	0	54	0	0	0	0	0	1	0	0	0	0	0
2058	1	1	0	7	36	3	0	0	0	0	0	0	1	0	0	0
2324	0	4	0	10	28	3	0	0	0	0	0	0	0	0	0	1
2318	1	1	1	8	32	2	0	0	0	0	0	0	1	0	0	0
2084	0	1	2	7	30	0	0	0	0	0	0	0	0	0	0	0
2311	1	3	0	12	20	0	0	0	0	0	0	0	0	0	0	1
2076	0	0	0	2	29	0	0	0	0	0	1	0	0	0	0	0
2370	0	0	0	6	14	4	1	0	0	0	0	0	0	0	0	3
TOTAL	52	51	27	358	1979	59	4	5	26	2	7	5	9	1	7	21

Table 7.5: Mesolithic pit assemblage composition (%)

Pit	Blade-based pieces	Waste	Cores	Core rejuvenation flake	Microlith	Scraper	Retouched flake	Tested nodule	Burnt unworked
2094	3	94	1.5	0.2	0.3	0	0	0.5	2
2064	8	88	4	0	0.5	0	0.5	0.5	0.5
2100	7	92	1	0.5	0.3	0	0	0	0
2090	5	93	0	0	0	0	0	0.5	0
2316	4	93	1	0.5	0.5	0.5	0	0.5	0
2189	2	97	0	0	0	0	0	0	0
2108	6	90	2	0	0	0	0	0	0
2290	1	93	0	0	0	0	0	0	6
2384	3	85	0	0	1	0	0	1	0
2299	9	86	0	0	1	0	1	0	1
2096	2	96	0	0	0	0	0	0	0
2058	4	93	0	0	2	0	0	0	0
2324	8	85	0	0	0	0	0	0	2
2318	6	92	0	0	2	0	0	0	0
2084	7	93	0	0	0	0	0	0	0
2311	11	87	0	0	0	0	0	0	3
2076	0	97	3	0	0	0	0	0	0
2370	0	80	3	0	0	0	3	0	1

Besides the finds from pits, three gullies contained flint-rich fills. Gully 2072 (context 2071) contained 187 worked flints including four multi-platform cores and a small number of blades and blade-like flakes. Gully 2196 (context 2195) contained 186 flints including a microlith of Jacobi's (ibid.) 7a2 form, ten blades and blade-like flakes, and two core-related flakes, whilst gully 2356 (context 2355) contained a total of 158 worked pieces with cores, bladelets and two microliths of Jacobi's (ibid.) Type 5c and 6 present. The narrowness of the flake scars on the cores, along with the predominantly blade and narrow flakes present suggests a late Mesolithic date for this material, which is supported by a radiocarbon date (NZA 32689) of 5220–4850 cal BC (95.4% confidence; or 5210–4940 cal BC, 68.2% confidence) from gully 2196.

Post-Mesolithic worked flint from Junction 9 includes a late Neolithic chisel arrowhead (Fig. 7.1.1) recovered from context 2103 in pit 2104. Pit 2108 (context 2107) contained a total of 84 flints including two multi-platform cores, which are probably later Neolithic in date, and six multi-platform cores were among the 69 worked flints from pit 2384 (context 2385), which also contained pottery. Pit 2052 contained a total of 204 worked flints, as well as 152 burnt unworked pieces. This material was predominantly waste flakes, but 11 scrapers (Fig. 7.1.2–12) were also recovered, as well as four retouched flakes and a core. The broad nature of many of the flakes from this pit and the presence of end and side scrapers suggests a late Neolithic date for the feature, as the material is in fresh condition and does not appear to have been redeposited. This is supported by a radiocarbon date (NZA 32683) of 2620–2340 cal BC (95.4% confi-

dence; or 2570–2460 cal BC, 68.2% confidence) obtained from this pit.

Pit 2189 (context 2190) contained a total of 93 flints, predominantly flakes and chips which were not diagnostic. A further 26 pits contained between one and 85 pieces of flint and of these a total of 11 contained less than ten pieces; five between 11 and 20; four between 21 and 30; and nine between 31 and 85. None of this material is particularly diagnostic and only in one instance (pit 2386) does it occur with pottery (Table 7.2)

Discussion

The material from the M1 widening scheme is dominated by undiagnostic waste flakes and chips, with very few formal tools and cores present. The majority of the material is residual within later features, although a small proportion of the material appears to be *in situ*. Most significant is the flint recovered from a series of pits at Junction 9.

The flint from the pits at Junction 9 is dominated by waste flakes and chips and there is a lack of cores and almost complete absence of formal tools. The large amount of waste, and the presence of tested nodules and some heat-treated flint, suggest that this material represents the by-products of flint-knapping episodes and may indicate that the tools produced, and the cores from which they were struck, were removed from the site for use elsewhere. The number of pits, and their distribution, is suggestive of repeated visits to the site during which time the waste from knapping episodes was incorporated into the fills of pits alongside other material such as hazelnut shells and charcoal. The radiocarbon dating programme (see Chapter 9) indicates that this activity may have

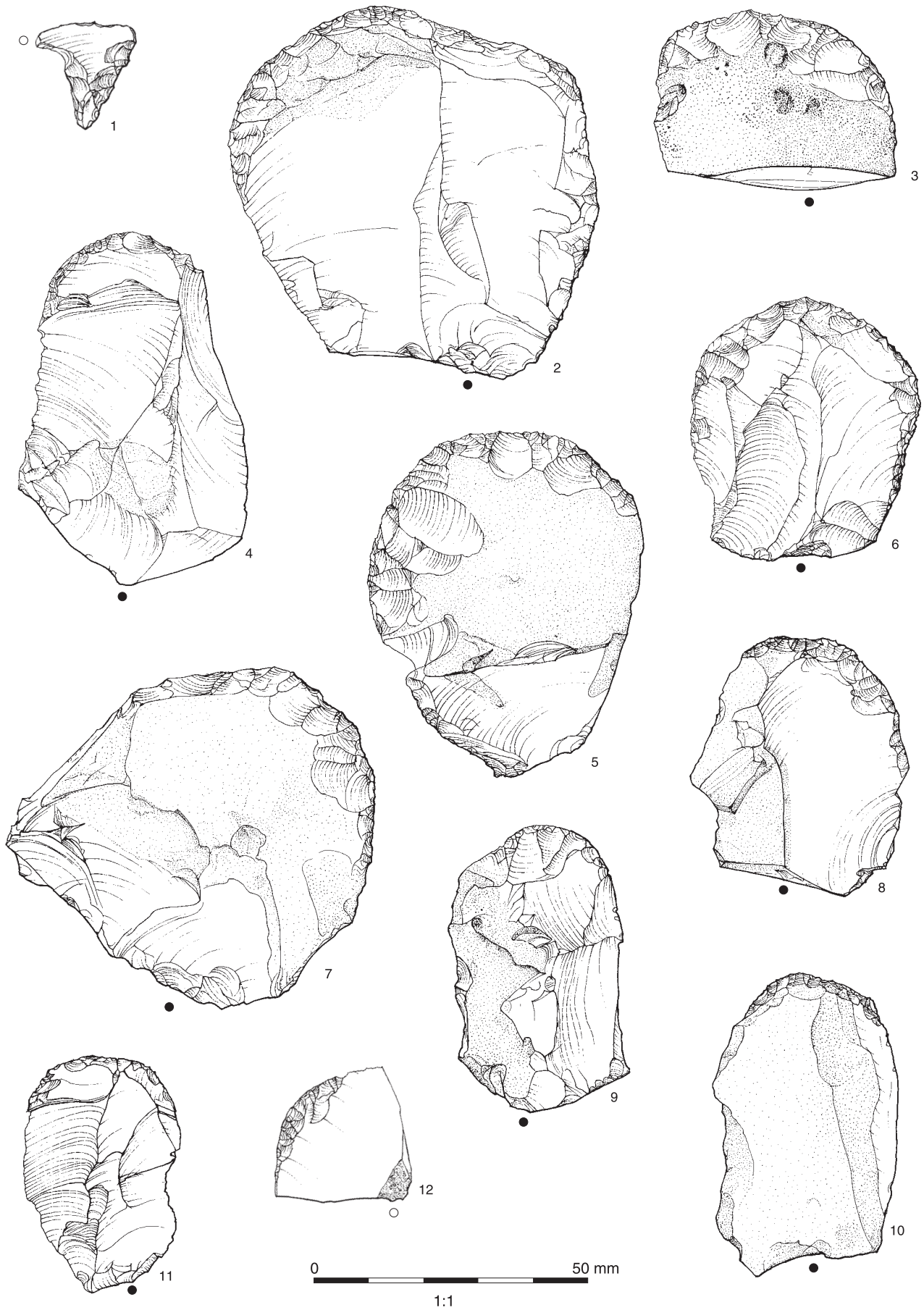


Fig. 7.1 The flint

taken place over a relatively short period of time, potentially less than 100 years, and probably represents several discrete episodes of activity. This is supported by the limited range of materials recovered from within the pits, including a chronologically restricted set of microliths, but it is difficult to find a mechanism which explains why some pits were filled with large numbers of waste flakes, whilst others contained very few (Table 7.2). It is unlikely that this is the result of truncation, as some of the deeper pits on the site contained the least numbers of worked flint (Table 7.2), and it may be that there is an element of selection, although it is not possible to understand the criteria by which pits which received the greatest amount of material were chosen.

The microliths from Junction 9 are predominantly scalene microtriangles of type 7a2 (Jacobi 1978), although types 5 and 6 microliths are also present. This style of microlith was utilised towards the end of the Mesolithic, probably forming part of composite tools (*ibid.*). Sites containing microliths alongside large assemblages of flakes and blades are known from Stratford's Yard, Chesham (Stainton 1989) and the Colne Valley (Lacaille 1963), but whilst these are late Mesolithic narrow-blade assemblages, they contain very few microtriangles. The assemblages from these sites are markedly different from those on the M1 widening and contain microburins, which are not recorded in the M1 assemblage, scrapers and tranchet axes. It is tempting to see these sites as representing the by-products of longer-term activity, in contrast to the shorter-term repeated visits to what is now Junction 9. The assemblage of flakes and microliths from the M1 can also be paralleled at two sites in Somerset, where similar assemblages were recovered from pits. At Blackmoor, Charterhouse (Lewis 2007), an assemblage of waste flakes, blades and a small number of cores was recovered from a 0.5m-deep pit or posthole. At Langleys Lane, Midsomer Norton, a series of pits containing flakes, blades and microliths, as well as a small assemblage of animal bone and charcoal, was associated with what appears to be a spring, sealed by a layer of tufa (J Lewis and R Davies pers. comm.). Although, at the moment, no radiocarbon dates are available from these sites, the similarity of the lithic assemblages and their circumstances of deposition, have strong parallels with the material from the M1.

Other Mesolithic flint has been recovered from the local area at Chalton and Caddington, to the north of Junction 9, and Mesolithic artefact scatters from the region tend to be focussed on river valleys such as the Colne, Misbourne, Chess, Ver and Lea (Holgate 1995b). The Junction 9 site is close to the headwaters of the Ver, in a valley side location, which fits well with this pattern. Mesolithic material has been recovered from further down the valley at Redbourn and Friar's Wash and from the Park Street Roman Villa, leading Holgate (*ibid.*, 9)

to suggest that the entire valley was exploited for its wild resources during the later Mesolithic. The material from the majority of these sites is, however, unpublished and it is not possible to offer a comparison of the assemblages from these sites with those recovered during the M1 widening scheme.

The small amount of flint from Junction 8S includes blades, blade-like flakes and a single-platform core, which are diagnostically late Mesolithic/early Neolithic in date. The radiocarbon date (NZA-32714) of 3800-3640 cal BC (95.4% confidence; or 3760-3650 cal BC, 68.2% confidence) from pit 5081 places this assemblage in the early Neolithic, but the flint assemblage is relatively small and does not offer enough data to enable any significant typological or technological differences to be identified between the late Mesolithic assemblage from Junction 9 and that from Junction 8S. A further five pits at Junction 8S (5064, 5088, 5096, 5172 and 5226) contain typologically Neolithic to early Bronze Age flint, but these cannot be assigned a narrower range within this time span.

A total of four pits at Junction 9 can be assigned a date in the late Neolithic and the radiocarbon date from pit 2052 confirms the typological dating of the flint. Although the worked flint from the pit is fairly typical of the period, the number of scrapers (predominantly side scrapers) is noteworthy. Similar pits containing later Neolithic material including Grooved Ware and animal bone have been recorded at Puddlehill, Bedfordshire and Letchworth, Hertfordshire (*ibid.*), and surface scatters of Neolithic to Bronze Age flintwork are known from the Dunstable/Luton area of south Bedfordshire (Hudspith 1995). However, these remain unpublished and it is not possible to make any comparisons between these sites and the material recovered during the M1 widening scheme excavations. The presence of late Neolithic pits so close to those of Mesolithic date at Junction 9 is interesting, but activity at this site appears to be separated by a period of over two thousand years (see Chapter 9). Nevertheless, the occurrence of Neolithic sites close to those of Mesolithic date can be observed at Stonehenge and other sites in southern Britain (Allen and Gardiner 2002), but the reasons for the apparent monumentalisation of areas previously exploited in the Mesolithic is not clear. This process did not happen at the Junction 9 site and there is clearly no causal relationship between the presence of Mesolithic pits and Neolithic monuments. The tradition of deposition of selected assemblages of material culture, including worked flint, within pits has been discussed at length by Thomas (1999) who considers it to be a way of formally drawing attention to specific parts of the landscape. The material recovered from Junction 9 suggests that this tradition may have a longer history than previously anticipated.

THE PREHISTORIC POTTERY *by Leo Webley and Lisa Brown*

Introduction

Prehistoric ceramics predating the late Iron Age were found during the evaluation and mitigation fieldwork at seven of the M1 sites: Buncefield Depot; Junction 8S; Junction 8N; The Aubreys; Area M; Junction 9; and Junction 10. The assemblage comprises 988 sherds, weighing 4373g. Most of the material dates to between the late Bronze Age and the middle Iron Age, but sherds of possible late Neolithic date were found at The Aubreys.

Methodology

The pottery was recorded following the guidelines of the Prehistoric Ceramics Research Group (PCRG 1997). Data entered onto a MS Access database included quantification by sherd number and weight, fabrics (based on principal inclusion type), form, surface finish and decoration. No carbonised organic residues, soot or limescale were observed, probably due in part to the generally poor condition of the assemblage.

Condition

With an overall mean sherd weight of only 4.4g, the condition of the assemblage is poor and many sherds are abraded or have missing surfaces. The few large sherds were all recovered from pits in the Buncefield Depot and Junction 8S sites, and a selection of these are illustrated (Fig. 7.2).

Fabrics

The pottery has been ascribed to 12 broad fabric groups, described in Table 7.6. The majority of the assemblage contains calcined (burnt) flint inclusions. As the underlying geology of the M1

widening footprint is frequently flinty Carstens series clayey soils, this group of fabrics could have been produced from entirely locally derived raw materials. A smaller proportion of sandy wares was also present, and a near negligible number of sherds with shell inclusions (11 sherds) from Area M could have been manufactured from shelly Oxford Clays located some 10-15km to the north of the site. A fabric group with organic inclusions preserved as flat vesicles indicates a practice of deliberate combining of vegetable matter, possibly in the form of manure, with potting clay to improve plasticity and/or firing.

The distribution of fabrics by sherd count and weight within each site is presented in Table 7.7.

Site assemblages

The pottery is described within site groups. Some identifications are tentative, given the poor condition of much of the material, and the fact that few local or near-regional prehistoric assemblages are currently available for comparison.

Buncefield Depot

Buncefield Depot produced 301 sherds (2042g), all of which can be placed in the post-Deverel-Rimbury tradition of the late Bronze Age/early Iron Age (Barrett 1980). Most of the material is flint tempered, with some sandy and vegetable-tempered sherds also present. A number of diagnostic vessel fragments were recovered from pit 516 and associated spread 521/522. Fill 519 of the pit contained: part of a round-shouldered bowl or jar with a slightly everted rim; an everted rim from a vessel decorated with fingernail impressions on its neck; sherds of a further coarse vessel decorated with fingertip impressions (Fig. 7.2.1-2); and a body sherd from a fine, carinated bowl. Layer 521 produced part of a fine, bipartite 'furrowed' bowl with an upright rim and a fragment of a fine,

Table 7.6: Prehistoric pottery fabric descriptions

Fabric		Description
A1	Fine sandy	Moderate to abundant quartz sand < 0.5mm; rare iron oxide < 2mm visible in some sherds
A2	Coarse sandy	Moderate to abundant quartz sand < 1mm; rare iron oxide < 2mm visible in some sherds
AF1	Sand and fine flint	Moderate to abundant quartz sand < 1mm; sparse calcined flint < 1mm
AF2	Sand and coarse flint	Moderate to abundant quartz sand < 1mm; sparse, poorly sorted calcined flint < 5mm
AL1	Sand and limestone	Moderate quartz sand < 0.5mm; rare limestone < 5mm, rare flint < 5mm, rare iron oxide < 2mm
F1	Fine flint	Moderate calcined flint < 1mm; sparse quartz sand < 0.5mm
F2	Coarse flint	Moderate calcined flint < 5mm; sparse quartz sand < 0.5mm
F3	Coarse, poorly sorted flint	Moderate, poorly sorted calcined flint < 8mm; sparse quartz sand < 0.5 mm. Hard
S1	Fine shell	Moderate shell < 1mm; sparse quartz sand < 0.5mm; sparse iron oxide < 1mm. Soapy feel
V1	Vegetable inclusions	Moderate to abundant flat voids from vegetable inclusions < 5mm
VA1	Vegetable inclusions and sand	Moderate flat voids from vegetable inclusions < 5mm; moderate quartz sand < 0.5mm; rare, poorly sorted flint < 5mm; rare calcareous inclusions < 1mm. Friable
VA2	Vegetable inclusions and sand	Moderate flat voids from vegetable inclusions < 5mm; moderate sand < 0.5mm. Hard

Table 7.7: Quantification of prehistoric pottery fabrics (sherd count and weight) by site

	Buncefield Depot	Junction 8S	Junction 8N	The Aubreys	Area M	Junction 9	Junction 10
A1	13 (70g)	229 (310g)	42 (107g)		3 (8g)	23 (157g)	
A2			5 (12g)		11 (45g)		
AF1	144 (943g)	6 (27g)			1 (2g)	1 (2g)	
AF2			2 (18g)		2 (7g)	7 (57g)	
AL1							1 (5g)
F1	85 (376g)	52 (166g)	14 (43g)		2 (6g)	21 (23g)	
F2	42 (507g)	212 (1166g)	10 (58g)		2 (7g)	9 (18g)	
F3				8 (20g)			
S1					11 (20g)		
V1	1 (7g)	3 (12g)	1 (1g)		2 (3g)		
VA1	16 (139g)						
VA2			7 (31g)				
Total	301 (2042g)	502 (1681g)	81 (270g)	8 (20g)	34 (98g)	61 (257g)	1 (5g)

burnished, carinated bowl with a flaring rim (Fig. 7.2.3-4). Layer 522 contained a fine sandy sherd decorated with two incised lines and two impressed dots inlaid with white paste (not illustrated).

Elsewhere, pit 532 (fill 533) contained a large group of sherds (1037g), most of which belonged to a single coarse vessel; a shouldered jar decorated with fingertip impressions on its shoulder. The vessel forms and types of decoration seen at this site indicate a date in the early Iron Age (c 800-400 cal BC) and possibly in the earlier part of this period.

Junction 8S

Junction 8S produced 502 sherds (1681g) of prehistoric pottery. Most of the material is in flint-tempered fabrics and can be broadly dated to the late Bronze Age/early Iron Age. In most cases, only small undiagnostic sherds were recovered.

Eight small, shallow pits (5234, 5236, 5441, 5446, 5448, 5461, 5465 and 5474) within a group (7785) of ten, together produced a small collection of 78 sherds with a mean sherd weight of under 6g. Although the features were not strictly contemporary, as some were inter-cutting, all except pit 5236 produced flint-tempered fabrics consistent with a late Bronze Age/early Iron Age date. Pit 5465 (fill 5464) produced a single large fragment from a round-bodied jar with a slightly everted rim (Fig. 7.2.5). Pit 5236, which contained only sandy wares (fabric A1) may be a middle Iron Age feature, but cannot be more precisely dated due to the absence of featured sherds.

A second concentration of eight shallow pits (7786) and two features interpreted as tree-throw holes (5345 and 5433) occupied the central part of this site. Of this group, the single fills of pits 5021, 5023, 5106 and 5424 produced a total of 338 sherds (924g) of prehistoric pottery, most of it flint-tempered material of late Bronze Age or early Iron Age type. Pit 5023 (fill 5024) contained the largest group (130 sherds; 650g), most belonging to a single

vessel. Although this vessel is too fragmented and incomplete to be reconstructed, it was probably a jar with a flaring rim. In addition to the flint-tempered sherds, a few contexts (notably fill 5107 of pit 5106) contained sandy sherds. These, like the material from pit 5236, may be of middle Iron Age date.

Posthole 5192 (fill 5193) contained a T-shaped rim, probably from a late Bronze Age/early Iron Age jar (Fig. 7.2.6). Jars with T-shaped rims are often associated with early Iron Age assemblages, an example from pit 1013 at Buncefield Lane (see above) being a case in point. However, the complete absence of decoration in the Junction 8S assemblage suggests that it may have an earlier emphasis than that from Buncefield Depot, perhaps falling within the post-Deverel-Rimbury plain-ware tradition of c 1150–800 cal BC.

Junction 8N

Junction 8N produced 81 sherds (270g) of prehistoric pottery. A number of flint-tempered sherds can be broadly dated to the late Bronze Age/early Iron Age. Most of these are very small and abraded, and much of the material was residual within late Iron Age and early Roman ditch fills. The one notable exception is a large fragment of a shouldered jar with an upright flat-topped rim from fill 6196 of posthole 6195 (Fig. 7.2.7). All of the pottery is undecorated except for a residual body sherd from context 6417 which had fingertip impressions.

Middle Iron Age activity is represented by a small number of undecorated sherds in sandy and vegetable-tempered fabrics. Of three rim fragments, at least one, from fill 6783 of pit 6782, derives from a slack-shouldered jar (Fig. 7.2.8).

The Aubreys

Pits 207 (fill 206) and 218 (fill 213) produced eight sherds (20g) of pottery in a fabric with poorly sorted flint inclusions. These are early prehistoric, possibly

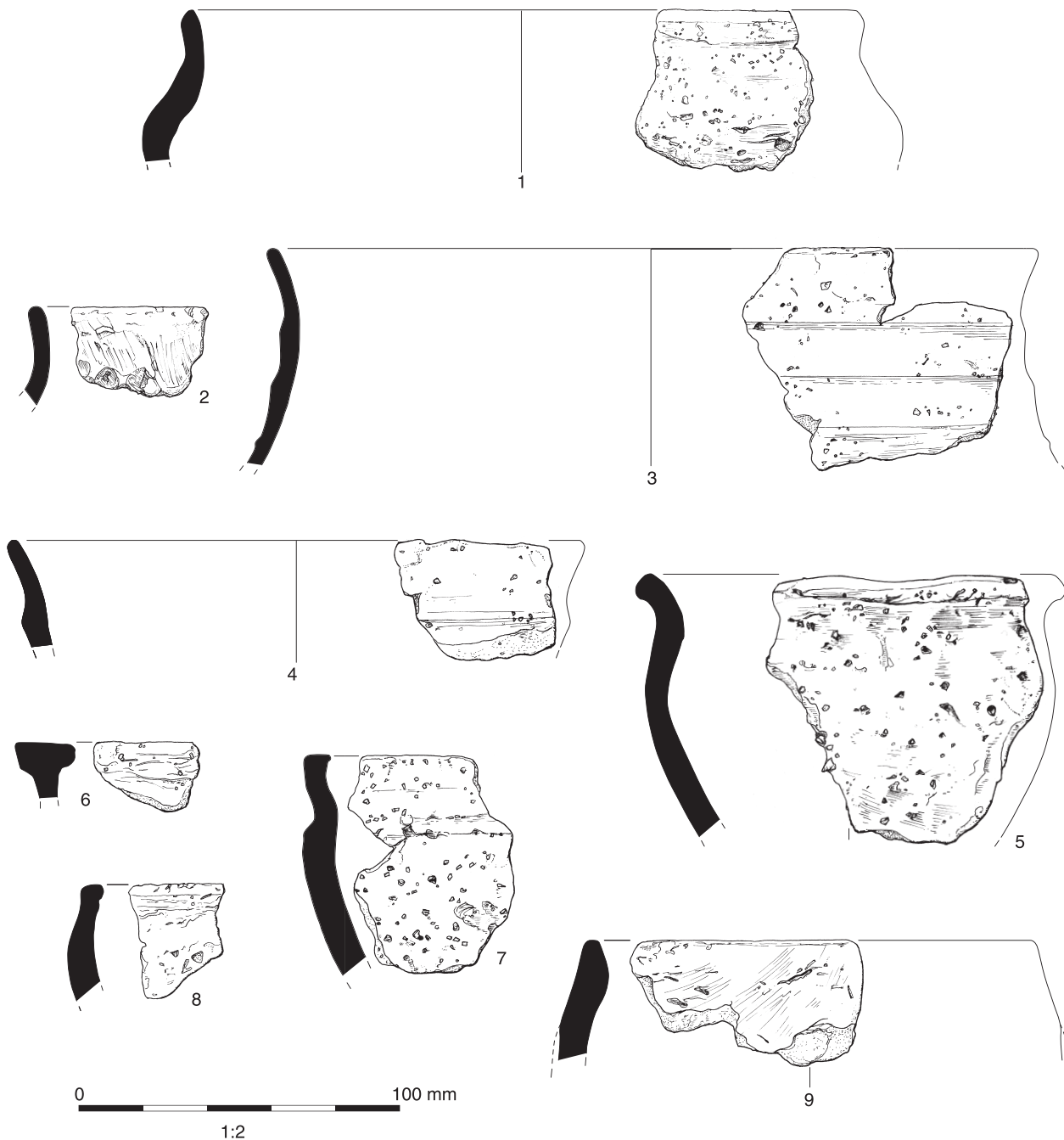


Fig. 7.2 Prehistoric pottery

dating to the late Neolithic or early Bronze Age, which would be consistent with the occurrence of numerous flints of that date recovered from locations across the scheme (see above).

Area M

Area M produced 34 sherds (98g) of prehistoric pottery. The material is highly fragmented, and dating is difficult. A few flint-tempered sherds, likely to be of late Bronze Age/early Iron Age date, include a small fragment of a flat-topped rim; however, an early prehistoric attribution for some of

the flint-tempered material cannot be ruled out. Some sandy sherds might date to the middle Iron Age, although again no featured sherds were present. Eleven sherds from ditch 3008 (fills 3009 and 3017) are in a fabric containing fine shell inclusions, which is not paralleled elsewhere in the M1 investigations; an Iron Age date can be tentatively suggested for these.

Junction 9

Junction 9 produced 61 sherds (257g) of prehistoric pottery. A few very small fragments of flint-

tempered pottery are likely to date to the late Bronze Age/early Iron Age, though they could be residual. More clearly represented are middle Iron Age sherds in sandy fabrics, including rim sherds from a slack-shouldered bowl or jar from pit 2108 (fill 2107) (Fig. 7.2.9). Two sherds in fabric S1 from ditch 2047 (fill 2138) belong to an ovoid jar with an upright rounded rim and horizontal combing or scoring on the body. This has been dated to the middle or, more likely, late Iron Age as the sherds were found in association with grog-tempered late Iron Age pottery.

A radiocarbon date (NZA-32692) of 5220-4930 cal BC (95.4% confidence; or 5210-4990 cal BC, 68.2% confidence) was obtained on a charred hazelnut shell from pit 2316 (context 2317); pottery fragments in this deposit, weighing 10g must have been intrusive. The pottery is a coarse flint-tempered ware (F2), which corresponds with late Bronze Age/early Iron Age vessel forms elsewhere on the site.

Junction 10

Posthole 1009 produced a single residual sherd weighing only 5g, in a fabric containing coarse limestone and iron-oxide inclusions not paralleled elsewhere in the M1 investigations. The date of this is unclear, though it could be Iron Age.

Discussion

The prehistoric pottery assemblages from the M1 sites are small and poorly preserved. Nevertheless, given the scarcity of late Bronze Age to middle Iron Age assemblages elsewhere in Hertfordshire, and especially south of the Chiltern ridge, the material represents a useful addition to the existing local ceramic record. The pottery from Buncefield Depot is of particular interest as it includes a number of distinctive early Iron Age vessel forms.

Distribution and provenance

The bulk of the prehistoric pottery from all of the sites came from over 30 pits located at The Aubreys, Buncefield Depot, Junction 8S, Junction 8N and Junction 9. Pits are a common catchment for material on prehistoric sites. Most of the pits, however, contained fewer than 20 sherds (and generally under eight). The exceptions were pit 532 at Buncefield Depot (130 sherds; 1037g) and pits 5023 (130 sherds; 625g) and 5106 (168 sherds; 223g) at Junction 8S. In all three cases, these sherd groups almost certainly represented fragments of single vessels, as they were in identical fabrics with some visible joins. Since the vessels from pit 532 and pit 5023 were early Iron Age, and that from pit 5106 more probably middle Iron Age, however, no particular pattern of chronologically significant deposition practice seems apparent. In fact, since these larger vessel fractions are highly fragmented, they may have entered their respective pits by much the

same means as the rest of the pottery. Accidental inclusion in a deliberate backfill of occupation-rich soils (such as a midden) is one possibility.

Much of the rest of the prehistoric pottery was residual in the fills of ditches in Area M and Junction 8N. Several postholes (most at Junction 8S and Junction 8N) and irregular hollows, recorded as tree-throw holes (eight of the latter located at Junction 8S), accounted for the remainder.

Regional affinities

Knowledge of later prehistoric ceramic development in south Hertfordshire prior to the late Iron Age ('Belgic') horizon is currently limited. However, the assemblage from pit 532 at Buncefield Depot could be broadly contemporary with the group from pit 1013 at nearby Buncefield Lane, Hemel Hempstead, which included a shouldered jar, a fine carinated bowl and a fine hemispherical bowl decorated with incised lines, associated with a radiocarbon date of 810-515 cal BC (McDonald 2003). Somewhat further afield, Ivinghoe Beacon, some 15km to the west of the M1 on the Chiltern Hills of Buckinghamshire, represents a type-site for pottery dating to the 8th-6th centuries cal BC. The range of ceramics collected here during excavations carried out in the 1960s includes coarsely made hemispherical bowls and shouldered jars with finger-impressed decoration (Cotton and Frere 1968). Small, isolated groups of similar, but unpublished material, are known from Hawthorn Hill, near Letchworth and Bedfordshire sites at Kempton, Sandy and Totternhoe (Cunliffe 2005, 97).

Pottery recovered from Great Wymondley, near Letchworth in the 1930s represents a slightly later ceramic development (5th-3rd centuries cal BC) that includes carinated bowls with flaring rims associated with shouldered jars (Tebbutt 1932). Similar early Iron Age bowls have also been recovered from Puddlehill, Bedfordshire (Matthews 1976). These assemblages, however, include bowls with incised or scratched zigzag decoration of a type not present in the M1 assemblage, which suggests either stylistic or chronological disparity between the assemblages.

Catalogue of illustrated sherds

- 1 Buncefield Depot: shouldered jar/bowl, early Iron Age. Ctx 519
- 2 Buncefield Depot: rim with fingernail impressions on neck, early Iron Age. Ctx 519
- 3 Buncefield Depot: bipartite furrowed bowl, early Iron Age. Ctx 521
- 4 Buncefield Depot: carinated flared-rim bowl, early Iron Age. Ctx 521
- 5 Junction 8S: round-bodied jar, late Bronze Age/early Iron Age. Ctx 5464
- 6 Junction 8S: T-shaped rim, late Bronze Age/early Iron Age. Ctx 5193
- 7 Junction 8N: shouldered jar, late Bronze Age/early Iron Age. Ctx 6196

- 8 Junction 8N: slack-shouldered jar, middle Iron Age. Ctx 6783
- 9 Junction 9: slack-shouldered bowl/jar, middle Iron Age. Ctx 2107

THE LATE IRON AGE AND ROMAN POTTERY by Dan Stansbie

Introduction and Methodology

Late Iron Age and Roman pottery was recovered during the evaluation and mitigation stages of the excavations. The material from the evaluation is discussed as a block, while the assemblages from the mitigation phases of the work, including the watching briefs, are discussed individually (see below). Six sites within the mitigation phase (Junction 8N, Junction 9, Junction 10, Area M, Area P and The Aubreys) produced assemblages of late Iron Age and Roman date. Overall 12,059 sherds weighing 100kg were recovered. The material was fully recorded on a MS Access database and fabrics were identified using codes based on the national Roman pottery fabric reference collection (Tomber and Dore 1998) and used by Lyne (1999) in his report on the pottery from Folly Lane, Verulamium. However, where a fabric was not covered by either of these systems the OA standard recording system for Iron Age and Roman fabrics was used (Booth 2007). Where necessary, the pottery was examined under a binocular microscope at x20 magnification to aid in identification of the fabric. Reference was also made to: the City of London corpus (Davies *et al.* 1994); Hawkes and Hull's (1947) report on the pottery from Camulodunum and Thompson's (1982) corpus (for 'Belgic' forms); Going's (1987) report on the pottery from Chelmsford; and Young's (1977) corpus of the Oxfordshire industry. Vessel form typology follows the OA standard recording system and where relevant reference is made to regional and international corpora. The OA recording system divides vessels into 13 classes: A-amphorae; B-flagons/jugs; C-jars; D-jar/bowls; E-beakers; F-cups; G-tankards and mugs; H-bowls; I-bowls/dishes; J-dishes and platters; K-mortaria; L-lids; and M-miscellaneous. The pottery was divided into four ceramic phases: late Iron Age-early Roman (50 BC-AD 70); early Roman (AD 43-120); middle Roman (AD 120-250); and late Roman (AD 250-410). In the following report pottery described as being of a particular ceramic phase will have derived from a context or contexts assigned to that phase on both ceramic and other criteria. Such groups frequently contained redeposited material of earlier date which is included in the phase group statistics.

Condition

An average sherd weight of 8g suggests that the condition of the pottery was poor. However, this figure is influenced by large amounts of very

abraded residual material within the assemblage and belies the presence of a substantial number of well-preserved groups.

Pottery from the evaluation (Table 7.8)

Late Iron Age and Roman pottery from the evaluation comprises 498 sherds, weighing 4606g. With an average sherd weight of 9g the pottery is generally in moderate condition, although there are some large well-preserved groups of sherds and some groups were heavily abraded. The material from the evaluation is dominated by pottery of broad Roman date, which accounts for 46% by weight. This is supplemented by late Iron Age-early Roman pottery, which accounts for 18% by weight and early Roman pottery, which also takes an 18% share. The remainder of the assemblage comprises middle Roman pottery at 11% by weight and late Roman pottery at 7% by weight.

The late Iron Age-early Roman assemblage is composed largely of body sherds of grog-tempered ware (GROG), with several jars, including a high-shouldered jar, and a necked bowl also present. In addition, there is a butt-beaker in 'Belgic' sandy ware. The early Roman assemblage is also dominated by body sherds of grog-tempered ware, with a single grog-tempered jar. This is supplemented by a bead-rimmed jar in unsourced reduced coarse ware (UNSREC), a medium-mouthed jar in shelly ware and body sherds in 'Belgic' sandy ware

Table 7.8: Evaluation. Late Iron Age and Roman pottery

Fabric	Nosh	% Nosh	Weight (g)	% Weight
BATAM	1	<1	122	2.6
CGSA	1	<1	2	<1
E30 'Belgic' sandy fabrics	28	5.6	196	4.2
E40 shell-tempered fabrics	5	<1	19	<1
GROG	264	52.6	1794	38.2
HARSH	25	5	295	6.4
HADOX	1	<1	2	<1
HGWREC	2	<1	12	<1
LCVRE3	5	1	12	<1
LNVCC	1	<1	1	<1
MISC	2	<1	2	<1
OXFRS	3	<1	48	1
OXFRSM	3	<1	6	<1
PNKGT	9	1.8	610	13.2
R90 coarse tempered fabrics	4	<1	76	1.6
SGSA	2	<1	24	<1
UNSOX	14	2.8	186	4
UNSOXC	36	7.2	181	3.9
UNSOX	10	2	118	2.5
UNSREC	46	9.2	603	13
UNSPREF	12	2.4	55	1
VERWH	24	4.8	242	5.2
Total	498	100	4606	100

(E30). Furthermore, there is a single sherd of Dressel 20 amphora (BATAM) and a form 15/17 dish in South Gaulish samian ware (SGSA).

The bulk of the middle Roman assemblage comprises unsourced reduced coarse ware (UNSREC) and Verulamium-region white ware (VERWH), with a single medium-mouthed jar in the former and a reeded-rim bowl in the later. In addition, there is a reeded-rim bowl in unsourced oxidised ware, a jar in Highgate Wood C ware (HGWREC) and a single body sherd of lower Nene Valley colour-coated ware (LNVCC).

The late Roman assemblage was small and was not dominated by any individual fabric, although Harrold shelly ware (HARSH) is most common with 16 sherds belonging to a medium-mouthed jar. This is supplemented by a bowl in Oxfordshire colour-coated ware (OXFRS) and body sherds of Oxfordshire white-ware mortaria (OXFWHM), pink grogged ware (PNKGT) and Central Gaulish samian ware (CGSA). Like the late Roman material, pottery that can only be assigned a broad Roman date range is not dominated by any individual fabric. Unsourced reduced coarse ware (UNSREC) is prominent, however, with several jars including lid-seated and medium-mouthed types, and this is supplemented by body sherds and medium-mouthed jars in Harrold shelly ware (HARSH) and a flagon and a jar in Verulamium-region white ware (VERWH). Moreover, there are body sherds of Highgate Wood C (HGWREC), pink grogged ware (PNKGT) and Hadham oxidised ware (HADOX).

Pottery from Junction 9 (Table 7.9)

In total 4936 sherds of late Iron Age and Roman pottery, weighing 54kg were recovered from Junction 9. With an average sherd weight of 11g the pottery is in moderate condition, although some groups are particularly well preserved and a number of sherds are clearly residual, being heavily abraded. The assemblage from Junction 9 is dominated by material from contexts of early Roman date, which accounted for 60% of the assemblage by weight. This is supplemented by smaller amounts of late Iron Age-early Roman pottery at 10% by weight, middle Roman pottery at 17% by weight and late Roman pottery at 11% by weight. The remaining 2% are accounted for by material that can only be assigned a broadly Roman date range.

The late Iron Age-early Roman assemblage is overwhelmingly dominated by grog-tempered wares (GROG), with vessels in this fabric largely being made up of medium-mouthed jars, supplemented by several high-shouldered jars, a lid-seated jar and a storage jar. Also present are a carinated bowl and several lids. The grog-tempered material is supplemented by shelly fabrics (E40), 'Belgic' sandy fabrics (E30), in which there is a butt-beaker and a single sherd of flint-tempered material (E60).

The early Roman assemblage consists of a more diverse range of fabrics, although it is still largely

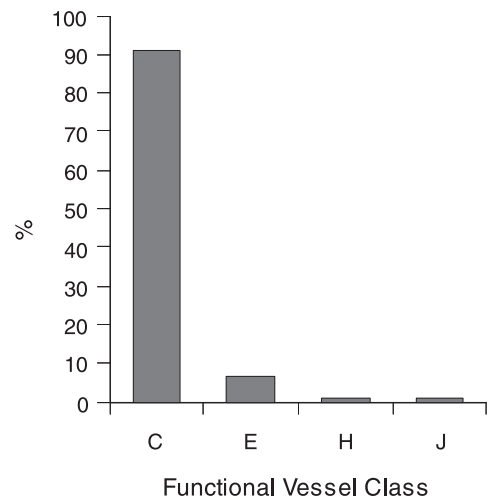


Fig. 7.3 Late Iron Age-early Roman functional vessel class (%)

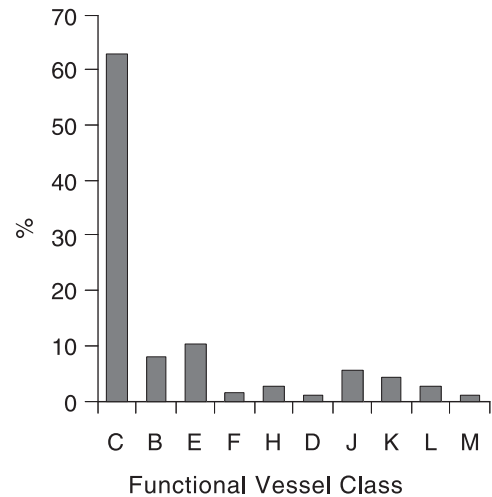


Fig. 7.4 Early Roman functional vessel class (%)

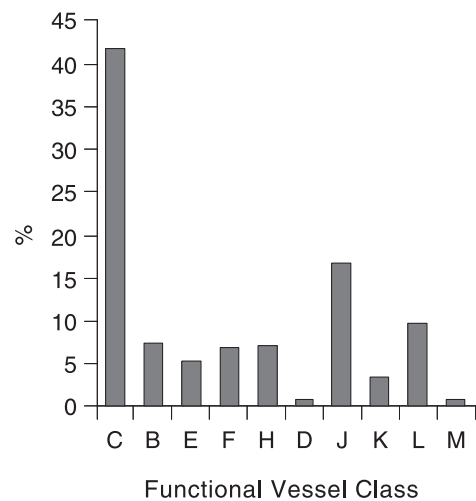


Fig. 7.5 Middle Roman functional vessel class (%)

dominated by grog-tempered wares, which account for 63% by weight (much of this material is likely to be residual). Vessels in grog-tempered ware largely comprise high-shouldered and medium-mouthed jars, with some lid-seated and bead-rimmed examples. In addition, there are grog-tempered butt-beakers, carinated bowls, a globular bowl and a platter. No other fabrics are present in such substantial amounts within the early Roman assemblage, although pink grogged wares (PNKGT), unsourced reduced coarse wares (UNSREC) and Verulamium-region white wares are the next most common fabric types at 7%, 6% and 5% by weight, respectively. Reduced-ware vessels also largely comprise medium-mouthed jars, although other types, including lid-seated vessels, are also present and the jars are supplemented by beakers (including poppy-head beakers), bowls and platters. The Verulamium-region white wares include ring-necked flagons, medium-mouthed and neckless jars and reeded-rim bowls. The only vessels present in pink grogged

ware are storage jars. There is a small amount of samian ware, all from South Gaulish (SGSA) production centres, consisting of forms 18 and 18/31 dishes, forms 27, 33, 24/25 and 35 cups, and a form 37 bowl. The remaining fabrics in the early Roman assemblage are all present in small amounts of less than 5% by weight (Table 7.9). Notable among these fabrics are body sherds of Dressel 20 (BATAM) and Gallic (GALAM) amphorae, a flanged bowl in local mica-dusted ware, a platter (CAM16) in *terra nigra* (GABTN), body sherds of North Gaulish white ware (NOGWH), body sherds and a storage jar in Harold shelly ware (HARSH) and body sherds of Highgate Wood C ware (HGWREC).

The middle Roman assemblage comprises a diverse range of fabrics, none of which really dominate. The most common of these are again unsourced reduced coarse wares and Verulamium-region white wares, which together account for 40% of the assemblage by weight. Vessels in these fabrics largely consist of jars, including medium-mouthed, wide-mouthed and neckless varieties, with several reeded-rim bowls in Verulamium-region white ware. The small amount of samian ware mostly came from Central (CGSA) and South Gaulish (SGSA) production centres, with a very small amount (less than 1% by weight) of East Gaulish (EGSA) material. Vessels in these fabrics include: form 18/31 dishes; forms 27, 33 and 35 cups; a form 36 dish; and a form 37 bowl. Apart from pink grogged ware (PNKGT), Verulamium-region white-ware mortaria (VERWHM) and unsourced black-burnished wares (UNSBB), the remaining fabrics are all present in small amounts of less than 5%. These fabrics include body sherds of Hadam oxidised wares (HADOX) and Hadham oxidised white-slipped wares (HADWS), along with plain-rimmed dishes, a bead-rimmed dish and a cooking jar in black-burnished ware (BB1), and several jars in Harold shelly wares (HARSH).

Like the middle Roman assemblage, the late Roman pottery is not dominated by a particular fabric, although unsourced reduced wares are most common at 27% by weight, with vessels in this fabric largely consisting of jars, including medium- and wide-mouthed types and cooking jars, supplemented by flanged- and bead-rimmed dishes. Body sherds and jars in unsourced black-burnished wares (UNSBB) are next most common at 8% by weight. These are supplemented by small quantities of regional imports and specialist wares, including: body sherds; a plain-rimmed dish and a flanged dish in black-burnished ware (BB1); body sherds of Dressel 20 and Gallic amphorae (BATAM and GALAM); body sherds and a jar in Harold shelly ware (HARSH); body sherds, a flagon and a bowl/jar in Hadham oxidised ware (HADOX); body sherds and a triangular-rimmed dish in lower Nene Valley colour-coated wares (LNVCC); and a variety of Oxfordshire products including bowls in Oxfordshire colour-coated ware (OXFRS) and a bowl in Oxfordshire parchment ware (OXFPA).

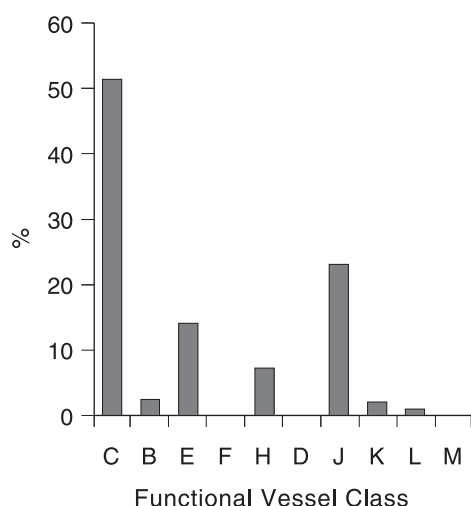


Fig. 7.6 Late Roman functional vessel class (%)

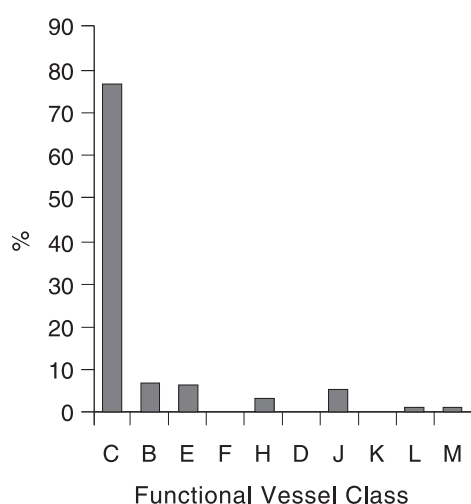


Fig. 7.7 Roman functional vessel class (%)

Table 7.9: Junction 9. Late Iron Age and Roman pottery

<i>Fabric</i>	<i>Nosh</i>	<i>% Nosh</i>	<i>Weight (g)</i>	<i>% Weight</i>
BATAM	28	<1	1439	2.6
BB1	27	<1	408	<1
CGSA	13	<1	61	<1
COLWH	25	<1	76	<1
COLCC	6	<1	17	<1
E20 'Belgic' fine sandy fabrics	1	<1	19	<1
E30 'Belgic' coarse sandy fabrics	21	<1	55	<1
E40 shelly fabrics	205	4	1676	3
E60	1	<1	5	<1
EGSA	9	<1	87	<1
GABTN	3	<1	66	<1
GALAM	6	<1	305	<1
GROG	2068	42	27534	51
HADOX	55	1	433	<1
HADRE	7	<1	86	<1
HADREWS	14	<1	66	<1
HADWS	2	<1	12	<1
HARSH	58	1	459	<1
HGWREC	16	<1	40	<1
LNVDWH	1	<1	15	<1
LONMD	4	<1	7	<1
M23 Mancetter/Hartshill mortaria	1	<1	42	<1
MISC	10	<1	9	<1
NOGWH	4	<1	48	<1
O80 oxidised coarse tempered fabrics	1	<1	180	<1
OXFPA	1	<1	30	<1
OXFRS	8	<1	77	<1
OXFRSM	1	<1	8	<1
PNKGT	212	4.2	3654	6.7
Q20 white-slipped oxidised ware	2	<1	22	<1
Q30 white-slipped reduced ware	24	<1	184	<1
Q51 Upchurch white-slipped oxidised ware	2	<1	19	<1
ROBSH	5	<1	34	<1
SGSA	64	1.2	170	<1
UNSB	227	4.5	2280	4
UNSOXC	149	3	792	1
UNSOXF	21	<1	46	<1
UNSREC	814	16	5602	10
UNSREF	82	1.6	336	<1
UNWS	5	<1	12	<1
VERRE	42	<1	407	<1
VERWH	564	11.4	3911	7.1
VERWHM	37	<1	2237	4
VERWS	1	<1	22	<1
W10 fine white fabrics	9	<1	18	<1
W20 sandy white fabrics	15	<1	40	<1
W41 south-east English white/buff fabrics	3	<1	50	<1
Total	4936	100	54,443	100

Also present are Oxfordshire white-ware mortaria (OXFWHM) and body sherds of Colchester colour-coated ware (COLCC) and white ware (COLWH). Quantities of grog-tempered material (GROG), which represent 18% of the assemblage by weight, and Verulamium-region white ware at 4% by weight indicate high-levels of residuality within the assemblage. The remaining fabrics were all present in small quantities of less than 5% by weight (Table 7.9).

Pottery which can only be assigned a broadly Roman date range is largely made up of unsourced reduced fabrics, supplemented by unsourced oxidised fabrics, Verulamium-region white wares and grog-tempered wares. The remaining fabrics are all present in small quantities of less than 5% (Table 7.9).

Pottery from Junction 9 watching brief (Table 7.10)

A small group of nine sherds weighing 31g was recovered from a single context (ditch 609), during the watching brief on Junction 9. These were all early Roman in date, comprising two ring-necked flagons and some body sherds in Verulamium-region white ware (VERWH) and a jar in Hadham reduced ware (HADRE).

Table 7.10: Junction 9 watching brief. Late Iron Age and Roman pottery

<i>Fabric</i>	<i>Nosh</i>	<i>% Nosh</i>	<i>Weight (g)</i>	<i>% Weight</i>
VERWH	8	89	19	61
HADRE	1	11	12	39
Total	9	100	31	100

Pottery from Junction 8N (Table 7.11)

Late Iron Age and Roman pottery from Junction 8N totalled 5419 sherds, weighing 34kg. The pottery is generally in poor condition, having an average sherd weight of 6g, but some groups were well preserved, comprising large unabraded sherds, and much of the more abraded material is residual. The assemblage from Junction 8N is dominated by middle Roman material, which accounts for 39% of the assemblage by weight. This is supplemented by early Roman material at 24% and late Iron Age-early Roman material at 17%. The remainder of the assemblage is made up of late Roman pottery comprising 7% by weight and pottery of broadly Roman date at 12%. The remaining 1% represents undated material.

The late Iron Age-early Roman pottery is overwhelmingly dominated by grog-tempered wares (GROG), which comprise 96% of the assemblage by weight. Vessels in these fabrics are largely jars, including medium-mouthed, high-shouldered

and bead-rimmed varieties, along with a storage jar and a pedestal jar. These are supplemented by a butt-beaker in North Gaulish white ware (NOGWH). The remaining fabrics include a sherd of Dressel 20 amphora (BATAM), sherds of shelly fabric and a sherd of unsourced reduced coarse ware (UNSERC).

The early Roman assemblage is likewise dominated by grog-tempered wares (GROG) at 48% by weight, but these are supplemented by unsourced reduced coarse wares (UNSERC), which account for 21% by weight. Vessels in these fabrics are mostly medium-mouthed jars, with occasional high-shouldered and lid-seated examples in grog-tempered ware. In addition to the grog-tempered wares and unsourced coarse reduced ware fabrics, neckless jars, bowls and ring-necked flagons in Verulamium-region white ware (VERWH) accounted for 13% of the assemblage by weight. The remaining fabrics are all present in small quantities of less than 5% (Table 7.11) and include: jars in local mica-dusted ware (LONMD); a storage jar in Harrold shelly ware (HARSH); body sherds in Upchurch fine reduced ware (UPCFR); body sherds from Dressel 20 amphorae (BATAM); and South Gaulish samian ware (SGSA). Vessels in South Gaulish samian ware were largely comprised form 18 dishes, but these were supplemented by a form 36 dish, a form 27 cup and a form 24/25 cup.

The middle Roman assemblage is more diverse in terms of fabrics than either the late Iron Age-early Roman or early Roman assemblages, with a large component of residual grog-tempered material accounting for 24% by weight. Vessels in grog-tempered ware (GROG) consist exclusively of jars, including medium-mouthed and bead-rimmed types. The most common fabric after grog-tempered ware is unsourced reduced coarse ware (NUSREC) at 19% by weight, and this is supplemented by Verulamium-region white ware (VERWH), which accounts for 13% by weight. Vessels in unsourced coarse reduced ware consist largely of jars, including two cooking jars; these are complemented by a jar/bowl, several bowls, a platter, plain rimmed dishes and lids. The majority of vessels in Verulamium-region white ware are also jars or bowls, largely of the neckless variety. There is also a tazza, with finger impressions around the rim. Samian ware (accounting for around 3% of the assemblage by weight) largely consists of form 18 and 18/31 dishes from Central Gaulish (CGSA) production centres, supplemented by several cups including form 27s and a form 33, a form 37 bowl and a form 36 dish. In addition, there is a South Gaulish (SGSA) form 33 cup and an East Gaulish (EGSA) form 38 bowl. The remaining fabrics are all present in small quantities, accounting for less than 5% by weight. Notable among these fabrics are: plain-rimmed dishes and drop-flanged bowls in black-burnished ware (BB1); a wide-mouthed jar and a beaker in Hadham white-slipped reduced ware (HADREWS); mortaria in Oxfordshire and

Verulamium-region white ware (OXFWH and VERWH); an indented beaker in lower Nene Valley colour-coated ware (LNVCC); a beaker in Upchurch fine oxidised ware (UPCFO); a bowl in Oxfordshire colour-coated ware (OXFRS); a jar/bowl in Hadham oxidised ware (HADOX); a body sherd of Verulamium-region amphora (A24); body sherds of

Table 7.11: Junction 8. Late Iron Age and Roman pottery by sherd count and weight

Fabric	Nosh	% Nosh	Weight (g)	% Weight
A24 Verulamium region amphorae	1	<1	118	<1
BATAM	59	1	1824	5
GALAM	9	<1	139	<1
BB1	45	<1	447	1.3
HARSH	70	1	484	1
E30 'Belgic' coarse sandy fabrics	70	1	171	1
E40 shell-tempered fabrics	49	<1	432	1.2
GROG	2043	38	13597	39
COLC	1	<1	1	<1
HADOX	18	<1	72	<1
LNVCC	34	<1	115	<1
LONMD	19	<1	145	<1
NOGWH	1	<1	17	<1
OXFRS	4	<1	27	<1
UNSCC	10	<1	36	<1
OXFWHM	15	<1	779	2
VERWHM	16	<1	623	1.8
MISC	4	<1	2	<1
PNKGT	41	<1	857	2.5
UNSOXC	193	3.5	751	2.2
UNSOXF	34	<1	97	<1
UPCFO	1	<1	3	<1
HADREW	5	<1	35	<1
Q20 white-slipped oxidised fabrics	6	<1	52	<1
Q30 white-slipped reduced fabrics	28	<1	89	<1
VERWS	48	<1	248	<1
HADRE	3	<1	24	<1
LNVRE	2	<1	9	<1
R90 coarse tempered fabrics	8	<1	101	<1
UNSCC	135	2	891	3
UNSCC	1429	26	6214	18
UNSCC	74	<1	454	<1
UPCFR	33	<1	195	<1
VERRE	66	1	367	1
CGSA	55	<1	370	<1
EGSA	5	<1	7	<1
SGSA	44	<1	254	<1
OXFWH	1	<1	35	<1
VERWH	729	13	3918	11
W41 south-east English white/buff fabrics	12	<1	18	<1
Total	5419	100	34,013	100

Dressel 20 amphorae (BATAM); and body sherds of Gallic amphorae (GALAM).

Unsourced reduced coarse wares (UNSREC) dominate the late Roman assemblage at 48% by weight. Vessels in this fabric are largely drop-flanged bowls, although there is also a beaker and two jars. The next most common fabrics are unsourced black-burnished wares (UNSBB) at 9% by weight and Verulamium-region white wares at 8%. Only one vessel (a jar) is present in Verulamium-region white ware and it can be assumed that this material is residual. Vessels in unsourced black-burnished ware (UNSBB) are restricted to a single drop-flanged bowl. Body sherds of pink grogged ware (PNKGT) and a single storage jar account for 9% by weight and two mortaria in Oxfordshire white ware (OXFWM) account for 8%. The remaining fabrics are all present in small quantities, each accounting for less than 5% by weight. Notable among these fabrics are: Gallic amphorae (GALAM); body sherds and drop-flanged bowls in black-burnished ware (BB1); body sherds and bag-shaped beakers in lower Nene Valley colour-coated ware (LNVCC); Harold shelly ware (HARSH), including a storage jar; and Hadham oxidised ware (HADOX), including a jar/bowl.

Pottery from Junction 8N that could only be assigned a broad Roman date range include grog-tempered wares (GROG), unsourced reduced coarse wares (UNSREC) and Verulamium-region white wares (VERWH), which together account for 59% of the unphased assemblage by weight. Vessels in these fabrics are largely jars, although there is one unguentarium in Verulamium-region white ware. Body sherds of Dressel 20 amphora (BATAM) also make up a significant proportion of this assemblage at 16% by weight. With the exception of pink grogged ware (PNKGT) at 7% by weight the remaining fabrics are all present in small quantities of less than 5% by weight (Table 7.11).

Funerary pottery from Junction 8N

The late Iron Age-early Roman assemblage from Junction 8N also included pottery from two cremation burials (6289 and 6293). Cremation burial 6289 contained three grog-tempered vessels, comprising one cremation urn and two ancillary vessels. None of these vessels could be identified to type with any certainty, as they were all very fragmented and had lost their rims. Cremation burial 6293 produced three ancillary vessels, but no urn. These comprised a platter and a carinated cup in grog-tempered ware and a beaker in 'Belgic' sandy ware.

Catalogue of funerary pottery

Cremation burial 6289

Jar/beaker. Fabric GROG. SF 6051
Jar/beaker. Fabric GROG. SF6052
Jar/beaker. Fabric GROG. SF 6053

Cremation burial 6293

1 Platter. Fabric GROG. SF 6054
Carinated cup. Fabric GROG. SF 6055
Beaker. Fabric GROG. SF 6056

Pottery from the Junction 10 Borrow Pit Area

Two sherds of grog-tempered ware (GROG), weighing 8g and dating to the late Iron Age-early Roman period, were recovered during the excavations at the Junction 10 Borrow Pit.

Pottery from The Aubreys (Table 7.12)

Four sherds of late Iron Age-Roman pottery, weighing 23g, were recovered from The Aubreys. These comprise a sherd of unidentifiable material (MISC), a sherd of unsourced oxidised ware (UNSOXC) and two sherds of unsourced reduced coarse ware (UNSREC). The latter three sherds are broadly Roman in date.

Table 7.12: The Aubreys. Late Iron Age and Roman pottery

Fabric	Nosh	% Nosh	Weight (g)	% Weight
Misc	1	25	1	4
UNSOXC	1	25	2	8.6
UNSREC	2	50	20	86.9
Total	4	100	23	100

Pottery from Area M (Table 7.13)

Some 614 sherds of late Iron Age-Roman pottery, weighing 3146g, were recovered during the excavations at Area M. With an average sherd weight of 5g the pottery is generally in poor condition, although some groups contain well-preserved material. The assemblage is dominated by pottery from early Roman contexts, which accounts for 88% of the assemblage by weight. The remainder is accounted for by late Iron Age-early Roman pottery at 11% and pottery of broad Roman date at 1%.

The late Iron Age-early Roman pottery largely consists of grog-tempered ware (GROG), in which there are two jars, plus body sherds of Dressel 20 amphora (BATAM) and 'Belgic' sandy ware (E20). The early Roman pottery is also dominated by grog-tempered ware (GROG), which accounts for 38% of the phase assemblage by weight. Several jars are present in this fabric, along with a butt-beaker and two lids. The grog-tempered ware is supplemented by a medium-mouthed jar in unsourced black-surfaced ware, which accounts for 22% of the assemblage by weight, and body sherds of unsourced reduced coarse ware (UNSREC), along with two jars and a lid, which account for 13%. The remainder of the assemblage comprises five body sherds of

Table 7.13: Area M. Late Iron Age and Roman pottery

Fabric	Nosh	% Nosh	Weight (g)	% Weight
BATAM	6	<1	630	11.4
E20 'Belgic' fine sandy fabrics	2	<1	9	<1
GROG	214	35	1391	44
NOGWH	10	1.6	13	<1
SGSA	18	3	123	3.9
UNSOXC	7	1.14	27	<1
UNSOXF	11	1.7	17	<1
UNSBB	145	23.6	599	19
UNSREC	57	9.2	356	11
UNSREF	47	7.6	75	2.3
VERWH	3	<1	3	<1
W41 south-east English white/buff fabrics	94	15.3	173	5.4
Total	614	100	3146	100

Dressel 20 amphora (BATAM), body sherds of North Gaulish white ware (NOGWH), Verulamium-region white ware (VERWH) and south-east English white ware (W41), along with several form 18/31 dishes, a form 15/17 dish and a form 24/25 cup in South Gaulish samian ware (SGSA). Pottery of broad Roman date comprises body sherds of grog-tempered ware (GROG) and unsourced reduced coarse ware (UNSREC).

Pottery from Area P (Table 7.14)

A total of 577 sherds, weighing 4405g, was recovered during the excavations at Area P. With an average sherd weight of 8g the pottery was in poor to moderate condition, although some groups of large, well-preserved sherds were recovered. The assemblage is dominated by middle Roman pottery, which accounts for 93% of the assemblage by weight. The remainder is accounted for by late Iron Age-early Roman material at 2% and pottery of broadly Roman date at 5%. The late Iron Age-early Roman material consists of body sherds and a medium-mouthed jar in grog-tempered ware (GROG). Jars and bowls in Verulamium-region white ware (VERWH) dominate the middle Roman assemblage, taking a 37% share of the phase group by weight. These are supplemented by jars and bowls in unsourced reduced coarse ware (UNSREC), which account for 18%, jars including medium-mouthed and lid-seated types in Harrold shelly ware (HARSH) at 15% and body sherds of pink grogged ware (PNKGT), which account for 8%. The remaining fabrics are all present in small amounts of 5% or less. Notable among these fabrics are: body sherds from Campanian and Gallic amphorae (CAMAM1 and GALAM); body sherds of black-burnished ware (BB1); plain-rimmed dishes in unsourced black-burnished ware

Table 7.14: Area P. Late Iron Age and Roman pottery

Fabric	Nosh	% Nosh	Weight (g)	% Weight
BATAM	25	4	809	18
BB1	4	<1	18	<1
CAMAM1	1	<1	107	2.4
CGSA	18	3	84	1.9
GALAM	1	<1	119	2.7
GROG	70	12	295	6.6
HADOX	1	<1	1	<1
HARSH	90	15.5	455	10.3
LNVCC	12	2	48	1
LNVRE	1	<1	6	<1
PNKGT	10	1.7	262	5.9
Q30 white-slipped reduced fabrics	7	1.2	34	<1
UNSBB	21	3.6	78	1.77
UNSOXC	39	6.7	107	2.4
UNSREC	126	21.8	579	13.1
UNSREF	20	3.4	135	3
UPCFR	2	<1	7	<1
VERRE	3	<1	57	1.2
VERWH	125	21.6	1193	27
Total	577	100	4405	100

(UNSBB); body sherds in lower Nene Valley colour-coated ware (LNVCC); several form 36 dishes, a form 18/31 dish and a form 37 bowl in Central Gaulish samian ware (CGSA); and some residual jars in grog-tempered ware (GROG). Pottery of broadly Roman date comprises a variety of fabrics, including: a jar in unsourced reduced coarse ware (UNSREC); body sherds of black-burnished ware (BB1); lower Nene Valley colour-coated ware (LNVCC); Hadham oxidised ware (HADOX); and Verulamium-region white ware (VERWH).

Discussion

Junction 9

Like the assemblage from Junction 8N the late Iron Age-early Roman pottery from Junction 9 largely consisted of medium-mouthed and high-shouldered jars in grog-tempered fabrics, with a single carinated bowl also present. These were supplemented by small amounts of late Iron Age sandy and shelly fabrics, including a butt-beaker. Small quantities of unsourced reduced coarse ware, Verulamium-region white ware and Hadham oxidised ware from this phase must have been intrusive.

During the early Roman period, grog-tempered fabric still accounted for just over half of all pottery recovered from the settlement, with the bulk of this material being represented by medium-mouthed, high-shouldered and bead-rimmed jars, along with butt-beakers and carinated bowls. These were

supplemented by jars and bowls, along with a small number of poppyhead beakers in locally made (but unsourced) reduced coarse wares and jars, bowls and flagons in Verulamium-region white ware. Non-local regionally produced fabrics were in relatively short supply in this period, but accounted for a higher proportion of the assemblage at Junction 9 than at Junction 8N (see above). Such material included south Spanish and Gallic amphora, Highgate Wood reduced ware, pink grogged ware, Much Hadham oxidised ware, North Gaulish white ware and the base of a platter in *terra nigra*. Dishes and cups in South Gaulish samian ware, and a bowl in London mica-dusted ware were also supplied during this phase.

By the beginning of the middle Roman phase the pottery supply was dominated by a combination of local unsourced reduced coarse wares and Verulamium-region white wares. Vessels in these fabrics included medium-mouthed jars and bowls. Supplementing these two main fabric types were small quantities of black-burnished wares, locally produced shell-tempered fabrics, pink grogged wares, locally produced oxidised sandy wares and unsourced black-burnished wares. Vessels in these fabrics consisted of jars. Fine and specialist wares remained in relatively short supply in the middle Roman period, but included south Spanish and Gallic amphorae and cups, dishes and a bowl in South, Central and East Gaulish samian, Much Hadham oxidised ware, and Highgate Wood reduced ware. Also present in very small quantities were Nene Valley colour-coated wares, Mancetter-Hartshill mortaria and Oxfordshire colour-coated wares. A platter in *terra nigra* and some North Gaulish white ware were clearly residual. Deposits of middle Roman pottery were clearly mixed with earlier material during the recutting of enclosure ditches at Junction 9, as at Junction 8N, and this is demonstrated by the presence of relatively substantial quantities of grog-tempered body sherds from this phase.

Pottery supply to Junction 9 in the late Roman period saw the continued dominance of locally made unsourced reduced coarse wares, although, as would be expected, the proportion of Verulamium-region white ware declined relative to the middle Roman period and the Verulamium material that was present during this phase must have been residual. Once again jars were common in these fabrics, although the proportion of dishes in unsourced reduced coarse ware increased. These fabrics were supplemented by jars in unsourced black-burnished wares, black-burnished wares, pink grogged wares, locally produced sandy oxidised wares, locally produced shelly fabrics and late Roman shell-tempered wares. As might be expected for a later Roman assemblage, the proportion of fine and specialist wares increased in this phase. Fine and specialist wares included: Nene Valley colour-coated ware; Oxfordshire colour-coated ware; Oxfordshire parchment ware; Much

Hadham oxidised ware; Much Hadham reduced white-slipped ware; Verulamium-region white-slipped ware; Colchester colour-coated ware; and Colchester white ware, although some of these may have been residual by this time. Vessels included two bowls, one in Nene Valley colour-coated ware and one in Oxfordshire colour-coated ware, and a flagon in Hadham oxidised ware. Also present were south Spanish and Gallic amphorae and some residual South and Central Gaulish samian, along with some residual grog-tempered body sherds.

The pottery from Junction 9 in its regional context

The late Iron Age-early Roman pottery from Junction 9 is comparable to that from Junction 8N and to that from most low-status rural sites of this period in the region (see above). In contrast to the assemblage from Junction 8N, the similarity to assemblages from other sites in the region continued into the early Roman period. The dominance of Verulamium-region white wares and locally produced unsourced reduced coarse wares can be paralleled at sites such as Foxholes Farm, Boxfield Farm, Folly Lane, Buncefield Lane, Hemel Hempstead and Gadebridge, although the proportions of fine and specialist wares and regional imports at some of these sites is greater than that seen at Junction 9. This may be explained by the higher status of some of these settlements. Middle Roman pottery supply continued to reflect the pattern seen at many other sites in the region (see above), with high proportions of Verulamium-region white ware and locally made unsourced reduced coarse wares, but relatively low quantities of fine and specialist wares and regional imports reflecting the site's rural character. Late Roman pottery supply, with a slight increase in fine and specialist wares and a fall off in Verulamium-region products, is also typical of the region.

Junction 8N

The late Iron Age-early Roman pottery from Junction 8N was dominated by locally produced grog-tempered wares, with medium-mouthed, high-shouldered or bead-rimmed jars being the most common vessel forms. Imports, table wares and fine wares were very rare in this phase, being represented by a single butt-beaker in North Gaulish white ware. A single sherd of locally made unsourced reduced coarse ware in this phase may have been intrusive.

By the early Roman period, grog-tempered wares, which were still the dominant fabric type, were being supplemented with locally made unsourced reduced coarse ware fabrics, including some fine white-slipped fabrics and Verulamium-region white wares. Jars were the most common vessels in these fabrics and included medium-mouthed jars and lid-seated examples in grog-tempered ware, with flagons, bowls and a mortarium also present in Verulamium-region

white ware. In addition, there were small amounts of unsourced oxidised wares and medium-mouthed jars in unsourced black-burnished wares. Fine and specialist wares had increased as a proportion of the overall assemblage, but were still in relatively short supply. These included south Spanish amphorae, a medium-mouthed jar in London mica-dusted ware and dishes and cups in South Gaulish samian ware.

In many ways the mid-Roman period saw a continuation of the early Roman pattern of supply, with unsourced coarse reduced wares and Verulamium-region white wares playing a dominant role; although vessels in these fabrics now included a higher proportion of bowls and dishes. Grog-tempered wares still represented a significant proportion of the assemblage in this phase, although this material must have been largely residual, its presence probably accounted for by the recutting of enclosure ditches which remained open and largely unmodified through these periods. Also present was a small quantity of black-burnished ware, including plain-rimmed dishes and a bowl. The overall quantities, if not the proportions, of fine and specialist wares had increased by the middle Roman period and new regional fabrics, such as Nene Valley and Oxfordshire colour-coated wares, Hadham oxidised wares and Upchurch fine reduced ware had appeared, although the last of these may have been residual in this period. Vessels in these fabrics included bowls, jars and beakers. Fine and specialist wares included south Spanish, Gallic and Verulamium-region amphorae and bowls, cups and dishes in South, Central and East Gaulish samian. The presence of Upchurch products in Hertfordshire is unusual and outside the normal distribution of the products of this industry, but the identification of the material is secure.

Late Roman pottery supply to Junction 8N continued the trends seen in the middle Roman phase, with jars and dishes in unsourced reduced coarse wares dominating. The unsourced reduced coarse wares were supplemented by relatively small quantities of residual Verulamium-region white wares, pink grogged ware and unsourced black-burnished ware. Grog-tempered wares were no

longer present. Fine and specialist wares comprised a slightly greater proportion of the pottery than that seen in the middle Roman phase, including several beakers in Nene Valley colour-coated ware, along with Oxfordshire white-ware mortaria, some Hadham oxidised wares, including a jar and a jar/bowl, and some Gallic amphorae. Also present was a sherd of Hadham reduced ware with a white slip. Small quantities of shelly fabrics were present throughout the Roman occupation at Junction 8N, but never made a significant contribution in any phase.

The pottery from Junction 8N in its regional context

The late Iron Age-early Roman assemblage from Junction 8N is typical of assemblages from this period in Hertfordshire and in southern Britain generally, being dominated by jars in grog-tempered ware. The typical composition of assemblages from this type of site in southern Britain has been clearly demonstrated by Evans (2001, 26). By the early Roman period, and continuing into the middle and late Roman periods, the composition of the Junction 8N assemblage appears to diverge from that of many other contemporary assemblages from Hertfordshire. Whereas the assemblage from Junction 8N continued to be dominated by reduced coarse wares of unknown, but probably, local origin and grog-tempered wares, with small amounts of fine and specialist wares, including Upchurch products, coming into use in the later periods, assemblages from other sites in Hertfordshire included much higher proportions of Verulamium-region white wares and greywares, supplemented by Highgate Wood fabrics in the early period and by high proportions of Hadham wares, Oxfordshire colour-coated wares and Nene Valley colour-coated wares in the later periods. Such assemblages include those from Boxfield Farm (Waugh 1999), the Villas at Gorhambury (Parminter 1990) and Gadebridge (Neal 1974), and the field systems at Buncefield Lane, Hemel Hempstead (Going 2003). One exception to this pattern is the assemblage from Canon's Corner (Biddulph 2001), dating from the second half of the

Table 7.15: Late Iron Age-early Roman vessel class by feature type (%EVE). All sites

Vessel Class	Ditches	Pits	Postholes	Waterholes	Layers	Total Eves
Jars	63	29.5	7.2	-	-	3.45
Amphorae	-	-	-	-	-	-
Flagons	-	-	-	-	-	-
Jar/bowls	-	-	-	-	-	-
Beakers	64	36	-	-	-	0.25
Cups	-	-	-	-	-	-
Bowls	-	100	-	-	-	0.06
Platters/dishes	-	-	-	-	-	-
Mortaria	-	-	-	-	-	-
Lids	50	50	-	-	-	0.16
Miscellaneous	-	-	-	-	-	-

2nd century to the end of the Roman period, which is dominated by miscellaneous sand-tempered wares, both oxidised and reduced, and has relatively small amounts of Verulamium-region white ware and fine and specialist wares. The relative lack of Verulamium ware at Canon's Corner is probably due to chronological factors, but this does not explain the variation in fine and specialist wares, which may be due to its geographical position, further away from regional suppliers of specialist wares than the other examples, as well

its peripheral status (Smith 2001, 38). The differences between the Junction 8N assemblage and those from most of the sites mentioned above may also be accounted for by the status of the Junction 8N settlement. There is a lack of excavated evidence for lower-status Roman rural settlement in Hertfordshire (notwithstanding Hunn's (1996) survey of late Iron Age and Roman enclosures) resulting in a lack of data directly comparable with the Junction 8N assemblage. The nearby site at Buncefield Lane was also considered to be of low

Table 7.16: Early Roman vessel class by feature type (%EVE). All sites

Vessel Class	Ditches	Pits	Postholes	Waterholes	Layers	Total Eves
Jars	95.5	2.6	-	-	1.7	22.84
Amphorae	100	-	-	-	-	0.04
Flagons	63.2	8.3	-	-	28.3	4.41
Jar/bowls	100	-	-	-	-	0.3
Beakers	100	-	-	-	-	3.51
Cups	81.7	9.7	-	8.5	-	0.02
Bowls	95.8	4.1	-	-	-	0.96
Platters/dishes	100	-	-	-	-	2.03
Mortaria	88.5	11.4	-	-	-	0.35
Lids	93	-	-	-	7	0.68
Miscellaneous	100	-	-	-	-	0.12

Table 7.17: Middle Roman vessel class by feature type (%EVE). All sites

Vessel Class	Ditches	Pits	Postholes	Waterholes	Layers	Total Eves
Jars	71.2	16	1	-	11.5	16.48
Amphorae	-	-	-	-	-	-
Flagons	100	-	-	-	-	-
Jar/bowls	50	50	-	-	-	1.04
Beakers	57	43	-	-	-	1.14
Cups	30.7	54.3	-	-	14.9	1.14
Bowls	73.2	26.7	-	-	-	1.46
Platters/dishes	51.1	45	<1	-	3.19	3.13
Mortaria	87.6	12.3	-	-	-	0.65
Lids	27	68.5	-	-	4.5	1.97
Miscellaneous	-	100	-	-	-	0.2

Table 7.18: Late Roman vessel class by feature type (%EVE). All sites

Vessel Class	Ditches	Pits	Postholes	Waterholes	Layers	Total Eves
Jars	87	3.8	-	9.1	-	16.48
Amphorae	-	-	-	-	-	-
Flagons	45.7	54.2	-	-	-	0.35
Jar/bowls	16.6	-	83.3	-	-	0.06
Beakers	75	-	16.6	8.3	-	0.6
Cups	-	-	-	-	-	-
Bowls	37	30	33	-	-	1.32
Platters/dishes	54	15	-	30.1	-	0.78
Mortaria	66.6	33.3	-	-	-	0.18
Lids	44.4	-	55.5	-	-	0.09
Miscellaneous	-	-	-	-	-	-

status, but in that case the assemblage was small (Going 2003) and the significance of conclusions drawn from it is therefore uncertain.

Area M

Apart from two sherds in an unsourced fine sandy fabric, the late Iron Age-early Roman assemblage from Area M comprised grog-tempered fabrics (GROG), in which there were two jars. By the early Roman period, the assemblage was dominated by grog-tempered wares and locally produced reduced sandy fabrics. Medium-mouthed jars were the dominant vessel type in the grog-tempered fabrics, while jars were also available in the reduced fabrics. These were supplemented by small quantities of unsourced sandy oxidised ware, unsourced black-burnished wares (UNSB) and Verulamium-region white wares (VERWH). Imports and regional fabrics were in short supply, consisting of south Spanish amphorae (BATAM), dishes and a cup in South Gaulish samian (SGSA) and some sherds of North Gaulish white ware (NOGWH). Also present were some sherds of fine pink/buff south-east English fabric (W41). Pottery supply to Area M during the late Iron Age and early Roman periods was typical of southern British low-status rural settlement (Evans 2001, 26).

Area P

Pottery supplied to Area P during the late Iron Age-early Roman period consisted entirely of grog-tempered fabrics and included a medium-mouthed jar. During the middle Roman period the assemblage was dominated by jars, including medium-mouthed and lid-seated types in Verulamium-region white wares, unsourced reduced coarse ware and locally produced shell-tempered fabrics. These were supplemented by small quantities of fine and specialist wares, including bowls and dishes in Central Gaulish samian (CGSA), south Spanish amphorae (BATAM), Campanian amphorae (CAM AM1) and Gallic amphorae (GALAM). Also supplied in small amounts were some regional specialist wares including black-burnished ware (BB1), pink grogged ware (PNKGT), a dish in Nene Valley colour-coated ware (LNVCC) and Upchurch fine reduced ware (UPCFR), the presence of which is unusual for the region (see above). Plain-rimmed dishes in unsourced black-burnished ware (UNSB) were also available. As with Area M, the pottery supply to Area P was typical of a low-status rural settlement (Evans 2001, 26) being dominated by jars in both phases.

Deposition/distribution

The composition of assemblages from different feature types by vessel class was quantified using estimated vessel equivalents (EVEs). For the purpose of this analysis features were divided into

five broad categories: ditches; pits; postholes; waterholes; and layers. Vessels were classified using the standard OA recording system (Booth 2007). The results of the analysis were disappointing, with the majority of all vessel types being confined to ditches in all phases and at all sites (Tables 7.15-18 present data by period for all the sites combined). In the late Iron Age-early Roman phase (Table 7.15) jars and beakers were mostly deposited in ditches, with smaller quantities deposited in pits and bowls being the only vessel type entirely deposited in pits. By the early Roman period (Table 7.16) the vast majority of all vessel classes were deposited in ditches, with some types including jar/bowls, beakers and platters/dishes being entirely confined to ditches. In the middle and late Roman periods (Tables 7.17-18) a wider range of vessel classes were deposited in pits, postholes, waterholes and layers, but most vessel classes were still recovered principally from ditches. The early Roman pattern in particular contrasts strongly with work done by Pitts (2005, 152, table 2) on late Iron Age-early Roman sites in Essex, where drinking and eating vessels such as beakers, bowls and platters were more strongly represented in pits, although it should be noted that the majority of jars at all of the sites were deposited in ditches. The pattern seen in the M1 widening assemblages is probably best explained as a function of the relative lack of pits from the sites, although this begs the question of why there were so few pits, given that some of the enclosures seem to represent domestic occupation. The pattern of deposition therefore possibly represents a particular local mode of disposal, or behavioural pattern.

Functional analysis: pottery consumption and social stratification

The functional composition of the assemblages (composition by functional vessel class) for each site is described below and the data analysed for information on pottery use, consumption and social stratification. Tables 7.19-22 show the proportions of different functional vessel classes by site and phase, using EVEs as a measure.

The Junction 9 assemblage had a functional vessel class profile displaying the classic characteristics of a rural settlement throughout the Roman period (see Evans 2001), being dominated by cooking and storage jars (Table 7.19). In the late Iron Age-early Roman period, jars accounted for 86.3% of all vessels present (by EVE), with drinking/eating vessels accounting for only 6.5%. By the early Roman and middle Roman periods the proportion of jars had fallen, but they were still dominant at 60.5% and 62.3% of EVEs respectively. Eating/drinking vessels in these periods never exceeded 36% of EVEs. In the late Roman period the proportion of jars increased once more to 70.2% of EVEs with eating/drinking vessels accounting for 29%. The data therefore suggests that the inhabitants of

the settlement at Junction 9 occupied the lower end of the social spectrum through the Roman period, with proportions of cooking/storage vessels to eating/drinking vessels comparing well to those on other 'basic' rural sites from throughout the province (Evans 2001), especially in the late Iron Age-early Roman period. Levels of eating/drinking vessels in the early and middle Roman periods, although relatively high, still fall within the upper range of values recorded for lower-status rural assemblages and the level of eating/drinking vessels in the late Roman period is exceptionally low. Where drinking and eating vessels were supplied in the late Iron Age-early Roman and early Roman phases they were mostly in locally produced fabric types, with regional and Continental imports, including decorated samian, being scarce, a pattern which appears to back up the evidence of the vessel forms. However, some pottery from further afield, including Highgate Wood C fabrics, south Spanish and Gallic amphorae, North Gaulish white ware and *terra nigra*, was available, showing that the settlement was not completely isolated. In the middle Roman period, eating/drinking vessels were again overwhelmingly supplied in locally produced fabrics, with regional wares and Continental imports, being restricted to small amounts of Hadham oxidised ware, black-burnished ware and Central Gaulish samian, this last with a very low ratio of decorated to undecorated forms. By the late Roman period, imports were more strongly represented among the eating/drinking vessels, with products of the major regional industries, including the Nene Valley and Oxfordshire, available, although it should be

remembered that these formed a minor component of the assemblage.

The assemblage from Junction 8N was also dominated by jars throughout the late Iron Age-early Roman, early Roman and middle Roman phases, although the proportion of jars declined steeply by the middle Roman period (Table 7.20). In the late Iron Age-early Roman period, jars were complemented by beakers and dishes/platters, although these types never accounted for more than 13.2% of EVEs. A wider range of vessel types was available in the early and middle Roman periods, including types related to eating, drinking and food preparation, such as beakers, cups, bowls and mortaria, but these never accounted for more than 22% of EVEs in the early Roman period, or 45% in the middle Roman period. By the late Roman period the percentage of jars had fallen to 14.7% and the assemblage was now dominated by dishes/platters at 50.2% of EVEs, with other eating/drinking vessels constituting 35% of the assemblage. The percentage of jars, in this case, seems particularly low, but the overall late Roman assemblage was very small, comprising some 2.31 EVEs in total, and this fact may have skewed the data set. The data for the late Iron Age-early Roman phases fit the profile of a 'basic' rural site as defined by Evans (2001) and this suggests that the inhabitants occupied the lower end of the social scale, with their pottery mostly consisting of cooking and storage jars, mostly procured from local sources. However, eating and drinking vessels were supplied and where they were present they tended to occur in regionally produced or Continental fabrics such as Verulamium-region white ware, black-burnished ware and South or Central Gaulish samian ware. In

Table 7.19: Junction 9 functional vessel class by phase (EVEs)

Phase	Jars	Flagons	Beakers	Cups	Bowls	Jar-Bowls	Dishes/Platters	Mortaria	Lids	Misc	Total
RO	0.83	-	-	-	0.13	-	0.04	-	0.03	-	1.03
LIA-ER	1.96	-	0.09	-	0.06	-	-	-	0.16	-	2.27
ER	14.7	2.92	3.53	0.38	0.81	-	0.57	0.58	0.66	0.12	24.27
MR	5.11	0.65	0.26	0.62	-	-	1	0.25	0.3	-	8.19
LR	3.83	-	0.14	-	0.61	0.01	0.7	0.12	0.04	-	5.45
Total	26.43	3.57	4.02	1	1.61	0.01	2.31	0.95	1.19	0.12	41.21

Table 7.20: Junction 8N functional vessel class by phase (EVEs)

Phase	Jars	Flagons	Beakers	Cups	Bowls	Jar-Bowls	Dishes/Platters	Mortaria	Lids	Misc	Total
RO	3.04	0.32	0.43	-	0.08	-	0.31	-	-	0.06	4.24
LIA-ER	2.08	-	0.28	-	-	-	0.04	-	-	-	2.4
ER	6.14	-	0.23	0.18	0.24	0.3	0.75	0.1	-	-	7.94
MR	9.95	1	0.88	0.89	0.8	0.14	2.11	0.48	1.7	0.2	18.15
LR	0.34	0.19	0.46	-	1.04	0.05	0.12	0.06	0.05	-	2.31
Total	21.55	1.51	2.28	1.07	1.12	0.49	4.37	0.64	1.75	0.26	35.04

addition, sherds of North Gaulish white ware and Upchurch fine reduced ware suggest some more long distance contacts, while sherds from a locally made mica-dusted vessel indicate at least occasional access to higher-status ceramics. By the middle Roman period, drinking/eating vessels formed a higher proportion of the assemblage, a chronological pattern also recognised by Evans (*ibid.*, 28), but jars were still dominant and this probably reflects relatively low social status. Despite this, the presence of regionally produced and Continental fabrics such as Upchurch fine oxidised ware, Oxfordshire colour-coated ware, samian ware and sherds of south Spanish and Gallic amphorae again indicate some long-distance contacts in this period. The late Roman dominance of drinking/eating vessels over cooking/storage related ones may be partially explained by chronology, but this is a pattern more commonly associated with sites at the higher end of the social spectrum and is therefore anomalous. It may be explained by the small size of the late Roman sample relative to the rest of the assemblage (see above). The continuation of long-distance contacts seen in the earlier phases is demonstrated by a similar range of regional and Continental fabrics, although with the addition of Nene Valley colour-coated wares in this phase.

Cooking/storage jars accounted for 100% of the vessels supplied to Area M during the late Iron Age-early Roman period, falling to 59.1% in the early Roman period, when eating/drinking vessels accounted for 28.2% (Table 7.21). Again the data fits the profile for a rural settlement at the lower end of the social scale, but the presence of Dressel 20 amphorae sherds in the late Iron Age-early Roman phase, and of south-east English white ware, along with presumably residual North Gaulish white ware, in the early Roman phase indicates that even this relatively minor settle-

ment had access to wider pottery supply networks.

Like Area M, the Area P assemblage was completely dominated by jars in the late Iron Age-early Roman phase and continued to be dominated by them into the middle Roman phase, when eating/drinking vessels accounted for 17.8% of EVEs (Table 7.22). Despite the dominance of locally produced material, sherds of Gallic and Campanian amphorae indicate some far-flung contacts. In addition, eating/drinking vessels were supplied in regional and Continental fabrics, including Nene Valley colour-coated ware and Central Gaulish colour-coated ware. Two body sherds of Upchurch fine reduced ware also indicate the capacity to acquire pottery from beyond the immediate region. As with Area M, the Area P data suggest a rural site, with inhabitants at the lower end of the social spectrum.

The pottery from The Aubreys and the Junction 10 Borrow Pit Area did not produce any EVEs data and could not be analysed in functional terms. When compared together (Figs 7.3-7) the functional vessel class data conform with the pattern revealed for the individual sites, with jars (C) dominating throughout the Roman period, but declining steadily in favour of eating/drinking vessels into the middle and late Roman periods. This confirms the overall impression of the users of these sites as representing a rural population at the lower end of the socio-economic scale.

Catalogue of illustrated vessels

Junction 8 (Fig. 7.8)

- 1 Medium-mouthed jar (cd 740). Fabric UNSREC. Ctx 6118
- 2 Medium-mouthed jar (cd 730). Fabric UNSREC. Ctx 6118

Table 7.21: Site M functional vessel class by phase (EVEs)

Phase	Jars	Flagons	Beakers	Cups	Bowls	Jar-Bowls	Dishes/Platters	Mortaria	Lids	Misc	Total
RO	0.07	-	-	-	-	-	-	-	-	-	0.07
LIA-ER	0.29	-	-	-	-	-	-	-	-	-	0.29
ER	1.75	-	0.12	0.05	-	-	0.67	-	0.37	-	2.96
Total	2.11		0.12	0.05			0.67		0.37		3.32

Table 7.22: Site P functional vessel class by phase (EVEs)

Phase	Jars	Flagons	Beakers	Cups	Bowls	Jar-Bowls	Dishes/Platters	Mortaria	Lids	Misc	Total
RO	0.24	-	-	-	-	-	-	-	-	-	0.24
LIA-ER	0.27	-	-	-	-	-	-	-	-	-	0.27
MR	3.8	-	-	-	0.44	-	0.41	-	0.11	-	4.76
Total	4.31	-	-	-	0.44	-	0.41	-	0.11	-	5.27

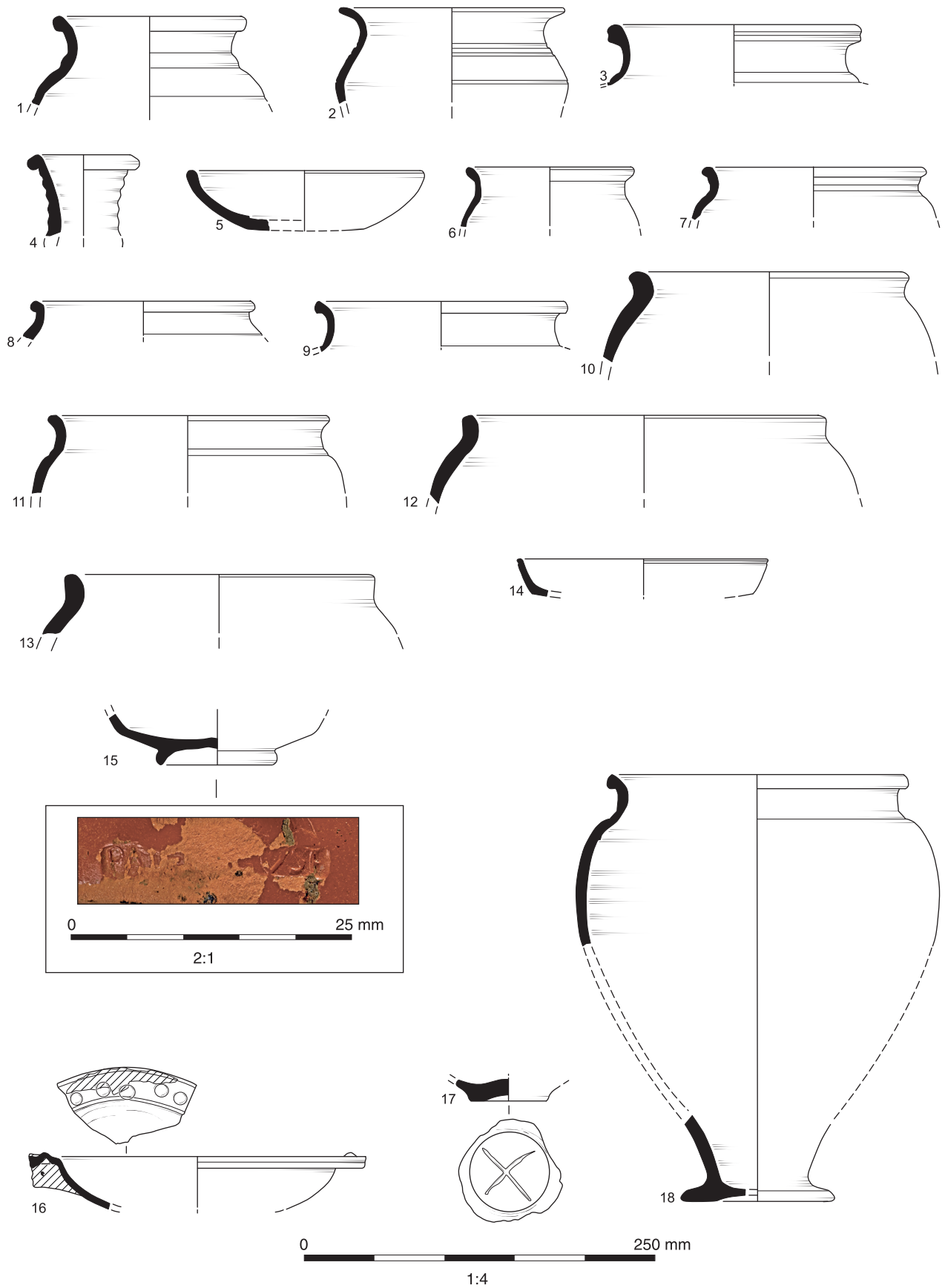


Fig. 7.8 Late Iron Age and Roman pottery from Junction 8

- | | | | |
|----|--|----|---|
| 3 | Medium-mouthed jar (cd 740). Fabric UNSREC. Ctx 6118 | 13 | Medium-mouthed jar (cd 730). Fabric GROG. Ctx 6755 |
| 4 | Ring-necked flagon (bb 235). Fabric VERWH. Ctx 6118 | 14 | Form 18 dish (j). Fabric SGSA. Ctx 6755 |
| 5 | Platter (jc 110). Fabric UNSREF. Ctx 6755 | 15 | Samian stamp (paterclvsf). Ctx 6697 |
| 6 | Medium-mouthed jar (cd 730). Fabric UNSBB. Ctx 6755 | 16 | Dish (jb 400), possible imitation metal vessel. Fabric UNSOXC. Ctx 7263 |
| 7 | Medium-mouthed jar (cd 730). Fabric UNSBB. Ctx 6755 | 17 | Jar base with 'x' graffito. Fabric VERWH. Ctx 6420 |
| 8 | Medium-mouthed jar (cd 730). Fabric UNSBB. Ctx 6755 | 18 | Pedestal jar (cp 740). Fabric GROG. Ctx 6757 |
| 9 | Medium-mouthed jar (cd 740). Fabric LONMD. Ctx 6755 | | |
| 10 | Medium-mouthed jar (cd 730). Fabric GROG. Ctx 6755 | | |
| 11 | High-shouldered (necked) jar (ce 730). Fabric GROG. Ctx 6755 | | |
| 12 | Medium-mouthed jar (cd 730). Fabric GROG. Ctx 6755 | | |

Cremations 6289 and 6293 (Fig. 7.9)

- | | |
|----|--|
| 19 | Jar/beaker (c/e). Fabric GROG. Ctx 6290 (crem 6289). SF 6051 |
| 20 | Platter (jc 210). Fabric GROG. Ctx 6294 (crem 6293). SF 6054 |
| 21 | Butt-beaker (ee 240). Fabric GROG. Ctx 6249 (crem 6293). SF 6055 |
| 22 | Carinated cup (fd). Fabric GROG. Ctx 6294 (crem 6293). SF 6055 |

Site M (Fig. 7.10)

- | | |
|----|---|
| 23 | Medium-mouthed jar (cd 740). Fabric UNSBB. Ctx 3150 |
| 24 | Form 24/25 cup. Fabric SGSA. Ctx 3150 |
| 25 | Form 15/17. Fabric SGSA. Ctx 3150 |
| 26 | Lid (l). Fabric UNSREC. Ctx 3150 |
| 27 | Bead-rimmed jar (ch 210). Fabric UNSREC. Ctx 3150 |
| 28 | Medium-mouthed jar (cd 730). Fabric GROG. Ctx 3150 |

Junction 9 (Figs 7.11-12)

- | | |
|----|--|
| 29 | Lid-seated jar (cj 810). Fabric UNSBB. Ctx 2007 |
| 30 | Disc-mouthed flagon (ba 240). Fabric VERWH. Ctx 2001 |
| 31 | Plain-rimmed dish (jb110). Fabric VERWS. Ctx 2041 |
| 32 | Spindlewhorl. Fabric GROG. Ctx 2113 |
| 33 | Butt-beaker (ea 210). Fabric GROG. Ctx 2139 |
| 34 | High-shouldered jar (ce 730). Fabric GROG. Ctx 2139 |
| 35 | High-shouldered jar (ce 740). Fabric GROG. Ctx 2139 |
| 36 | Lid-seated jar (cj 810). Fabric GROG. Ctx 2139 |
| 37 | Carinated bowl (ha 730). Fabric GROG. Ctx 2139 |

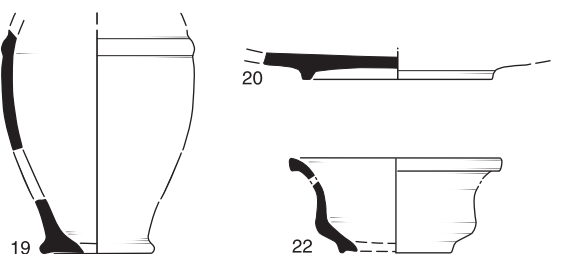


Fig. 7.9 Late Iron Age and Roman pottery from cremations 6289 and 6293

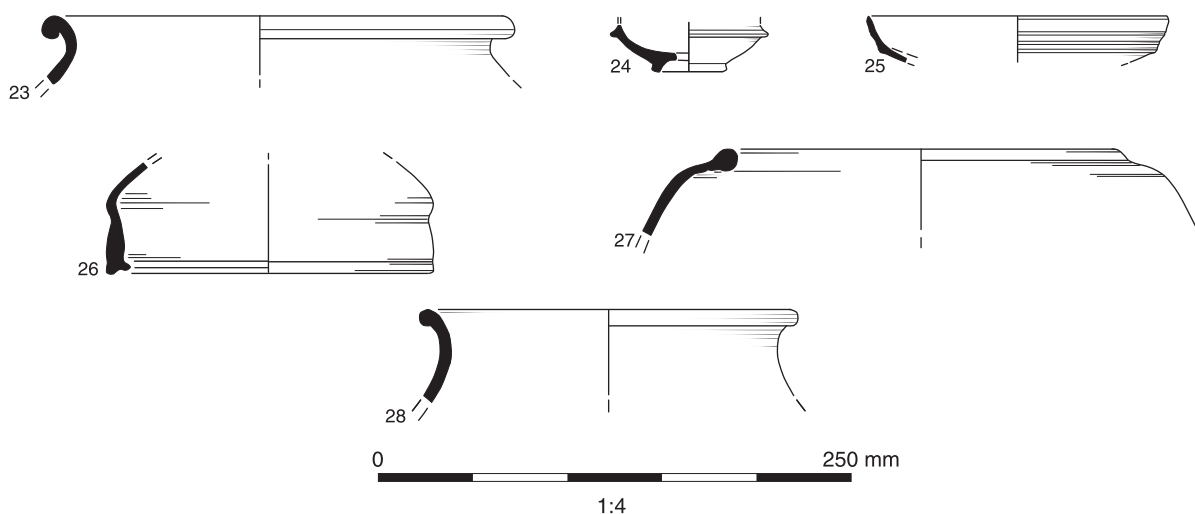


Fig. 7.10 Late Iron Age and Roman pottery from Site M

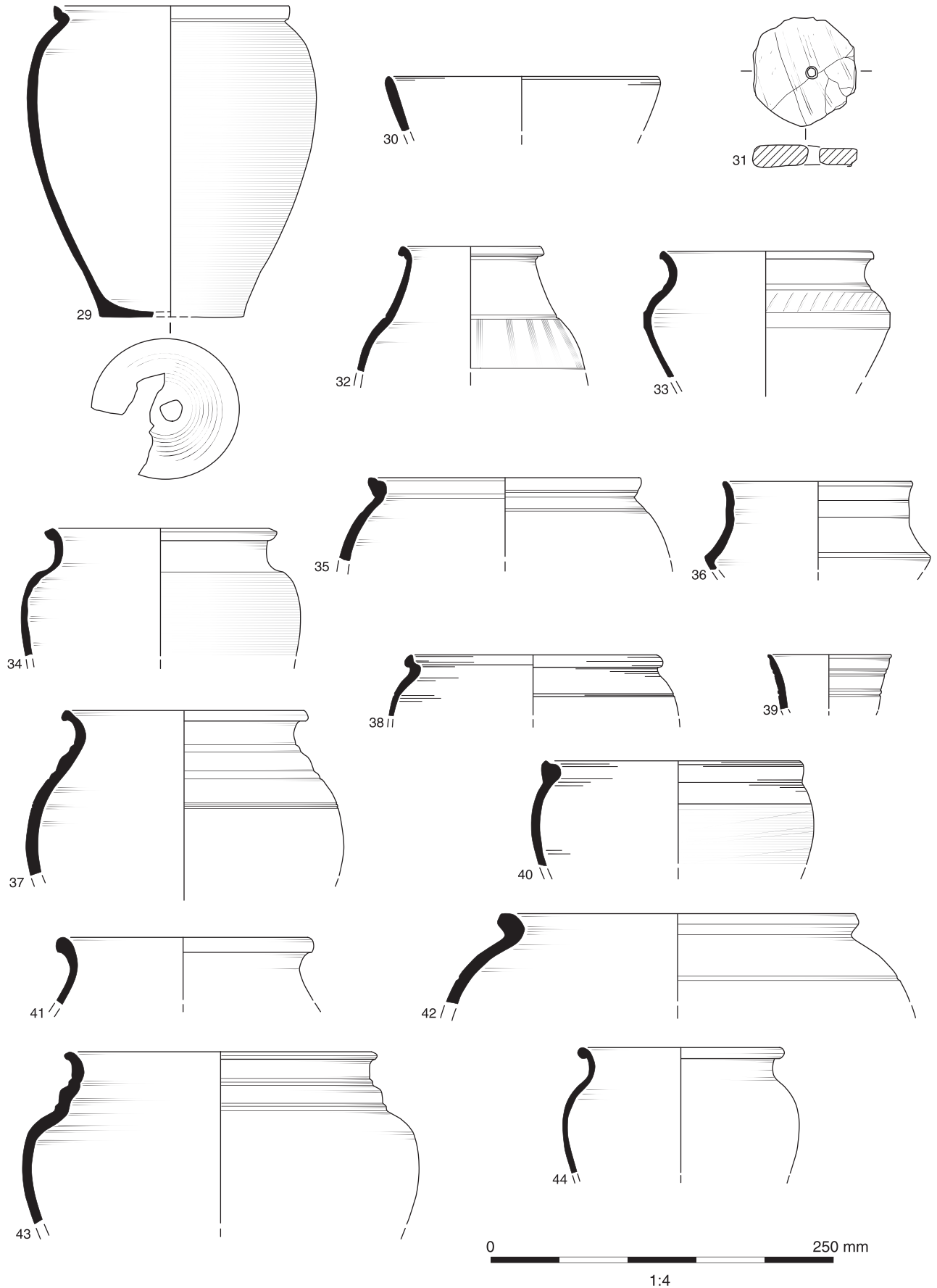


Fig. 7.11 Late Iron Age and Roman pottery from Junction 9

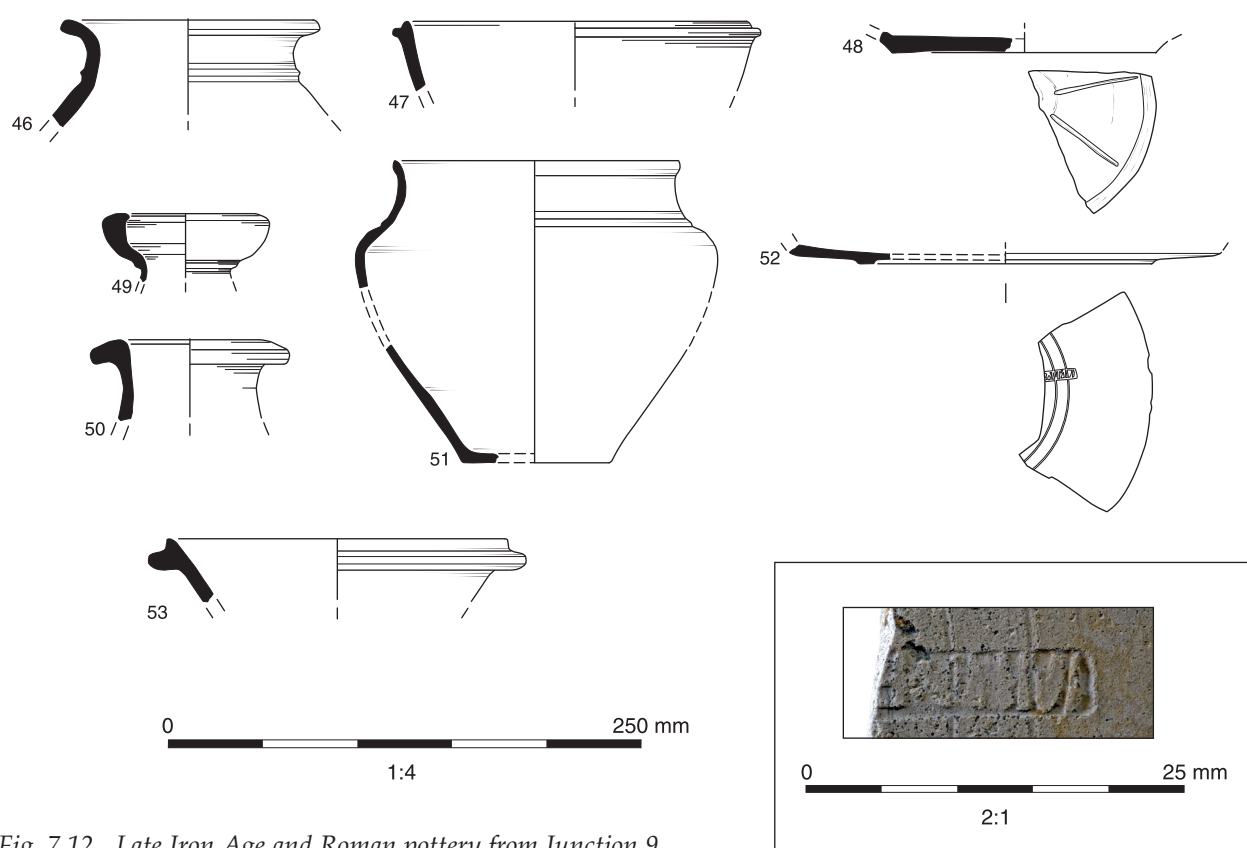


Fig. 7.12 Late Iron Age and Roman pottery from Junction 9

- 38 Thompson-type b2-4 jar. Fabric GROG. Ctx 2139
- 39 Lid-seated jar (cj 820). Fabric UNSREC. Ctx 2139
- 40 Carinated cup (fd 210). Fabric UNSREC. Ctx 2139
- 41 Lid-seated jar (cj 820). Fabric E40. Ctx 2139
- 42 Medium-mouthed jar (cd 740). Fabric E40. Ctx 2139
- 43 Bead-rimmed jar (ch 210). Fabric GROG. Ctx 2139
- 44 High-shouldered/necked jar (ce 730). Fabric GROG. Ctx 2139
- 45 High-shouldered/necked jar (ce 740). Fabric GROG. Ctx 2139
- 46 Medium-mouthed jar (cd 730). Fabric UNSREC. Ctx 2139
- 47 Flanged dish (jb 440). Fabric UNSREC. Ctx 2139
- 48 Base sherd with incised radial decoration. Fabric GROG. Ctx 2392
- 49 Cup-mouthed flagon (bb 242). Fabric VERWH. Ctx 2617
- 50 Bead-rimmed flagon (bb 242). Fabric VERWH. Ctx 2617
- 51 High-shouldered/necked jar (ce 730). Fabric GROG. Ctx 2036
- 52 Platter base with stamp (inita fe). Fabric GABTN. Ctx 2114
- 53 Flanged dish (ja 440). Fabric UNSREC. Ctx 2041

Analysis of charred residue from pot 2041 by gas chromatography-mass spectrometry (GC-MS) by Ben Stern

Sample preparation

The charred residue was present within a pot recovered from context 2041. A sub-sample of 1g

was solvent extracted with three aliquots of ~3ml DCM:MeOH (dichloromethane:methanol 2:1, v/v). The sample was partially soluble and the solvent became a pale orange/brown colour. The solvent extract was transferred to another vial and removed under a stream of nitrogen to leave the lipid extract. Excess BSTFA (*N,O*-bis(trimethylsilyl)trifluoroacetamide) with 1% TMCS (trimethylchlorosilane) was added to derivatise the sample. Excess derivatising agent was removed under a stream of nitrogen. The samples were diluted in approximately 1ml of DCM for analysis by GC-MS. A method blank sample was prepared and analysed alongside the samples.

Instrumental (GC-MS)

Analysis was carried out by GC-MS using an Agilent 7890A Series GC connected to an 5975C Inert XL mass selective detector. The splitless injector and interface were maintained at 300°C and 340°C respectively. Helium was the carrier gas at constant inlet pressure. The temperature of the oven was programmed from 50°C (2 min) to 350°C (10 min) at 10°C/min. The GC was fitted with a 15m x 0.25mm, 0.25 m HP-5MS 5% Phenyl Methyl Siloxane phase fused silica column. The column was directly inserted into the ion source where electron impact (EI) spectra were obtained at 70eV with full scan from *m/z* 50 to 800.

Results (GC-MS)

The results are presented as total ion chromatograms of the BSTFA derivatized solvent extract ($-\text{Si}(\text{CH}_3)_3$ derivatives). These show each separated component of the solvent extract as discrete peaks, the area under each peak being representative of the abundance (Fig. 7.13). Where identified, components have been labelled.

- C = fatty acid, with carbon number and degree of unsaturation (as TMS derivatives),
 * = branched isomer
 MAG = monoacylglycerol, with carbon number of the fatty acid
 DAG = diacylglycerol, with carbon number of the two fatty acids. Two isomers of each component.
 TAG = triacylglycerol, with total carbon number of the fatty acids

The bulk of the residue was insoluble in the solvents used. However, the solvent extract of the charred residue from pot 2041 was a pale orange/brown colour. Although lipids are generally colourless the colour was a good general indication that the solvent extraction was successful in isolating solvent soluble components from the residue. The method blank contained no lipids confirming the absence of contamination during the sample preparation and analysis.

A range of triacylglycerols (labelled TAG) and their degradation products diacylglycerols (DAG), monoacylglycerols (MAG), fatty acids and glycerol were extracted from this sample. The triacylglycerols imply the presence of an animal fat or vegetable oil. Unfortunately, degradation causes the loss of the characteristic triacylglycerol distribution of materials such as milk and adipose fats.

but of materials such as milk and adipose fats.

A wide range of saturated fatty acids (C_8 to C_{27}) were extracted from the sample. These are dominated by the $\text{C}_{16:0}$ and $\text{C}_{18:0}$ saturated fatty acids. Fatty acids are biologically synthesised in even carbon numbers and this indicates they come from a biological source. As fatty acids are ubiquitous at low levels in most environments, the high abundances found confirms that they originate from the sample and not from contamination. Supporting this is the absence of squalene, which is present in human fingerprints and often indicates contamination originating from recent handling. The presence of short-chain fatty acids (usually C_4 to C_{14}) may be indicative of a milk fat. Although the longer-chain fatty acids ($>\text{C}_{20}$) could also originate from a plant source.

A number of odd carbon-numbered fatty acids (C_{15} and C_{17}) and their branched chain isomers (labelled as C_{15^*} , C_{17^*} , two isomers of each) were also extracted. These fatty acids are produced by bacteria which could be due to the bacterial degradation of the original oil/fat or possibly from a ruminant animal source.

Low abundances of the unsaturated fatty acid $\text{C}_{18:1}$ were extracted. The unsaturated fatty acids are preferentially degraded (over the saturated fatty acids) and this confirms that this is a degraded oil/fat. Although the ratios of abundances of the fatty acids can be used to determine the origin of the sample, this sample is degraded and, as little is known of the specific degradation pathways or their preferential degradation of one component over another (eg shorter-chain fatty acids are preferentially soluble in water than longer-chain fatty acids), this approach is not valid in this instance.

Cholesterol was also extracted from this sample. This indicated that the origin of the lipids is an

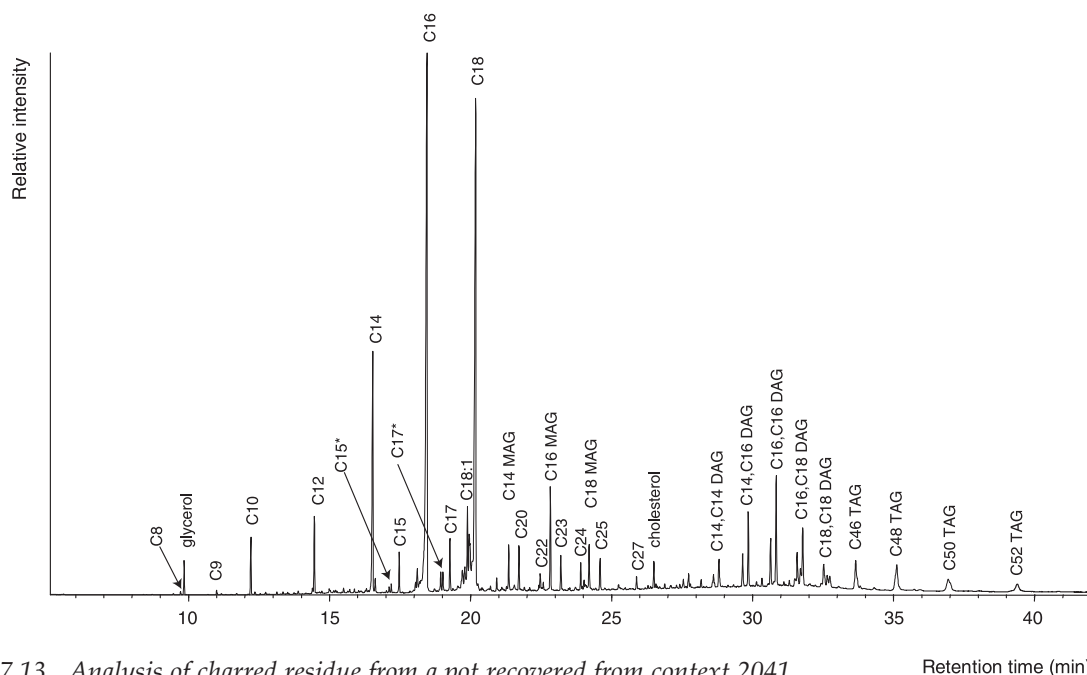


Fig. 7.13 Analysis of charred residue from a pot recovered from context 2041

Retention time (min)

animal source. This sample therefore contains a degraded animal fat and further analysis, such as compound-specific isotope ratio mass spectrometry of the C₁₆ and C₁₈ fatty acids, could be used to confirm the origin of the sample.

MEDIEVAL POTTERY *by John Cotter*

Junction 8N

Introduction and methodology

A total of 2152 sherds of pottery weighing 12.94kg was recovered from nearly 100 contexts on the Junction 8N site. The total rim estimated vessel equivalents (EVEs), or summation of rim circumference, was 6.06. Excluding earlier pottery, the assemblage from this particular site is entirely medieval and there is no Anglo-Saxon or post-medieval material. All the pottery was examined, spot-dated and fully catalogued (in MS Excel). For each context and fabric the total pottery sherd count and weight were recorded. Vessel form, if identifiable, was also recorded together with rim EVEs (circumference length) if present. Positive form identification was usually limited to rim sherds. As no universally accepted classification system exists for medieval pottery forms and fabrics in this area, a relatively simple site-specific system of classification was devised. The simple numeric and alphanumeric fabric codes used in the catalogue have been retained in this report but, wherever possible, cross-referenced to Museum of London (MoLAS) fabric codes, which are widely used in the London area and include several common Hertfordshire pottery fabrics (LAARC 2007). Form typology was limited to a few basic definitions (eg jar, bowl etc). More detailed codified definitions for vessel sub-parts (types of rim, base, handle etc) were also avoided as these rarely prove very useful on relatively small medieval assemblages such as that from Junction

8N. Simple descriptions of vessel sub-parts and any other attributes worthy of note (eg decoration, traces of use etc.) were, however, usually recorded in a comments field. The full pottery catalogue together with notes and sketches has been deposited in the site archive.

Date and nature of the assemblage

Overall the pottery assemblage is in a very fragmentary condition. The average sherd weight is only 6g, but this figure is slightly exaggerated by two contexts (6451 and 6305) containing only two or three very crushed vessels which have been counted as individual sherds (457 in total). If these are excluded the average sherd weight for the site is 7g. Many smaller sherds from the site are clearly abraded. Within the broader range, however, some larger fresher pieces have survived. These include at least two complete (reconstructable) jar/cooking pot profiles and several half profiles or significant portions of vessels. This is consistent with an assemblage largely derived from ditches, scattered pits and postholes, which appears to represent casual domestic rubbish disposal from a rural settlement context. This disposal probably took place over a century or two. The character of the pottery suggests occupation, or human activity, perhaps from as early as the later 11th century, although the main period of activity appears to have been from the late 12th-13th century. There may have been some activity into the 14th century, although the evidence for this is a little ambiguous.

Pottery fabrics

A relatively small number of pottery fabrics was identified. These are all local, or fairly local, apart from a Developed Stamford-ware jug and a possible exotic import. These are described and quantified in Table 7.23.

Table 7.23: Quantification of medieval pottery fabrics from Junction 8N

<i>Fabric</i>	<i>Name</i>	<i>Date</i>	<i>Sherds</i>	<i>Weight</i>	<i>EVEs</i>
1A	South Herts Greyware	c 1170-1350	1974	11531	5.07
1B	South Herts Greyware: fine	c 1170-1350	31	239	0.08
1G	Glazed greyware	c 1170-1350	9	85	0.42
2	Chalk-tempered ware	c 1050-1150	61	404	0.21
3	Flint-tempered ware	c 1050-1250?	26	168	0.21
4	Early med shelly ware	c 1075-1350	6	22	0.07
5	Fine shelly-sandy ware	c 1050-1150?	1	3	0
6	Developed Stamford ware	c 1150-1250	14	270	0
7A	Oxidised sandy slipware	c 1200-1400?	12	44	0
7B	Oxidised sandy ware	c 1200-1400?	4	16	0
8	Possible Islamic import	c 1200-1450?	4	126	0
UNID	Unidentified wares	c 1000-1500?	10	32	0
TOTAL		2152	12940	6.06	

Fabric 1A. South Hertfordshire Greyware, c 1170-1350

A medium-coarse sandy fabric. Equivalent to London fabric code SHER and SHER COAR (Vince 1985, 44). This grey reduced sandy coarse ware is easily the commonest pottery fabric from the site, as it is from most medieval sites in Hertfordshire. By sherd count it comprises 91.7% of the assemblage (or 83.7% by EVEs). The fabric and typology of this ware, or tradition, have been discussed in some detail for nearby St Albans (Havercroft et al. 1987) and a broader survey of the tradition is about to be published (Pearce and Blackmore forthcoming). A brief summary of the type and its main production sites has been published (McCarthy and Brooks 1988, 296-7), as has a detailed gazetteer of its known production sites in Hertfordshire (Turner-Rugg 1993). For the most part, the ware seen from the M1 excavations has a dense, grey to dark grey fabric with abundant, well-sorted, medium-coarse quartz sand and rare-sparse coarser quartz and flint grits. In terms of petrology, it is not a particularly distinctive fabric and given the similarity of South Hertfordshire Greywares in general it may not be possible to assign it to one or other of the several known production centres in the county on the basis of fabric characteristics alone.

In reality there is a fair bit of variation in texture, hardness and colour tone within this range, but no more than would be expected from a single production centre utilising slightly different local clay beds and sand pits over a century or more. These mostly fairly minor variations can usually be attributed to variations in the frequency and coarseness of the tempering agents (quartz mostly) and in the firing conditions in the kiln. For the purposes of this report, it has not been considered practical or necessary to divide the greyware assemblage into more than two categories: the medium-coarse Fabric 1A; and the rarer fine-medium Fabric 1B (see below). It is likely, however, that flint-tempered Fabric 3 (see below) may include sherds from the coarser end of this fabric range.

The fabric is mainly hard to very hard, but soft underfired examples also occur. Firing colour is mostly a uniform grey to dark grey but brownish-greys are also common. A few weakly oxidised, reddish-brown or orange-brown sherds also occur. Slight tonal variation is also evident on some of the most complete vessels. The internal and external surfaces often have a slightly different tone too; when this occurs the external surface is generally slightly browner than the internal surface. The core is generally slightly redder or browner than the surface colour, but sometimes just lighter or darker. A sandwich-effect firing is seen on some sherds but is not often very marked. At one end of the range, the texture of Fabric 1A can be fairly even, densely packed with abundant and well-sorted quartz grains mainly in the 0.25-1mm range, and with a slightly rough or rough feel. Most examples, however, have a fine or silty matrix with moderate

to abundant coarse quartz inclusions up to 1mm, with occasional coarser quartz and flint inclusions up to 4mm across giving the fabric an abrasive feel and fairly gritty or pimply texture. At the other end of the range there is a gradual increase in very coarse inclusions including both quartz and flint grits, but such examples are fairly rare. Quartz inclusions are generally rounded to sub-rounded, occasionally sub-angular with a few worn crystals also noted. Quartz is predominantly clear and milky with lesser amounts of iron-tinted orange, brown, reddish and grey grains and occasionally red-brown iron-coated grains. Flint is generally sparse to moderate, mostly rounded, but also occurring as sparse sub-angular grits. Sparse to moderate red iron oxide or iron-rich clay pellets of varying size also occur, and occasional grey-clay pellets. Rare coarse inclusions of iron-cemented quartz grains or ironstone have also been noted, as have sparse organic inclusions. The matrix contains abundant fine mica. Despite these variations, however, the basic fabric and technology appear fairly uniform. Most vessels are clearly wheel-thrown but a few clearly have handmade bodies and wheel-finished rims.

Sources of South Hertfordshire Greywares

Around a dozen greyware production sites are known across Hertfordshire, most of them identified by pottery wasters and kiln furniture rather than actual kiln structures (see Turner-Rugg 1993, for most up-to-date gazetteer). Some of these have been listed in earlier summaries but sometimes, confusingly, by parish name or nearest town rather than find-spot (McCarthy and Brooks 1988, 296-7; Sheppard 1977). Production sites have also been found just outside the county. A kiln producing pottery in this tradition was excavated further south at Pinner in Middlesex (Sheppard 1977), and evidence for pottery production in this tradition has also been excavated at Uxbridge, Middlesex (Knight and Jeffries 2004). Similar grey sandy wares were also produced in neighbouring counties most notably at Limpsfield in Surrey, Denham in Buckinghamshire, and various locations in Bedfordshire and Essex.

The M1 Junction 8N site is located in the middle of west Hertfordshire. As it is more than likely that the occupants of that site obtained their greyware pottery from fairly local production sites (perhaps via local markets or itinerant traders) only those in the western part of the county will be considered as the most likely candidates. One cannot, of course, rule out the possibility of an occasional vessel or two arriving from more far-flung sources. Unfortunately, the rather uniform fabric of South Hertfordshire Greywares and their rather undiagnostic sedimentary petrology do not lend themselves to close provenancing. Minor visual and textural differences have been detected in the greyware fabrics from nearby St Albans and these, in combination with chemical analysis, may one

day prove significant in identifying kiln sources (Havercroft *et al.* 1987, 32) but, to date, attempts to source greyware fabrics by simple visual comparison alone do not seem to have met with much success (A Turner-Rugg pers. comm.). Comparison of vessel typology, particularly of decorated jug handles, has some potential for sourcing (*ibid.*), but not all kiln-site assemblages have been adequately illustrated and published, and as the M1 assemblage has remarkably few surviving jug handles this technique is of no use in this case. Physical comparison of the M1 greywares with those of every production site known in the county is not currently a feasible option and might, in any case, be of questionable value. For the present, therefore, the most likely sources to have supplied the site are judged to have been the closest, and there were enough of these in west Hertfordshire to limit the search to this area.

The city of St Albans, only 5km east of the Junction 8N site, is easily the largest nearby consumer site of medieval pottery. Hertfordshire Greyware is by far the commonest type of pottery there on sites dated from the 12th-14th centuries and has been studied and published in some detail (Havercroft *et al.* 1987). Being so close it seems logical that the sources supplying St Albans might also be those that supplied the Junction 8N site. These might, therefore, have included the kiln site at Wildhill, near Hatfield, c 13 km further east (Turner-Rugg 1993, 33), but to date none of the greywares from St Albans have been ascribed to a particular source. Indeed, it is possible that there was a more local kiln site supplying the city but which remains undiscovered (A Turner-Rugg pers. comm.). The closest possible production site which might have supplied the Junction 8N site is the small hamlet of Potters Crouch which lies only c 3.7km south-east of the site and immediately west of the village of Chiswell Green. The identification of this as a pottery production site, however, is only tentative and seems to be largely based on place-name evidence. Turner-Rugg (1993) does not mention it in her gazetteer and knows of no definite evidence for this suggestion (A Turner-Rugg pers. comm.). Although the place-name makes it an obvious candidate for a pottery-production site (as does its proximity to large modern sand/gravel quarries) the earliest reference found to this suggestion seems to be in Sheppard's (1977) article concerning the Pinner kiln in which he suggests, 'The other possible sites at Arkley, Elstree, Enfield, Potters Crouch and Wild Hill have produced kiln furniture or wasters but no actual kiln structures' (*ibid.*, 35). He also clearly marks it as a kiln in his location map (*ibid.*, fig. 4). McCarthy and Brooks (1988, fig. 165, no.19) also show Potters Crouch (Hertfordshire) as a production site on a location map of the south Midlands, but otherwise do not discuss it. If there were evidence in the form of kiln wasters and furniture from Potters Crouch it is unlikely that Turner-Rugg would have overlooked

it in her comprehensive 1993 gazetteer, unless the material is lost or remains in private ownership. Enquiries are currently in progress to determine the basis for these suggestions but, for the moment at least, Potters Crouch remains a possible candidate for the supply of pottery to the Junction 8N site, even if this rests solely on place-name evidence.

Two definite greyware production sites lie in different directions both only c 9.5km from Junction 8N. These are Nettleden, near Hemel Hempstead, to the north-west, and Chandlers Cross, near Rickmansworth, to the SSW. At Nettleden, a double-flue kiln was discovered and Greyware pottery from this site includes jugs, jars, a large storage jar and some bowls (Turner-Rugg 1993, 33, fig. 2-3). The jars/cooking pots from this kiln are mostly short necked with stubby sub-squared rims or with simpler beaded rims. Some very small jars were also produced (*ibid.*, fig. 3.27-8). Some jars (and bowls) have applied thumbled strips. The jugs include examples with handles decorated with slashing or thumbled edges. A few body sherds with bands of combed wavy decoration are also present (*ibid.*, fig. 3.26, 29-31). Although Turner-Rugg (*ibid.*) offers no specific dating for the Nettleden kiln the relatively simple rim forms and the presence of combed decoration may suggest that it dates to the first half of the 13th century rather than later. These simpler jar/cooking pot rim forms find plenty of general and even exact parallels amongst the Junction 8N assemblage and the presence of a few comb-decorated sherds in both assemblages makes Nettleden a strong candidate for the supply of at least some greywares to the Junction 8N site for at least part of the settlement's existence.

Chandlers Cross, to the south, has also produced a definite pottery kiln of the horizontal-draught type. Details of this site and its products are briefly summarised elsewhere (Havercroft *et al.* 1987, 45, fig. 3.52-63, jugs; Turner-Rugg 1993, 32, not *illus.*). The kiln produced South Hertfordshire Greyware including jugs, jars, bowls and curfews. Some of this greyware has linear decoration in white slip and extensive areas of dark green glaze. Potentially this source is just as likely to have supplied the Junction 8N site as Nettleden. A few sherds of glazed greyware, including a jug rim, were found at the Junction 8N site (see Fabric 1G below) and Chandlers Cross is more likely to be the source of these than any other production site in the county. A single greyware storage jar from Berkhamsted Castle, 10km north-west of our site, is possibly an underfired waster but there are no other details of its provenance (Turner-Rugg 1993, 32). It may, in any case, have come from the nearby Nettleden kiln. As one moves outside west Hertfordshire the likelihood of more distant greyware production centres supplying the Junction 8N site becomes more remote. These could, however, have included the known production centre at Gustard Wood, near Wheathampstead, c 14km north-east in central north Hertfordshire. This site produced greywares, some,

apparently with freckles of green glaze; a massive and heavily decorated storage jar rim and a spouted vessel are also known from this site (*ibid.*, 32). Down on the south-western border of the county, c 15km south-east of Junction 8 and less than 2km apart, lie the production sites of Barnet Lane, Elstree, and Elstree Hill South. Finds from the probable kiln site at Barnet Lane are in a homogenous greyware and comprise jugs with thumbled handles, jars, storage jars and socketed bowls (*ibid.*, 31-2).

The probable kiln site at Elstree Hill South produced greyware wasters in three fabric types including a sand and flint-tempered fabric. Forms included jugs with thumbled handles, jars and bowls. Some vessels had applied band decoration and stabbed rims (*ibid.*, 32; Salveson and Blackmore 1985). Both these sites were potential suppliers of greywares to the Junction 8N site and the presence of flint-tempered fabrics at Elstree Hill South is of particular interest given the presence of at least some flint-tempered (Fabric 3) vessels from the Junction 8N site. Other greyware production sites in central and eastern Hertfordshire are also documented (Turner-Rugg 1993), but these are much less likely to have supplied settlements in the west of the county than the more accessible production sites listed above. It is of course very likely that there were other production sites in west Hertfordshire and elsewhere in the county that remain to be discovered. In time it may be possible to identify Hertfordshire Greyware products more accurately via chemical or textural analyses as well as traditional visual and typological comparison, but most of this lies beyond the scope of the present report.

South Hertfordshire Greyware vessel forms

Only 270 sherds of South Hertfordshire Greyware have been assigned to a definite vessel form. These are all featured sherds, mostly rims plus a few handles or large base/body sherds. Such sherds comprise only 13.7% of the 1974 sherds in this fabric. The remainder mostly comprise body sherds and undiagnostic base sherds. Quantification by EVEs (surviving rim percent) is a more reliable approach to vessel composition, although this has the disadvantage of excluding very minor forms that might not have surviving rims. Jars/cooking pots, as expected, are easily the commonest form represented in this fabric, comprising 95.3% of the fabric EVEs total. Jugs comprise only 4.1% and bowls only 0.6%.

Jars: complete profiles are limited to only two or three examples but jars seem to have a typical medieval rounded or globular profile, sometimes slightly shouldered, with a variety of fairly simple rim types (see below) and always with a plain sagging base. The majority of jar sherds, particularly the base and lower walls, show evidence of sooting from their use as cooking vessels and a few examples show internal 'limescale' deposits. Other jars, apparently unsooted, may have been used for storage. Jars/cooking pots appear to be predomi-

nantly wheel-thrown but a few, perhaps earlier examples, clearly have handmade bodies and wheel-finished rims. The inside of one large sooted cooking pot (Fig. 7.14.1), though quite fragmentary, clearly shows two roughly horizontal rows of pinching or squeezing to build-up the lower half of the vessel, which was probably coil built; the rim, however, was finished on a turntable or wheel. Sherds from a few other jars also show this technique. One of the smallest jars in the assemblage also exhibits internal irregularities suggesting handmade manufacture (Fig. 7.14.2). Handmade but wheel-finished greyware jars of early appearance have been noted at Whormeley Wood near Stevenage in north Hertfordshire (Turner-Rugg 1993, fig. 8-11). Composite manufacture, with handmade bodies and wheel-finished rims, is also a feature of very similar coarse greywares in north Essex and is considered to be an early mode of production which disappeared soon after c 1250 when fully wheel-thrown vessels became the norm (Cotter 2000, 91-107). Rim diameters cover a wide size range from 110-350mm. Based on EVEs and approximate vessel counts it is clear, however, that the size range 180-280mm is common, with each 10mm subdivision represented by at least two vessels. Within this range there are two peak sizes; one at 260mm (0.61 EVEs, c 7 vessels) and a joint peak at c 210-220mm (0.56 EVEs each, c 7-8 vessels each). Although the highest single EVEs count is at c 145mm (0.75 EVEs) this is for a single small jar profile and is therefore unrepresentative of the main size trends. Jar diameters outside the 180-280mm range are fairly rare with vessels above 280mm represented by single examples only.

Rim types were not individually coded or quantified in detail (but the basic shape was described in the catalogue comments field). Most rims fell into two broad and overlapping types: thickened flat-topped rims; and sub-squared rims. Both types account individually for roughly a third each of all rim types found on jars, with the thickened flat-topped rims being perhaps slightly commoner. The remaining third comprises a variety of other less common rim types including plain everted or thickened everted types, also externally beaded rims, rare clubbed rims (probably dating to c 1150-1225) and more developed squared or flanged rims (Figs 7.14.1-13 and 7.16.34-51). Within the two main types of rim there are innumerable minor variations caused by the addition of internal or external beveling, or other minor modifications caused by varying pressure from the potter's fingers as the vessel turned on the wheel. Such variation is a common feature of South Hertfordshire Greywares and many other medieval coarse ware industries.

Decoration of any sort is quite rare and not easily quantifiable as most of this occurs on body sherds, which might include sherds from rarer non-jar forms. Definite decoration, such as incised or combed decoration, is very rare but more ambiguous types of 'decoration' such as external

rilling or girth grooves, and thumbled strips, are slightly more common. The rims of at least ten jars/cooking pots (0.42 EVEs) bear some sort of decoration (see also bowls below). Two jar rims appear to have light external thumbled decoration on the rim itself. One of these also has traces of incised wavy-line decoration on the neck externally (Figs 7.14.5 and 7.16.47). Another unusual jar rim has an incised wavy line on the top of the rim (Fig. 7.14.6). Two separate jar rims from the same context are decorated with a combed wavy band on the inside of the neck and incised-line or comb decoration on top of the rim (Fig. 7.16.34-5). A possible bowl also has similar internal combed decoration (see below). One other jar rim has traces of horizontal combed or finely rilled decoration on the shoulder (Fig. 7.14.4). This sort of decoration has also been noted on body sherds from at least two other vessels, probably jars, including one with bold horizontal rilling or external grooving. Marked shoulder rilling, as opposed to grooving or combing, occurs on several other jars (Fig. 7.4.7) and although this could be a by-product of wheel throwing it may also have been used to decorative effect. Rilling or 'corrugation' has been noted on greyware jars from St Albans (Havercroft *et al.* 1987, fig. 4.65-6, 68). A jar with an angle or carination on the shoulder and a plain everted neckless rim (Fig. 7.14.9) also has close parallels at St Albans (*ibid.*, fig. 4.64) and from the Pinner kiln (Sheppard 1977, fig. 3.14-15, 17). Ten body sherds from the neck/shoulder area of perhaps half a dozen jars have applied horizontal or vertical thumbled strips. These are probably functional (to strengthen the vessels' walls) rather than decorative. A bowl or unusually large jar rim with shoulder strips is the only example of this type illustrated (Fig. 7.15.16).

Within the overall jar category are one or two other possible examples of specialised jar forms but represented by base sherds only. These include six joining sherds from the base of a small tripod-footed vessel; probably a tripod pipkin or small cauldron. The sherds include parts of two tripod feet attached to a sagging base which is heat scorched or sooted in places. The feet were formed as solid rods of clay and inserted through the vessel wall (Fig. 7.15.14). Pipkins were smallish jars with a rod-like side handle. They were probably used to prepare smaller portions of food or sauces. Although pipkins are known from St Albans, these all have plain sagging bases and so far none has been found with feet as with the example recovered from Junction 8N (Havercroft *et al.* 1997, 37). One unique sherd has been tentatively interpreted as coming from the sagging base of a large decorated storage jar (Fig. 7.15.15). This has a diameter of c 380-400mm with a thumbled strip applied around the basal angle and with traces of vertical combed wavy bands. Alternatively, this could be from the dome of a curfew (firecover), although it shows no traces of sooting.

Bowls: these are very rare and may not be bowls in the usual sense (shallow open forms), but possibly exceptionally large jars or storage jars since the rim forms are very similar. Only two examples were identified from rim sherds (2 sherds, 0.03 EVEs, or 0.6% of the fabric assemblage). One of these is identified from an everted jar-like rim (Fig. 7.15.16) of very large diameter (c 480mm). This has traces of a horizontal-applied strip on the neck and probably a vertical strip too. The other example is represented by a small sherd from a thick-walled vessel with a damaged rim and traces of combed horizontal decoration internally (Fig. 7.15.17). Typical wide greyware bowl forms, which occur at St Albans and elsewhere, were not identified.

Jugs: these are rare and only eight sherds (0.21 EVEs, or 4.1% of the fabric assemblage) have been identified with any certainty. These comprise rim sherds from five individual jugs and one detached jug handle. Because of the very small number of jugs recovered, and their fragmentary condition, none of these has the pronounced thumbled and stabbed-decorated handles that are so characteristic of South Hertfordshire Greyware jugs and which offer the best possibility of linking greyware jug assemblages to known production sites (Havercroft *et al.* 1987, 45, fig. 1-3). At the Nettleden kiln, jugs with decorated strap handles predominate, whereas at the Chandlers Cross kiln jugs with rod-section handles predominate. The single handle from the Junction 8N site (Fig. 7.15.18) and another from the nearby targeted watching brief site (see below; Fig. 7.15.19) are both of rod section and could conceivably be from Chandlers Cross, although the sample is admittedly very small and perhaps unreliable. Most of the jug rims are of simple collared form (Fig. 7.16.33) as is a glazed greyware (Fabric 1G) jug rim (Fig. 7.15.21). One rim is of simple thickened flat-topped form as is the more complete example from the targeted watching brief site at Junction 8 (see below; Fig. 7.15.19). This also has the stub of a rod-section handle with faint traces of stabbing on top. These simpler rims might be of fairly early date (perhaps c 1170-1225). The other handled sherd is from the lower end of a handle with a pair of thumbled impressions to secure it to the vessel wall (Fig. 7.15.18). Apart from the stabbed handle stub, none of the jugs show decoration, although some body sherds with horizontal rilling or fine grooving might have come from this form. Including the glazed jug and the watching brief example, rim diameters are in the 110-160mm range. Jugs would most commonly have been used for fetching and serving liquids. The scarcity of jugs (table wares) from this site suggests that dining and entertaining were not high priorities and that the site was probably of low status.

Miscellaneous: an odd ?basal sherd with a diameter of c 250mm (Fig. 7.15.20), and from the same context

as the tripod pipkin (see above), appears to have been decorated on its underside with something like an unusual incised lattice design made before the vessel was fired. This was scored to a depth of 2mm with a blade. There is no external evidence of sooting, but the interior shows possible traces of sooting or boiling. It is possible that this sherd is from a lid or a curfew.

Fabric 1B. South Hertfordshire Greyware (fine-medium fabric), c 1170-1350

Possibly equivalent to London fabric code SHER FINE. Probably a much finer (and rarer) variant of Fabric 1A (see above), although other sources cannot be ruled out. Fine grey sandy fabric with abundant quartz mostly under 0.3mm, with rare grains up to 2mm. Other inclusions as in Fabric 1A. Sherds from perhaps seven-eight vessels represented. The only substantial vessel to survive is the upper part of a large wheel-thrown jar/cooking pot with a thickened flat-topped rim (Fig. 7.15.31). This vessel occurs in a particularly fine, light grey, almost Roman-looking fabric. A few other body sherds from other contexts have fine horizontal rilled or lightly combed decoration. These could be from jars or jugs.

Fabric 1G. Glazed grey sandy coarse ware, c 1170-1350

Probably a much rarer glazed variant of South Hertfordshire Greyware (Fabric 1A; see above) with nine sherds from a maximum of four vessels, possibly jugs, recovered from the site. These have a thin patchy clear glaze externally showing greyish-green against the reduced background. The only rim sherds are from a jug with a pouring lip (Fig. 7.15.21). This has a markedly collared rim and an unusual angled or carinated shoulder which bears fine horizontal rilling. Although this has been classed as a glazed greyware the fabric is a uniform leached pale brown with a few matt-black patches externally and only a few lead pellets embedded in the centre of these; it may, however, have been more extensively glazed lower down on the body. Small quantities of glazed greyware sherds have been identified from the kiln at Chandlers Cross (Turner-Rugg 1993, 32) and from excavations in St Albans (Havercroft *et al.* 1987, 32). See also Fabric 7A below.

Fabric 2. Chalk-tempered ware, c 1050-1150

Possibly equivalent to London fabric code EMCH (Vince and Jenner 1991, 70-2). Mainly with oxidised orange-brown surfaces and a grey core, although some pieces are greyish-brown or grey throughout. Quite a bit of textural variation. Abundant rounded chalk or algal-limestone inclusions showing white or grey, up to 4mm across but in some specimens consistently under 1mm across. The chalk is often dissolved leaving only pockmarks. Moderate to abundant fine-coarse quartz inclusions and sparse-moderate angular flint. Some specimens are much grittier than others. This fabric is common from late 11th- or early 12th-century deposits at St Albans and

is presumably fairly local (*ibid.*; see also Turner-Rugg 1995, 46, where they are grouped under 'calcareous wares'). The second commonest fabric from the site, but represented by only 61 sherds (2.8% of the site assemblage, or 3.5% by EVEs). Many of these are presumably residual in later contexts. Present as handmade jars/cooking pots probably, in some cases, with wheel-finished rims. A range of fairly simple thickened and flat-topped rims is represented, sometimes internally hollowed (Fig. 7.15.22-4), although one example has a more developed later-looking squared rim (Fig. 7.15.25) with equal proportions of chalk and sand. One small body sherd shows traces of combed decoration (not illus.; Key Group 6407). Unless the site was unoccupied for around 20 years, there must have been a point of overlap between the supposed end-date of chalk-tempered ware c 1150 and the introduction of South Hertfordshire Greywares c 1170. It could be that outside urban centres, like St Albans, chalk-tempered wares lingered on for another decade or two; just long enough to be contemporary with the first arrival of greyware. These may have included the sandier/grittier chalk-tempered vessels with more developed rims. Similar chalky gritty fabrics remained in production in the Winchester area, for example, as late as c 1225.

Fabric 3. Flint-tempered ware, c 1050-1250?

This falls within a group of 'early medieval unglazed sandy and gritty' wares found in St Albans and believed to date from the 11th and early 12th centuries (Turner-Rugg 1995, 48). These are thought to be of local manufacture, as some are very similar to the later South Hertfordshire Greywares. The samples from the M1 include both early medieval-looking handmade jars/cooking pots and sherds from wheel-thrown vessels that are possibly just coarser variants of South Hertfordshire Greywares, which can sometimes be flint tempered (*ibid.*). On this basis, the flint-tempered ware from the Junction 8N site is tentatively dated to c 1050-1250, but most examples probably belong to the later end of this range. This is probably equivalent to London Fabric code SHER FL (South Hertfordshire Flint-tempered Greyware), which is dated to c 1170-1350 (Pearce and Blackmore forthcoming). The fabric from the M1 includes a range of textures. The earlier-looking handmade examples have a fairly soft micaceous matrix with moderate very coarse angular to sub-rounded flint grits up to 4mm, moderate-abundant ill-sorted quartz up to 1mm and sparse chalk and iron compounds. Firing colour varies from dark grey to light brown. The later-looking wheel-thrown examples have the same better-sorted fabric as Fabric 1A above, but with the addition of moderate coarse angular flint up to 3mm. This fabric is fairly rare from the site (26 sherds) and possibly mostly residual.

Rims from four flint-tempered jars/cooking pots were recovered with diameters in the 160-250mm range. These include early-looking simple thick-

ened flat-topped rims (Fig. 7.15.26-7) and a more developed wheel-thrown sub-squared/internally hollowed example (Fig. 7.15.32). Some sherds show external sooting and one has internal sooting. Despite the coarseness of this fabric a small body sherd from context 6631 is decorated with sunburst stamps in the Saxo-Norman tradition (Fig. 7.15.28). This is the only coarse-ware sherd from the site with stamped decoration. It is relatively thin walled (6mm thick) and in view of these features might perhaps be from a spouted pitcher rather than a plain jar.

Fabric 4. Early medieval shelly ware, c 1075-1300

Probably the same as the 'Medieval Shelly ware' (Fabric MC1) found at Great Linford in Buckinghamshire. The exact source is unknown but probably resides in the Ouse Valley, Buckinghamshire (Mynard 1992, 251). Similar fabrics also occur in Bedfordshire. It contains inclusions of Jurassic fossil shell identical to late Saxon St Neot's-type ware, possibly with the addition of crushed bivalve shell, but is generally coarser than the latter. It also contains fossil limestone, moderate fine-medium quartz inclusions and sparse flint. The shell is sometimes dissolved out. Firing colour is brown to dark grey. Some sherds are oxidised externally and reduced internally. Only six fairly small sherds were recovered from the site from just three vessels, probably wheel-thrown, including an everted jar/cooking pot rim probably with light thumbing on the apex (Fig. 7.15.29).

Fabric 5. Fine grey sandy ware with shell. Possibly 11th-12th century?

Present as a single small sherd from a jar/cooking pot with a flaring thickened everted rim with traces of thumbing decoration probably on the inside of the rim (context 6055, not illus.). Dark grey fabric with abundant fine-medium rounded quartz, very fine mica and sparse-moderate coarse inclusions of platy fossil shell up to 6mm long. Source unknown but similar to Early Medieval Sand and Shell-tempered ware (Fabric EMSS) from the London area, common there c 1075-1150 (Vince and Jenner 1991, 59-63). From a late 12th-13th-century context (6055) associated with Fabric 1A, but possibly residual.

Fabric 6. Developed Stamford ware, c 1150-1250

A high-quality wheel-thrown green-glazed white ware produced at Stamford in Lincolnshire. Normally traded in the form of jugs (Kilmurry 1980, 11, 130). London Fabric code DEVS (Vince and Jenner 1991, 96). The fabric is very fine and sandy with few inclusions visible to the naked eye except a few specks of red iron oxide. All 14 sherds are from the base and walls of a single jug in Key Group 6407 (Fig. 7.15.30). This has an off-white to very pale grey fabric with a glossy external clear glaze with abundant copper-green flecks. Stamford ware occurs sporadically on early medieval sites across

Hertfordshire (Turner-Rugg 1993, type not specified) and also occurs at Great Linford in north Buckinghamshire, but is rare (Mynard 1992, 274). The latter does not apparently include any examples of Developed Stamford ware.

Fabric 7A. Oxidised orange sandy slipware, c 1200-1400?

Present as 12 body sherds apparently from glazed jugs with evidence of white-slip decoration. The fabric is fairly coarse and sandy. Most sherds are fairly worn but the slip decoration appears to be linear. One small sherd (context 6601) has an all-over external white slip with traces of narrow vertical strips in red clay under a green copper-flecked glaze in the 'highly decorated' or 'North French' style as found, for example, on London-type ware jugs of c 1250-1350 (Pearce *et al.* 1985). The fabric of these sherds, however, is too coarse for London-type ware or Mill Green ware (Essex) but not unlike some of the many medieval 'Essex redwares', such as medieval Harlow ware or Colchester-type ware (Cotter 2000, 107-80). Alternatively, and perhaps more likely, they could be examples of the less well-understood local glazed wares (oxidised or reduced) which also sometimes have white-slip decoration. These are thought to be a 'fine ware' variant of South Hertfordshire Greywares (Fabric 1A; see above) and have been found in very small quantities in earlier 13th-century contexts at St Albans and from the Chandlers Cross greyware kiln (Turner-Rugg 1993, 32; 1995, 48-52). A recently discovered greyware kiln at Bancroft, Hitchin, also produced a small collection of glazed oxidised sandy ware with white-slip decoration (P Blinkhorn pers. comm.). Other sources, however, cannot be ruled out.

Fabric 7B. Oxidised orange sandy ware (no visible slip), c 1200-1400?

Otherwise as Fabric 7A above. Four body sherds present from a single glazed vessel, probably a jug. The context (6537) appears to be 13th century in date.

Fabric 8. Possible Islamic import, c 1200-1450?

Four abraded body sherds from a single vessel (not illus.) were recovered, three from key pit group context 6407 and one from pit context 6202, 15m distant. Pit group 6407 contained several fresh sherds from a Developed Stamford ware jug (Fabric 6; see above), a glazed South Hertfordshire Greyware sherd (Fabric 1G; see above) and a large assemblage of South Hertfordshire Greywares (Fabric 1A; see above), including jugs, and is therefore dated to c 1170-1250. Although petrological analysis has proved inconclusive (see below), this fabric may be broadly equivalent with London Fabric code ALKG (Alkaline Glazed ware), an umbrella code for medieval alkaline glazed wares from the Islamic world including greenish-blue glazed Raqqa-type wares from Syria and Egypt, and

Maghrebi wares from north-west Africa (Vince 1985, 38, 54).

The M1 sherds are possibly from a fairly large jar or pitcher which, on balance, is probably wheel-thrown, although the surfaces exhibit many slight irregularities, particularly on the largest sherds. The curvature on the two largest sherds, probably from the lower wall of the vessel, suggests a diameter in excess of c 270mm at the maximum girth (higher up). The two smaller sherds are slightly thinner walled and probably from the shoulder area of the vessel, as these show fine horizontal grooving or throwing marks externally. The fabric is unusually hard and dense for a Near Eastern import and is probably overfired, giving it a sub-stoneware hardness. Despite a superficial resemblance to Near Eastern stonepaste ('fritware') fabrics, it does not appear to be an example of this class (see below). It is fine and sandy with a broad mid-grey core with paler-grey margins and surfaces. The original glazed surface has almost completely been worn off, but in pockmarks and slight surface irregularities there are tiny traces, or islands, of fine white sandy slip bearing even smaller traces of a thick greenish crystalline or aquamarine transparent glaze, apparently alkaline. The largest patch of glaze is just under 4mm across. Glaze patches occur on both the outside and the inside of the vessel suggesting it was originally glazed all over. Most of the broken edges show considerable abrasion and none of the sherds join, although it is obvious they all come from the same vessel. The sherds have a maximum thickness of 10mm and a minimum thickness of 7mm, but would have been slightly thicker with the glaze. Thin, but extensive patches, of a brownish-yellow, possibly cassy, post-deposition deposit occur on some of the sherds. Though much harder, the sherds are quite like a blue-green alkaline glazed bowl from St Gregory's Priory, Canterbury. The latter is probably of early 13th-century date and believed to come from Egypt (Cotter 2001, 237-8, 264, fig. 206.95). This accords well with the dating suggested for pit group 6407. The sherds were shown to the late Dr Alan Vince in 2008 who was also of the opinion that they might be of Near Eastern origin (pers. comm.). A thin-section report and commentary on the M1 vessel has been carried out by Rebecca Bridgman (see below). Unfortunately, this has not enabled the vessel to be assigned to a known source, although origin in the central Islamic lands was entirely ruled out. It is fairly certain, however, that the vessel is a foreign import, perhaps from the Mediterranean, even if not Islamic. Future research may eventually determine its source. Quite how an exotic imported glazed vessel of fairly large size ended up in a medieval farmstead in rural Hertfordshire is unclear, but rare isolated finds of Near Eastern 'Raqqā' ware have previously been made on remote rural sites, such as in a peasant dwelling at Abdon in Shropshire (Hurst 1968, 198; see also Cotter 2001), as well as at several high-status sites in Britain. These would have been

exotic and highly prized possessions in their time; some perhaps brought back by pilgrims or even crusaders visiting the Holy Land or the Near East. Whatever the route by which the vessel ended up at the Junction 8N site, it must, with its blue-green glaze, have appeared strikingly exotic next to the rather humdrum coarse local greywares with which it was eventually associated.

Unidentified wares (UNID)

Ten sherds cannot be assigned to any of the above fabric groups. These are individually described in the comments field of the catalogue (details in site archive). In nearly every case the sherds are too small or worn to be confidently identified and may include misidentified Roman wares. One of two sherds may be unusually pale grey or off-cream variants of Fabric 1A. Two small glazed sherds (total weight 7g) deserve a comment however. The larger of these (6591) is soft and very worn with a very fine to fine creamy orange-buff fabric and with a small speck of clear glaze. The smaller sherd (7083) weighs less than 1g and has the same fabric as the latter but with a worn copper-green flecked glaze externally. These can probably be identified as jug sherds in either Brill/Boarstall ware from Buckinghamshire (c 1200-1600), or as Late Medieval Hertfordshire Glazed ware (c 1350-1450). Unfortunately, the fabric of these two industries is too similar to distinguish in sherds as small as this (Turner-Rugg 1995, 52). Associated greywares in these contexts, however, suggest a 13th-century dating and therefore probably a Brill/Boarstall identification, although they seem slightly finer than most examples seen by the author.

Post-medieval wares, c 1550-1900

These are absent from the Junction 8N site but a small number of these occur on other M1 sites. These comprise a few sherds of 17th/18th-century glazed red earthenwares, but mostly consist of mass-produced Victorian white earthenwares and stoneware bottles. Full details of these can be found in the project archive or are mentioned briefly in the other site reports.

Pottery and dating in relation to the site

Pottery from contexts associated with building 6961 was examined to see if its chronology could be refined in any way and to see if there were any chronological or functional differences between pottery from the main building and its eastern 'annexe'. These contexts included three large rubbish pits (6406, 6188 and 6054) parallel to the northern wall of the building, but just outside it. The majority of the pottery recovered from the site came from these pits and from one or two others much further south of the building. The main building itself produced only small groups of pottery and the annexe just a few smallish sherds from a handful of contexts. No chronological or

functional differences could be determined between the main building and annexe, or between the building and the greater majority of medieval contexts across the site. The conservative nature of South Hertfordshire Greywares makes it difficult to refine the dating within its estimated currency of *c* 1170-1350, particularly as virtually the only vessel form present is the ubiquitous jar/cooking pot. However, there is little from the site to suggest definite occupation into the 14th century and most contexts have been dated to the period *c* 1170-1300, which marks the peak of occupation on this site. In some cases, the presence of a few more developed greyware rim forms or the presence of rare glazed sherds has resulted in some contexts being dated to the 13th century. The latter include a few contexts associated with the main building. Some contexts associated with the building include definite examples of handmade greyware jars with wheel-finished rims which represent an early mode of greyware production that can probably be dated to *c* 1170-1250, and this dating fits well with the single Developed Stamford ware jug (*c* 1150-1250) from pit 6406 (context 6407). It is probably safe to conclude that the main building was occupied by *c* 1200-50 and possibly for a decade or two after this when completely wheel-thrown greyware jars became the norm.

The three large rubbish pits (6406, 6188 and 6054) parallel to the building deserve more detailed consideration, as these produced the majority of the pottery recovered from the site and include some of the largest and freshest sherds (see above). The largest of these is pit 6406, the upper fill of which (6407) is treated here as a key group with most of its pottery illustrated. This produced three of the four sherds from the possible Islamic vessel (ALKG). The fourth sherd came from a context (6202) in pit 6188 about 15m to the north-east. This is the most noteworthy cross-join recorded from the site; an observation helped by the distinctiveness of the fabric. Pit 6406 is the most westerly of the three main pits. It is of unusually oval plan, measuring 8.20 x 3 x 0.68m, with its long axis aligned with the other two pits and roughly with that of the building. Its three fills include much charcoal and rubbish so it may well be a rubbish pit, though in view of its size and unusual shape it might also originally have been a latrine pit. The quantities of pottery from each fill are given in Table 7.24.

Table 7.24: Breakdown of medieval pottery quantities in pit 6406

Context	Sherds	Weight	EVEs
6407	299	2709	1.06
6698	54	321	0.56
6699	102	846	0.85
TOTAL	455	3876	2.47

The 455 sherds from pit 6406 comprise 21% of the site total. The figure for weight and EVEs is even higher (30% and 41% respectively). The average sherd weight for the whole pit is 8.5g, which is higher than the site average, with that of context 6407, at 9g, being the highest of all for a large group. The main fabrics in each of the three fills are roughly in the same proportions as those present in the overall site assemblage and so will not be considered in too much detail. The main fabric is South Hertfordshire Greyware (Fabric 1A), together with some of the finer greyware (Fabric 1B), and in each context a few sherds of chalk-tempered ware (Fabric 2) and flint-tempered ware (Fabric 3). The additional fabrics in 6407 are considered below. Context 6699, the lowest fill, mainly comprises sherds from just three greyware vessels including a complete small handmade jar/cooking pot profile (Fig. 7.14.2). It also includes the rim from a very large jar or possibly a bowl (diameter 350mm; not illus.) and another smaller jar rim. Sherds from the small jar profile in 6699 also occur in the middle fill 6698 which also produced a glazed greyware jug rim (Fig. 7.15.21).

The uppermost and main fill, context 6407, is treated here as a key group in that most of the rim sherds have been illustrated. This is the only context from the site to have produced Developed Stamford ware; a single green-glazed jug base and body sherds (Fig. 7.15.30). It also produced sherds from the only possible Islamic vessel (ALKG; not illus.). These two vessels, both probably table wares, must have been strikingly different from the mass of local greywares. Other minority wares illustrated from this group include the only substantial example of a fine South Hertfordshire Greyware jar (Fabric 1B; Fig. 7.15.31), and a developed jar rim in flint-tempered ware (Fabric 3; Fig. 7.15.32). The large South Hertfordshire Greyware element in this assemblage comprises a single jug rim (Fig. 7.16.33) and rims from at least 18 jars/cooking pots (Fig. 7.16.34-51; see Fabric 1A description above for reference to some of these).

Pits 6188 and 6095, within the same axis, will be considered more briefly. Pit 6188 is a large sub-circular rubbish pit. A sherd cross-join (ALKG) between this and Key Group 6407 was present (see above). The fills of this pit (6202, 6206 and 6207) produced 134 sherds of pottery (1095g) including three sherds of glazed greyware (Fabric 1G). Two chalk-tempered jar rims (Fig. 7.15.22-3) and two flint-tempered rims (Fig. 7.15.26-7) are illustrated, as well as several of the many greyware jar rims (Fig. 7.14.5 and Fig. 7.14.12). The only early medieval shelly ware jar rim from the site is also from this pit (Fabric 4; Fig. 7.15.29). Pit 6054 lies *c* 4.5m. north-east of pit 6188 at the end of the pit axis. The fills of this pit (6055 and 6067) produced 48 sherds of pottery (413g). The only illustrated piece is a possible greyware bowl rim with internal combed decoration (Fig. 7.15.17). The only fine shelly-sandy ware jar rim also came from here (Fabric 5; not illus.).

East and south of building 6961 lay four gullies (7006, 6402, 6403 and 7704). These produced varying quantities of pottery which are indistinguishable in character from contexts associated with the building and which have therefore been similarly dated to *c* 1170-1300.

To the north of building 6961, in the angle of the enclosure, stood kiln/oven 6585. This contained a fairly small quantity of pottery, all domestic rubbish. As well as South Hertfordshire Greywares, one context (6591) also produced a small glazed sherd which may be Brill/Boarstall ware (see UNID) and if so must date after *c* 1200. Two greyware vessels from this context also have a developed, fully wheel-thrown, appearance and may date to the mid-late 13th century. In the south-eastern corner of the medieval settlement, a limekiln (6577) produced a small fresh assemblage of handmade jars in South Hertfordshire Greyware, including a profile. These probably date to *c* 1170-1250.

Conclusions

While not the best preserved of assemblages, the medieval pottery from Junction 8N provides an essential dating framework for the site and sheds a degree of light on the economy and status of the site as well as the needs and daily concerns of its inhabitants. In medieval rural Hertfordshire, pottery, as in many other small rural settlements, was primarily functional and utilitarian and not usually the primary medium through which status and higher aspirations were expressed. The site seems to have had no early Anglo-Saxon activity. The character of the pottery suggests occupation or human activity perhaps from as early as the later 11th century. The small quantity of chalk-tempered and flint-tempered wares (both from *c* 1050, but possibly slightly earlier) do not rule out the possibility of some pre-Conquest activity. The main period of activity, however, appears to have been from the late 12th-13th century coinciding with the predominance of South Hertfordshire Greywares. There may have been some activity into the 14th century, although the evidence for this is a little ambiguous. The site is fortunate in that no later occupation or reoccupation occurred, which might have disturbed this otherwise quite narrow timeframe of medieval occupation.

There is very little diversity in the range of pottery fabrics and vessel forms available. Local coarse wares (South Hertfordshire Greywares) overwhelmingly predominate and nearly all of these are cooking pots or storage jars. The remainder comprises a small number of glazed and unglazed jugs, in some cases from slightly more distant sources, including a single green-glazed jug from Stamford in Lincolnshire and a single exotic imported vessel, which may have been a treasured personal possession. Apart from the latter there are no foreign imports. Over 90% of pottery supplied to the site came from sources probably within a *c* 4.5-9.5km radius. These very probably

included greyware products from the probable nearby kiln site at Potters Crouch and from the known kilns at Nettleden, near Hemel Hempstead, and Chandlers Cross, near Rickmansworth. Only a sprinkle of more attractive glazed table wares would have come from sources beyond this (although some probably came from Chandlers Cross). These probably included other Hertfordshire kiln sites and possibly one or two sources in neighbouring counties perhaps including Essex, Buckinghamshire, and of course the one recognisable import from Lincolnshire. No London products were recognised even though glazed London-type jugs and other forms are widely distributed across south-east England. This lack of diversity, even monotony, is consistent with a fairly isolated and low-status rural settlement with little evidence for social dining and entertainment, or the fancy table wares and ceramic fripperies associated with this.

Evidence for the economy of the site is difficult to deduce from the pottery alone. Most vessels here were greyware jars and the abundant evidence for sooting on these indicates that most of these were cooking pots. Other unsooted jars may have been used for storage. A single tripod cooking vessel, a pipkin or cauldron, may have been used for making sauces. The few jugs identified would have been used for fetching and serving liquids including ale and wine. The almost complete absence of wide bowls, or indeed bowls of any sort (only two possible examples identified), is striking and puzzling and may reflect the economy of the site. On some other low-status medieval rural sites in England the presence of wide bowls in quantity has been linked to dairying practices (butter, cheese production etc; Brown 1997, 92-3), so their absence from this site requires some explanation. It has also been suggested, however, that ceramic bowls may occasionally have been used as grain measures, or 'cantels', and this was argued in the case of the rural settlement at West Cotton, Northamptonshire, where there was a high correlation between shallow ceramic bowls and bakehouses (Blinkhorn 1998-9, 44-5). In the case of our site, however, the dairying connection seems like the more plausible explanation. It could be that dairying practices, or the rearing of cattle and sheep for their milk products, were of low priority to the economy of this settlement, which may perhaps have been grain, wool or meat based. The lack of bowls might therefore be explained by the lack of concern for dairying. Wide pottery bowls were certainly available at the time and they occur in local kiln assemblages and in nearby St Albans. The low priority of dairying practices at the Junction 8N site is a possible and attractive explanation for the absence of bowls, but certainly not the only one. Pottery only ever provides a partial answer, but it generally survives much better than vessels in other materials such as wood, leather and metal. It could be that in this particular place and time wooden bowls were preferred for dairying purposes, and for eating off,

but evidence for these has simply not survived. On its own the pottery evidence is inconclusive on this point, but at least provides one possible explanation. Evidence to support these suggestions might be better sought in the animal bone or other non-ceramic assemblages from the site. The fairly small assemblage of medieval animal bone includes a few horses, cattle, sheep and quite a few pigs; this evidence neither supports nor refutes the possible explanation offered here (see Chapter 8). The relatively high number of pig bones however adds some weight to the suggestion of a meat-based site economy. The lack of medieval small finds, however, is unlikely to help on this point, but does at least support the general impression of material poverty.

Junction 8 targeted watching brief

This site produced a small assemblage of medieval pottery comprising 67 sherds weighing 296g and with a total of 0.16 EVEs. The fabrics and quantities are shown in Table 7.25.

The pottery came from a series of rubbish pits and appears to represent ordinary domestic rubbish. No medieval pottery came from the hollow-way. The condition is generally poor, with an average sherd weight of only 4.4g. Fabrics present, and the relative frequency with which they occur, mirror those on the main Junction 8N site but are restricted to the main local fabrics. The unidentified fabric is a thin-walled body sherd from a ?jar with marked external rilling. This is possibly a very pale-grey variant of South Hertfordshire Greyware and two sherds of this also occurred on the main site. South Hertfordshire Greyware vessel forms present (as rims) comprise a jar/cooking pot and a fairly simple jug rim with the stub of a rod handle (Fig. 7.15.19). A jar/cooking pot rim in flint-tempered ware is also present plus sagging base sherds, probably from jars, in chalk-tempered ware. The date range represented by the assemblage is similar to that of the main site, falling between the later 11th and 13th centuries, with the period c 1170-1300 best represented.

Junction 8 Compound

This site produced only two sherds of medieval pottery weighing 24g and with a total of 0.07 EVEs.

These came from two contexts (5515 and 5521). Both sherds, which are worn, are in chalk-tempered ware (Fabric 2) and date to c 1050-1150 or possibly slightly later. The sherd in context 5515 is from the rim of a large jar/cooking pot with a thickened flat-topped rim with internal bevel (diameter 300mm., not illus.). The other sherd is a body sherd.

Catalogue of Illustrated vessels (Figs 7.14-16)

- 1 Jar profile showing handmade body and wheel-turned rim. Fabric 1A. Dia: 340mm. Ctx 6823
- 2 Small jar profile showing handmade body and wheel-turned rim. Fabric 1A. Dia: 140-150mm. Ctx 6699
- 3 Jar, half profile. Thickened flat-topped rim. Fabric 1A. Dia: 220mm. Ctx 6823
- 4 Jar with sub-squared rim and horizontal combed decoration on shoulder. Fabric 1A. Dia: 230mm. Ctx 6537
- 5 Jar rim with traces lightly thumbled decoration on external rim and incised wavy line on neck externally. Fabric 1A. Ctx 6202
- 6 Jar rim with ridge on interior and incised wavy line on top of rim. Fabric 1A. Dia: 220mm. Ctx 6581
- 7 Jar with plain everted rim and bold external rilling. Fabric 1A. Dia: 210mm. Ctx 6503
- 8 Jar with plain everted rim. Fabric 1A. Dia: 180mm. Ctx 6951
- 9 Jar with plain everted rim and angle on shoulder. Fabric 1A. Dia: 210mm. Ctx 6591
- 10 Jar with squared rim. Fabric 1A. Dia: 240mm. Ctx 6111
- 11 Jar with early-style clubbed rim. Fabric 1A. Dia: 220mm. Ctx 7174
- 12 Jar with heavy-clubbed rim. Fabric 1A. Ctx 6207
- 13 Jar with thickened upright internal bevelled rim. Fabric 1A. Ctx 6111
- 14 Tripod ?pipkin or cauldron base with evidence of two inserted rod-like feet. Sooted in places. Fabric 1A. Dia: c 150mm. Ctx 6451
- 15 ?Storage jar base with applied angle strip and combed dec. Fabric 1A. Dia: c 380-400mm. Ctx 6947
- 16 Bowl/jar rim with horizontal- and vertical-applied thumbled strip decoration on neck. Fabric 1A. Dia: 480mm. Ctx 6432
- 17 Bowl/jar rim (damaged) with horizontal combed decoration on neck int. Fabric 1A. Ctx 6055
- 18 Jug handle. Lower junction with thumbled impressions. Fabric 1A. Ctx 6631
- 19 Jug with simple rim. Stub of rod handle with traces of stabbing on top. Fabric 1A. Dia: 160mm. Ctx 5630
- 20 Odd basal sherd with incised decoration under-

Table 7.25: Medieval pottery totals from the Junction 8 targeted watching brief site

Fabric	Name	Date	Sherds	Weight	EVEs
1A	South Herts Greyware	c 1170-1350	59	220	0.12
2	Chalk-tempered ware	c 1050-1150	4	54	0
3	Flint-tempered ware	c 1050-1250?	3	18	0.04
UNID	Unidentified wares	c 1000-1500?	1	4	0
TOTAL			67	296	0.16

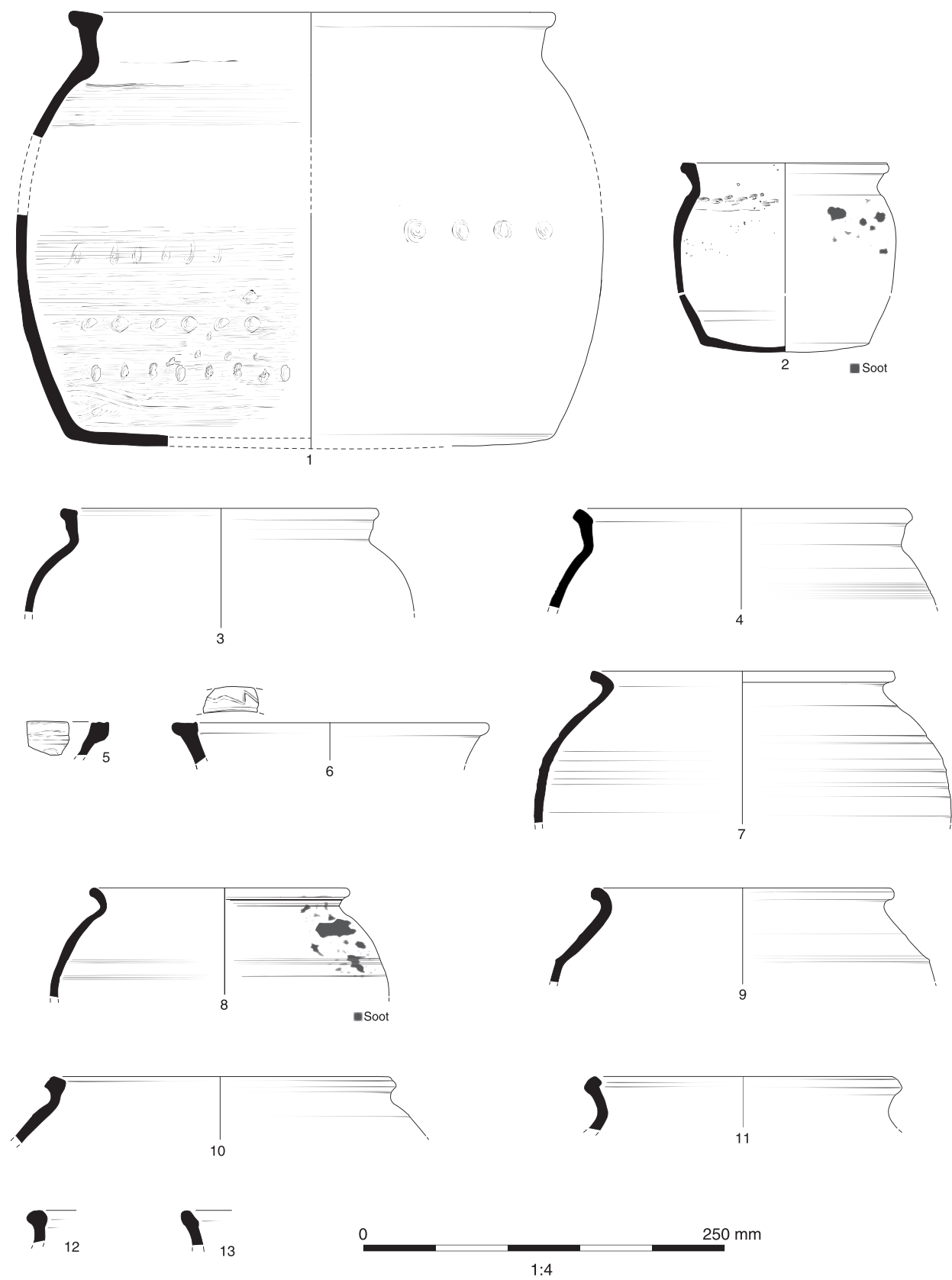


Fig. 7.14 Medieval pottery

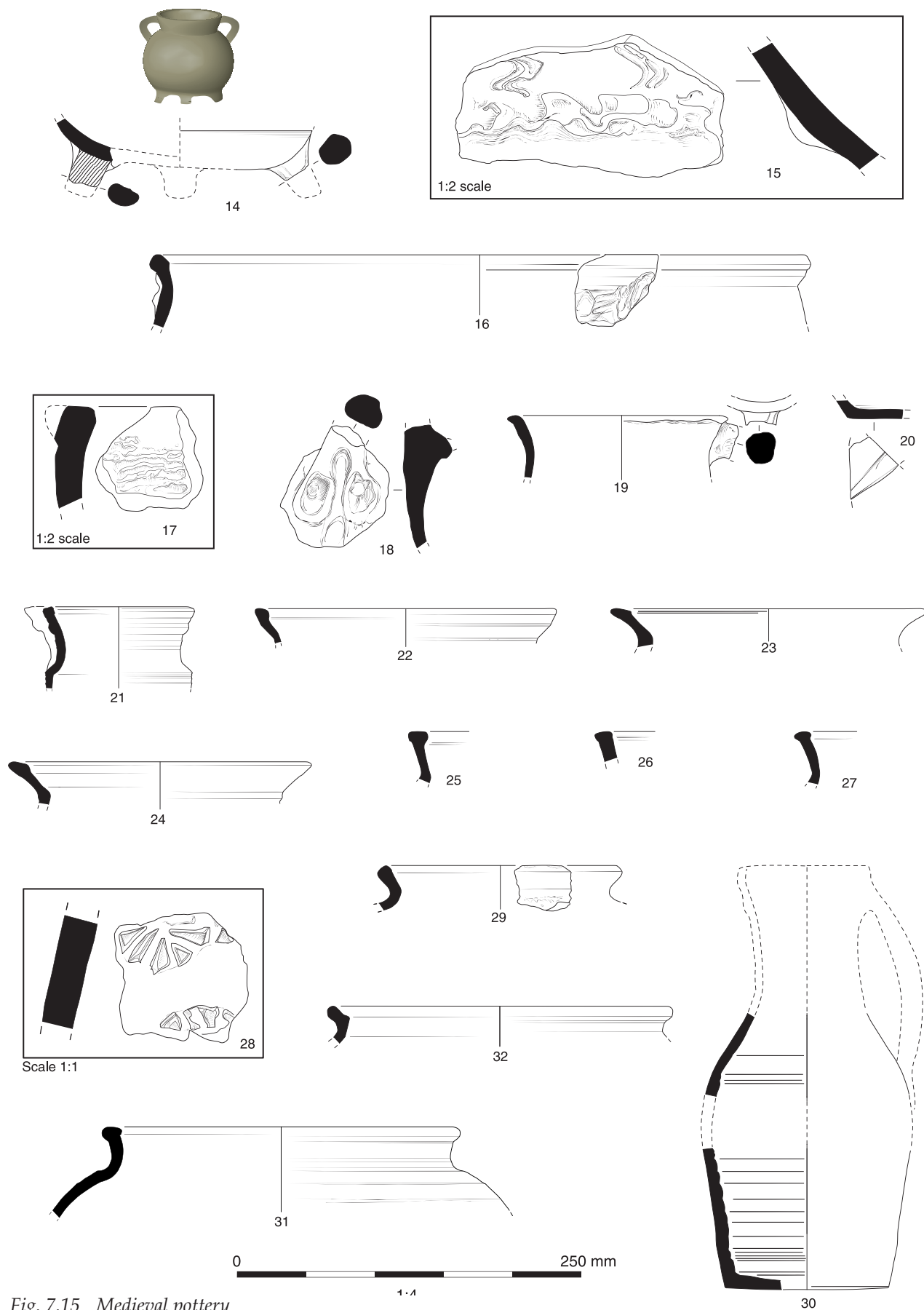


Fig. 7.15 Medieval pottery

- | | | | |
|----|---|----|---|
| | side. ?Jar or curfew? Fabric 1A. Dia: c 250mm. Ctx 6451 | 28 | Body sherd with sunburst stamps. Fabric 3. Ctx 6631 |
| 21 | Jug with collared rim, pouring lip and specks of glaze. Fabric 1G. Dia: 110mm. Ctx 6698 | 29 | Everted jar rim with light thumbing on apex. Fabric 4. Dia: 180mm. Ctx 6206 |
| 22 | Jar with internal cupped rim. Fabric 2. Dia: 220mm. Ctx 6202 | 30 | Jug. Base and shoulders. Mottled green glaze. Fabric 6. Base dia: 120mm. Ctx 6407 (Key Group) |
| 23 | Jar with internal everted flat-topped rim. Fabric 2. Dia: 230mm. Ctx 6202 | 31 | Jar rim. Fabric 1B. Dia: 260mm. Ctx 6407 (Key Group) |
| 24 | Jar with flat-topped lid-seated rim. Fabric 2. Dia: 220mm. Ctx 6662 | 32 | Jar rim. Fabric 3. Dia: 250mm. Ctx 6407 (Key Group) |
| 25 | Jar with squared rim. Fabric 2. Dia: 240mm. Ctx 6497 | 33 | Jug rim. Fabric 1A. Dia: 120mm. Ctx 6407 (Key Group) |
| 26 | Jar with plain flat-topped rim. Fabric 3. Ctx 6202 | 34 | Jar rim with combed wavy-band decoration on internal neck and incised wavy-line decoration on top of rim. Fabric 1A. Ctx 6407 (Key Group) |
| 27 | Jar with thickened flat-topped rim. Fabric 3. Dia: 160mm. Ctx 6207 | | |

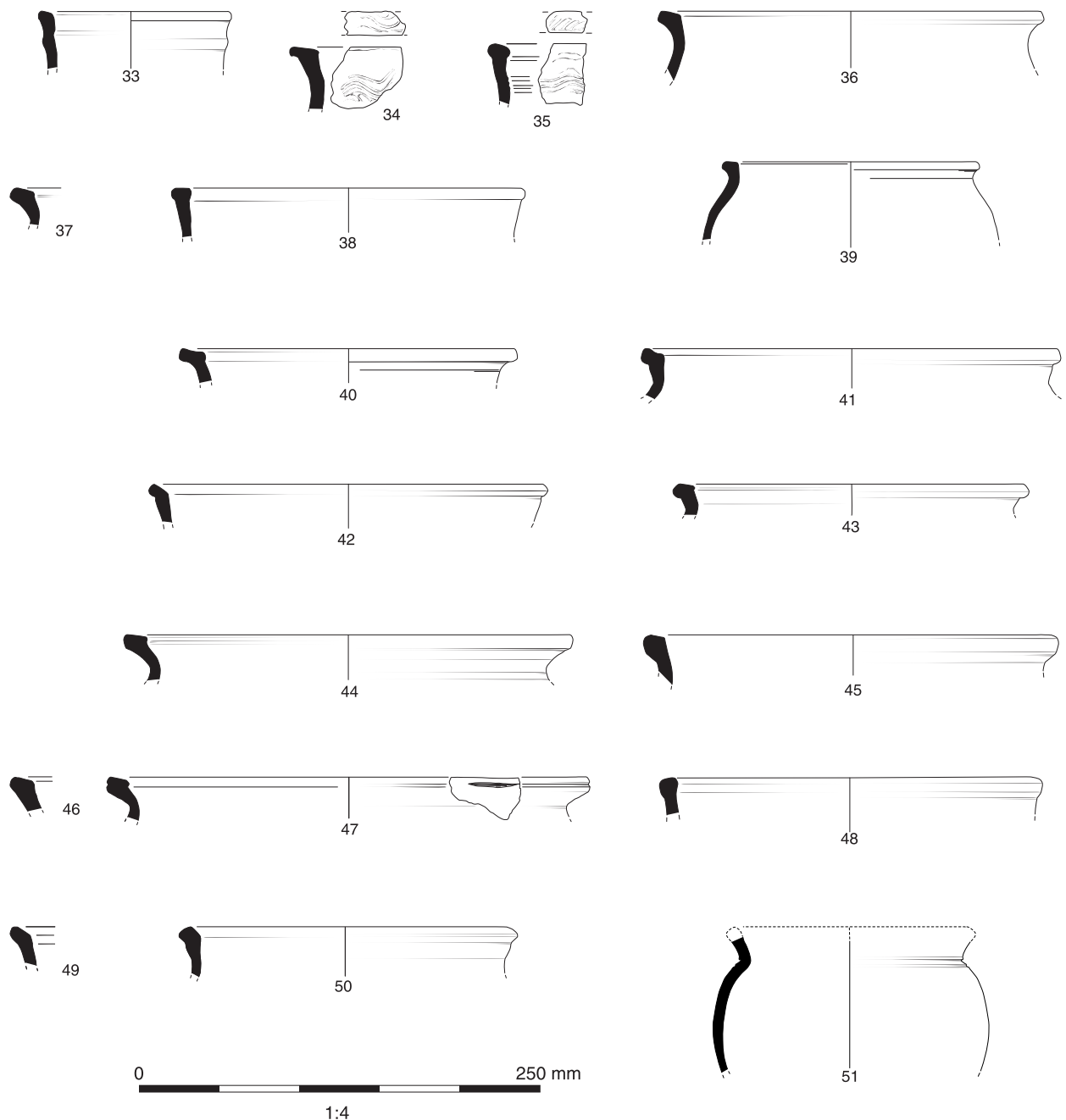


Fig. 7.16 Medieval pottery

- 35 Jar rim with combed wavy-band decoration on internal neck and possible combed decoration on top of rim. Fabric 1A. Ctx 6407 (Key Group)
- 36 Jar rim. Squared. Fabric 1A. Dia: 230mm. Ctx 6407 (Key Group)
- 37 Jar rim. Squared. Fabric 1A. Dia: 240mm. Ctx 6407 (Key Group)
- 38 Jar with thickened flat-topped rim. Fabric 1A. Dia: 220mm. Ctx 6407 (Key Group)
- 39 Jar rim. Sub-squared. Fabric 1A. Dia: 160mm. Ctx 6407 (Key Group)
- 40 Jar rim. Squared. Fabric 1A. Dia: 210mm. Ctx 6407 (Key Group)
- 41 Jar rim. Sub-squared. Fabric 1A. Dia: 260mm. Ctx 6407 (Key Group)
- 42 Jar with thickened flat-topped rim. Fabric 1A. Dia: 250mm. Ctx 6407 (Key Group)
- 43 Jar rim. Squared. Fabric 1A. Dia: 230mm. Ctx 6407 (Key Group)
- 44 Jar rim. Sub-squared with internal groove. Fabric 1A. Dia: 280mm. Ctx 6407 (Key Group)
- 45 Jar rim. Sub-squared. Fabric 1A. Dia: 260mm. Ctx 6407 (Key Group)
- 46 Jar with thickened flat-topped / internal-bevelled rim. Fabric 1A. Ctx 6407 (Key Group)
- 47 Jar rim with traces of lightly thumbbed or grooved decoration on external rim. Fabric 1A. Dia: 300mm. Ctx 6407 (Key Group)
- 48 Jar rim with thickened clubbed form. Fabric 1A. Dia: 240mm. Ctx 6407 (Key Group)
- 49 Jar with squared, steeply angled rim. Fabric 1A. Ctx 6407 (Key Group)
- 50 Jar rim. Sub-squared with bulge below. Fabric 1A. Dia: 210mm. Ctx 6407 (Key Group)
- 51 Jar body. Small, c 170mm maximum girth. Groove at neck/shoulder junction. Fabric 1A. Ctx 6407 (Key Group)

Analysis of a glazed ceramic sherd by Rebecca Bridgman

Introduction

A ceramic sherd, with a hard grey fabric whose surface incorporated remnants of green glaze on a fine white slip, was subject to petrological analysis in order to establish production source (Fig. 7.17). A possible source in the central-Islamic lands was hypothesised and it was suggested that this sherd may be categorised as a stonepaste fabric. The aim of petrological analysis was to test this hypothesis.

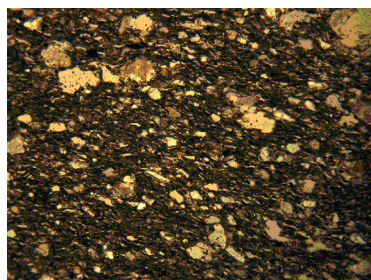


Fig. 7.17 Photomicrograph taken in plane polarised light, area 1023x768µm

The sherd is from a pit context (6407) associated with local wares dated c 1170-1250.

Methodology

Standard procedures were used to prepare a sample c 0.03mm thick, suitable for analysis using a petrological microscope (Peacock 1970, 379), based on the identification, arrangement, frequency, size, shape and composition of component inclusions (Whitbread 1995, 368). For the analysis of this sample, reference was made to the largest-scale testing of Islamic pottery carried out by Mason (2004).

Results

The sample tested is characterised by common quantities (20%) of poorly sorted, sub-angular quartz inclusions measuring no greater than 0.5mm in size, most frequently cracked but clear in appearance. Very few other inclusions, with a particular absence of diagnostic rock or mineral fragments, were observed making the source of production difficult to identify. As the sample contains only common quantities of quartz, it does not fall into the category of stonepaste or even proto-stonepaste fabrics that were commonly produced in central-Islamic lands from the early 11th century (*ibid.*, 170-1). Stonepaste and proto-stonepaste fabrics are characterised by abundant (50-60%) inclusions of quartz, in some cases combined with glass fragments (*ibid.*). Furthermore, the inclusions observed here are not similar to those identified by Mason (*ibid.*) in his analyses of other fabric types from Iraq, Syria, or Iran. The closest fabric that could be compared to those tested is Mason's 'Ca-Nile 1' from Fustat, which lacks the carbonate inclusions associated with other Nile fabrics, but which does contain plagioclase feldspar (*ibid.*, 77). Given the lack of plagioclase feldspar in the Hertfordshire sample, it seems unlikely that this could be a possible origin of this sherd. Based on current analysis, therefore, it is difficult to suggest an origin within the area defined as the central-Islamic lands as the sample tested does not match previous analysis of material from this area. Nevertheless, as the geographical area of the central-Islamic lands is very large and our understanding of ceramic production relatively poor, the possibility that the Hertfordshire sample was made in this region cannot be totally discounted.

Observed Inclusions

Quartz: present in common quantities (20%) with predominantly sub-angular grains which are poorly sorted (measuring up to 0.5mm). Includes rare (1%) polycrystalline grains and examples with significant cracking.

Orthoclase feldspar: present in rare quantities (1-2%) sub-rounded inclusions.

Limestone: present in rare quantities (1%) with sub-rounded inclusions.

Iron-rich pellets: sparse (3-5%) sub-rounded.

THE CERAMIC BUILDING MATERIAL AND FIRED CLAY *by Cynthia Poole*

Introduction and methodology

Ceramic building material (CBM) and fired clay, predominantly of late Iron Age and Roman date were recovered from the mitigation phase of excavations, at Junction 8, Junction 9, Area M and Area P. A smaller quantity of medieval/post-medieval tile was also found, mainly from the Junction 9 area. The material from the evaluation phase of the project has been incorporated with the data from the mitigation assemblage and included in the current report.

The assemblages from the mitigation excavations amounted to a total of 2886 fragments, weighing nearly 212kg, of CBM and 2543 fragments of fired clay, weighing 6783g. The material from the evaluations adds about a further 200 fragments of tile weighing c 13kg, but less than fifty fragments of fired clay weighing under a kilogramme. No complete tiles were recovered and thickness was the only complete dimension for the majority of pieces, though in a small number of cases length or breadth dimensions also survived. The overall mean fragment weight (MFW) of 74g for the tile reflects the relatively small size of individual pieces, though a single fragment could range from 1g to over 2kg. Nearly half the assemblage was moderately or heavily abraded. No discard policy was implemented during recording, though small shattered fragments of tile were discarded, unless they were the only pieces from an individual context.

The fired clay was extremely poorly preserved, with a very low MFW of 3g, which reflects the fact that most was recovered from sieving (sieved material had a MFW of 1.5g). However, even the material recovered by hand only had an MFW of 12g, a mean size which produces few recognisable or diagnostic fragments. Individual fragments ranged from 1g up to 140g. It was also frequently difficult to distinguish the fired clay from ceramic building material. The sieved samples were rapidly scanned and only fragments greater than 5g recorded in any detail. Much of the sieved material was discarded, retaining only shaped fragments or up to six representative fragments, where no shaped pieces survived. The tile and fired clay assemblages have been fully recorded and the data entered on an MS Excel spreadsheet.

The fabrics

Fabrics were defined on macroscopic characteristics as well as with the aid of a x10 hand lens and

additionally with a binocular microscope at x25 magnification. Eight Roman and five medieval/post-medieval tile fabrics were identified. Nearly all the Roman tile was orange or orange-red in colour and a number of fragments were classified as intermediate types between fabrics.

The Roman fabrics

Fabric A: pale pink, orange pink or salmon pink clay matrix with cream-buff surface containing a moderate density of medium-coarse rose, white- or clear-quartz sand and sometimes a scatter of angular and rounded coarse stone sand and grit 0.5-3mm, plus rare scattered large grits up to 10mm of quartzite and burnt flint. The coarse sand and grit content may have derived from similar moulding sand frequently associated. This was very similar in character to Eccles ware, though whether this was indeed being brought from the Eccles kilns or was produced more locally from a similar geological clay source has not been established.

Fabric B: red-orange or maroon-red fine sandy-clay matrix containing a high density of medium quartz sand and rounded maroon iron-oxide grits or iron-rich silty clay pellets 1-8mm.

Fabric C: orange or brown-orange; fine silty-clay matrix containing a low-moderate density of medium-coarse quartz sand; occasional large clay pellets 1-10mm and rare organic impressions sometimes present.

Fabric D: light orange-brown surface; orange core; very fine sandy-silty clay fabric containing no or few inclusions apart from fine sand and very occasional coarse quartz sand (derived from moulding sand) and occasional diffuse buff clay pellets.

Fabric E: orange, red or brown in colour. The clay matrix usually contained moderate-frequent quantities of fine-medium quartz sand, and was laminated with pale orange or cream streaks enlarging into rounded globules of cream clay. Laminations varied from prominent to more diffuse and some pieces contained detached cream or ferruginous maroon-red rounded silty-clay pellets 1-7mm. The cream pellets were occasionally up to 20mm in size.

Fabric F: light brown, buff, pink and cream fine smooth clay, occasionally laminated, with few visible inclusions, but highly porous, which appeared to result from shell inclusions having been leached out in most examples. In a few some evidence of shell grit survived.

Fabric G: orange or reddish brown with cream streaks laminated clay contained a high density of

white, usually coarse, quartz and other rock sand and common coarse angular flint grit up to 20mm and occasionally chalk of the same size.

Fabric H: orange-brown, diffusely laminated hard and dense sandy-clay matrix containing a high density of fine-coarse quartz sand, the coarse quartz mostly white and rose, plus rounded red-maroon iron-oxide grits up to 3mm size and rounded grits of chalk or crypto-crystalline limestone 1-8mm.

The fired-clay fabrics

The same or very similar fabrics to the finer sandy tile group were used for much of the fired clay, which has resulted in difficulty in separating less diagnostic fragments of fired clay or tile. Fired clay normally derives from local clay sources and this similarity supports the hypothesis of a fairly local source for the tile. Some of the fired clay was assigned to fabrics distinct from the tile. These included FC:A, which consisted of a clay mixed with poorly sorted sand and small grit and on occasions containing additional organic temper (FC:A2). Another variety was FC:A3, a fine sandy-silty micaceous-clay matrix containing a low density of scattered angular flint grit 1-8mm. Occasionally chalk grit was present (FC:C).

The medieval/post-medieval fabrics

Five exclusively post-Roman fabrics were identified, as well as a brick fabric very close in character to Fabric E, recorded as MedE in the data record.

Med1: orange-red clay matrix, which contained a high density of well-sorted coarse white-/clear-quartz sand (sub-angular-sub-rounded) 0.5-1mm, rare rounded haematite 0.5-1mm and scattered angular grits of quartz or quartzite up to 4mm.

Med2: an orange or reddish orange sandy laminated clay sometimes with cream streaks containing fine quartz sand and sub-angular-sub-rounded cream and red-clay pellets 1-5mm. This is similar to Roman fabric E, but somewhat finer.

Med3: red, brownish red very uniform fine sandy clay containing frequent fine quartz sand <1mm and rare grains of quartz and haematite 1-2mm.

Med4: red to reddish brown fine sandy clay containing poorly sorted sand comprising frequent fine-medium sand, mostly quartz but occasional dark grains, coarse angular flint grits 1-2mm and dark rounded overfired grog or slaggy inclusions c 2mm.

Med5: Red to brownish red, fine sandy clay containing common coarse sand grits of quartz and flint 1-2mm.

Moulding sand

A range of the more distinctive moulding sands were noted on 186 records. The fairly standard clear/rose medium quartz sand was not normally recorded. Seven broad groups were established from the recording notes and were distinguished by the sand grade, type and the dominant colour. White-quartz sand was the most common, sometimes combined with clear or rose quartz, or a black rock sand and creating a speckled appearance in the finer varieties (MS2). The most common varieties were coarse white-quartz sand (MS5.1) or this combined with angular white-/grey-flint grits up to c 6mm (MS6). These were used predominantly in the Roman period, whilst in medieval/post-medieval periods only MS6 and to a lesser extent MS5.1 were at all common. None were exclusive to a particular fabric category, though some showed some slight correlation, for example MS1 and MS2 was more common on fabric D. More noticeable is the absence of these moulding sands on Fabric A.

Discussion of the fabrics

The Roman fabrics can be allocated to three broad fabric groups. The smallest is a shelly group containing only fabric F. This was used for a few fragments found only on sites Junction 9 and Junction 8N, and may represent a minor input from production sites on the Oxford Clay to the north-west in Bedfordshire or Northamptonshire.

A second small, but significant group, is a coarse sandy group containing flint or chalk grit. This comprises fabrics A, G and H. Fabric A is distinctive with a strong similarity to Eccles ware; it is likely to derive from a single production site though it has not been confirmed that this derives from the Eccles (Kent) kilns. It was found almost exclusively at Junction 9, apart from a single fragment each at Junction 8N and Area M. Nearly three-quarters was found in early Roman phase deposits, which would be compatible with the known period of production of Eccles fabric. The absence of the white-quartz moulding sands on Fabric A also suggests a quite separate source to the other fabrics. Fabrics G and H were similar and may represent closely related clay sources. Fabric G was most common, whilst only a few pieces of H were identified. These were found at Junction 8N with lesser quantities at Junction 9 and a few fragments recovered during the evaluation. They were present throughout the Roman period, but occurred most frequently during the middle Roman phase.

The largest group, which formed over three-quarters of the assemblage, comprising Fabrics B, C, D and E, was characterised by a finer sandy fabric, often laminated with ferruginous and silty-clay pellets. These fabrics form a continuum with overlapping characteristics and are likely to represent a single geological clay source, the variations resulting from spatial differences in the clay exploited or variables in the preparation of the clay.

All occurred in moderate quantities in the early Roman phase, but are most frequent during the middle Roman phase, decreasing considerably in the late Roman phase. These fabrics formed the dominant group on all the main sites occurring in similar proportions except at Junction 8S where fabrics D and E dominated the assemblage. The white-quartz and gritty moulding sands were found on all the fabrics of this group suggesting a further connection between these fabrics.

The similarity of the main fabric group to the fired-clay fabrics suggests that the majority of the clay fabrics represent relatively local or regional production. Kilns are known at Verulamium and the surrounding area (Swan 1984, 97-8). The most likely source is the Radlett-Brockley Hill pottery and tile industry (Castle 1976) which exploited the Tertiary clays to the south of St Albans and was situated close to Watling Street.

The post-Roman fabrics are broadly similar in character to the earlier fabrics suggesting they too were manufactured in the region around St Albans. The fabrics used for roof tile were sufficiently different to have their own designations. Fabric Med1 was predominantly used for medieval roof tile, whilst fabrics Med2 and Med3 were mainly used for post-medieval tile, apparently replacing Med1. The few fragments of Med4 all appear to be

medieval in character, whilst Med5 had the appearance of post-medieval tile.

Forms and function

The Roman tile

Examples of all major Roman tile types were found, including *tegula*, *imbrex*, flue tile, brick, *tesserae* and more unusually some examples of segmental brick, *tegula mammata* and half box-flue tile. Only the larger sites, described in more detail below, produced a wide range of forms, whilst the smaller excavations and watching briefs produced almost exclusively brick and plain flat tile, with only a few occurrences of flue tile and *tegulae*. Quantification of all the major brick and tile types from the main sites is given in Table 7.26.

Brick and flat tile

Brick formed over two-thirds of the Roman tile assemblage, amounting to over 1200 fragments weighing nearly 150kg. It was made in all fabrics except Fabric F. No complete dimensions survived except thickness which ranged from 25mm to over 70mm (Table 7.27), with the majority measuring 35-45mm in thickness. Most pieces had a smooth flat upper surface and a more irregular rough lower

Table 7.26: Quantification by count/weight (g) of CBM forms by site

Class	Site								
	Junction 8S	Junction 8N	The Aubreys	Area M	Area P	Junction 9	Junction 10	Other	Total
<i>Roman</i>									
Brick	18/2185	1062/125385			2/227	117/20555	2/129	4/87	1205/148568
Brick: segmental		2/2935				78/1396			80/4331
Tegula mammata	5/4130	14/5535				1/49			20/9714
Flat tile	36/1074	347/14294	7/259	6/491	20/1044	290/9324		9/684	715/27170
Flue	2/217	21/826		1/120		12/1342		1/62	37/2567
Tegula	2/92	92/11758		2/453		62/7313			158/19616
Imbrex		31/2223		1/15		31/2111			63/4349
Tessera		3/60				12/252			15/312
Indeterminate	90/328	422/2524	11/51	4/20	8/35	114/801		8/38	657/3797
<i>Total Roman</i>	153/8026	1994/165540	18/310	14/1099	307/1306	717/43143	2/129	22/871	2950/220424
<i>Post-Roman</i>									
Brick: Medieval / post-medieval	2/1571	1/30	1/28					3/226	7/1855
Brick: perforated								1/54	1/54
Floor						1/87			1/87
Roof: flat	14/684	11/399	1/12			36/673	9/479	18/338	89/2585
Roof: peg	2/208			2/17		6/105	4/55	4/192	18/577
Roof: ridge/pantile		1/26							1/26
Wall tile		1/51							1/51
<i>Total post-Roman</i>	18/2463	14/506	2/40	2/17		43/865	13/534	26/810	118/5235
<i>Total</i>	171/10489	2008/166046	20/350	16/1116	30 / /1306	760/44008	15/663	48/1681	3068/225659

Table 7.27: Comparison of *imbrex*, *tegula*, brick and flat-tile thickness showing the numbers of tiles within each size grade

Thickness	<i>Imbrex</i>	<i>Tegula</i>	Flat	Brick
11-15 mm	14	4	10	0
16-20 mm	11	28	38	0
21-25 mm	5	29	36	4
26-30 mm	0	11	36	14
31-35 mm	0	1	31	84
36-40 mm	0	0	7	144
40-45 mm	0	0	0	220
46-50 mm	0	0	0	29
51-60 mm	0	0	0	2
61- >70 mm	0	0	0	2

surface; knife trimming of edges or arrises was rare. One brick, which thinned to the edges, may have been a 'Belgic brick' though it was too fragmented to be certain of this. Much of the brick had been burnt on one or more surfaces, suggesting that its prime function was for use in hearths, ovens, corn dryers or kilns. It was found mainly at Junction 8N, Junction 8S and Junction 9, with a few fragments at Junction 10, Area P and V and the Junction 8 Compound. Brick was common through all Roman phases, but was equally plentiful in medieval deposits at Junction 8N.

The flat tile fragments were without diagnostic characteristic and could derive from a variety of tile types. A comparison of the range of thickness (Table 7.27) with brick, *imbrex* and *tegula* suggests that the flat tile includes both *imbrex* and *tegula*, but the large number of tiles over 25mm in thickness suggest that a high proportion represents thin bricks.

Segmental brick

Five examples of segmental brick amounting to 80 fragments, weighing 4331g, were found on sites Junction 8N and Junction 9. None were complete, but all appeared to be parts of semi-circular bricks. About a third survived of the most complete which had an estimated diameter of 500mm and measured 50-6mm thick. Others measured between 43mm and 45mm, or more thick, by 260-300mm in diameter. These fall within the range of sizes recorded by Brodribb (1987, 55). Surfaces were smooth, apart from the bases which tended to be rougher, but knife trimmed. They were made in fabrics C, D, E and G. Two occurred in early and middle Roman contexts, but the remainder were found residually in post-Roman contexts.

Circular and semi-circular bricks may be used as pillars or pilasters with a plaster cover, though Brodribb (ibid.) notes this does not appear to be the case in Roman Britain, where a more prosaic function as hypocaust *pilae* was the norm. Examples of *pilae* were found at Gadebridge villa in Room 9 (Neal, 1974, 15), but at Fishbourne (Cunliffe 1971,

44) it is postulated that the semicircular bricks were used as columns or pilasters in the early phase palace, though they were only found *in situ* where used for seating in the 'Third-Period' plunge bath in the East Wing. Circular bricks have been found used as paving for the threshold of a door in Room 1 of the villa at Northchurch (Neal 1976, pl. 3)

Tegula mammata

Five examples of *tegula mammata* were found amounting to 20 fragments weighing 9714g. They were made in fabrics B, E and G. Two sizes were perhaps represented; three measuring 36-42mm were possibly a smaller variety, whilst two measuring 40-50mm thick, 266mm wide and over 258mm long may represent a larger type. All are similar in form and accord with type A as defined by Brodribb (1987, 60-2) and have evidence of only a single *mamma* towards one corner suggesting that they fall into Brodribb's (ibid.) sub-type b or possibly sub-type c. Two examples have only the oval scar of the *mamma* surviving, whilst on two others the *mamma* was sub-circular, hemispherical and roughly moulded, measuring 40-5mm wide by c 50mm long, and 10-18mm high. They were centred c 40-50mm from one edge and 75-80mm from the other. A detached *mamma* was also identified.

Brodribb (ibid.) suggests that this type of *tegula mammata* was used for flooring, though in other areas of the Roman empire such as South Gaul a similar type was used in walling as insulation, but not for heating (Bouet 1999). Most were found on site Junction 8N and one on Junction 8S. Two were in middle Roman contexts and the remainder unphased. *Tegulae mammatae* were found at Gorhambury villa in Flavian and late 1st-century contexts (Neal *et al.* 1990, 169, fig. 147.1068)

Tegula

Tegulae accounted for the largest group (5%; 9% by weight) of diagnostic Roman tile forms (158 fragments, 19.6kg) and were found in greatest quantity on sites Junction 8N and Junction 9, together with a few examples from Areas G and M. No complete *tegulae* survived, the largest piece measuring no more than 195mm long by 140mm wide. The only complete dimension was thickness (Table 7.27) which was predominantly 20-25mm. Minimum numbers (MNI) based on numbers of corners by position (upper or lower L/R) and fabric indicates the following breakdown by site: Junction 9, MNI four tiles; Area M, MNI two tiles; and Junction 8N, MNI eight tiles.

A total of 51 tiles retained the flange and a further 13 had broken flanges or had been deflanged. The flange morphology (Fig. 7.18.1-9) comprised a standard range including rectangular profiles (types A and B), rounded (types D, D2, E, F) and a triangular form (type C). The sizes are summarised in Table 7.28. The type D and D2 flanges were frequently tapered and a small number of type E and F were also noted as tapered. Three unusually

Table 7.28: Tegula flange sizes by type








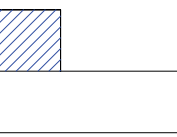
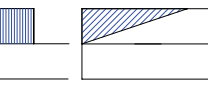
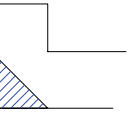
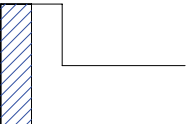
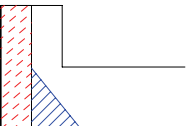
Flange type	Flange profile	Nos	Width	Height
A		11	18-34mm	40-56mm
A3		3	25-8mm and 36mm	45-58mm
C		1	26mm	48mm
D		8	15-35mm	30-57mm
D2		5	20-30mm	45-50mm
E		17	20-33mm and 40-2mm	40-56mm and 50-2mm
F		5	20-7mm	45-57mm
U		13	18-30mm plus one 50mm	~

Table 7.29: Summary of tegulae cutaway types and sizes (the C1 and A3 cutaways were all recorded on incomplete flanges and may be parts of composite A3/C1 type)

Cutaway type	Cutaway profile	Nos	Length	Width	Height/depth
A2 (Upper)		2 4 2 2 1 1	25-34 35-45 50-55 60 ~ ~	15-22 18-25 20-30 18-24 27 20	20-33 ~ 23 ~ 25 12-20
B2 (Upper)		2	>46 70	20 35	~ c.30
C1 (Lower)		3*	46	35	22
A3 (Lower)		1*	>40	~	~
A3 / C1 (Lower)		10	42 45 48 53 55* 60 ~ ~ ~ ~	~20 8/30 2-5 / 25-40 ~15 8/16 ~15 25 8/30 8/25 12/30	full/13 ~ full/11-12 full/25 full/26-30 full/30 25 ~ full/25 full/30
	*plus end of flange cut to chamfer				

thick flanges, 40-50mm wide, were identified and it is possible that some damaged fragments of this type may have been mistaken for the edges of bricks, as these were not recognised until part way through the recording. Flange types do not appear to related to any phase, most occurring in the early and middle Roman phases as well as residually in post-Roman phases. The sparse occurrence in the late Roman phase merely reflects the small quantity of *tegulae* generally present in this phase.

Both upper and lower cutaways were present. Sizes of both are summarised in Table 7.29. Thirteen upper cutaways were identified, all of the conventional rectangular form (type A2) (Fig. 7.18.6 and 7.18.9) except two which were angled (type B2) (Fig. 7.18.8). One of the latter was possibly made by the tile mould, rather than being cut. Four of the type A2 cutaways were cut to shape, but five appear to have been created by the tile mould (as indicated by remnants of sanding on their surface) and subsequently knife trimmed.

The lower cutaways were all of type A3/C1 (Fig. 7.18.2-3), where completely preserved. The examples with only a C1 or A3 cutaway recorded were incomplete and may have been part of the composite type. This consists of a rectangular recess (A3) formed by the mould in the outer side of the flange, combined with an additional knife-cut wedge (C1) removed from the base angle. This equates to the group C cutaways of Warry (2006), which he suggests is one of the later types dating to AD 160-260. This is consistent with phasing for the examples from the M1 sites which have been found mainly in middle and late Roman deposits except for one in an early Roman ditch (2047), though this example may indicate later silting in the top of the ditch.

The presence of sanding on some upper cutaways and the triangular flange form may indicate that some of the tiles were made in an inverted mould such as the type F, as described by Warry (*ibid.*, 8-34), whilst others with knife trimming along the lower edges would have been manufactured in the type D mould. Warry (*ibid.*) indicates that these inverted moulds were in use during the late 3rd and 4th centuries and are normally associated with his group D cutaways, none of which were present on the M1 sites.

Imbrex

This occurred in relatively small quantities, amounting to 63 fragments (4349g) and accounting for only 2% of the Roman tile. The tiles ranged from 8-23mm thick and in three instances the full height survived, measuring 70mm, 88mm and 110mm. All examples had a smooth outer surface, occasionally with fine longitudinal striations and one with longitudinal ribbing. Both curved and angular profiles were present. They were made in fabrics A, B, C, D and G. *Imbrices* were equally divided between sites Junction 8N and Junction 9, together with a single small fragment from Area M. They were present

through all phases of Roman occupation and occurred only rarely in post-Roman deposits.

Flue and wall tile

A variety of types associated with walling or cavity walling were identified, totalling 37 fragments (2567g). Box-flue tiles (*tubuli*) dominated the assemblage, but a half box or *tegula hamata* and two wall tiles were also identified.

The two small fragments of wall tile, 28mm and 45mm thick, were identified from the presence of lattice-scored keying on their back. One (2153) had a single cut line surviving (Fig. 7.18.17) and the other (6816) two thick scored lines converging (Fig. 7.18.18). Tiles with scored keying have been found at Gorhambury (Neal *et al.* 1990, 169) and reused in a drain at Boxmoor (Neal 1976, 85-6, 91, fig. LIII). This type of keyed brick was often used as wall jacketing in association with spacers to create cavity walling.

The single half box-flue tile or *tegula hamata* (Fig. 7.18.23) was found at Junction 9. It had been deflanged in antiquity (presumably to enable reuse in general building) leaving a flange scar 180mm long and 36mm wide from the corner. The central-vent area where the flange had been cut away during manufacture survived as a slightly raised lip at the edge of the tile. A finger groove ran along the edge of the flange in the same manner as found on roofing *tegulae*. The surviving tile fragment was 28-35mm thick, >140mm wide and >235mm long. No keying was visible on the back of the tile. This type of tile was manufactured during the 1st century AD (Black 1996) and has been found at Colchester (Black 1992) and Canterbury (Black 1995), where they were found in association with distinctive thin-walled box tiles. The latter type of tile was found in the baths in Insula XIX at Verulamium (Niblett and Thompson 2005, 85), but none have been found on the M1 sites, perhaps because they may have been more prone to breakage and not so easily reused.

Tubulus or box-flue tile was the most common variety. All pieces were very fragmentary and ranged in thickness from 11-25mm, no other dimensions surviving. All were identified by the presence of combed keying. The keying was all of standard common combing patterns, generally of straight vertical or diagonal bands (Fig. 7.18.19-22). Four examples of a straight vertical band parallel to the tile angle (type 1; Fig. 7.18.22) were identified, all from Junction 8N. Five examples of two diagonal bands forming a cross (type 4; Fig. 7.18.19-20) were found at Junction 8N, Junction 9, Area M and the Junction 8 Compound. One example of a less common pattern of curving bands possibly forming crossing semicircles (type 11) was found in evaluation trench 1126 (Junction 8N). A single example of a diamond with a vertical band forming a margin at each side (type 12a; Fig. 7.18.21) was also found at Junction 8N, though the proposed diamond pattern could in fact be more akin to the series of crosses

found on a flue tile at Gadebridge Park (Neal 1974, fig. 87.718). In most cases, the full width of the combed band did not survive, though the ratio of teeth to width indicates that most were of medium coarseness. Only three were complete; one measured 50mm wide and had 12 teeth, producing a fine combing pattern, whilst the other two were 52mm and 55mm wide both with six teeth. These both produced a very coarse combing emphasised by the wide teeth of 4-9mm spaced at 5-8mm, as compared to a more normal tooth size and spacing of 2-3mm.

Flue tiles with similar patterns of vertical bands of combing, crosses and curved or crossing semi-circles have been found at Northchurch and Boxmoor (Neal 1976, fig. XV, 73-82, fig. L, 112, 117-8) and at Gadebridge Park, (Neal 1974, 195-7, fig. 86, 715, 717, fig. 87, 718).

Markings

Keying has been described in relation to the flue tiles and other markings were sparse, consisting almost entirely of signature marks plus some possible tally marks and a single paw print of a dog or cat (Fig.7.18.24). A total of 23 signature marks were identified, all on tile from Junction 8N and Junction 9. The majority of signatures took the most common form of a simple semi-circle made with one or more fingers. The most common was a single groove (type 1.1), two of which were quite shallow examples with a height of 40-45mm and 55mm from the tile edge. Others were too fragmentary to gauge size. Five examples with two finger grooves (type 1.2; Fig.7.18.12) and two with three (type 1.3; Fig.7.18.13) were generally larger, measuring 90-120mm high and one was c 210mm wide. More unusual varieties of signature mark were each represented by a single example. These include possible examples of a looped circle (type 4), a loop (type 5), two examples of straight grooves running diagonally from the tile corner (type 12), one with two (type 12.2) and one with three finger marks (type 12.3; Fig.7.18.15) and curving zigzag (type 8; or possibly a double loop; Fig.7.18.14).

Eight examples were found on *tegulae* including types 1.1, 1.3 and 4, a single example of a type 1.3 on a *tegula mammata*, and the remaining 13 all on bricks (types 1.1, 1.2, 1.3, 5, 8 and 12). The semi-circular signatures are common on all Roman tile and appear to have been commonly used at all production sites. Types 4 and 5 are less common, though still frequently found. The other varieties of marks are much rarer. The type 12 has been found in Winchester whilst zigzags or S-shaped marks have been found in Winchester at the Cultural Centre (Poole and Shaffrey 2011) and Lankhills cemetery (Poole 2010a), and on the Isle of Wight at Combley and Newport villas (Tomlin 1987), but these have wider arcs than the example from Junction 9, which may in fact be two closely spaced tight loops. Only one tally mark was observed on a brick from Junction 8N. This was in the form of an impressed

5mm groove sloping diagonally from right to left. (Fig. 7.18.16)

The medieval and post-medieval tile

Small quantities of medieval or post-medieval tile were recovered, mainly roof tile together with a floor tile and a few brick fragments. Seven fragments of medieval and post-medieval brick were made in fabrics Med1, Med3 and MedE. One measured 50-55mm by 110mm wide and two other pieces were 54mm and 63mm thick. The two thinner bricks may have been late medieval or Tudor, but the remainder were post-medieval in date. A modern perforated brick measuring over 65mm thick was made in a cream sandy fabric (Mod10). These were found on Areas E and F, Junction 8N and 8S, and at The Aubreys.

The roof tile was almost all in flat fragments of which a small quantity could be positively identified as peg tile. They were made in five sandy fabrics in use during the medieval and post-medieval periods. Fabrics Med1, Med2 and Med3 were found in roughly equal quantities, though the coarser sandy fabrics Med1 and Med 4 were used for medieval tile and were replaced by the finer fabrics Med 2 and Med3, which dominated the post-medieval tile. No complete tiles survived and the only measurable dimension was thickness, which ranged from 9-16mm, with a single unusually thick fragment of 19mm. Only three pieces occurred in deposits of medieval phase, though the cruder or rougher examples in later deposits are identified as medieval in date. A total of 18 fragments had evidence of pegholes, all circular, ranging from 9-15mm diameter and centred from 18-43mm from the edges. A single fragment of curved tile was probably a pantile.

The fired clay

The poor preservation and very fragmentary character of the fired clay is reflected in the limited range of characteristics preserved. The majority of fragments (90%) retained only a single surface or were amorphous. A small number had two or three surfaces, and several were identified as oven plate and triangular oven brick. A single fragment with a wattle impression may be a part of an oven wall. Three small groups from Area Q, Junction 9 and Junction 8N, containing pieces with a flat or curving surface with finger marks, have been identified as oven lining. A number of pieces from Junction 9 and Junction 8N which have two surfaces, 30-40mm apart, joined by flat straight or curving rounded edges may be pieces of rectangular or circular oven plate. The most common diagnostic form was the triangular brick with perforations across the corners. The better preserved had a thickness of c 80-85mm and the perforations measured 12-16mm in diameter. Most were found at Junction 8N and one in Area Q. A few small fragments of briquetage

vessel in chaff- (one fragment) and shell-tempered (four fragments) fabrics measured between 5mm and 9mm thick. These have not been traced to a salt production area though the east coast is logically the most likely source.

The sites

Junction 8N

This site produced the largest individual assemblage of both tile and fired clay, with the greatest variety of forms, compared to the other sites on the scheme. There was a total of 2059 fragments of tile weighing 173.3kg (including material from the evaluation trenches), almost entirely Roman in character. The assemblage was dominated by brick which formed 77% by weight of the tile and it is likely that much of the plain flat tile category was also thin brick. Other identifiable forms, of which *tegula* was most common (7%) included *imbrex*, flue tile, *tesserae* and more unusually a few examples of *tegula mammata*, wall tile and curved segmental bricks.

Unsurprisingly, only a few fragments of brick and *imbrex* were found in early Roman contexts. At this time it is unlikely that a site such as this would have had the resources to obtain new tile and material for reuse would not be readily available. The majority of the material was found in the middle Roman phase distributed through ditch, pit, posthole and quarry fills. It is clear that by this phase brick and tile was more readily available, as early Roman masonry buildings were refurbished, as is evidenced by the presence of early forms such as *tegula mammata* and wall tiles. Brick and tile would have been most useful in the construction of small burnt structures such as hearths, ovens and kilns. A number of such features provided evidence of this incorporating brick or tile in their construction. These included ovens 7259 and 7335 and corn dryer 6514. The corn dryer of early-mid Roman construction contained several fragments of brick, which had probably been used in the construction of an arch over the main flue or as lining for the flue.

Small amounts of brick and tile were found in late Roman contexts, reflecting the general decrease in activity on the site during this period. Nearly all was brick, including a segmental brick, together with a single example of *tegula*. Most was found in pit 6874.

Post-Roman material included 11 small fragments (332g) of medieval roof tile and a single small fragment (30g) of brick. Fabrics Med1, Med2 and Med3 were used. The roof tile was 11-14mm thick, but no evidence of pegholes survived. The small quantity of tile is perhaps surprising as this was the only site to produce evidence of medieval occupation, but the absence of CBM at this period is not unusual for the type of settlement and indicates that the buildings were constructed of other materials,

probably timber and thatch. However, the large quantity of Roman material found in medieval contexts (562 fragments; 61.5kg), representing roughly a third of the whole assemblage, points to possible reuse at this period, particularly that associated with the oven and limekiln. The oven (6585) assigned to the earlier phase of medieval activity contained 59 fragments (9.5kg) of Roman brick and tile. The limekiln (6577) belonging to phase 2 of the medieval occupation contained a smaller quantity (62 fragments; c 6.4kg) of brick, *tegula* and flat tile. In both structures some fragments had evidence of burning or refiring.

The fired clay (2383 fragments; 5.1kg) was mostly undiagnostic consisting of amorphous fragments or pieces with a single surface. Some pieces of possible oven plate or 'Belgic brick', possible hearth floor, triangular oven brick and briquetage were identified. The triangular brick was very badly fragmented, but two perforations measuring 14-15mm diameter were identifiable and thickness was c 85mm suggesting that it lay at the larger end of the size scale for this type of object. Three small flat sherds of briquetage, 9mm thick and made in a shell-tempered fabric, were recovered from pit 6817, which is dated to the late Roman phase. It is likely that the briquetage itself dates from earlier in the Roman period.

Junction 8S

This site produced a considerably smaller quantity of tile, amounting to 114 fragments weighing 3.1kg, whilst fired clay was negligible (84 fragments; 85g). The majority of the tile was found in quarry pits, 5025 fragments of early-middle Roman date and 5057 fragments of medieval or later date based on the tile assemblage. The remaining Roman tile formed a scatter in ditches of late Roman and post-medieval date and a tree-throw hole. The only identifiable Roman tiles were a single fragment of combed flue tile and brick, which were found in the quarry pit. There are no buildings or structures within the excavated area from which the brick and tile could derive and it seems likely that the quarry pits provided a suitable dumping ground for disposing of waste material, probably from the adjacent site at Junction 8N.

The remainder, accounting for just over three-quarters of this small assemblage, was post-Roman material comprising flat roof tile, brick and small shattered indeterminate fragments. The roof tile included two fragments with pegholes, measured 12-14mm thick and was made in a variety of fabrics. Two brick fragments measured 50-55mm thick by c 105mm wide and 63mm thick. The thicker brick was probably of 19th-20th-century date, though the other brick and all the roof tile could be of late medieval or early post-medieval date. The older brick had mortar on the surface. However, all the later tile was found in unphased contexts and it appears to represent material brought in as a result

of agricultural activity, perhaps being used in early field drainage schemes.

Junction 9

This site produced a substantial assemblage of tile of Roman and medieval date consisting of 760 fragments weighing 44kg, whilst fired clay amounted to 85 fragments weighing 2kg. Roman tile dominated the assemblage (almost 98% by weight) and consisted of all the most common forms including *tegula*, *imbrex*, flue tile, *tesserae* and brick. More unusually this site also produced examples of segmental brick; although one was extremely shattered, all were probably of semi-circular form. Brick and flat tile dominated the assemblage forming over 50% (68% by weight). A small fragment of *tegula mammata* and a more substantial piece of *tegula hamata* (half-box flue) were also found and suggest that the tile was being obtained from buildings originally constructed in the 1st or early 2nd centuries. Roughly half the phased Roman tile was found in early Roman contexts with a quarter each in middle and late Roman contexts.

There were two foci of tile distribution, one in the northern area of the Roman enclosures and the second in the southern area, though scattered fragments of tile occurred in the intervening areas. The greatest quantity (56% by weight) was found in ditch fills and the remainder was scattered through a range of features including pits, postholes, layers and topsoil. The largest single deposit (85 fragments; 5.35kg; 11% by weight) occurred in the waterhole 2004, but in general the tile formed a light scatter of a few fragments in each feature. A rather greater than average quantity of tile (42 fragments; 2.8kg) occurred in the curvilinear ditches (2555, 2246 and 2204) at the southernmost end of the site, perhaps indicating more intensive activity in association with this enclosure.

The material represents a general use of brick and flat tile within the occupation areas of the enclosures, that came to be discarded in the boundary ditches and other features. It is perhaps surprising that no tile had been used in the structure of the kiln 2638/2644, as it is most likely that brick and tile was reused in the construction of hearths, ovens or kilns on this type of rural site rather than in other building work. Approximately 18% (by weight) of tile was burnt reflecting the use of tile in such structures. Only the tile in direct contact with the heat source (floors and flue lining) is likely to show evidence of burning. Tile from context 2474 was the only material found in direct association with such a structure. The tile from this furnace had all been burnt, suggesting that it formed part of the structure, either as wall lining or floor, or had been used as oven furniture, possibly as covers for flue or vent holes.

Fired clay included oven plate or possibly 'Belgic brick' fragments, oven wall structure and lining,

hearth floor and three sherds of briquetage. The briquetage is from a thin-walled vessel (5-7mm) in a shelly fabric. The fired clay appears to be concentrated more towards the northern area of enclosures and most was found in ditch fills with only small amounts in waterholes, postholes, pits and other deposits. The majority of the fired clay was found in early Roman contexts, decreasing significantly in quantity thereafter. It was associated with Roman tile, suggesting that it is of Roman date rather than originating from the preceding prehistoric phases.

A moderate quantity of medieval or early post-medieval roof tile amounting to 42 fragments (778g) and a single floor-tile fragment (87g) were also recovered, the majority from topsoil or subsoil deposits (particularly layer 600), though a few were found in ditches and a pit of Roman date, possibly from the final silting of these features. No significant medieval or later occupation, or structural remains, were encountered in the excavations and it is likely the spread of tile relates to agricultural practice, possibly early field drains, which frequently utilised roof tile in their bases.

The Aubreys

Only a small quantity of tile (20 fragments; 350g) was found in this area consisting predominantly of non-diagnostic Roman flat tile, nearly all found in ditch fills and much of it in the terminus of an early Roman ditch (42). However, the tile is moderately or heavily abraded and it is unlikely that it was incorporated in the fill at that date; rather it may have been deposited during a later period of soil accumulation in the silted ditch.

Areas B and T

Two small fragments (88g) of medieval/post-medieval roof tile were found, both made in fabric Med2, moderately to heavily abraded, and including a peg tile with a circular perforation 15mm diameter.

Areas E and F

Apart from a fragment (130g) of non-diagnostic Roman flat tile, all the material (15 fragments; 533g) from this area was of medieval/post-medieval date. It was found in ditches, pits and a quarry pit, which were dated solely on the CBM. The material consisted of fragments of post-medieval brick, possible floor tile, flat roof tile, including peg tile with circular pegholes, with 10-14mm diameters and a modern thick perforated brick with circular perforations, measuring 20mm and 26mm in diameter, possibly a ventilation brick or for a malting kiln floor. Abrasion was generally moderate. It is unlikely that the group represents anything more than post-medieval agricultural practices such as manuring, field drainage, or maintenance of farm tracks.

Area M

CBM and fired clay were recovered from enclosure and trackway ditches, concentrated mainly in the ditches defining an enclosure extending to the east outside the excavated area. The CBM totalled 16 fragments, weighing 1116g, and the fired clay nine fragments, weighing 68g.

The fired clay was non-diagnostic; one fragment had a single surface surviving and another two surfaces at right-angles. All the fragments are probably derived from oven or hearth type structures. The CBM all comprised Roman tile, except for two small fragments of peg tile. The group comprise a mixture of brick/flat tile, *tegula*, box flue and *imbrex*. The pieces have suffered only low or moderate abrasion, suggesting that they derived from a settlement situated within the enclosure. Though the dated ditches are assigned to the early Roman period, the single fragment of box-flue tile is of a type that did not become commonplace until the 2nd century. This suggests that the enclosure ditches continued to silt up beyond the 1st century, a process possibly not completed until the medieval period, if the fragments of peg tile are not intrusive.

Area P

A small quantity of Roman tile (30 fragments; 1306g) comprising brick and flat tile was found mainly in the ditches defining the trackway and the pit between them. Abrasion was variable. No indication of occupation was found in the area, though significant amounts of pottery were found in the ditches suggesting that a settlement may have been situated nearby. The amount of tile, although not great, reinforces this and may represent the remnants of metalling on the track or material used to infill potholes.

Area S (Junction 10)

No tile was found during the mitigation excavation, but a scatter was found in the evaluation trenches. Most of this was post-medieval flat roof tile (13 fragments; 534g), measuring 12-15mm thick and including a peg tile with circular peghole with a 22mm diameter. Two fragments of Roman brick were found towards the south of the area. One was possibly shaped to form a coarse *tessera* measuring 35 x 35mm.

Area V

This area produced two fragments of post-medieval roof tile and two fragments of Roman brick and tile.

Area W (Buncefield Depot)

A fragment of a Roman brick was found in hollow-way 124204, a piece of post-medieval flat roof tile

was found in the fill of feature 126406 and a few scraps of indeterminate CBM were found in ditch 126404.

Discussion

The Roman assemblage has a certain homogeneity in that it is dominated by brick and flat forms that could be used in a similar manner, and suggests deliberate selection of these forms for reuse. However, there is an element of heterogeneity in respect of occasional oddities such as the segmental bricks, the *tegulae mammatae*, the half-box flue and wall-tile fragments. The proportion of *tegula* to *imbrex* is not consistent with the ratios normally required for a roof. All in all this suggests the opportunistic selection or acquisition of any suitable tile that could be reused on the respective sites. It is probable that such material was reused in the construction of small structures such as ovens, hearths, corn dryers or kilns, which is the common pattern on minor rural agricultural settlements. Such use is attested by the extensive evidence of burning and refiring on the material from all excavation areas. It would seem that some had possibly been reused in a medieval oven/kiln at Junction 8N.

The presence of a range of unusual or less common forms suggests that the tile was obtained from a variety of sources, which could have included any of the villas in the region, either during their refurbishment or rebuilding, or possibly from redevelopment in Verulamium itself. The relationship of the settlements to a higher-status site or sites, or the mechanism whereby the low-status sites obtained such material is unclear. At Cotswold Community (Poole 2010b) outside Cirencester it has been suggested that there may have been an element of waste disposal from the urban centre and there is a slight hint of similar oddities in the M1 assemblage. However, these oddities may represent nothing more than opportunistic salvaging of waste building material and the greater variety of forms in use in the earlier phase of the Roman occupation in this part of the country, rather than any formal waste disposal arrangements for Verulamium. There is clearly deliberate selection for brick and flat tile that could most easily be used as general building material.

Unsurprisingly, there was a scatter of medieval/post-medieval tile and (less commonly) brick along the length of scheme, with occasional pieces in the evaluation trenches. These are likely to represent nothing more than material inadvertently incorporated in the ploughsoil as a result of manuring or more deliberately as part of field drainage. However, greater concentrations of medieval roof tile at Junction 9 suggest that it was used for roofing to a limited extent. It is unclear whether the slightly raised quantities at Junction 8N, Junction 8S, Junction 10 and Area E merely



Fig. 7.18 Ceramic building material and fired clay

reflect the more extensive areas excavated compared to the evaluation, or whether they indicate more intensive use. Where tile was used for roofing it is likely that the majority of it was very thoroughly removed for reuse elsewhere, when a building went out of use.

It is worth noting that a number of large groups of Roman tile were found in medieval features, in particular in the kiln (6591) at Junction 8N, as well as occurring more generally in ditch and features fills in the later medieval phase at this site. This may indicate the reuse of Roman brick in the medieval phase.

Catalogue of illustrations (Fig. 7.18)

- 1 *Tegula*. Flange A1. Ctx 2130
- 2 *Tegula*. Flange A3, cutaway A3/C1. Ctx 7784
- 3 *Tegula*. Flange B/E, cutaway A3/C1. Ctx 2474
- 4 *Tegula*. Flange C. Ctx 7316
- 5 *Tegula*. Flange D. Ctx 2038
- 6 *Tegula*. Flange D2, cutaway A2. Ctx 2247
- 7 *Tegula*. Flange E. Ctx 6606
- 8 *Tegula*. Flange F, cutaway B2. Ctx 2112
- 9 *Tegula*. Flange D/E, cutaway A2. Profile through flange indicating area of cutaway and position of knife trimming. Ctx 6168
- 10 Segmental brick. Semi-circular brick. Ctx 6499. SF 6105.
- 11 *Tegula mammata*. Showing *mamma* in corner quadrant. Ctx 7781
- 12 Signature mark. Type 1.2 on brick. Ctx 6607
- 13 Signature mark. Type 1.3 on *Tegula mammata*. Ctx 6607
- 14 Signature mark. Type 8 brick. Ctx 2048
- 15 Signature mark. Type 12a on brick. Ctx 6173
- 16 Tally mark. Diagonal impressed line on tile edge. Ctx 7084
- 17 Keyed surface. Knife-scored line on subsequently burnt surface. Ctx 2153
- 18 Keyed surface. Two knife-scored incised lines forming X. Ctx 6816
- 19 Keyed surface. Type 4? Two bands of coarse combing crossing. Ctx 2139
- 20 Keyed surface. Type 4 or 5. Two bands of medium combing crossing. Ctx 5506
- 21 Keyed surface. Type 12a? Two bands of coarse combing, one vertical and one diagonal. Ctx 6173
- 22 Keyed surface. Type 1. Corner of flue tile with combing on one face. Ctx 7472
- 23 *Tegula hamata*. Half-box flue with scar from de-flanging. Ctx 2451
- 24 Imprint. Animal paw print, probably cat paw print. Ctx 2112

WORKED STONE by Ruth Shaffrey

Summary

Amongst this assemblage are a minimum of 30 rotary querns and a number of flakes indicating quern manufacture. There are also whetstones and general processors including one saddle quern. All stone was fully recorded and details entered into a MS Access database

Table 7.30: Total fragment count and numbers of contexts producing worked stone

Type	Mid Roman	Late Roman	Medieval 2	Unphased	Total
Rotary quern	10 (6)	1	17 (9)	29 (6)	57 (22)
Saddle quern			1	1	
Whetstone	1		1		2
Other	2				2
Processor	1				1
Unworked				1	1
Grand Total	14	1	18	31	64 (29)

Junction 8N

Junction 8N produced the largest quantity of worked stone including 57 quern fragments from a total of 22 contexts and a small number of other items (Table 7.30).

Roman

The site at Junction 8N produced the largest number and most substantial examples of rotary querns. Of the 22 records, eight are groups of very small weathered lava fragments and one group comprises three small fragments of Old Red Sandstone; none of these are specifically identifiable as rotary-quern fragments, although they are made of stone known only to have been used in this way. Each group from a single context has been treated as a single record for the purposes of analysis. The remaining 13 rotary-quern fragments are larger and more clearly identifiable. Of these, six are Millstone Grit, four are Lava and three are Old Red Sandstone.

Rotary-quern fragments were recovered most commonly from medieval contexts (nine contexts) with a significant number from both mid-Roman (six contexts) and unphased contexts (six contexts). Only one fragment was recovered from a late Roman context, which reflects the general lack of activity on the site at that time. Although rotary querns are indicative of simple domestic activity, the examples found at Junction 8N are almost all small worn fragments, many heavily so, suggesting secondary deposition. Two fragments survived sufficiently for something of their style to be determined; one is a projecting hopper-style lava quern (6823) and the other is of Millstone Grit with pronounced concentric grooving (SF 6114). An almost complete Old Red Sandstone lower quern of lozenge shape was found during the evaluation (SF 101); these are almost always of 1st- or 2nd-century date (Shaffrey 200 * ADD PAGE NUMBER). A neatly broken half saddle quern is made of quartzite, almost certainly gathered from the glacial gravels. It was found in the fill of unphased pit 6632 (6631), but seems most likely to have been associated with Roman or earlier activity.

Medieval

Of the nine medieval contexts producing rotary-quern fragments, seven are groups of small weathered lava fragments recovered from foundation and ditch fills. It seems most likely that these represent residual evidence of earlier (presumably Roman) activity, rather than being directly related to activity associated with the medieval building. Two fragments of Millstone Grit comprise a more substantial fragment of an upper stone, which demonstrates wear associated with use, with a smaller lower stone (6382). These may be connected to medieval activity.

Other domestic activity is demonstrated by a single Norwegian Rag whetstone (SF 6082; Fig. 7.19.1). This has a partial perforation and is notched at the upper end. There is evidence for wear across the top, suggesting use for sharpening fine implements, as well as wear across the main body of the whetstone. It would not have been appropriate for sharpening agricultural tools and is more likely to be associated with the settlement.

Discussion

Although there is a larger than average assemblage of rotary querns from Junction 8N, they are all heavily worn. They are examples of stone types commonly found in the general area and, although largely residual, they suggest a domestic element to the Junction 8N site during the Roman period. The remainder of the worked stone assemblage at this site, including whetstones and other processors, is also typical of domestic sites. None of these finds is unusual and the majority of utilised stones would have been either locally available or are imported items commonly used in the region at the time.

Junction 9

The worked stone assemblage from Junction 9 is strikingly different to that from Junction 8N and represents a few rotary querns and processors along with unusual struck Hertfordshire Puddingstone. Only five contexts produced fragments of rotary querns, three contexts containing lava, one containing puddingstone and one containing sandstone; only the lava-quern fragments can be absolutely identified as rotary querns because they were imported specifically for this purpose. However, all the quern fragments are tiny and very highly weathered suggesting that they are residual and possibly not associated with grinding at this particular site. Other worked stone includes one pecked item of indeterminate function and two hammerstones/processors from unphased contexts, which may have been associated with the puddingstone working (see below).

The most significant component of the worked-stone assemblage from Junction 9 is a group of Hertfordshire Puddingstone fragments recovered

from a total of five contexts. Thirteen flakes of Hertfordshire Puddingstone, plus a number of chips, were recovered from ditches 2006 and 2114 (contexts 2007, 2113 and 2114) all late Iron and early Roman in date. Because the matrix of puddingstone is chemically similar to that of the flint pebbles it contains, it tends to fracture equally well across the matrix and the flints. This means that a strike to the rock can result in flaking such as that seen here. The flakes also show evidence of deliberate removal including bulbs of percussion and removal scars. None of the struck material can be refitted. In addition to the flakes, a number of small fragments of puddingstone were recovered from a further two contexts on this site (2557 and 2911); these could be fragments of broken up rotary quern, but it is not possible to be sure.

The two types of debris recovered, especially the flakes, are evidence that the stone was being worked on site. More than one petrological type of puddingstone is represented amongst the flakes and they are not from immediately adjacent contexts, suggesting that the working was more than a single isolated event. The recovery of struck flakes of puddingstone is hitherto unknown in an archaeological context and, although the flakes do not appear to have been worked into tools, some have damage to the edges, which may result from use. The most likely interpretation, especially given that the date of use fits well with the known use of puddingstone for rotary querns (Major 2004), is that querns were being manufactured at this site. Although not a single definite puddingstone rotary quern was recovered from Junction 9 (or from other M1 sites), no substantial rotary querns of any lithology were found, suggesting that the domestic emphasis of the Junction 9 site was elsewhere. A study of the distribution of puddingstone querns does not reveal a particular concentration in this area, as might be expected around a manufacture site, but the Junction 9 site is conveniently located close to Watling Street for ease of distribution. Puddingstone querns do occur on nearby sites, particularly at Verulamium (eg Frere 1972; Adamson 1999, 214), and at Gadebridge Park (Neal 1974, 193) and Gorhambury (Neal *et al.* 1990, 166).

The source of the Hertfordshire Puddingstone is hard to identify because it is a difficult material to find geologically *in situ* (Robinson 1994, 77) and there are no known substantial exposures near the site. However, small outliers of Reading Beds are located within 4km of the Junction 9 site with a possible capping of Reading Beds some 3km to the south-west at Gaddesden Row, where fragments of Hertfordshire Puddingstone were observed in an exposure (Sherlock 1922, 34). In addition, a seam of large puddingstone boulders was exposed approximately 1.5m below the surface at Folly Lane (Niblett pers comm), approximately 10km to the south-west. Fragments of puddingstone can also occur in the Quaternary clay-with-flints deposits which overlie

the Reading Beds (Hopson *et al.* 1996, 72-4) and boulders of it have been moved around by glacial action, so that they now occur in the glacial gravels, stratigraphically above the clay-with-flints (Sherlock and Pocock 1924, 33). These are seen on the surface of fields in the area, however they are not geologically *in situ* and thus impossible to proveance. Thus, the question of the source of the worked puddingstone found at Junction 9 is a complex one.

No large pieces of puddingstone were recovered from Junction 9 and it is possible that all the worked fragments exploited easily obtainable and relatively small fragments. However, the most likely reason for the working of puddingstone during the Roman period is that rotary querns were being manufactured. In this case, the stone may have been brought in from some distance, depending on availability of suitably sized pieces. In addition to the multiple sources for the puddingstone described above, the rock itself is also extremely variable. Recent work along the construction of the A10, about 30km to the east of M1 Junction 9, exposed a dozen large boulders of puddingstone interpreted as being geologically *in situ* (Lovell and Tubb 2006, 185).

They have not been studied in detail but a visual inspection confirms that they vary enormously, and it is this variability that makes a provenance difficult to establish. A possible extraction location has been exposed near Puckeridge where a group of depressions appeared to be targeting the deposits containing puddingstone (Cushion 2008, 3) and there was evidence suggesting a routeway for the extracted material to Ermine Street (Lovell and Tubb 2006, 186). However, none of the puddingstone from the Puckeridge source is sufficiently similar to that at Junction 9 to establish a link. The most that can be said at present, is that the puddingstone presumably had a relatively local source within either the Reading Beds outliers or a stratigraphically later deposit.

Catalogue of illustrated items (Fig. 7.19)

Junction 8N

- Primary whetstone.** Schist, probably Norwegian Rag. Elongate tapered whetstone, very thin at one end with a sub-square cross-section. The other end is notched and although it maybe a spokeshave

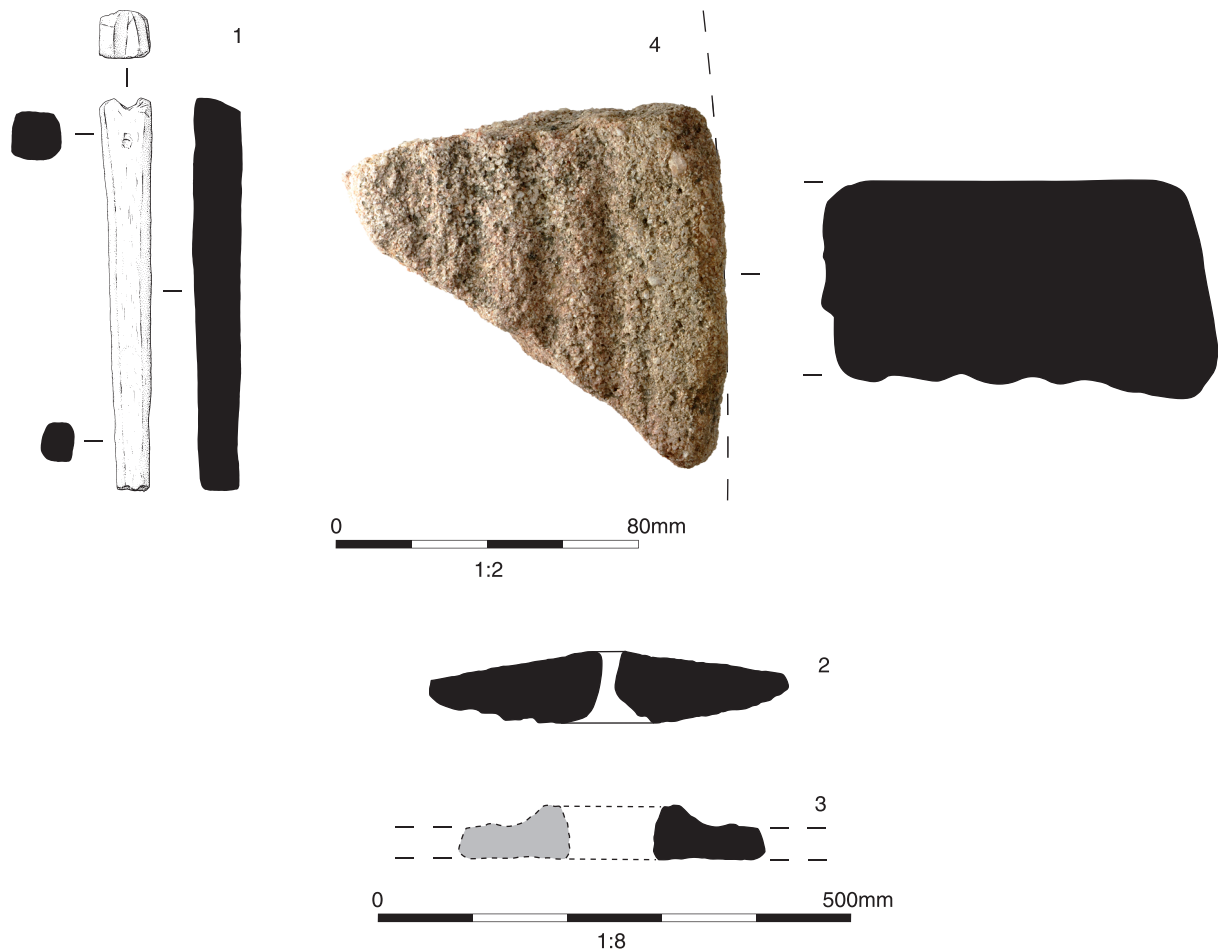


Fig. 7.19 Worked Stone

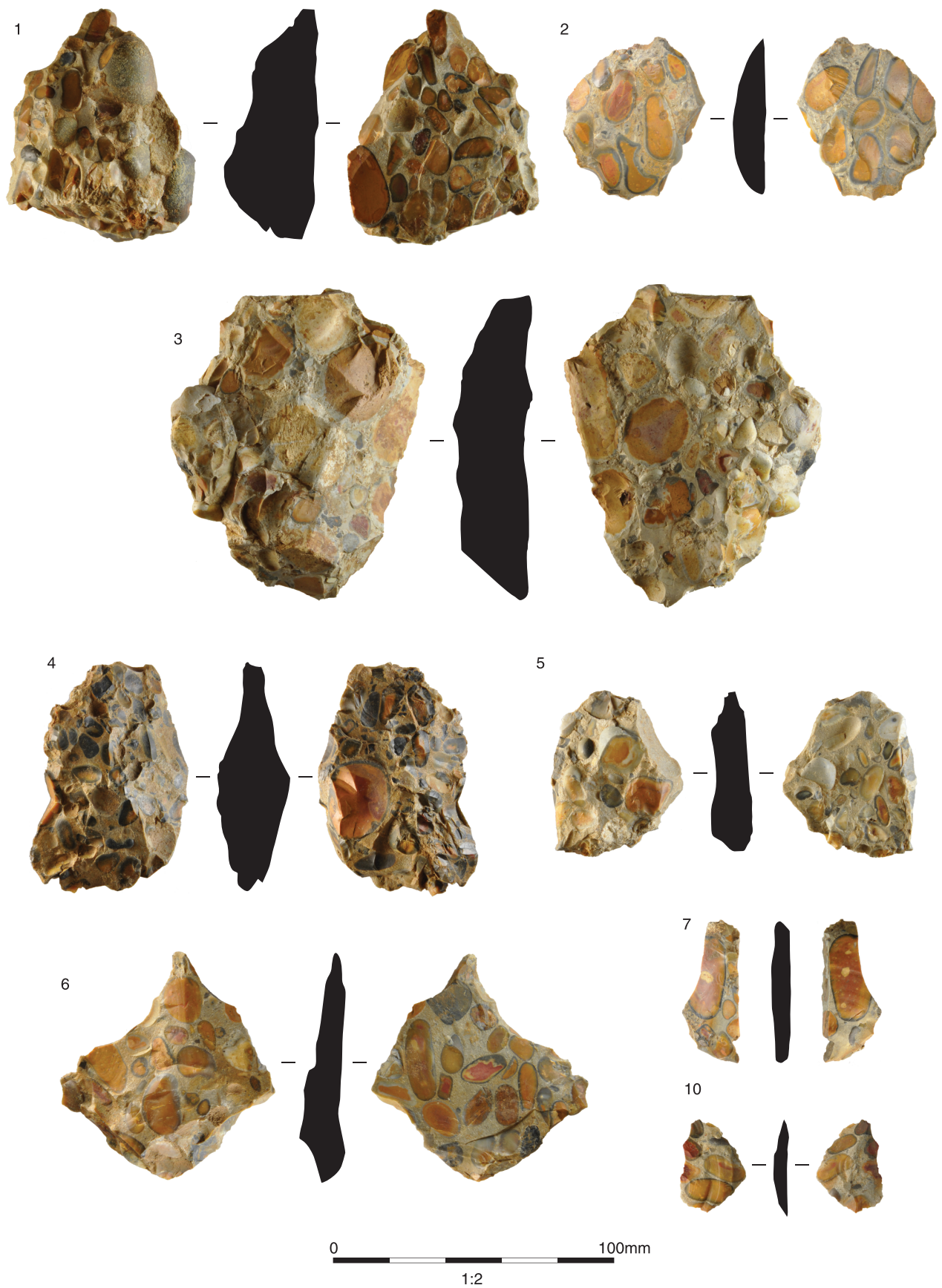


Fig. 7.20 Puddingstone Flakes

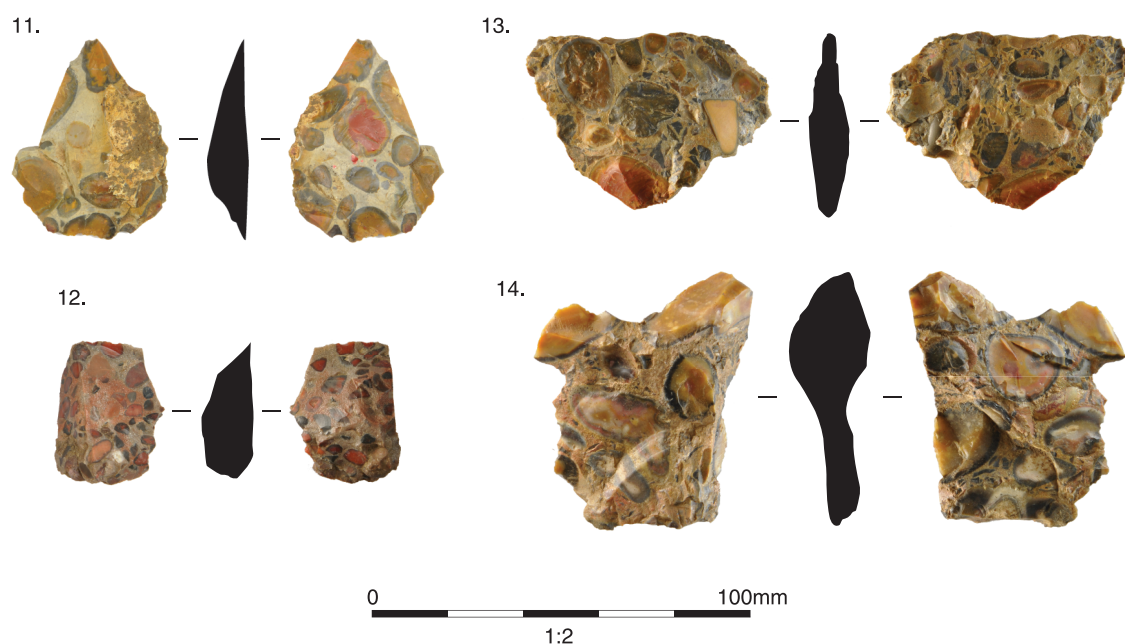


Fig. 7.21 Puddingstone Flakes

(used to work arrows etc) the main areas of use are on the long surfaces. There is some evidence that blades were drawn through the notch as well. There is also evidence for a partial perforation just below the notched end. Ctx 6649. SF 6082

- 2 **Upper rotary quern fragment.** Lava. Pronounced projecting hopper. Rim 20mm high. Edge too damaged to determine diameter, but looks crudely worked. Measures 57mm maximum thickness on hopper. Ctx 6823
- 3 **Incomplete lower rotary quern.** ORS QC. 80% survives. Of lozenge (type 2b) style. Almost always of 1st-2nd-century date. Rough convex base, pecked convex grinding surface with slight lip around cylindrical perforation turning into conical shape at the base. Edges are straight and quite thin (20mm). Pecked edges. Eye has a 24mm diameter (35mm on base). Th: 70mm max. Dia: 380mm. Ctx 112202. SF 101
- 4 **Upper rotary quern fragment.** Millstone Grit. Fragment of disc-style quern with straight edges leaning in slightly and with very smooth flat top suggesting reuse as a whetstone or similar. The grinding surface has the remains of at least four rounded channels each about 10mm wide and 1mm (max) deep. These are deliberate and not a result of wear. Concentric grooves. Th: 58mm max. Dia: indeterminate. US. SF 6114

Junction 9

1. **Flake / possible crude tool.** Hertfordshire Puddingstone. Striking platform at one end with some ripples and partial bulb scar. Damaged along one edge. Ctx 2114.ER
2. **Flake / possible crude tool.** Hertfordshire Puddingstone. Curved profile with slight bulb of percussion. One edge is damaged with possible use wear. Ctx 2114. ER
4. **Flake.** Hertfordshire Puddingstone. Possible

scarring where smaller flakes have been removed. Ctx 2114. ER

5. **Flake.** Hertfordshire Puddingstone. Slightly curved but with little other evidence of use or working. Ctx 2114. ER
3. **Flake / tool.** Hertfordshire Puddingstone. Large flake, thickening towards larger end and with one sharp edge. Ctx 2114. ER
6. **Flake.** Hertfordshire Puddingstone. Large flake. One face is concave, the other slightly convex. No bulb of percussion or radial scarring and no retouch. Ctx 2114. ER
7. **Flake.** Hertfordshire Puddingstone. Small narrow flake with radial scarring on one face. Ctx 2007.ER
10. **Flake.** Hertfordshire Puddingstone. Very small flake with radial scarring on one face. Ctx 2007. ER
11. **Flake.** Hertfordshire Puddingstone. Small flake with radial scars across the length of one surface and whole flake is curved. Some damage to edges but no retouch. Ctx 2007. ER
12. **Flake.** Hertfordshire Puddingstone. This is a thick concave chunk with some radial scarring. Ctx 2007. ER
14. **Flake.** Hertfordshire Puddingstone. Larger flake with prominent radial scarring and damage to some edges. Ctx 2113. LIA/ER
13. **Flake.** Hertfordshire Puddingstone. Slim flake with radial scarring. Damaged along one sharp edge. Ctx 2113. LIA/ER

ROMAN COINS by Paul Booth

Only 12 Roman coins were recovered during the excavation phase of the project, supplementary to two coins found in the evaluation phase (one of Domitian, from Trench 1130, subsequently within the area of Junction 8N excavation and an undated, but probably 4th-century piece from Trench 1363,

subsequently within the Junction 9 excavation area). In addition, a 19th-century penny, worn totally flat, was found. The coins were in very variable condition, some relatively well preserved and others completely eroded. Where possible, complete identifications were made. Three coins were too eroded for any meaningful identification beyond broad period. The Roman coins are listed in site and context order in Table 7.31.

None of the sites produced a meaningful assemblage, the largest group being of nine coins from Junction 9. Single early Roman coins included a copy of a Claudian *as* from Junction 9. This was a Grade II copy in Sutherland's scheme (cf Boon 1974, 103) and although at least moderately worn had a weight of 7g. Another *as*, probably dated AD 84-5, came from an evaluation context at Junction 8N. Much less certainly of 1st-2nd-century date is an extremely eroded piece from Area P, the only coin from this site. The only certain 3rd-century coin was a regular antoninianus of Probus. Two very eroded coins, one each from Junction 8N and Area M, could have been of later 3rd- or 4th-century date, although the latter is perhaps more likely in both cases.

Eight coins were certainly of 4th century date, all but one from Junction 9. They ranged in date from the early 4th century up to the end of the Constantinian period, with probable and possible irregular issues of the mid 4th century. There were no coins of the houses of Valentinian and Theodosius. Coins of 4th-century date that could be assigned to a mint were from Trier (3) and Lyons (2).

The relative absence of early Roman coinage, despite the fact that this is the period of most intensive activity at all of the main sites, is characteristic of assemblages from lower-status rural settlements. The breakdown of the Junction 9 group, with the single Claudian copy, the single coin of Probus and seven certain or probable 4th-century pieces, is quite typical of rural coin-loss profiles, even though the extent of 4th-century activity at this site was relatively limited. The overall numbers are too small, however, to allow meaningful comparison with other assemblages from the region. Nevertheless, it may be significant that the scarcity of later 4th-century coinage at Junction 9 is reflected in the much larger assemblage from nearby Gorhambury, where coins of the house of Valentinian were scarce and those of the house of Theodosius completely absent (Curnow 1990, 112). This is a pattern also seen at Dicket Mead, but not to the same extent in the other sites discussed by Curnow (*ibid.*, 109-10) as comparanda for Gorhambury.

METALWORK by Ian Scott

Junction 9

The metal finds number 238, and included 12 copper-alloy pieces (Table 7.32). All but 16 of the items are from late Iron Age or Roman contexts. The majority are from contexts assigned to middle Roman or late

Table 7.31: Roman coins

Context	Site	SF no	Denomination
Evaluation 113010	Junction8N	103	24mm as
7082	Junction8N	6108	17-19mm AE3
7234	Junction 8N	6113	12mm+
Evaluation 136311	Junction9	105	9mm+
2005	Junction 9	2001	13mm+
2005	Junction9	2004	16mm AE3
2005	Junction9	2042	18mm AE3
2005	Junction9	2005	15mm AE3
2007	Junction9	2002	26mm as
2107	Junction9	2010	23-25mm antoninianus
2107	Junction9	2021	20mm+ AE2
2545	Junction9	2048	10mm
3044	Area M	3001	14mm+
4002	Area P	4001	22mm+

Roman phases. The assemblage is dominated by nails or nail fragments of which there are 201.

There are a few tools, including a probable carpenter's gouge (Fig. 7.22.1; context 2048), a small hammer (Fig. 7.22.2; context 2038) and an ox-goad (context 2007) from contexts of Roman date. There is also part of a pair of scissors (SF 2041; context 2447), the latter fragment is medieval or later in date and from an unphased context. The only item relating to transport is a possible wing from a hipposandal (Fig. 7.22.4).

Personal items number ten and include five hobnails (Table 7.33). The remaining personal items comprise a tiny fragment of copper-alloy buckle bow (SF 2011), identified by its distinctive cross-section, fragments of two broad bangles or armlets (Fig. 7.23.5-6) of Roman date, a very well-preserved Roman bow brooch of unusual form (Fig. 7.23.7) and a probable finger ring (Fig. 7.23.8; context 2557). One of the bangle fragments (Fig. 7.23.6) is from an unphased context, but its identification and dating are certain. The single household item is the tine from a table fork of post-medieval date (SF 2003; context 2007), although from a context assigned a late Roman date. It is probably intrusive.

There are some structural items (clamps, holdfasts, looped pin and a washer) and miscellaneous fragments. The nails are overwhelmingly from contexts of Roman date (Table 7.34). Finally amongst the objects of uncertain identification is an unusual flat circular object with decorative cutouts and a lined central hole (Fig. 7.23.9). Its purpose is far from clear, but merits further discussion. The object was found in the fill of a late Roman ditch. A number of similar objects are known, but all the published examples are from late Iron Age contexts. Most have been found in late Iron Age cremation burials; examples from Biddenham Loop, Beds (Luke 2008, 222-3, fig. 9.13, RA 118) and Monkston Park, Milton Keynes (Wardle in Bull and Davis

Chapter 7

<i>?Date</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Mint</i>	<i>Comment</i>
?84-85	..DOMITI]ANAUGGE[R....	?Moneta l, with cornucopia in l hand, r hand extended holding ?scales, SC	Rome	?RIC II, 242A, 248, 270
324-330	head l	PROVIDENTIAE AUGG	?	eroded
13-4C				eroded
?330+	?	figure(s), cf Gloria Exercitus		eroded
350-364	eroded	Victoriae DD NN Aug et Cae	irregular	
330-335	FLIULCONSTA]NTIUSNOBC	GLORIA EXERCITUS 2 standards	Lyons	LRBCI, 189
330-335	CONSTANTINUSIUNNOBC	GLORIA EXERCITUS 2 standards	Trier	as LRBCI, 68
341-348	CONSTAN] SPFAUG	VICTORIAE DD NN AUGG Q NN	?Trier	LRBCI, 149
c 43-64	TICLAUDIUS]CAESARAUGPM[TRPIMP	Minerva r, S C	irregular	as RIC I (2nd ed.), 100
276-282	IMPCPROBUSPFAUG	MARS VICTOR Mars r	Lyons	RIC VII, 38
313-315	?IMPCONSTANTINUSAUG	SOLI INV[ICTO CO]MITI	Trier	RIC VII Trier, 39 or 40
?330-364	CON] head l	eroded	irregular	size suggests FTR copy of c 350-364
13-4C	?	?		eroded
??1-2C	?head r	?		eroded

Table 7.32: Junction 9. Metalwork assemblage by function and phase

<i>Phase</i>	<i>Tool</i>	<i>Transport</i>	<i>Personal</i>	<i>Household</i>	<i>Function Structural</i>	<i>Nails</i>	<i>Misc</i>	<i>Query</i>	<i>Total</i>
LIA/ER			2		1	8	1		12
LIA/ER?						1			1
MR/LR	1		2		1	64	1	1	70
LR	2	1	5	1	2	118	6	4	139
UN	1		1			9	1	3	15
Topsoil						1			1
Total	4	1	10	1	4	201	9	8	238

Table 7.33: Junction 9. Personal finds by type, phase and context

<i>Phase</i>	<i>Context</i>	<i>Context type</i>	<i>bow brooch</i>	<i>armlets</i>	<i>Identification buckle</i>	<i>finger ring</i>	<i>hobnails</i>	<i>Total</i>
LIA/ER	2721	kiln					1	1
	2907	pit	1					1
LIA/ER	Total		1				1	2
MR/LR	2528	ditch					1	1
	2557	ditch				1		1
MR/LR	Total					1	1	2
LR	2041	waterhole					2	2
	2048	ditch		1				1
	2112	ditch			1			1
	2130	ditch					1	1
LR	Total			1	1		3	5
UN	2488	layer		1				1
UN	Total		1					1
Total			1	2	1	1	5	10

2006) have been published recently. There are other examples from the cemeteries at King Harry Lane (cremation 325; Stead and Rigby 1989, 358, fig. 157, no. 10) and Verulam Fields, Verulamium (burial iv; Anthony 1968, 14), at Dellfield, Berkhamsted, (burial group I; Thompson and Holland, 1976, 142-3, fig. viii, no. 1), Maldon Hall Farm, Essex (burial 3; Lavender 1991, 205-6, fig. 4, no. 2), Hinxton Rings, Cambs, (cremation 2; Hill *et al.* 1999, 253-6, fig. 10) and a burial at St Lawrence, Isle of Wight (Jones and Stead 1969, 354, fig. 2, no. 5). Discs have also been found at the Iron Age settlement at Puddlehill, Bedfordshire (Matthews 1976, 117-8, fig. 73, no. 11), in the hillfort at Spettisbury Rings, Dorset (Gresham 1939, 113, pl. vi, no. 5) and at Danebury (Cunliffe 1984, 370, fig. 7.23, no. 2.174).

It has been suggested that these objects could be knives or circular cutters similar to a modern pizza cutter (eg Luke 2008, 222) and the objects do appear to have a cutting edge around their circumference. In some cases the central hole has an inserted collar, which suggests that the disc was intended to be mounted on a rod or axle and were probably intended to revolve. In the case of the examples from Biddenham (*ibid.*) and from St Lawrence on the Isle of Wight (Jones and Stead 1969, 354, fig. 2, no. 5) this collar is made of iron, while in the case of the M1 example the collar is non-ferrous. The disc from King Harry Lane has no notch or cut-out in its circumference, which supports the idea that it could have been a circular knife.

More relevant, perhaps, are the examples of discs with notches on the circumference. Examples from Biddenham (Luke 2008, 222) and from burial 3 in the Iron Age cemetery at Alkham, Kent (Philp 1991; Ian Stead *in litt.*; James and Rigby 1997, fig. 42) both have distinctive notches. The discs from Puddlehill (Matthews 1976, 117-8) and Spettisbury (Gresham 1939, 113) are also notched. Unpublished examples from Beckford, Worcestershire, and Norton Road, Stotfold, Bedfordshire, noted by Luke (2008, 222) also apparently have notches.

The notches appear to have been carefully made. The example from Biddenham has two circular cut-outs joined together to form a large cut-out with a raised point in the centre. The Alkham example has a wide cut-out with a small V notch in the middle, forming an ogee shape. The M1 example has two adjacent circular cut-outs with a notch between.

If the discs are circular knives, the notches would seem to serve no purpose beyond the decorative. In cremation 2 at Hinxton Rings, the perforated circular disc was associated with a small oval disc with a central perforation, as well as four iron brooches, a pair of copper-alloy tweezers and a nail cleaner (Hill *et al.* 1999, 253-6, fig. 10). The oval disc might be symbolic rather than practical. Possibly the discs are circular knives but have some additional symbolic significance. A late Iron Age cremation burial from the excavations on the line of the A2 in Kent (Allen *et al.* forthcoming, grave 4298) was found with four copper-alloy brooches, the

poorly preserved fragments of an iron brooch, small copper-alloy clamps or staples and a small notched and perforated copper-alloy disc (diameter 28mm). The latter was not a circular knife. The metal is thin, of uniform thickness and has no sharpened edge, the perforation is lightly off-centre, and there are

Table 7.34: Junction 9. Nails by phase and context

Phase	Context	Context type	Nails
LIA / ER	2017	ditch	1
	2114	ditch	2
	2511	layer	2
	2616	layer	1
	2664	layer	1
	2905	pit	1
LIA/ER	Total		8
LIA / ER?	2585	layer	1
LIA/ER?	Total		1
MR / LR	2038	ditch	21
	2118	ditch	1
	2170	ditch	2
	2173	ditch	1
	2205	ditch	1
	2352	ditch	5
	2353	ditch	3
	2354	ditch	3
	2364	pit	1
	2406	ditch	4
	2513	ditch	1
	2557	ditch	20
	2591	ditch	1
MR/LR	Total		64
LR	2005	pit	10
	2007	pit	59
	2033	ditch	1
	2036	ditch	2
	2041	waterhole	9
	2048	ditch	27
	2129	ditch	2
	2130	ditch	2
	2139	ditch	1
	2152	ditch	1
	2153	ditch	1
	2168	pit	3
LR	Total		118
UN	2043	pit	1
	2447	pit	2
	2448	layer	2
	2488	layer	4
UN	Total		9
US	2001	topsoil	1
US	Total		1
Total			201

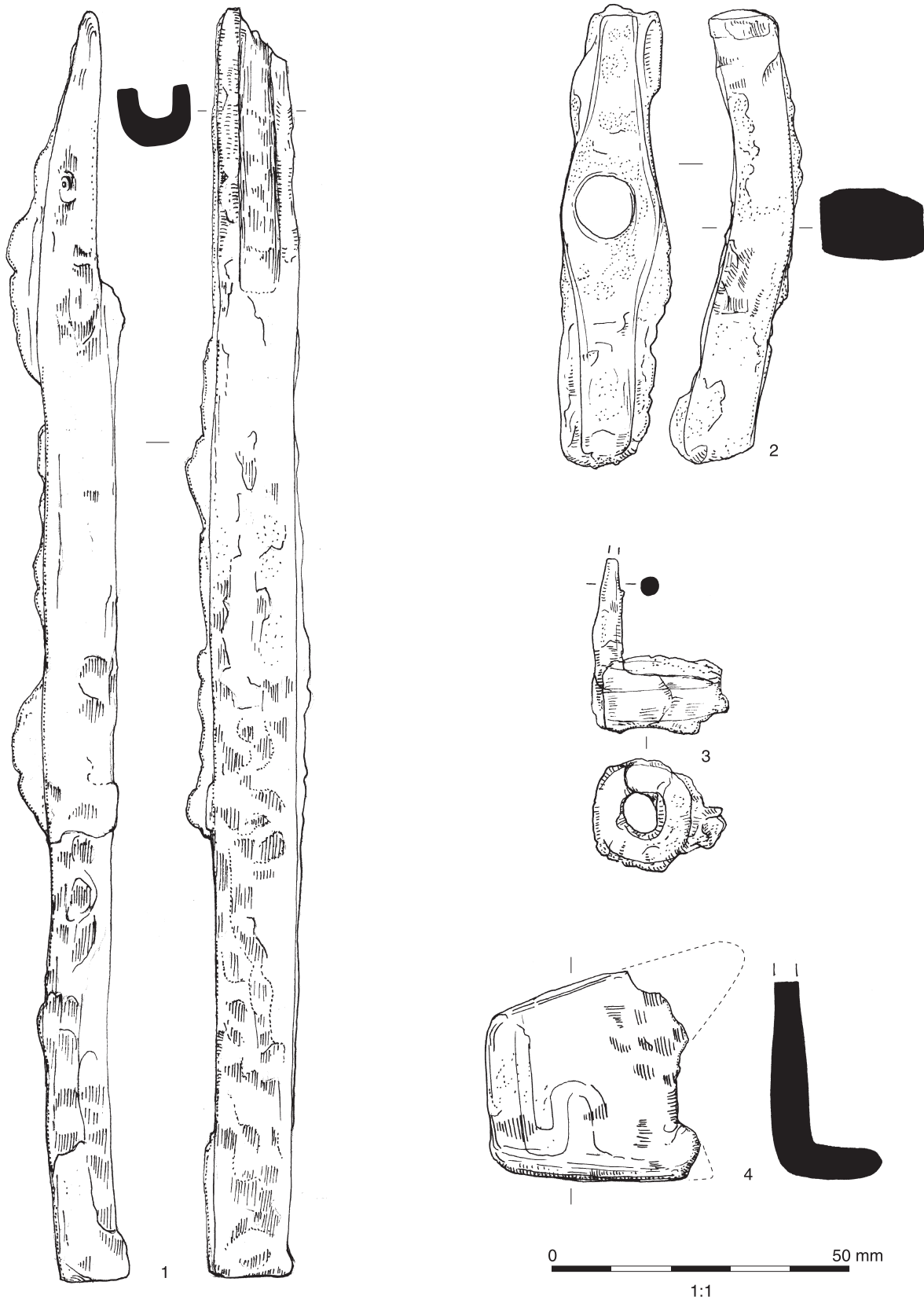


Fig. 7.22 Metalwork from Junction 9

three V-shaped notches spaced around the circumference. The purpose of this object is unclear but it could be seen as an echo of the circular iron ones found elsewhere, and as such might hint at some further symbolic significance to the circular iron knives or discs.

The metalwork assemblage is comparatively small, especially if the nails are excluded, and has a limited range of object types. This makes it difficult to characterise the assemblage with any degree of confidence. The material hints at domestic occupation, but given the comparatively small number of the objects, this can only be a suggestion.

Catalogue of illustrated finds (Figs 7.22-3)

- 1 **Gouge.** [ID 102]. Rectangular section at top, grooved for much of length, changing to hollow half round section towards edge. Carpenter's tool? Fe. L: 214mm. Ctx 2048. Phase: late Roman. SF 2047
- 2 **Small hammerhead with circular eye.** [ID 81]. Jeweller's hammer? Fe. L: 75mm. Ctx 2038. Phase: middle-late Roman
- 3 **Ox-goad with simple collar.** [ID 69]. Fe. L: 29mm; Dia: 19mm. Ctx 2007. Phase late Roman
- 4 **Hipposandal wing.** [ID 98]. Curved and shaped plate. Fe. L extant: 38mm. Ctx 2048. Phase: late Roman

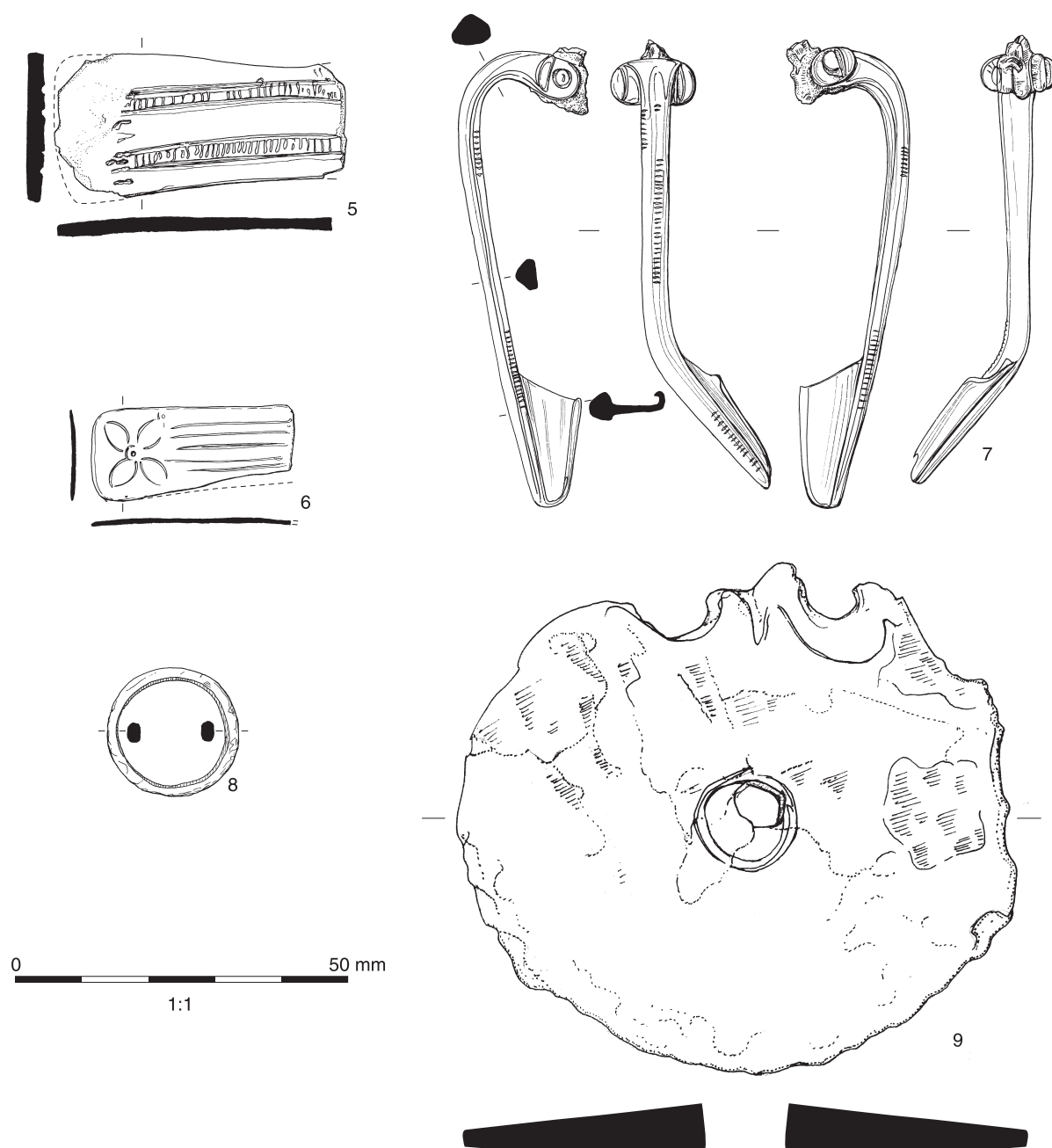


Fig. 7.23 Metalwork from Junction 9

Table 7.35: Junction 8N. Metalwork assemblage by function and phase

Phase	Transport	Personal	Household	Function		Nails	Misc	Total
				Structural	Bindings			
LIA/ER				1			1	2
ER/MR		118	1	1	1	19	2	142
MED	6	1		3		31	5	46
MED*		1				4		5
UN	2	1			1	16	2	22
Total	8	121	1	5	2	70	10	217

5 **Terminal of broad armlet.** [ID 339]. Rounded square-end decorated with four-petal flower with central dot. Parallel lines along band aiming for centre of flower. The broad flat band decorated with parallel lines and slightly expanded at the terminal is typical of Romano-British armlets of early date. Early bracelets or armlets have been discussed recently by Crummy (2005, 98-101), who has argued that they are military armillae. This particular example falls into Crummy's Group B, with a single central band (ibid.). It has the terminal decorated with a four-petal floret. This is a 1st-century type and its presence in a late Roman context suggests that it was either residual or a long retained heirloom. Cu alloy. L: 30mm; B: 14mm. Ctx 2048. Phase: late Roman. SF 2008

6 **Terminal of broad armlet with two parallel engraved bands.** [ID 344]. A broad flat armlet or armilla similar to No. 5 above. Its terminal is incomplete but does not show any signs of decoration. The armlet is decorated with two parallel engraved bands and falls into Crummy's group A (ibid., 96). Cu alloy. L: 43mm; B: 22mm. Ctx 2488. Unphased. SF 2050

7 **Bow brooch with hinged iron pin.** [ID 346]. The bow is straight, tapers and has a triangular section. The bow has been bent laterally. The catchplate is solid and has a plain undecorated terminal. There are very small wings flanking the head of the brooch. The brooch is extremely well preserved and has small panels of rocker decoration at points on the bow. The brooch is unusual and does not fit into any of the well-defined groups of Romano-British bow brooches. The vestigial wings suggest that the brooch should have had a sprung pin, which it clearly does not, and there is no other evidence for a sprung pin. It was clearly made with a hinged pin, but with the wings associated with a sprung pin. The straight bow and the plain catchplate are all distinct features, which together make an unusual piece. Cu alloy. L: 68mm. Ctx 2907. Phase: late Iron Age-early Roman. SF 2072

8 **Finger ring.** [ID 345]. Simple band, possibly with pattern of radial lines or cable pattern decoration. The possible cable pattern suggests that this a small finger ring, comparable to rings from Higham Ferrers (Scott 2009, 209, 235, fig. 5.38: 268-9) and Colchester (Crummy 1983, 49, fig. 50: 1770). Encrusted Cu alloy. Dia: 20mm. Ctx 2557. Phase: middle-late Roman. SF 2045

9 **Almost circular plate with central round perforation.** [ID 114]. The plate is thicker in the middle and thins to the edges. The perforation is lined with a small rolled and overlapped (non-ferrous?) collar,

which is clearly visible on the X-ray plate. On the edge are two almost circular cut-outs with a notch between them. Function unclear. Fe. Dia: 76-80mm. Ctx 2139. Phase: late Roman

Junction 8N

There are three copper-alloy finds and 213 iron finds from this excavation. Although the largest part of the assemblage is from late Iron Age or Roman contexts, there is a sizeable component from medieval contexts (Table 7.35).

The largest single functional category is personal (n = 121), almost exclusively from early/middle Roman contexts. Three of these items are of copper alloy; a pin or needle stem (SF 6101) from an early or mid-Roman context (6816), and a hollow decorative stud (Fig. 7.24.1) and pair of tweezers (Fig. 7.24.2) from medieval contexts. Both of these latter items are of medieval date. The remaining personal items are hobnails, which number a minimum of 118; there are at least 152 fragments of hobnail. Most of the hobnails are from three locations in ditches: context 6020 (min. n = 43; max. n = 44); context 6316 (min. n = 49; max. n = 82); and context 6420 (min. n = 25; max. n = 27) (Table 7.36). There is a single hobnail from context 6697.

Items relating to transport (n = 8) comprise horse-shoe nails, almost certainly all late medieval or post-medieval in date. A single household object, an incomplete small knife blade (Fig. 7.24.3), came from an early Roman context (7305).

Table 7.36: Junction 8N. Hobnails by phase and context

Phase	Context	Context type	Hobnails (min)	Hobnails (max)
ER/MR	6020	Ditch	43	44
	6316	Ditch	49	82
	6420	Ditch	25	27
Total			117	151
UN	6697	Tree-throw hole	1	1
Total			1	1
Total			118	152

Structural items (n = 5) include a modern wall hook, as well as clamps and a possible hinge fragment. There are two fragments of bindings comprising strips with nail holes. Nails number a relatively modest 70 pieces, some from Roman contexts, but more from medieval or later contexts. Otherwise the assemblage includes nine miscellaneous iron items (strip, sheet, rod, etc) and a single length of lead wire.

The assemblage, excluding the hobnails, is too small to characterise. The groups of hobnails,

although not intrinsically the most interesting objects, are the most interesting feature of the assemblage. The groups are from early or mid-Roman contexts 6020, 6316 and 6420. The circumstance under which the hobnails were deposited is unknown, though it is possible that they discarded as loose items or as parts of nailed shoes.

Catalogue of illustrated finds (Fig. 7.24)

- 1 **Hollow domed decorative stud probably from a belt.** [ID 333]. Medieval or late medieval date.

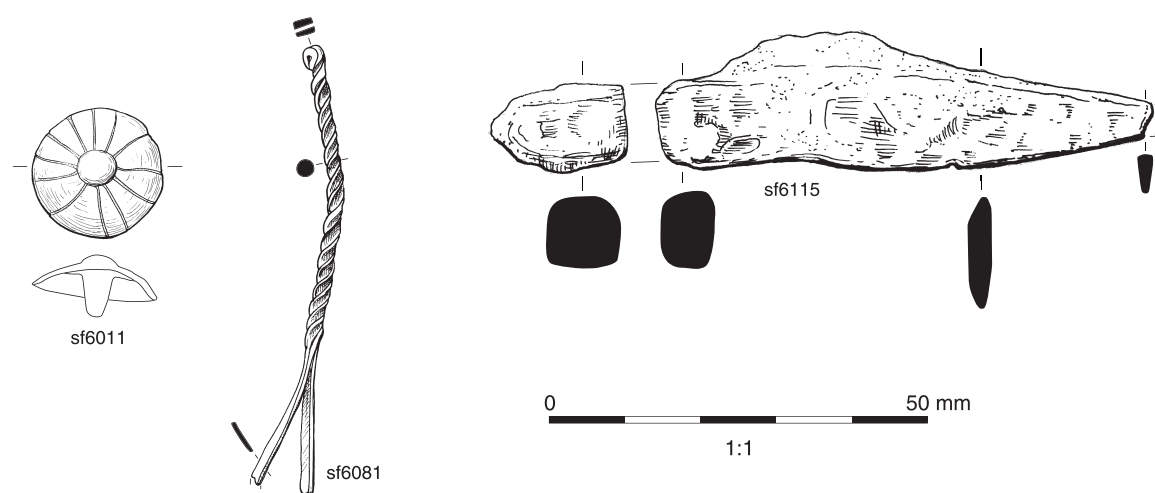


Fig. 7.24 Metalwork from Junction 8N

Table 7.37: Evaluation. Metalwork assemblage by function and context

	Context	Tool	Transport	Personal	Function Binding	Nails	Misc	Query
Total								
112202					1	4		5
113012					1			1
118105						1		1
118106					1			1
118607					1			1
118705							2	2
118706					1			1
126403						1		1
127008		3*						3
133205			1					1
135607					5	4	1	10
135611					2			2
135612					1			1
136214					1			1
136305					3			3
136311				1	8	1	1	11
136315					2			2
151005	1*							1
US			4					4
Total	1	3	5	1	27	11	4	52

Divided into irregular segments by fine lines. Cu alloy. Dia: 17mm. Ctx 6055. Phase: medieval. SF 6011

- 2 **Tweezers/earscoops.** [ID 331]. Has twisted stem and short splayed jaws, and is made from a single thin strip of metal. Compares with the implement from Swan Lane, Upper Thames Street, London (Egan and Pritchard 1991, 381, fig. 252: 1774). Cu alloy. L: 59mm; B: 4mm. Ctx 6490. Phase: medieval. SF 6081
- 3 **Small whittle tang knife.** [ID 306]. Tapering blade of triangular section with angled straight back and curved edge. Although heavily encrusted, the form of the blade is quite clear. Fe. L: 64mm. Ctx 7305. Phase: early-middle Roman. SF 6115

Evaluation

The evaluation trenches produced 48 objects (Table 7.37). These include part of a cast 19th- or 20th-century ploughshare (context 151005) and three post-medieval horseshoes (context 127008). Personal items comprise a much eroded Romano-British bow brooch (Cat. No. 1; context 133205) and 4 hobnails (SF 6014, unstratified). Amongst the objects of uncertain identification is a fragmentary circular copper-alloy mount with raised beaded border (Cat No. 2; context 136311). The other two unidentified objects are extremely poorly preserved. The remaining finds comprise a small oval iron collar or binding, 27 nails and 11 miscellaneous fragments.

Catalogue of selected finds

- 1 **Bow brooch.** [ID 39]. Eroded. Probably two-piece sprung, with eroded remains of hook at head. Eroded wings. Bow of oval section. Catchplate missing. Possibly part of a two-piece Colchester brooch, but too poorly preserved for certainty. Cu alloy. L: 31mm; B: 8mm. Ctx 133205. Phase: late Roman. SF 109
- 2 **Circular mount.** [ID 40]. Formed from thin sheet, with punched pellet border around circumference. Larger fragment comprises almost half the object. The second fragment is smaller with no original edge. There are two round raised spots or pellets within the otherwise flat field, one on each fragment. No other evidence for decoration. Two small pinholes in the larger fragment; spacing suggests originally four pinholes just inside the pellet border equally spaced around the mount. Cu alloy. Dia: 34mm. Ctx 136311. Phase: late Roman. SF 106

GLASS by Ian Scott

Introduction

There are 42 sherds of glass from the various archaeological interventions (Table 7.38). There are six sherds from the evaluation trenches, two sherds from Junction 8N and one from the watching brief on Junction 8. The remaining 33 pieces are from the excavations at Junction 9.

Table 7.38: Glass type by site, phase and context

Site	Phase	Vessel	Window	Total
Junction 9 (Exc)	LR	18		
18	MR/LR	13	1	
14	US		1	1
Junction 9 (Exc) Total	31	2	33	
Evaluation trenches	ER	1		1
	LR	1		1
	PMED	3	1	4
Evaluation Trenches Total	5	1	6	
Junction 8N (Exc)	ER/MR	1	1	2
Junction 8N (Exc) Total	1	1	2	
Junction 8 watching brief	RO/MED		1	1
Junction 8 watching brief Total			1	1
Total		37	5	42

Evaluation trenches

The glass from the evaluation trenches includes four modern pieces from post-medieval contexts. The remaining two sherds include a small indented base sherd from a beaker or jug in pale-blue-green glass, almost colourless, with small bubbles in the metal, which might suggest a late Roman date. However, the sherd is from an early Roman context (136305) and may therefore be earlier in date or intrusive. The second sherd is an undiagnostic body sherd in blue-green glass from a late Roman context (136311). The sherd appears to have been heated causing partial blurring of the sharp edges.

Junction 8N and Junction 8 watching brief

The sherds from Junction 8 are all very small and comprise two pieces of modern window glass and

Table 7.39: Junction 9. Glass type by phase and context

Phase	Context	Context type	Vessel	Window	Total
MR/LR	2038	ditch	10	1	11
	2353	ditch	1		1
	2354	ditch	1		1
	2406	ditch	1		1
MR/LR Total			13	1	14
LR	2007	pit	14		14
	2048	ditch	3		3
	2129	ditch	1		1
LR Total			18		18
US	2001	topsoil		1	1
US Total				1	1
Total			31	2	33

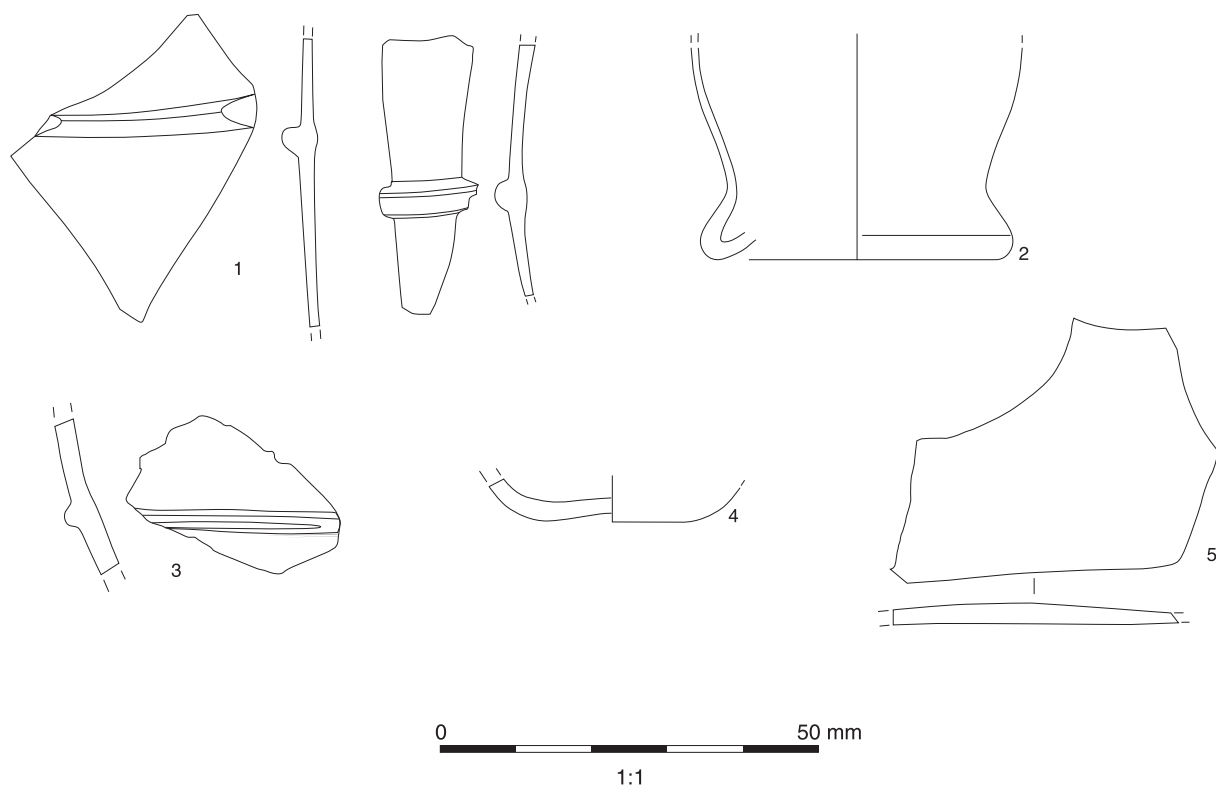
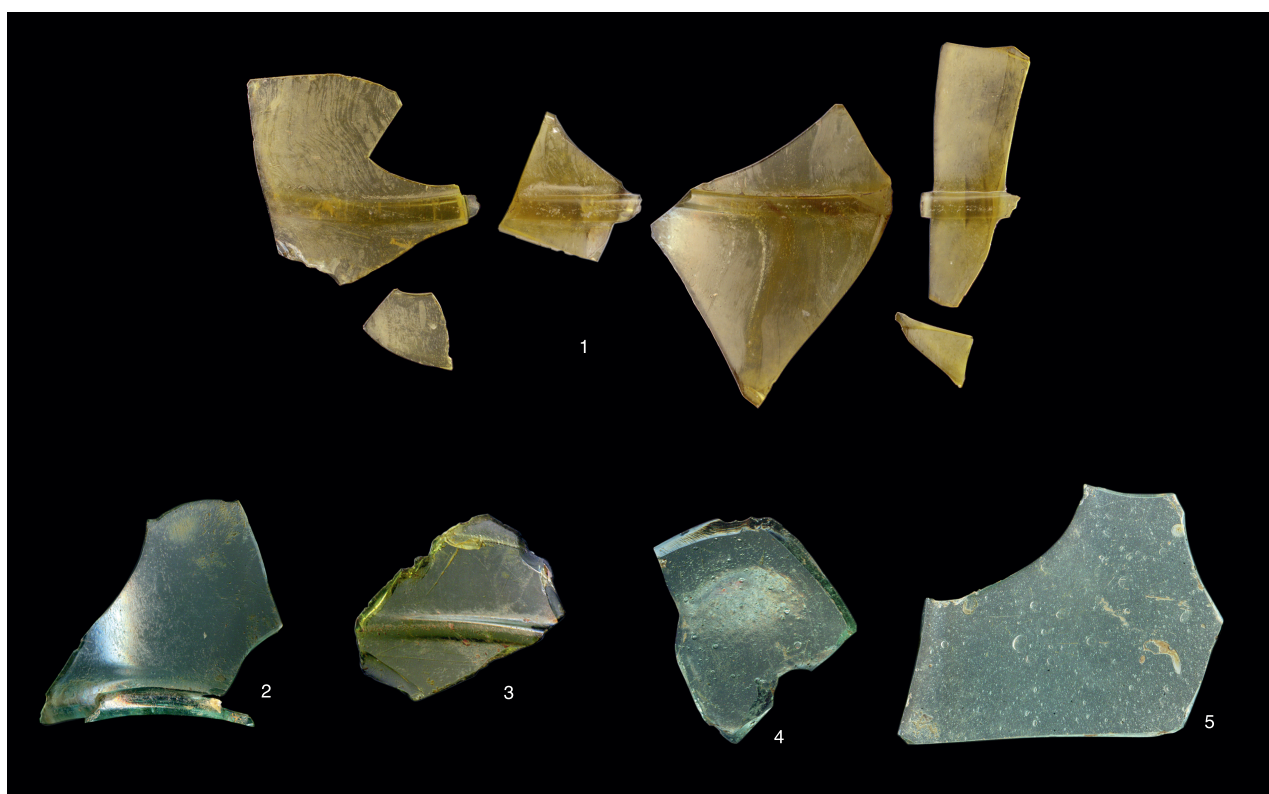


Fig. 7.25 Glass

small undiagnostic sherd of brown glass from a vessel. All three sherds could be intrusive.

Junction 9 excavations

The glass from Junction 9 comprises 31 sherds of vessel glass and two sherds of window glass or possible window glass (Table 7.39). All but one sherd are from contexts dated to the Roman period.

Middle-late Roman contexts

The middle to late Roman phase produced 14 sherds including 11 sherds from one context (2038). Six of these appear to be from a single vessel in yellow-brown glass with self-coloured trails (Fig. 7.25.1). The vessel form is uncertain and it is not possible to closely date the glass within the Roman period. The remaining glass from the context includes a piece of possible blue-green cast window glass (Fig. 7.25.5) and small undiagnostic vessel body sherds, one in deep-blue glass, the others in blue-green glass.

There is a tiny colourless undiagnostic body sherd from context 2406, a small vessel body sherd in yellow-green glass from context 2353, and larger body in deep-blue glass from context 2354. The latter sherd is undiagnostic to vessel form.

Late Roman contexts

There is a total of 18 sherds of vessel glass from late Roman contexts. There is no identifiable window glass. Fourteen sherds come from context 2007. These include two sherds from the base of a small beaker or jug in blue-green glass (Fig. 7.25.2) and 12 small undiagnostic body sherds in blue-green glass. The variation in wall thickness between these sherds suggest that they derive from more than one vessel.

Three body sherds from context 2048 comprise one of yellow-green glass with a self-coloured trail (Fig. 7.25.3), and two body sherds of pale-blue-green glass. The latter have possible traces of wheel cutting or grinding, which are late Roman features. Finally, there is a sherd from the base of a possible unguent bottle in pale-green glass with tiny bubbles in the metal (Fig. 7.25.4).

Unstratified glass

There is a single unstratified sherd of blue-green matt glossy window glass of Roman type.

Conclusions

The glass assemblage is not large and contains only two possible pieces of window glass. Most of the vessel sherds are small, and there is little that can be firmly identified to vessel form. As with the metalwork from this site the glass hints at domestic occupation, and its presence suggests at least some

pretensions to status. Beyond this its significance is uncertain.

Catalogue of illustrated sherds (Fig. 7.25)

- 1 Body sherds (n = 6) slightly curved. They comprise four sherds with applied self-coloured trails and two very small sherds. There are no obvious joins, and therefore the form of the vessel is not certain. Yellow-brown glass. Largest sherd: L: 30mm; B: 28mm; Th: 1-1.5mm. Junction 9; Ctx 2038. Phase: middle-late Roman
- 2 Body/base sherds from a small vessel with an open base ring. Probably from a beaker/jug. Blue-green glass. Two joining sherds. Ht: 28mm; B: 35mm; Th: 1mm. Junction 9; Ctx 2007. Phase: late Roman
- 3 Small curved body sherd with single self-coloured trail. Undiagnostic to form. Yellow-green glass. One sherd. L: 28mm; B: 24mm. Junction 9; Ctx 2048. Phase: late Roman
- 4 Small indented base, possibly from an unguent bottle, small flask or beaker. Bubbles in metal. One sherd. Pale-green glass. L: 30mm; B: 27mm. Junction 9; Ctx 2129. Phase: late Roman
- 5 Possible window glass, though perhaps rather thin. Flat on one face, slightly curved on the opposite face. Bubbles in the metal. One sherd. Blue-green glass. L: 44mm; B: 33mm; Th: 2mm. Junction 9; Ctx 2038. Phase: middle-late Roman

SLAG by Luke Howarth

Some 7.4kg of slag were recovered during the excavation phase of the project, with a smaller quantity (just over 1kg) from the evaluation. Over 90% of the material (by weight) came from Junction 9, with most of the rest from Junction 8N. The great majority of the material from the evaluation also came from the Junction 9 area (in Trenches 1356, 1357 and 1363). The material was recorded by number of fragments per context in terms of functional categories, where these could be determined. This information is summarised in Table 7.40.

The material was mostly recovered by hand excavation, but slag fragments were also recovered from environmental samples. The larger fragments are described in Table 7.40, but in some cases small fragments of metalworking debris were also found in the finest fraction (2-0.5mm) of the environmental samples and these residues have been retained. The residues were weighed and then 10% by weight of the residues was examined using a magnet and a x10 hand lens to pick out any metalworking debris.

All of the residues retained specifically for such further examination contained some evidence of metalworking, four samples in particular contained large concentrations of hammerscale, and these are listed in Table 7.41.

Summary of the material

The morphology of the slags from this site indicates

Table 7.40: Summary description of slag

Context	Sample No.	No. of fragments	Comments
600		1	Possible fragment of hearth bottom
1362	112	5	No diagnostic form
1362	112	5	No diagnostic form
2038		6	No diagnostic form
2038		10	Small hearth bottom
2044		4	Possible fragment of hearth bottom
2048		4	Undiagnostic
2048		1	Abraded fragment of Fe slag?
2138		2	Undiagnostic form; some pale-green oxide (copper?)
2139	2002	4	No diagnostic form
2139		1	Tabular fragment of slag with CBM annealed to one surface – fabric of structure
2156		10	Vitrified CBM and fuel-ash slag (FAS)
2279		1	Bun-shaped smithing hearth bottom
2332	2024	1	No diagnostic form
2437		3	No diagnostic form
2437		1	No diagnostic form
2448	2036	2	Fragment of hearth bottom
2448	2036	11	No diagnostic form
2474		7	Vitrified CBM
2488		23	Smithing-hearth bottom
2488		1	FAS
2488		2	Lump of iron surrounded with Fe oxide and CBM
2511		14	No diagnostic form
2511		2	No diagnostic form
2513		3	No diagnostic form; iron-rich slag
2513		25	Mixture of vitrified CBM; some fragments of nail and undiagnostic fragments of Fe-rich slag
2579		35	Small hearth bottom
2583	2039	1	No diagnostic form

iron working on small hearths. Some slags clearly represent smithing, but others are more ambiguous in character. The residues retained for metalworking debris all contained hammerscale and four samples contained relatively high concentrations of this material (Table 7.41). Hammerscale is significant as it is associated with refining of slags. The slag is predominantly indicative of iron working, though there is some evidence for the presence of copper in some of the slags. This may indicate that different ores were being worked at times, though copper and iron do occur together in some ores. The great majority of material comes from Roman deposits, the largest groups coming from features of 2nd-century date at Junction 9. A very small proportion of the slag from Junction 8N was from medieval deposits, but it is possible that this material was residual. The assemblage as a whole is relatively homogenous and is consistent with smithing of iron in small hearths rather than large-scale primary smelting.

Table 7.40: Summary description of slag – continued

Context	Sample No.	No. of fragments	Comments
2587		12	Fe slag with CBM annealed to one edge
2587		1	Vitrified CBM
2605		5	FAS
2616		6	Iron fragments and partially vitrified CBM
2616		13	No diagnostic form; Fe-rich slag and FAS
2616		1	Partially vitrified
2619		1	No diagnostic form
2664		1	No diagnostic form
2705		11	Small hearth bottoms
3051		1	No diagnostic form
3064		1	No diagnostic form
5026		15	Fe fragments
5235	2069	1	No diagnostic form
6055	6027	2	No diagnostic form
6061	6039	1	No diagnostic form
6067		1	Partly vitrified CBM
6154		1	Vitrified CBM; furnace fabric.
6169		1	Bun-shaped hearth bottom; cooling joints perpendicular to surface
6189		1	No diagnostic form
6215		1	Abraded fragment of Fe slag?
6219		2	No diagnostic form
6295	6007	1	No diagnostic form
6347		2	Abraded fragment of Fe slag?
6356	6037	1	No diagnostic form; Fe-rich slag
6475		1	No diagnostic form; Fe-rich slag
13615		2	No diagnostic form; Fe-rich slag
126304		1	No diagnostic form
135605	111	25	No diagnostic form; Fe-rich slag
135605	111	19	Fragment of smithing-hearth bottom?
135605	111	45	No diagnostic form; Fe-rich slag
135607	111	19	Mostly undiagnostic fragments, ;some possible fragments of smithing-hearth bottom
135607		3	No diagnostic form
135607		5	No diagnostic form
135612		1	No diagnostic form
135705		1	Possible fragment of smithing-hearth bottom
136313		16	No diagnostic form

Table 7.41: Residues retained for metalworking debris

Context	Sample No.	Wt of 10%	Wt of metalworking debris picked out	% of hammerscale present in the sorted metalworking debris
2139	2002	38 g	2 g	~75%
1362	112	33 g	2 g	~80%
2375	2033	60 g	1 g	~25%
7336	6081	56 g	3 g	~30%