

EXCAVATIONS AT 48-50 CANNON STREET, CITY OF LONDON, 1975

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Finds Research co-ordinated by Michael Rhodes

Rescue excavations on a small site to the south of Cannon Street located a number of linear features of Roman and post-Roman date. Three of the Roman features were water channels revetted with timber, probably for drainage rather than water supply. Numerous post-holes were found, mostly associated with the channels, though one group probably represented a small building, possibly of late Saxon date by association with some of the 19 pits of Roman, late Saxon and medieval date which were also uncovered on the site. The site may be linked topographically with others to the north and west both in the Roman and late Saxon periods.

1 INTRODUCTION AND ACKNOWLEDGEMENTS

The site (TQ 32428096) is located between Cannon Street and Great St. Thomas Apostle (Fig. 1) immediately west of the site of the church of St. Thomas Apostle. It lies on the southern slope of the western hill of the City, upon which St. Paul's is centred, and south of Cheapside. Little is known about this area archaeologically though the near vicinity has produced traces of mosaics¹ and the Huggin Hill baths have been excavated 150m to the south-west². The demolition of the Victorian buildings on the site presented an opportunity to investigate this relatively untouched area: a trial trench by Mr. C. Hill indicated the survival of archaeological features, and following this four areas (Trenches 1-3, Fig. 3; Trench 4, not shown), were machine-stripped under the supervision of the author.

Only three weeks were available for excavation and accordingly a policy of priorities was determined. This involved machining 0.5m off the top of the archaeological levels to a level at which all the features were sharply defined and could therefore be rapidly excavated³. Little work was conducted in Trench 4 as, on cleaning, it revealed only pits which were not regarded as of high a priority as the linear and structural features. Elsewhere pits were excavated without half sections and some pits were not excavated at all (Plates 1-2).

A total of 23 days was spent on the excavation which was carried out with the co-operation and encouragement of the developers, Compass Securities Ltd.; the demolition contractors, Griffiths Ltd.; the architect, Mr. A. Schickle, and the construction contractors, Higgs and Hill. A major part of the excavation work was carried out by the COLAS field-work group and other volunteers, without whose determined and dedicated efforts the site could not have been tackled in the same extensive manner. I would also like to express thanks to the Department of Urban Archaeology team, in particular to Ken Dash, Paul Herbert, Trevor Dennis and Barbara Garfi. Mr. Dash should be especially thanked for acting as assistant supervisor, for assisting with photography and for conducting the development watching brief. The drawings were prepared for publication by Robert Britton.

The features below are discussed in possible chronological order where this was determined, but as a number of features were either poorly dated or undated the features

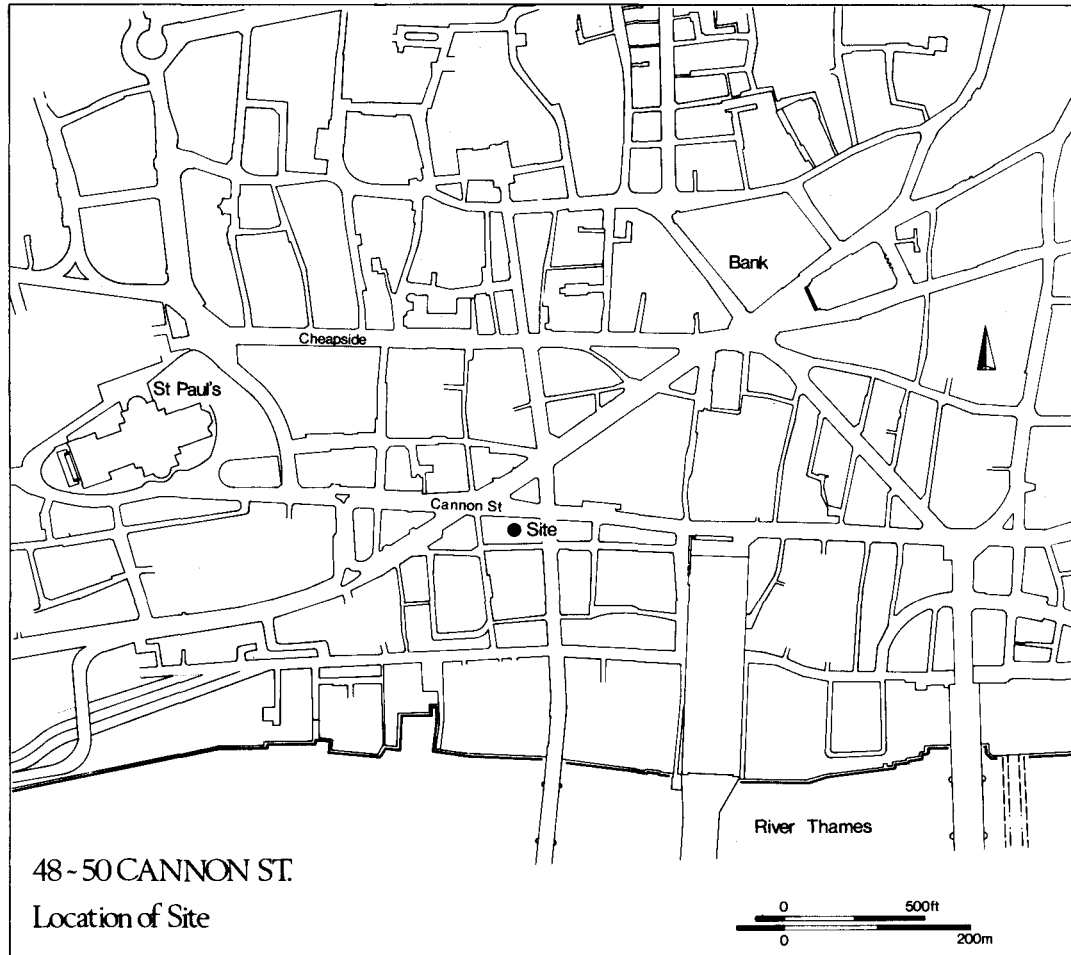


Fig. 1. Cannon Street 1975: Site Location Map.

are arranged into three groups: linear features, stakeholes and pits. The natural surface throughout Trenches 1 and 2 and the west part of Trench 3 was brickearth; in the east part of Trench 3 and Trench 4 coarse sand and gravel of the Taplow terrace.

This account is seen as a Level IV report as outlined in the Frere report (Department of the Environment, 1975). A copy of the archive report (Level III) can be obtained on application to the Department of Urban Archaeology and the Level II records may be inspected by appointment.

II THE FEATURES

(i) Roman

Feature A (Figs. 3-5)

Consisting of a north-south U-shaped linear cut with a flat bottom, this feature showed some indication of having contained a wooden structure; evidence of eight post-holes spaced on either side survived (Fig. 3). It is possible that these formed part of the structure of a wooden channel similar to Feature C but no other evidence for this survived. The construction cut (249) survived to a depth of 0.10m in Trench 3 and 0.25m in

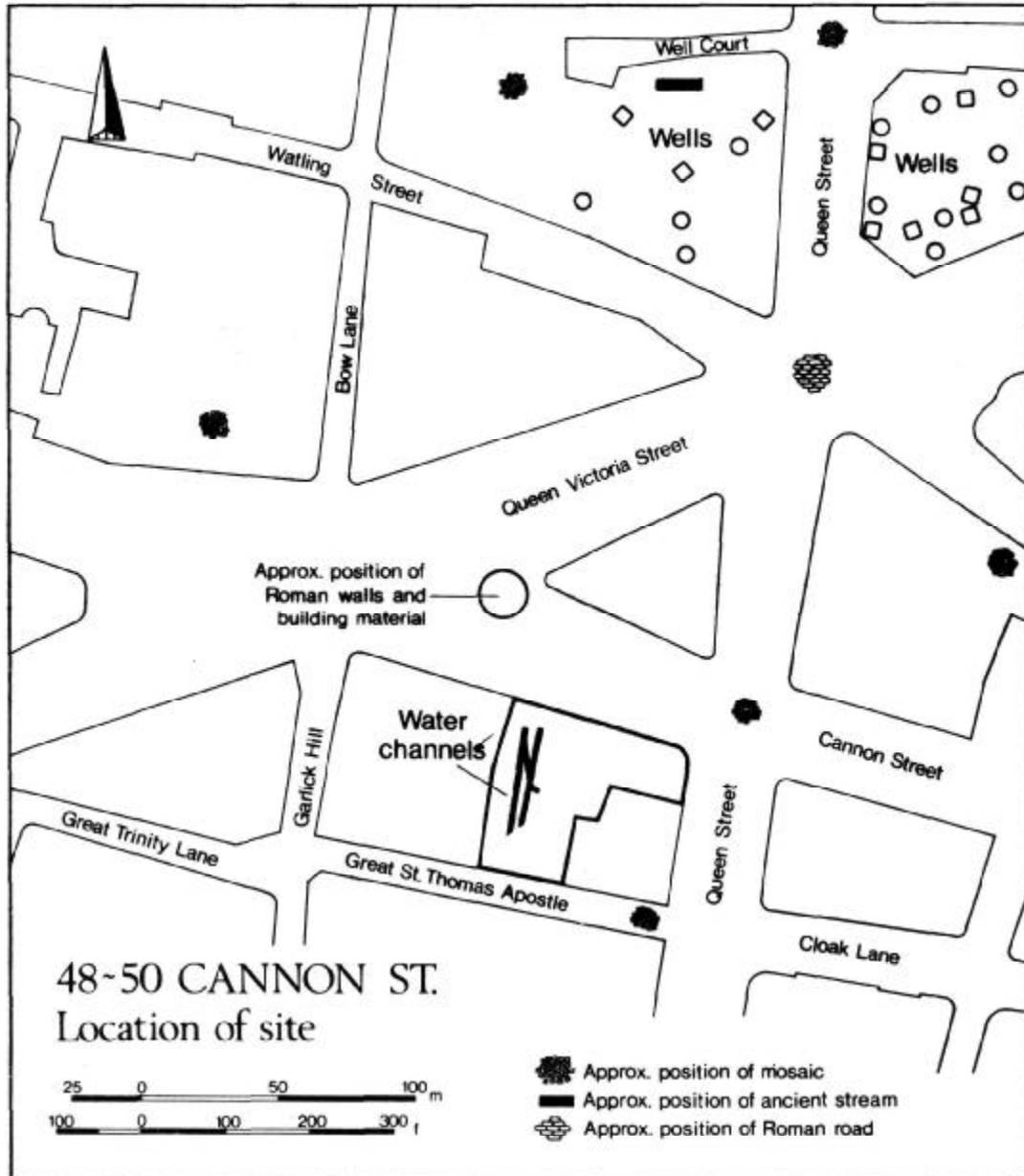


Fig. 2. Cannon Street 1975: Location of site (detail).

Trench 2. On the evidence of the small length surviving the bottom of the cut may be judged to be sloping to the south at a gradient of *c.* 1 in 40. The construction of the channel could not be dated.

The fill of the feature throughout was composed of layers of sand, charcoal mixed with sand, and of gravel (94); it was a water-lain fill which post-dated the removal or decay of any timber-work. Stratigraphically Feature A preceded Features B and C, and thus its fill may be dated to the 1st century.

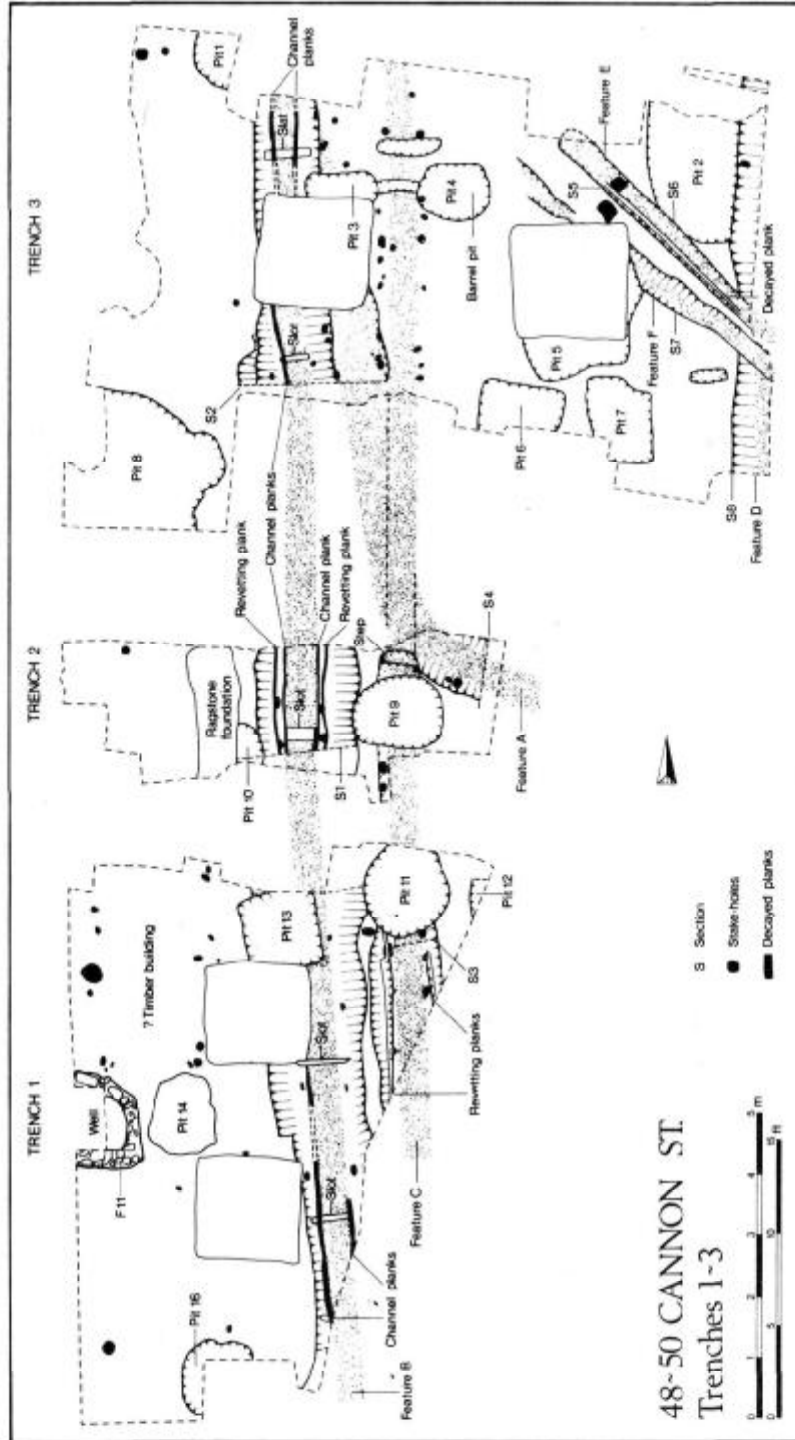


Fig. 3. Cannon Street 1975: Plan of trenches 1-3.

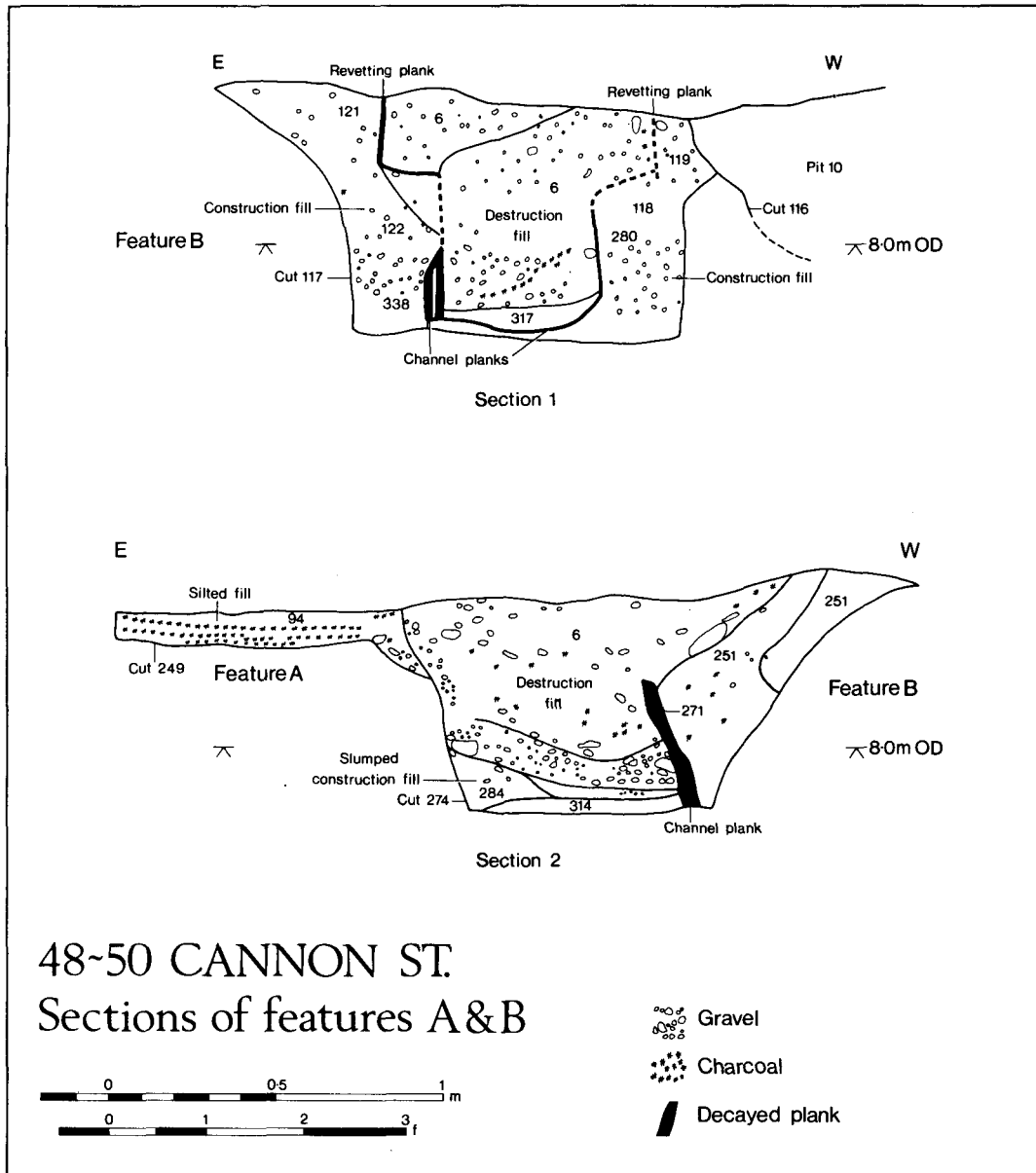


Fig. 4. Cannon Street 1975: Sections of Features A and B.

Feature B (Figs. 3-4, 6) (Plate 3)

Feature B, a similar structure, cut into A (Fig. 4). The construction ditch originally contained a wooden structure, the lower part of which was a plank-lined channel, and the upper part a revetment. Evidence for this survived as thin dark brown staining. The details of construction are as follows:

(I) A flat-bottomed ditch with steep sloping sides formed the construction trench (117, 274). Although within the excavation area this only survived up to 0.8m deep the east section of Trench A indicated that it was formerly at least 1.45m deep. The width of the bottom varied considerably between 0.75 and 1.04m.

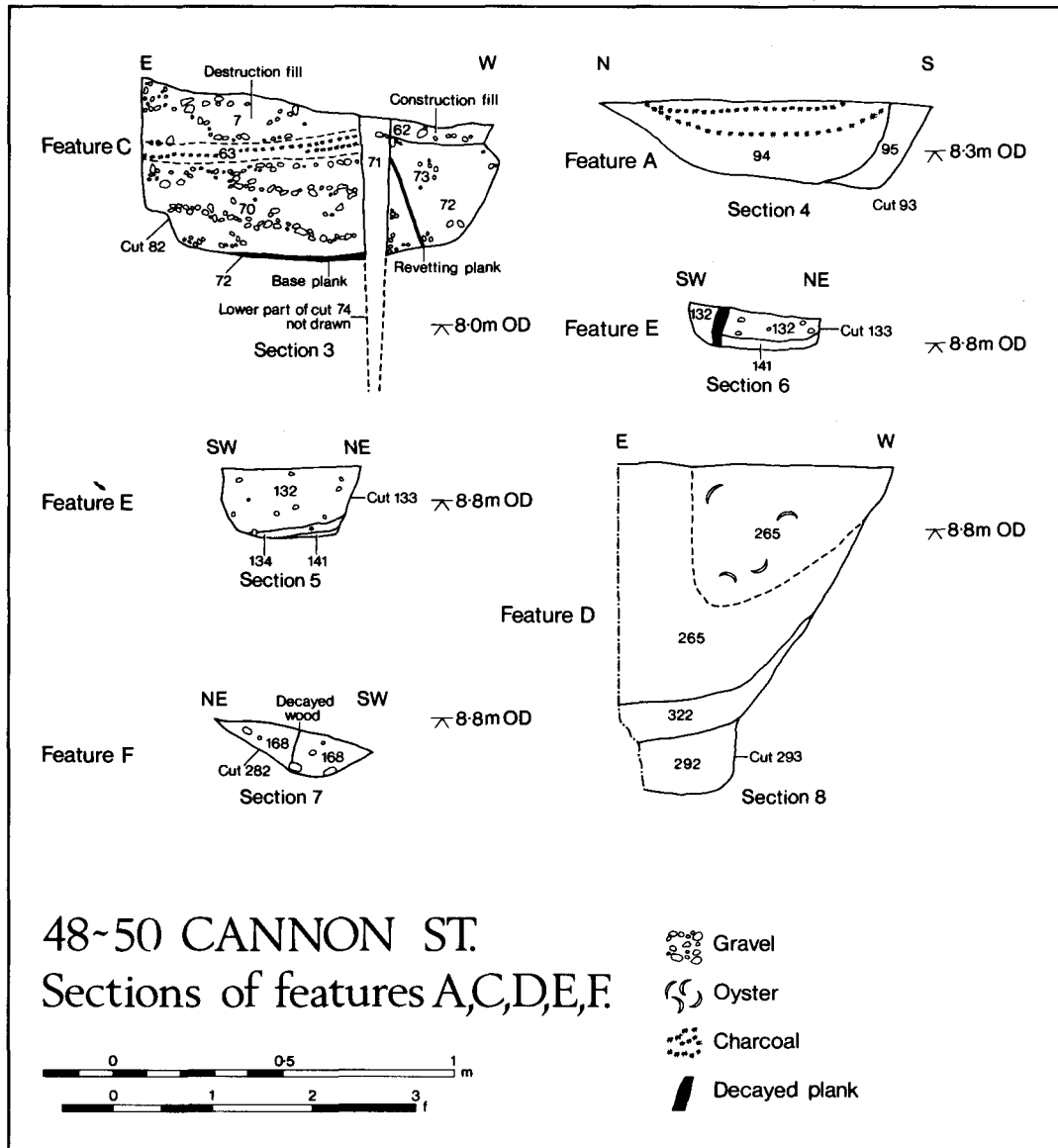


Fig. 5. Cannon Street 1975: Sections of Features A and C to F.

(II) Wooden slats were set across the bottom of this cut at varying intervals. These were used to level the bottom of the channel, the spaces between them being backfilled level to their tops. A gradient of c. 1 in 100 sloping down to the south was produced by this grading.

(III) On to the top of this levelling were laid the 40mm thick planks for the channel with planks of the same thickness set on their edges to form the sides. At the north end the planks survived *in situ* in an amorphous and highly decayed state. Elsewhere the planks may have been removed. The width of the channel was 0.40-0.43m, its original depth 0.43m. Mixed brickearth, sand and gravel was backfilled behind the vertical planks (118, 122, 280, 338, 251).

(IV) Revetting stakes were driven through the backfill on either side of the channel at intervals varying from 0.48 to 1.35m. Except for short lengths in Trench 1, the stains for the revetting planks only survived in Trench 2. Again brickearth, sand and gravel was backfilled behind the planks (119, 121). A construction date at the end of the 1st century seems probable.

It appears that the majority of the planks and stakes had been later removed. Over the length of the feature was a layer of sand and gravel 0.05-0.10m thick (317) which post-dated the removal of the timbers but did not seem to represent water-lain fill. The trench was backfilled with light grey-silt mixed with gravel which contained pottery of Hadrianic date, fragments of oyster shell, tile and wall-plaster along with three chalk *tesserae* (6). Towards the north the quantity of building debris increased, from which, in Trench C, was recovered a gold and emerald necklace (p. 22, No. 59; Fig. 12, Pl. 5). The reconstruction (Fig. 6) suggests that the structure was open, and the slope of the channel sides at the north end may suggest that it was in a state of disrepair before it was finally backfilled. The absence of silt at the north end, where the channel survived, indicated that the feature had not silted up.

Feature C (Figs. 3, 5-6)

This feature ran a straight course through the excavation from north to south parallel to, but having no relationship with, Feature B, and cut the fills of Feature A. Feature C survived best in Trench 1 where its method of construction could be determined:

(I) The construction cut was a flat-bottom ditch, 0.8m wide at the bottom and surviving 0.5m deep with near vertical sides. In Trench 2 the cut ended abruptly, apparently representing a step in the bottom level of the ditch which was at least 0.37m deep.

(II) Dark grey staining indicated that wooden planks about 0.46m wide had been laid along the bottom of the construction cut. In Trench 1 a thin levelling deposit was laid prior to the insertion of the plank.

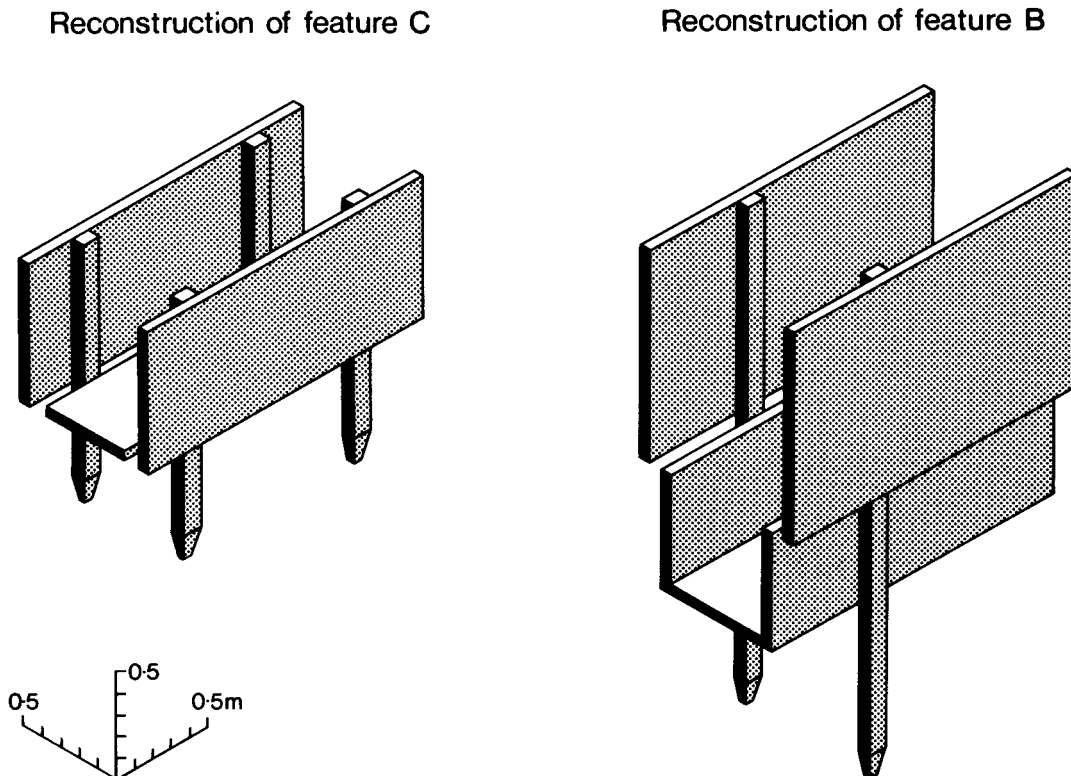


Fig. 6. Cannon Street 1975: Reconstructions of Features B and C.

(III) Stakes were driven into the bottom of the construction cut in pairs spaced at intervals of between 0.26 and 1.32m. These supported revetting planks which survived as thin wood stains which in some places were flush with the side of the construction cut. In others there was a backfill of sand and silt behind.

Although the construction cut did not survive in Trench 3, except in the north section face, the two lines of revetting stakes could be traced through the trench. From the spacing of the stake holes throughout, it was evident that the revetting planks were spaced between 0.56 and 0.74m apart. After use the wood work was apparently removed and the channel was backfilled with coarse sand and gravel (70, 63, 7).

An abrupt step in the bottom of the construction trench in Trench 2 appears to have been a deliberate construction to reduce the gradient of the channel from *c.* 1 in 60 to *c.* 1 in 100. These gradients could not be determined precisely due to the extent of destruction by later features.

Two shallow slots occurred in Trench 3 at right angles to the line of Feature C (Fig. 3), and whilst it appears probable that these features were associated with Feature C, their function is unknown.

Pottery from the construction fill (context 79) suggests an end of 1st-century date for this feature and destruction (context 70) probably in the Hadrianic period.

Feature D (Fig. 3, 5)

Along the east edge of Trench 3, the western half of a north-south aligned ditch was located, its eastern side having been destroyed by modern disturbance. The edge sloped in steeply from the top and for the lowest 0.25m was vertical; maximum depth 0.91m. The sand and gravel fill of Feature D was cut by Pit 2 which in turn was cut by another ditch, Feature E. A few sherds of pre- or early Flavian pottery were recovered from the sand and gravel fill (contexts 265 and 292), with one late 1st/early 2nd-century sherd. This may have been the earliest feature examined.

(ii) Post-Roman

Feature E (Figs. 3, 5)

A shallow ditch with a U-shaped profile, the end of this feature coincided with the north edge of Trench 3 and sloped down to the south-east at a gradient of *c.* 1 in 40. It survived to a maximum depth of 0.22m. Thin traces of wood indicated that there was originally a plank-lining along the bottom, which was a constant 0.33m wide, and the sides. The fill (context 132) was composed of silted layers of fine sand and clay and contained late Flavian/Trajanic pottery. This material is clearly residual as the fill of Pit 2, which is cut by Feature E, contains material of possible late 9th-century date.

Feature F (Figs. 3, 5)

This was an irregularly cut small ditch with no evidence of the wooden structure which ran alongside Feature E. The width across the bottom varied from 0.50 to 0.32m and had a gradient of very approximately 1 in 50; maximum surviving depth 0.14m. It is interesting to note that the layers of sand clay were identical to Feature E, which suggests that the two silted together. No other dating evidence was obtained.

Stakeholes

The majority of the stakeholes, discovered in Trench 3, were associated with Features A and C. A few, however, had no obvious associations. The only well-defined group of stakeholes not associated with the linear features occurred in the west part of Trench 1. It is possible that these may represent part of a wattle-and-daub building constructed of stakes varying in width from 0.06-0.26m, driven into the brickearth to surviving depths of between 0.06 and 0.96m. In cross-section the stakes were oval or round. Those stakes along the southern and eastern sides were grouped in threes, whilst those on the west side were apparently arranged singly. From this may be inferred the possibility that the southern and eastern lines represent external walls and that the western line was an internal partition, but without further evidence no firm conclusions may be reached. Traces of wattle and daub (not datable) were recovered from Pit 12. The structure as located within the excavation trench was 2m wide east-west and a minimum of 3.5m long north-south. Since the north edge of the structure was not located in Trench 1, it must have lain under the concrete foundation between Trenches 1 and 2: its maximum possible length therefore would have been 5m. No floor levels were located, and no dating evidence was obtained other than one Roman sherd from one of the stakehole fills.

Pits

Nineteen pits were discovered, though only eight were completely excavated. The pits were found throughout the site, and showed no apparent concentration or pattern. The fills varied from highly organic clay to redeposited layers of gravel with Roman wall-plaster, and produced material of a range of dates (see finds reports). Some pits contained good groups of Roman material, but others contained Roman residual material with a small proportion of Saxon material (e.g. Pit II, where Roman sherds outnumber the Saxon by over 6:1). There is thus a strong possibility that other pits with only Roman material may have been dug and backfilled in the Saxon period, particularly those with only a few Roman sherds present. This is investigated further in the finds report.

The probable dates of the pits may be tabulated thus:

<i>Roman:</i>	Pit 1	?late 2nd century or later
	3	Roman
	5	4th century
	9	late 3rd or later
	10	Roman
	16	?1st century
<i>Saxon:</i>	Pit 2	late 9th century
	11	9th/10th century
	? 13	Roman plus one Saxon sherd
<i>Medieval:</i>	Pit 4	13th/14th century
	15	mid-14th century
	17	late 11th/13th century
	18	11th/12th century
	19	11th or early 12th century

Pits 6, 7, 8, 12 and 14 either could not be dated or produced no finds. Pits 15, 17-19 are not shown on Fig. 3⁴.

Other Features (Fig. 3)

Two chalk-lined wells were located, one on the west side of Trench 1, F11 (fill context 8), containing 13th-century pottery, the other to the south of this trench (not shown on Fig. 3) (fill context 343) which was dated to the first half of the 15th century. In Trench 2 a ragstone foundation (context 76) containing a Tudor brick ran parallel to and was stratigraphically later than Feature C.

DISCUSSION

by Andy Boddington and John Schofield

Roman period

The size of channels A, B and C indicates that a fair quantity of water was involved though there is no conclusive evidence from the site as to whether this was fresh water being supplied or waste effluent being disposed of.

The problem of a water supply for London is well known and has recently been discussed by Wachter⁵. He refers to, amongst other sources, the intense concentration of wells 200m to the north of the Cannon Street site on the sites of Aldermay House and the Bank of London and South America, Queen Street (Fig. 2)⁶. These indicate an intensive water supply in use perhaps for a long period, though it is doubtful whether they would have sufficed to supply any buildings other than those immediately above them. Gradient was obviously a crucial factor in the construction of the channels, as witnessed by the care taken in the levelling of the bottom channel plank of Feature B, and the

possible step, or weir, in the bottom of Feature C. Such accuracy is essential as any reduction in gradient, for instance where the slope of the hillside levels out behind the Roman riverside, would result in deposition of silt elements and during heavy rainfall the channel would be prone to flooding.

Such parallels as exist for the Feature B type of channel point to its use for effluent rather than supply: one of two wooden drains at Cirencester⁷ had stakes along the outside of the channel. The closest parallels for the type come from London itself. An identical structure has recently been discovered at Mason's Avenue, Basinghall Street, and clearly functioned as a drain⁸, as may be another possible example which ran alongside the road on the east side of the Forum⁹. Another has been found on the Billingsgate Bath House site, Lower Thames Street¹⁰, functioning as a road drain. It may be concluded that these analogies suggest, on the whole, a drainage function for features A, B and C.

Other than the channels, little can be said of the Roman occupation of the site, though the backfill of the north end of Feature B suggests domestic occupation nearby at this period. This is in keeping with previous evidence from the area which is all of domestic character (Fig. 2). Chalk tesserae from Feature B suggest the use of mosaics at an early date (see below, p. 26).

Post-Roman period

Little occupation of the post-Roman period survived, in part due to the method of excavation. Stakeholes in a pattern suggesting part of a building or structure were found in the south-west of the site, adjacent to two pits (11 and 13) which were of probably and possibly late Saxon date respectively. A further possible late Saxon pit (2) lay in the north-east corner of the site. Pits have been shown in close proximity to a Saxon sunken hut on the site of St. Mildred's, Bread Street, about 270m to the west¹¹, dated to the mid-to late Saxon period by associated pottery¹²: such an arrangement may suggest a Saxon date for the Cannon Street structure. The pattern of the stakeholes suggests a small building of ancillary nature, perhaps aligned north-south and therefore aligning with the medieval property boundaries coming back from Great St. Thomas Apostle (Street) to the south. The east edge of Pit 2, in the north-east corner of the site, may also have been straightened to observe another north-south property boundary, possibly of the ninth or tenth centuries. This was, however, overlain by Features E and F on radically different alignments. These features, presumably of early or later medieval date, are of uncertain purpose. No relationship survived between them, except that their fills were identical.

Thus the site exhibits small evidence of occupation, possibly including a small building, in the late Saxon period. It joins an increasing group of sites on the western hill of the City of London which have produced similar evidence: the Financial Times site,¹³ St. Mildred's¹⁴, and more recently Milk Street¹⁵ and Watling Court¹⁶. The present site is the most south-easterly of an area of demonstrable late Saxon occupation in the area around and to the south of Cheapside, perhaps laid out following some kind of urban replanning in the ninth century for which there is evidence in the layout of the early medieval streets, and in documentary evidence for the area immediately north of Queenhithe¹⁷. It is unfortunate that the stakehole building aligning with Great St. Thomas Apostle remains undatable.

The fragmentary medieval remains included pits dotted over the property, a well, and a late medieval ragstone foundation (76) which lay north-south and followed the alignment

of the east side of the stakehole structure, 3m to the south. Possibly here also is a case of continuity of property boundaries from the late Saxon period into the late medieval.

NOTES

1. R. Merrifield *The Roman City of London* (London 1965) Gazetteer Nos. 105-8.
2. P. V. R. Marsden 'Two Roman Public Baths in London', *Trans. London Middlesex Archaeol. Soc.* 27 (1976) 1-70.
3. The limited time available on site encouraged the rapid machine removal of material which, there was subsequently reason to suppose, may have contained stratification above what was actually examined. There is evidently an important moral for the future in such expedients.
4. Pit 15 lay in Trench 1, over the line of Feature B, but would confuse the plan if shown; Pits 17, 18 and 19 were summarily excavated to the north and east of the excavated areas.
5. J. Wachter 'The Water supply of Londinium' in *Collectanea Londiniensia* J. Bird, H. Chapman and J. Clark (eds.), London Middlesex Archaeol. Soc. Special Paper 2 (1978) 104-108.
6. R. Merrifield (*op. cit.* in Note 1) Gazetteer Nos. 89, 91.
7. J. S. Wachter 'Cirencester 1961: Second Interim Report' *Antiq. J.* 42 (1962) 12 (Fig. 5).
8. P. Herbert, Department of Urban Archaeology Level III report.
9. A. Boddington, Department of Urban Archaeology Level III report.
10. We are grateful to P. Marsden for this information.
11. P. Marsden, T. Dyson and M. Rhodes 'Excavation on the site of St. Mildred's Church, Bread Street, London, 1973-4' *Trans. London Middlesex Archaeol. Soc.* 26 (1975) 181-7.
12. M. Rhodes 'The Finds' (*op. cit.* in Note 11) 203. Further discoveries of late Saxon material from a number of sites do not resemble the St. Mildred's groups, suggesting that the latter may be earlier.
13. W. F. Grimes *The Excavation of Roman and Medieval London* (London 1968) 155.
14. *Op. cit.* in Note 11.
15. S. Roskams, Department of Urban Archaeology Level III report.
16. Dominic Perring, Department of Urban Archaeology Level III report.
17. T. Dyson 'Two Saxon Land Grants for Queenhithe' (*in op. cit.* in Note 5) 200-15.

THE FINDS

Edited by Michael Rhodes

With contributions by Hugh Chapman, Chris Green, Catherine Johns, Don Mackreth and Clive Orton, and notes supplied by Caroline Bird and Philip Armitage, Joanna Bird, Elizabeth Eames, John Evans, D. B. Harden, Brian Hartley and Brenda Dickinson, D. T. Moore and M. Morgan.

INTRODUCTION

By Michael Rhodes

The finds were examined primarily as a means of providing dating evidence. In the absence of any coins, this rests heavily on the pottery, although two features have been broadly dated in the post-Roman periods by pieces of building material in their make-up, emphasising the importance of retaining all stratified finds until a preliminary examination of the material has taken place.

Although the pottery has received a very thorough examination, much of the dating evidence it provides must be treated with caution in view of the small size of most of the groups (a number have been dated on the evidence of a single sherd), the high proportion of residual material which they contain and the small number of stratigraphic relationships that were recorded. This applies in particular to a number of the pre-medieval pits which may well be Saxon or even sub-Roman although they produced only Roman pottery. They demonstrate once again that features belonging to these periods are unlikely to be identified as such unless they can be related to others of known date on the basis of their stratigraphy, or can be dated by absolute methods.

The large proportion of residual pottery on this site implies that objects which cannot be dated as closely on typological criteria may also have been removed from circulation at a period considerably earlier than the date of the deposits from which they were recovered. For this reason, where an object has come from a layer dated, for example, to the Hadrianic period, the phrase 'not later than Hadrianic' has been used to summarise the dating evidence.

Most of the Roman finds are described below with the exception of a few unidentifiable iron objects (probably nails), fragments of mud-brick and a piece of slag-like material (4091/74) which was recovered from the fill of Feature C. John Evans submitted this to analysis by emission spectroscopy, atomic absorption and flame photometry, although with inconclusive results. A few fragments of crust-like material, thought to be of faecal origin, were collected from the fills of Feature A (4104/10) and Feature C (4098/12) although, in view of the fact that these deposits contained materials which were clearly brought onto the site, these samples could not be used to provide evidence about the use of the water channels and were therefore not subject to further analysis.

The principal Roman discoveries are of late 1st to 2nd-century date and consist mainly of domestic rubbish together with quantities of building material, comprising fragments of mud-brick, window glass (No. 55), *tegulae*, *imbrices*, bonding course bricks and box flue tiles (Nos. 63-65), *tesserae* (Nos. 66-71) and painted wall-plaster (p. 26). Although no Roman buildings were discovered in the excavation, these remains combine to give the impression that the surrounding area may have been utilised for domestic structures of the kind discovered in the 1978-9 excavations at Watling Court (see Schofield and Dyson, forthcoming), i.e. timber-framed buildings with mud-brick walls on clay sills or stone foundations, with wall-paintings and mosaics on their floors.

A number of post-Roman finds have also not been described in detail. These include two pieces of burnt daub containing wattle impressions from Pit 12 (E.R. 4087) which are probably Saxon as at Bread Street (Rhodes, 1975, 206), although no Saxon wattle and daub structures have yet been discovered in the City. There are also some small quantities of medieval roof tiles (from Context 8; E.R. 4092: 13th century, Pit 4; E.R. 4103: late 13th or early 14th century and Pit 15; E.R. 4089: second half of 15th century), a late 19th century (?) clay tobacco pipe and some unstratified post-medieval pottery comprising red-wares, stone-wares, transfer-printed and plain white 'china'.

After an explanation of the methods used to study the pottery, the reports are grouped in four main sections dealing with the Roman, Saxon, Medieval and post-Medieval periods. Summaries of the skeletal evidence are added as appendices.

Each individually-described object is given a Catalogue Number and these are used in the illustrations. Each layer-group has been given a Museum of London group-accession number, pre-fixed by the letters E.R. Accession numbers of individual finds are given in brackets. These are in two parts, the first half being the E.R. number of the group to which each belongs.

All the finds are now in the Museum of London.



Pl. 1. Cannon Street 1975: General view of Trenches 2 and 3, looking west (Photo: Ken Dash).



Pl. 2. Cannon Street 1975: General view of Trench 1, looking south west (Photo: Ken Dash).



Pl. 3. Cannon Street 1975: Detail of Feature B at Section 1, looking south (Photo: Ken Dash).



Pl. 4. Cannon Street 1975: Roman millefiori glass, No. 51 (for scale see Fig. 12) (Photo: T. J. Hurst).



Pl. 5. Cannon Street 1975: Roman necklace, No. 59 (for scale see Fig. 12) (Photo: T. J. Hurst).

INTRODUCTION TO THE POTTERY REPORT

By Clive Orton

The pottery has been sorted and classified, and this report written, according to the system developed for use in the Department of Urban Archaeology (see Rhodes, 1977a or Orton, 1977a). A more detailed explanation of the methods employed (the 'Users' Handbook') is available on request. The reference for the identification of inclusions is now Peacock (1977c, 30-2). The keywords given by Orton (1977b) have since been augmented by the following:

(iv) *Visual texture* sub-conchoidal: breaks somewhat like glass or flint.

Because a relatively small amount of pottery was found, these reports differ from the preferred format in that it has sometimes proved necessary to publish detailed descriptions of individual sherds or vessels. Pottery names given in italics are the Common Names (Orton, 1977b, 29).

ROMAN

POTTERY

By Chris Green

incorporating notes on the samian by Joanna Bird

The Roman pottery consists of almost 15kgs (33lbs) from the Roman levels with a very much smaller quantity of residual material. Most of it is datable to the later 1st to mid 2nd centuries, the same period as the largest groups from the Billingsgate Buildings site, and this report should be read in conjunction with the report on those assemblages (Green, 1980, forthcoming) since it uses the same conventions, with additional descriptions and illustrations where necessary.

The assemblages are unremarkable, in a fragmentary condition and too small for a useful statistical analysis. The quantities of pottery from the main assemblages (i.e. excluding Features A and C – which produced very small groups) are tabulated according to type in Fig. 7.

Summary of the Dating Evidence:

Fill of Feature A (E.R. 4104)

The pottery consists merely of 72gms of Romano-British greyware body sherds. These cannot be dated, but the drain is stratigraphically earlier than the construction of Features B and C.

Construction trench of Feature B (E.R. 4108, E.R. 4119 and E.R. 4121).

Not a large group (2kgs), but the presence of *Central Gaulish samian* suggests that it belongs to the end of the 1st century at the earliest.

Fill of Feature B (E.R. 4090, E.R. 4112 and E.R. 4118)

Much the largest group, but contamination from later layers is apparent. If this is ignored, sherds of *Black-burnished Ware 1* and a local white-slipped ware should reliably indicate a Hadrianic date, suggesting that this feature was not in use for very long.

Construction trench of Feature C (E.R. 4101)

Only 63gms of pottery were found: 'grey' ware body sherds, a sherd of 'carrot' *amphora* and a sherd of coarse mica-dusted ware. This last item should be late 1st century at the earliest showing that Features C and B are roughly contemporary.

Fill of Feature C (E.R. 4091 and E.R. 4099)

By no means a large group, but a further sherd of the white-slipped fabric found in the fill of Feature B suggests that both drains could well have been demolished at the same time.

Fill of Feature D (E.R. 4120 and E.R. 4122)

This is stratigraphically isolated and difficult to date with certainty, but is perhaps the earliest feature on the site as it produced a number of hand-made grog-tempered vessels which normally indicate a pre- or early Flavian date when found in quantity in London. However, a single sherd of coarse mica-dusted ware (late 1st-early 2nd century) suggests that the hand-made pots could derive from the disturbance of an earlier feature not seen in the excavation.

FABRIC TYPE/SOURCE	POTTERY GROUPS							WEIGHT (gms)
	B (construction trench)	B backfill	C backfill	D	Later Pits	Isolated Pits	Post- Roman	
Dressel 2-4 amphora	P	P	-	-	P	-	-	830
Dressel 20 amphora	P	P	P	P	-	P	P	2474
Dressel 30 amphora	P	P	P	P	P	-	P	792
?Cam. 185a amphora	-	-	-	-	-	-	P	(10)
Cam. 186 amphora	P	P	-	-	P	P	P	671
Cam. 189 amphora	-	-	P	-	-	-	P	28
African cylindrical amphora	-	-	-	-	-	-	P	(90)
White rilled amphora	-	-	-	-	-	-	P*	(68)
Unassigned amphorae	-	P	-	P	-	-	P	(223)
Amphorae or large flagons	-	0.12*	-	-	-	-	R*	32
Grog-tempered (handmade)	P	0.07	P	0.87*	P	0.07	R*	809
Grog-tempered (wheelmade)	0.11	0.21	-	0.47*	-	-	-	250
Shell and/or sand-tempered (handmade)	-	0.02*	-	0.09*	-	-	-	83
Highgate-type greywares	P	0.86*	0.24*	P	0.15	-	R*	274
Brockley Hill-Verulamium white wares	0.45	1.20	0.06	0.75	P	P	R*	2811
Brockley Hill-Verulamium grey wares	-	0.49	P	-	-	-	-	234
Black-Burnished 1 (Dorset)	-	0.27	-	-	-	-	-	71
Black-Burnished 2 (Colchester (?))	-	-	0.02	-	-	-	R	23
Misc. coarser greywares	0.57	1.30*	0.07	0.38	0.25*	P	R*	3929
Misc. finer greywares	-	0.35*	-	-	-	0.08	P	76
London(?) - Staines white-slipped flagons	-	P	P	-	-	-	R*	55
White-slipped beakers, etc. uncertain source	-	P	-	0.20*	-	-	-	15
Face Urn	-	P*	-	-	-	-	-	65
Late Roman 'Calcite-gritted' ware (Midlands)	-	-	-	-	-	0.10	-	13
Coarser Mica-dusted	0.13	-	-	0.06	-	-	P	18
Burnt, etc. coarse wares	0.06	P	-	P	P	P	-	217
South Gaulish samian	P	1.55	0.06	0.09	P	-	-	276
Central Gaulish samian	0.10	0.03	0.04	-	0.08	-	P*	96
East Gaulish samian	-	-	-	-	-	-	P	13
Late Italian samian	P	-	-	-	-	-	-	2
Pompeian Redware 1	-	P	-	-	-	-	-	17
Pompeian Redware, Romano-British	0.03*	-	-	-	-	-	-	13
Terra Nigra	P	-	-	-	-	-	-	7
Lyons Ware	-	P	-	-	-	-	-	1
Finer Mica-dusted	-	0.39*	-	-	-	-	P*	65
Fineware 'second'	-	-	-	0.10*	-	-	-	44
Black Micaceous fineware (Flavian)	0.41	0.20*	-	-	-	-	R*	78
Eggshell Ware (local)	-	0.19*	-	-	-	-	-	5
Marbled Ware (local)	-	0.18*	-	-	-	-	-	51
Red-painted fineware	-	P	-	-	-	-	-	43
'London Ware'	-	0.17*	-	-	-	-	-	81
Mosellekeramik	-	-	-	-	-	P	-	8
Nene Valley colour-coated	-	I	-	-	-	P	-	58
Oxon. red colour-coated	-	I	-	-	0.09	-	P	126
Oxon. white colour-coated mortarium	-	-	-	-	-	-	R	(40)
Total - pottery from Roman layers	1.86	7.60	0.49	3.01	0.57	0.25		
	2011	8412	633	2064	1031	506		
								(Equivalent of 13.78 rims; Weight 14657gms)

- * = examples illustrated
P = present but without rim sherds
I = present but presumed intrusive
R = Rim sherd(s) in post-Roman contexts
0.07 etc = Proportion of a whole rim recovered (absolute quantities)
123 etc = Weight in grams (used in totals only).

Fig. 7. Cannon Street 1975: Quantities of Roman pottery in the main groups.

LATER PITS

The following pits cut the fills of Features B and C, and should therefore be Hadrianic or later. The dating evidence is generally poor:

Pit 1 (E.R. 4115)

Only greyware sherds were found, but these include a widely-everted jar rim (source unknown) which should be late 2nd-century or later on purely typological grounds.

Pit 3 (E.R. 4113)

None of the sherds (*amphorae*, coarsewares and *South Gaulish samian*) need be later than the 1st century, and are thus uninformative as to the date.

Pit 9 (E.R. 4102)

This contained two sherds of *Oxfordshire red colour-coated* bowls and should therefore be late 3rd century or later in date.

Pit 10 (E.R. 4107)

This contained a sherd of early *Central Gaulish samian* and two coarseware sherds, all clearly earlier than the pit itself.

Pit 13 (E.R. 4093)

This contained a single sherd of *Central Gaulish samian*.

ISOLATED PITS

These have no post-Roman finds, but are not necessarily of Roman date.

Pit 5 (E.R. 4116)

This contained three sherds, all of late 2nd-century or later date. The latest is from a *late Roman calcite-gritted jar*, probably from a Midlands source and of 4th-century date in London.

Pit 7 (E.R. 4117)

Two undatable sherds only.

Pit 16 (E.R. 4096)

This contained a dozen sherds from common *amphora* types and coarsewares none of which need be later than the 1st century.

The Fabrics Present:

Unless stated, the types below are not illustrated here. For full descriptions and further references see Green (1980).

AMPHORAE:

(Fig. 8, No. 1)

Dressel 2-4, see Green (1980) Nos. 15-20.

Dressel 20, see *ibid.* Nos. 1-3.

Dressel 30, see *ibid.* Nos. 21-28 and Peacock (1978).

Camulodunum 185a (probably present), see Green (1980) Nos. 4-5.

Camulodunum 186, see *ibid.* Nos. 6-11 and Peacock (1974).

Camulodunum 189 ('Carrot amphorae'), see Green (1980) Nos. 34-35.

African cylindrical, see *ibid.* between Nos. 387 and 388; also Peacock (1977d): The Cannon Street sherd is similar, but not necessarily from precisely the same source.

1. *White rilled amphora*. The fabric is very pale cream (10 YR 9/2), hard, smooth and fairly clean-fractured. Fairly abundant inclusions of white limestone and quartz (mainly subangular and 0.3mm or less in diameter) with sparser mica and ironstone of smaller sizes. The origin and dating of these little vessels is obscure (pers. comm., D. P. S. Peacock). Unstratified; E.R. 4086 (illustrated). Other unknown amphora types. Sherds from three distinct fabrics occur although are not described here as there is no indication of their form.

AMPHORAE OR LARGE FLAGONS:

(Fig. 8, Nos. 2-3)

2. Light grey fabric with red-brown margins (2.5 YR 6/10) and slightly duller surfaces. Very hard, with a rough feel resulting from abundant mainly rounded quartz

inclusions (0.2-0.7mm), with lesser quantities of fine mica, large rounded flint inclusions (c. 2mm) and ironstone. Probably local. From the fill of Feature B; E.R. 4112 (illustrated).

3. Pink fabric with flesh-coloured surfaces. Hard. White grog (up to 1.5mm) and further streaks of white clay are obvious in fracture, with abundant subangular quartz and some ironstone fragments up to 2mm in length. Source unknown. Residual in Pit 2; E.R. 4110 (illustrated).

OTHER COARSEWARES:

(Fig. 8, Nos. 4-22 and Fig. 9)

- 4-12. Handmade grog-tempered vessels. Nos. 4-8 form a coherent group in grey, generally moderately hard fabrics containing abundant light and dark grey grog up to 1mm and more in diameter, with a few grains of charcoal. Ironstone and quartz occur only sparsely as very fine grains in the matrix, so that these vessels feel smooth or 'soapy' despite their rough finish and lack of burnishing. Most examples (Nos. 4-9) are 'bead-rimmed' jars although necked jars also occur. On the evidence of unpublished material from current excavations in the City, it seems likely that they are pre-Flavian. Nos. 4-10 and 12 come from the fill of Feature D; E.R. 4120. No. 11 is unstratified; E.R. 4086 (illustrated).
- 13-14. Wheelmade grog-tempered vessels. A small quantity of material. From the fill of Feature B; E.R. 4121 (illustrated).
15. Handmade shell and/or sand-tempered vessels. A small quantity of material, showing no consistence in fabric. From Feature D; E.R. 4120 (illustrated).

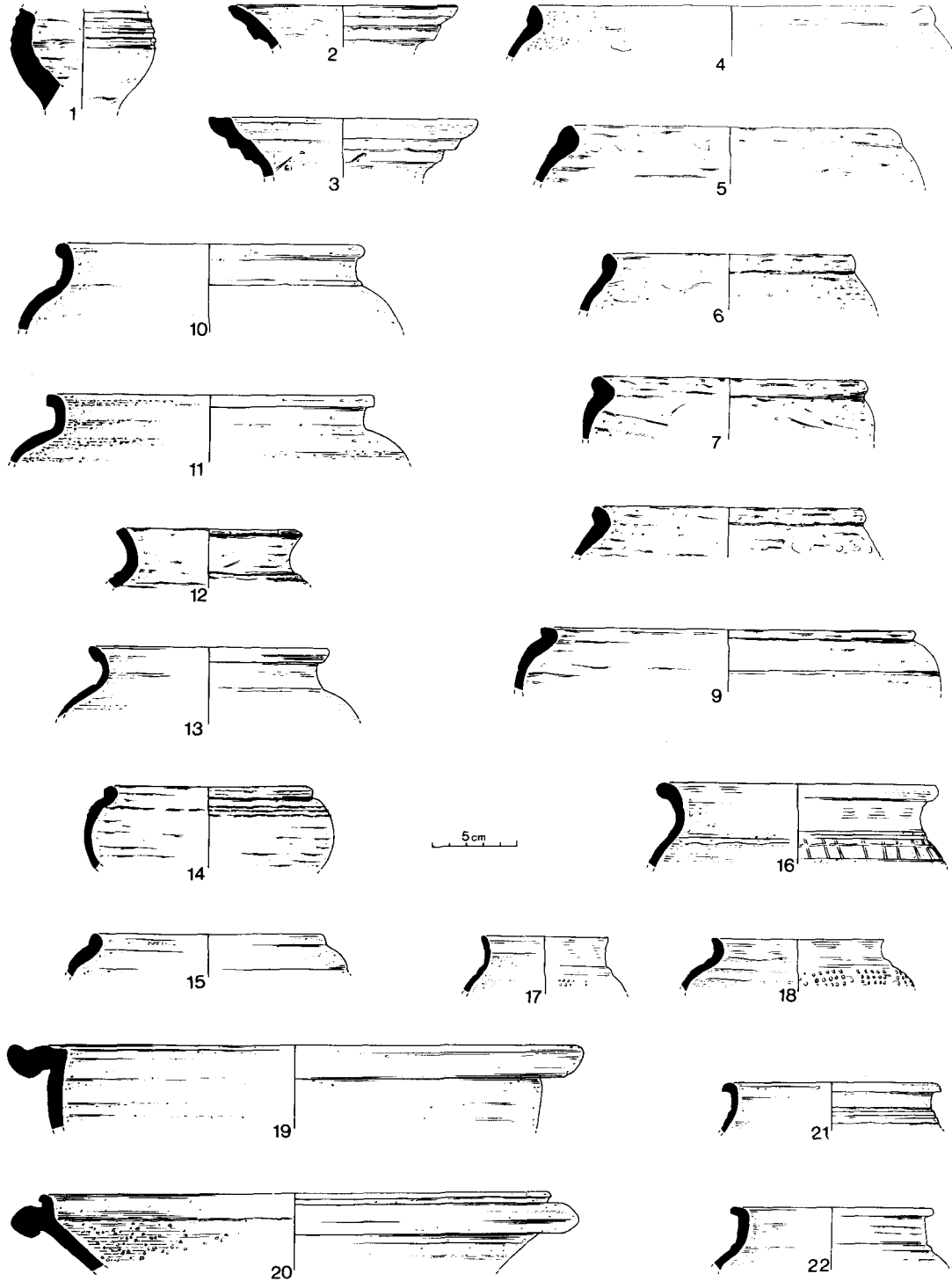


Fig. 8. Cannon Street 1975: Roman amphorae and coarsewares Nos. 1-22 (4).

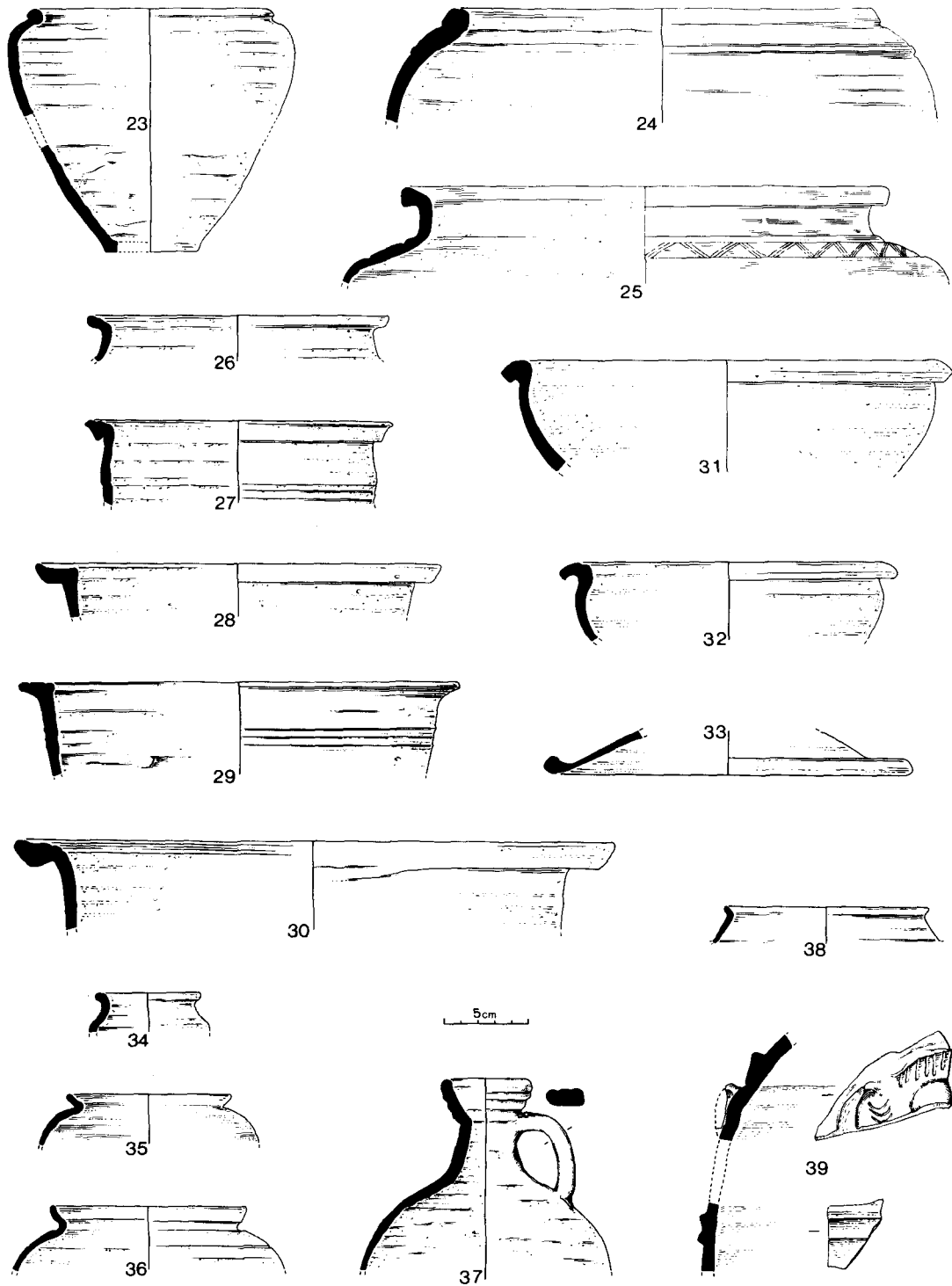


Fig. 9. Cannon Street 1975: Roman coarsewares and finewares Nos. 23-39 (4).

- 16-18 *Highgate-type sandy 'greywares'*. See Green (1980, Nos. 115-160). Some minor variations in form are illustrated here. From E.R. 4090, 4091 and 4111.
- 19-20. *Brockley Hill/Verulamium region 'white' wares*. See *ibid.* Nos. 53-106; only additional forms are illustrated here. The mortarium, No. 20, seems likely though not certainly to be an overfired vessel from this source. If so it should be a 2nd-century example. No. 19 is residual in Pit 2; E.R. 4088, and No. 20 is unstratified; E.R. 4086 (illustrated).
Brockley Hill/Verulamium region 'grey' wares. See *ibid.* Nos. 107-114. All the Cannon Street examples are bowls; *ibid.* Nos. 113-114.
- Black-burnished ware 1* (handmade, Dorset). See *ibid.* Nos. 277-284. These examples are 'early' bowl forms, i.e. Hadrianic-Antonine.
- Black-burnished ware 2* (wheelmade, Colchester (?)). See *ibid.* Nos. 251-257. The 'D' rimmed bowl, *ibid.* Nos. 251-253, is present here.
- 21-33. Miscellaneous coarser greywares. Probably all local. From various contexts; E.R. 4108, 4111, 4109, 4121 and 4090 respectively (illustrated).
- 34-36. Miscellaneous finer greywares. Probably all local. No. 36 comes from Pit 6; E.R. 4106. The others come from the fill of Feature B; E.R. 4108 (illustrated).
37. White-slipped coarseware from the Staines (?) or London areas. See *ibid.* Nos. 258-264. From a post-Roman layer; E.R. 4097 (illustrated).
38. White-slipped fabric (uncertain source). As *ibid.* 265a (but not illustrated there). Subsequent work has shown this to be a well-defined and distinctive fabric, identical to that of kiln waste from Hoo, Kent (Blumstein, 1956) now in the Maidstone Museum, but its date-range remains vague. Present here is a sherd of a rouletted beaker or butt-beaker, from the fill of Feature B; E.R. 4090, and a

beaker (No. 38) from the fill of Feature D; E.R. 4121 (illustrated).

39. Face Urn. Fragments of a finely-executed example with raised girth band. Fabric highly fired and very hard, dull brick red with dark grey inner core and margins, containing a moderate amount of subangular quartz with sparser ironstones, c. 0.5mm or less in diameter. The exterior and parts of the interior are slipped almost pure white. Possibly local? From the fill of Feature B; E.R. 4090 (illustrated).
Late Roman "Calcite-gritted" ware. See Orton (1977a, 37-39), where it is termed *late Roman shelly ware*. From the Bedford-Northampton area. A jar rim from Pit 5 (E.R. 4116), form as *ibid.* No. 253, is probably 4th-century date here.
Coarser mica-dusted wares. See Green (1980, Nos. 325-353).

FINEWARES:

(Fig. 10 and Fig. 11)

South Gaulish samian. Unremarkable fragments of common forms: Drag. 15/17, 18, 27 (most frequent), 29, 35, 36, 37, with a highly fragmentary decorated Déchelette 67. The only stamped sherd has been identified by Brian Hartley and Brenda Dickinson as OFFPATRICI; Patricius i, die 3d, on Drag 27g (La Graufesenque). They comment that this is not known on pre-Flavian sites, but is present at Chester, Nijmegen, Ulpia Noviomagus, Ribchester and Verulamium and is probably AD 70-90 (unstratified; E.R. 4086, and not illustrated in view of its poor condition). *Central Gaulish samian*. Generally in lesser quantities even in 2nd-century deposits. There are sherds of Curle 11 (Martres-de-Veyre), Drag. 18R, 27, 37 and Déchelette 67. Pit 13 (E.R. 4093) produced a Drag 37 (probably Martres-de-Veyre) in the Donnaucus/Sacer style.

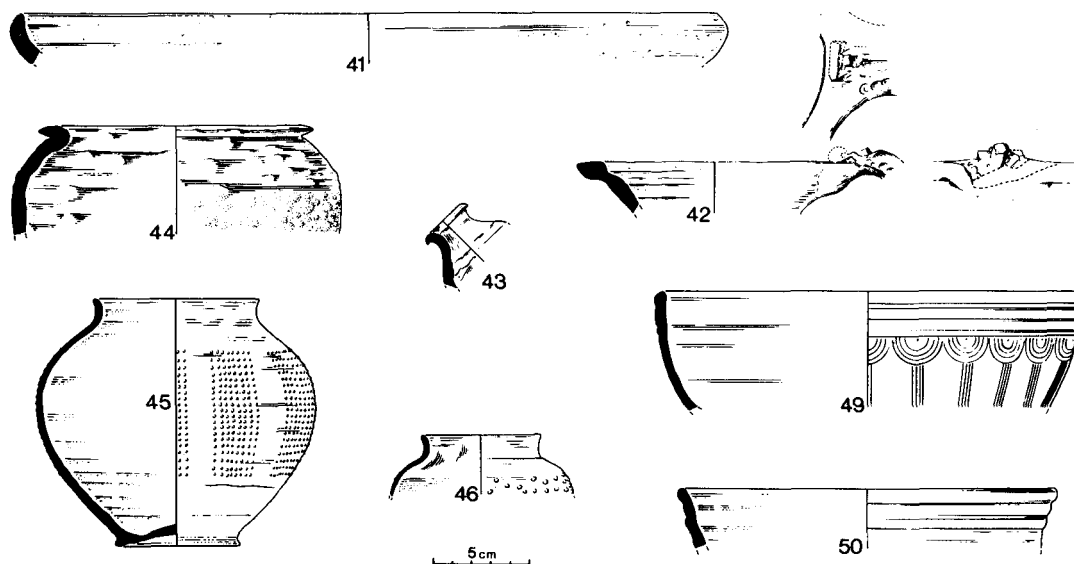


Fig. 10. Cannon Street 1975: Roman finewares Nos. 41-46, 49-50 (4).

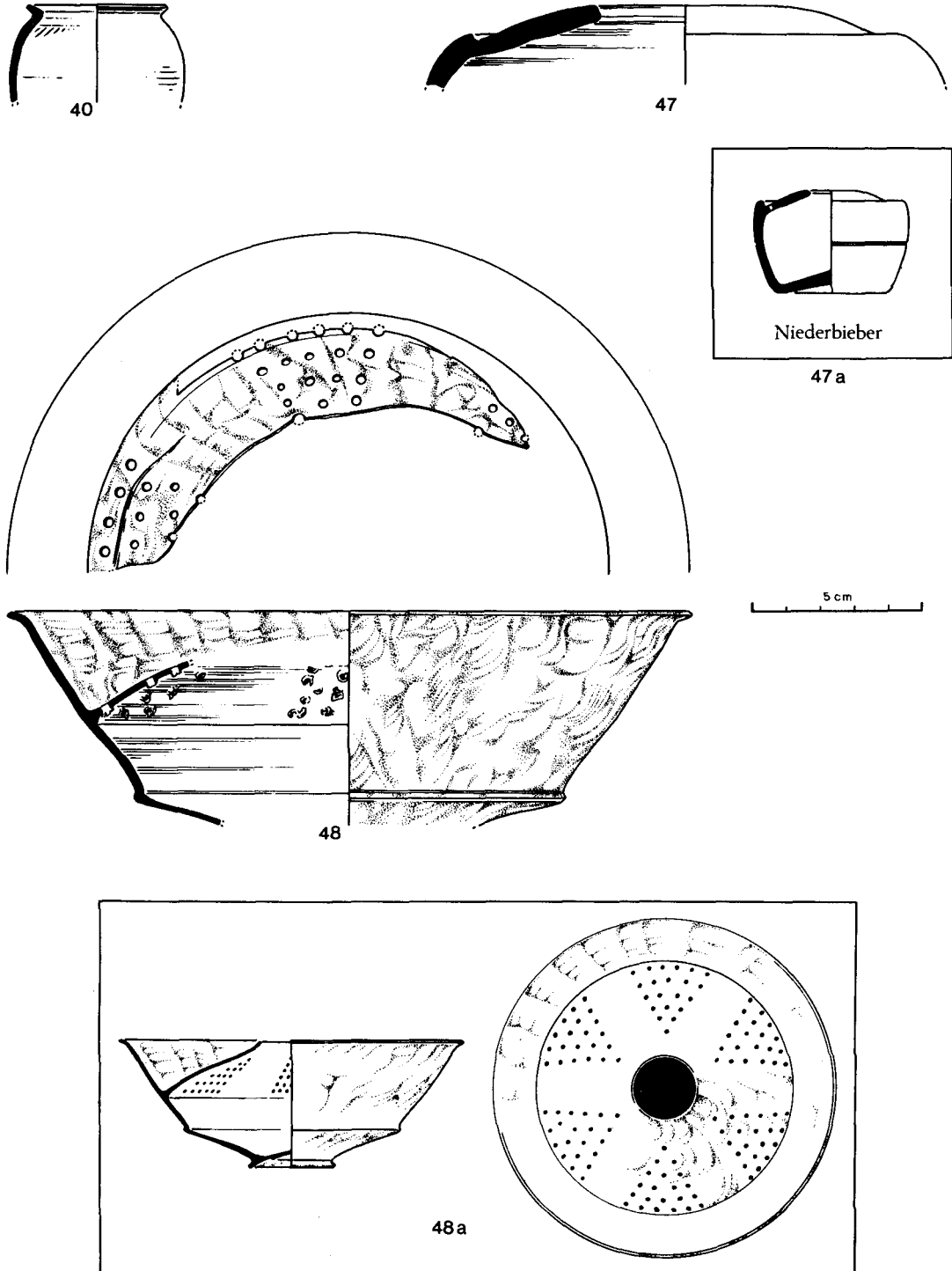


Fig. 11. Cannon Street 1975: Roman finewares Nos. 40, 47-48 ($\frac{1}{2}$; except for Nos. 47a and 48a ($\frac{1}{4}$)).

47. Of particular interest is the disc of an inkwell; a variant of Ritterling 12, probably Central Gaulish. This is a large example, lacking the usual non-spill internal flange. The closest parallel (though early 3rd century and presumably East Gaulish) comes from Niederbieber (Gose, 1950, Form 157 – here shown inset). Residual in Pit 11; E.R. 4088. Probably late 2nd century (illustrated).
East Gaulish samian. There is a single sherd of Drag 45. Late 2nd century. Residual in Pit 6; E.R. 4106.
Late Italian samian. Sherd of a dish in the characteristic rather roughly-fractured cream-pink fabric with minute orange-brown flecks and somewhat coarse brownish-red gloss. Rare in Britain: see Boon (1967, 42). Late Flavian-Hadrianic. From the construction of Feature B (E.R. 4109).
Pompeian Red ware. Fabric 1 (Campanian). See Green (1980, No. 303).
41. *Pompeian Red ware. Romano-British (?) fabric*. Pale grey with pinkish-brown margins (5 YR 7-8/4), slipped (probably overall) orange-brown (2.5 YR 6/8). Abundant subangular to rounded inclusions of quartz (0.2-0.6mm), with sparse, but prominent, white limestone (1-2mm, angular) and a little mica, grog and ironstone. Not included in Peacock (1977b). From the construction trench of Feature B; E.R. 4109 (illustrated).
Terra-nigra. Sherd from a dish/bowl. Grey-white with darker margins and very dark grey slip. Moderately hard. The inclusions consist merely of some fine quartz (up to 0.3mm, angular) and much sparser, tiny flecks of ironstone. From the construction trench of Feature B; E.R. 4109.
Lyons ware. See *ibid.* No. 304. Scraps of a roughcast beaker from the construction trench of Feature B; E.R. 4109.
- 42-43. Finer mica-dusted wares. See *ibid.* Nos. 318-323. Of special note are part of a 'wine-strainer' spout (No. 43) residual in Feature E; E.R. 4111 (illustrated) and a close copy of a bronze jug (No. 42) from the fill of Feature B; E.R. 4090 (illustrated).
44. Fineware "second" or possibly waster. The vessel walls are overfired and full of gas-blisters, so that the fabric need not be representative of normal examples: grey with pink-buff surfaces (5YR 7/8) containing sparse quartz (sub-angular less than 0.4mm), a few grains of grog (1mm), very fine mica and a very coarse flint inclusion in a silty matrix. Probably local although this vessel may well have been watertight and usable. From the fill of Feature D (E.R. 4121) but perhaps Flavian (illustrated).
- 45-46. *Black micaceous fineware*. Dark grey sometimes with reddish-brown external margins, and a darker (generally black) exterior. Hard, finely irregular in fracture. Fairly abundant inclusions of mainly subangular quartz and sparse ironstone (both silt-size to c. 0.5mm) and, distinctively, moderate amount of white mica (less than 0.3mm) which is conspicuous at the surfaces. No. 45 contains a very coarse flint inclusion. No. 46 is in an altogether finer fabric, but the resemblances are close. The only forms present are the short-rimmed barbotine-panelled beakers illustrated. Probably local and of early (?) Flavian date. No. 46 comes from the fill of Feature B; E.R. 4090 and No. 45 was residual in Pit 2; E.R. 4110 (illustrated).
40. *Eggshell ware (local)*. See *ibid.* Nos. 366-369 and 371. No. 47, which comes from the fill of Feature B (E.R. 4090) is the only example (illustrated).
48. *Marbled ware (local)*. See *ibid.* (grouped with Eggshell ware). The Cannon Street vessel is a fine example of wine-strainer, with orange marbling on the external surfaces only. The type is discussed in Marsh (1978, Type 45). From the fill of Feature B; E.R. 4090 (illustrated).
Red-painted fineware. See Green (1980, No. 372). The present example is a very similar deep bowl-flange.
- 49-50. *'London Ware'*. See *ibid.* Nos. 354-365. Oddly this locally common type only comes from one group – the fill of Feature B; E.R. 4090 (illustrated).
Mosellekeramik. This is the East Gaulish variety of the so-called 'Rhenish ware' of the late 2nd-early 3rd centuries, see Orton (1977c, 42) and Greene (1978, 18-19).
Nene Valley colour-coated wares. See Orton (1977c, 41). The white fabric was present at Cannon Street. It probably dates to the later 3rd or 4th centuries, but could be earlier.
Oxfordshire red-colour-coated wares. See Young (1977, 123-184). Bowl sherds, too fragmentary for a close determination of their form. Late 3rd-4th centuries.
Oxfordshire white colour-coated ware. See *ibid.* 117-122. A sherd of Young type WC 4.1 was found unstratified.

CONCLUSION

The Cannon Street groups have added very little to our knowledge of London's Roman pottery. However, they illustrate clearly the need to examine assemblages carefully as the dating evidence they provide has rested upon a single sherd in several instances.

GLASS

From notes by Dr D. B. Harden

(Fig. 12, Nos. 51-58; Pl. 4)

Although 32 fragments of Roman glass were recovered, these are mostly small and only pieces large enough to be identified have been included in this report. Munsell numbers have been used to give some indication of their colours.

51. (4090/6) Fragment of a flat-based dish or bowl in *millefiori* glass, fused in a two-part mould using green (5GY 5/4 – 10 G 3/4), yellow (5Y 8/12), white and red (2.5R 8/4) rods of glass. These are too distorted for the original flower pattern to be recognised. Perhaps Central or South Italian; the type is found in Britain in the second half of the 1st century. From the destruction fill of Feature B (illustrated).
52. (4090/47) Fragment of a small jar, possibly cast rather than blown, in opaque turquoise glass (5B 5/6). Italian. From the destruction fill of Feature B and therefore not later than the Hadrianic period (illustrated).

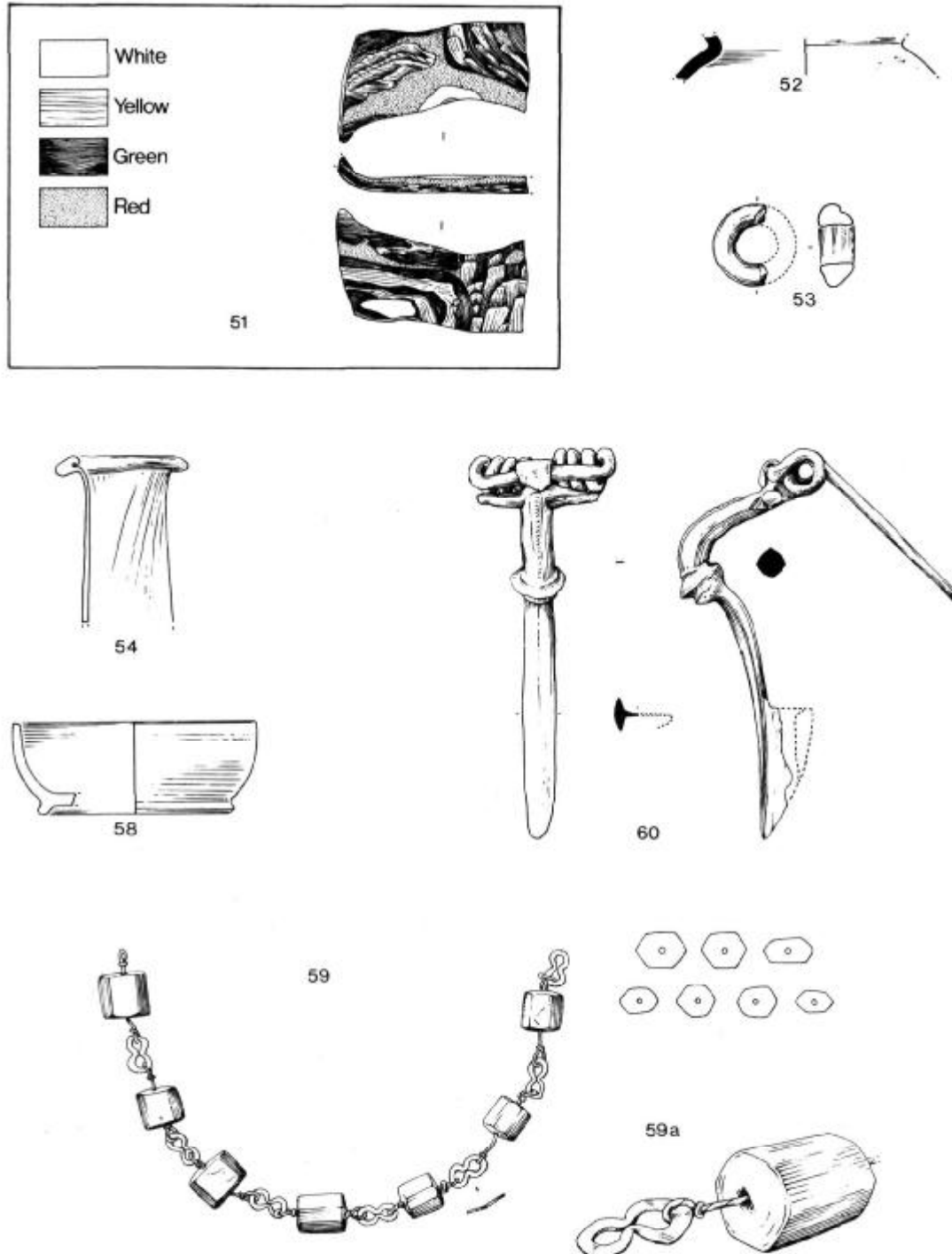


Fig. 12. Cannon Street 1975: Roman glass Nos. 51-58 ($\frac{1}{2}$; except for No. 51 1/1); Roman necklace No. 59 (1/1 and 5/2); Roman brooch No. 60 (1/1).

53. (4090/28) Large bead in natural blue-green glass; probably Gaulish. Date and provenance as for No. 52 (illustrated).
54. (4090/13) Neck and rim of a vessel in natural green glass. Probably from an unguent bottle as it appears to have been handleless. 1st century. Probably Gaulish. Provenance as for No. 52 (illustrated).
55. (4090/46) Sherd of natural green window (?) glass, 2-2.5mm thick, with straight heat-finished edge. Date and provenance as for No. 52.
56. (4090/26) Small (dia. approx. 15mm) lump of 'Egyptian Blue' frit; a deep blue (5PB 4/8) vesicular substance used as a pigment, see Harden (1956, 318). It has been found on a number of Romano-British sites, e.g. Woodeaton and Fishbourne. In London, hundreds of balls of 'Egyptian Blue' were found in a pit south of Cheapside in 1957 and use in a process such as enamelling was suggested (Marsden, 1968, 40). Date and provenance as for No. 52.
57. (4090/22) Fragment of turquoise 'melon' bead of standard form. Date and provenance as for No. 52.
58. (4086/21) Cast and wheel-cut bowl in pale natural green glass. There are no precise parallels. Unstratified (illustrated).

NECKLACE

By Catherine Johns

(Fig. 12, No. 59; Pl. 5)

59. (4090/2). Portion of necklace c. 110mm long. It consists of seven highly-polished emerald beads (identified by Mavis Bimson using X-ray diffraction analysis) of straight-sided form and roughly hexagonal cross-section. The beads are longitudinally pierced and threaded upon very fine gold wire where they alternate with flattened gold links of figure-of-eight form. Mavis Bimson has used X-ray fluorescence to show that the gold has a copper content of between 1 and 5%.

Necklaces consisting of beads alternating with gold links are well known in the Roman Empire. Several necklaces in the Greek and Roman Department of the British Museum show affinities with the Cannon Street fragment although the two closest parallels, Marshall (1911) Nos. 2759 and 2731, are unfortunately unprovenanced. The first of these has figure-of-eight links and green beads described by Marshall as porcelain, but more likely of emerald. The second, a complete necklace with a hook-and-eye type of fastening, has emerald beads very similar to those of the Cannon Street necklace, but the intervening gold links, though flattened, have a quatrefoil shape.

Several other necklaces are of the same general type, occasionally incorporating other stones (amethysts, garnets) as well as emeralds; another shape which occurs in the gold links is that of a knot of Hercules, perhaps the origin of the simpler figure-of-eight.

There is little dating evidence for these necklaces, but two examples from the Beaurains Treasure, near Arras (British Museum Reg. No. 1924/5 – 14/11 and 12) may be relevant. Although these differ in that their emeralds are spaced on a plaited gold chain, they seem, nonetheless, to belong to the same general range, and show that it was a long-lived variety. The Beaurains Treasure can be dated to c. AD 300, as it contains the fine gold medallion showing Constantine Chlorus at the gates of London, produced to commemorate his visit in AD 296 (for illustration see Merrifield, 1965, 167 and Pl. 13). A fragment of a necklace somewhat similar to these, this time with beads of imitation emerald, has recently been found at Canterbury, again probably in a late Roman layer (see Johns, forthcoming).

The Cannon Street necklace is important not only as an example, rare in Britain, of really fine Roman jewellery and the first representative of its exact type from this country, but as the first specimen of its exact type to be soundly stratified; it comes from the fill of Feature B and is therefore not later than Hadrianic (illustrated; see also Pl. 5).

BROOCH

By Don Mackreth

(Fig. 12, No. 60)

60. (4086/1). Brooch of copper-alloy. The spring arrangement is the same as that of Colchester type brooches (see Hawkes and Hull 1947, 308, Type III), save that the hook is short and broad. The wings are plain and narrow. The bow

design falls into two parts. The upper has a swell in front and behind, and an aris down each side. Along the top is a series of cross-cuts. This part of the bow runs out from the wings and then turns down sharply to a triple moulding, the central element of which is much larger than the other two. Below this ornament the lower part of the bow has a recurve and a slight swell in front, with a suggestion of a median aris at the top. The catch-plate is broken and is plain.

Such brooches are rare in Britain and are imports from the Continent. Similar examples have been found at Richborough (Radford, 1932, No. 7, p. 77 and Pl. 9), Lincoln (Hildyard, 1945, No. 3, 156) and Ditchley (Radford, 1936, No. 3, 56 and Pl. 9). Only one of these has any date; the Richborough brooch comes from a context with a date range of AD 50-120. It is clear that the proper starting date of this type is the first half of the 1st century AD along with companion pieces such as brooches with elaborate rosettes (see Hawkes and Hull, 1947, 314, Type X) and the Langton Down type (see Hawkes and Hull, 1947, 317, Type XII). Although it is possible that, like those, it could have been imported before the Conquest, the extreme rarity

of this sort of brooch suggests that it belongs to the period of greatly expanded trading connections after the Conquest. It is also possible that it was already a survival in use when it was brought to this country, the manufacture of the type having ceased. Unstratified (illustrated).

IRON

By Hugh Chapman

(Fig. 13, No. 61)

61. (4096/64) Socketed ballista or catapult bolt, heavily encrusted with corrosion but radiography indicates the

basic outline, solid head and hollow socket. A common type, see e.g. Brailsford (1962, 6, Nos. B117-B183 and Pl. 6, especially B182). From Pit 16 and therefore of late 1st or perhaps early 2nd century date (illustrated from radiograph).

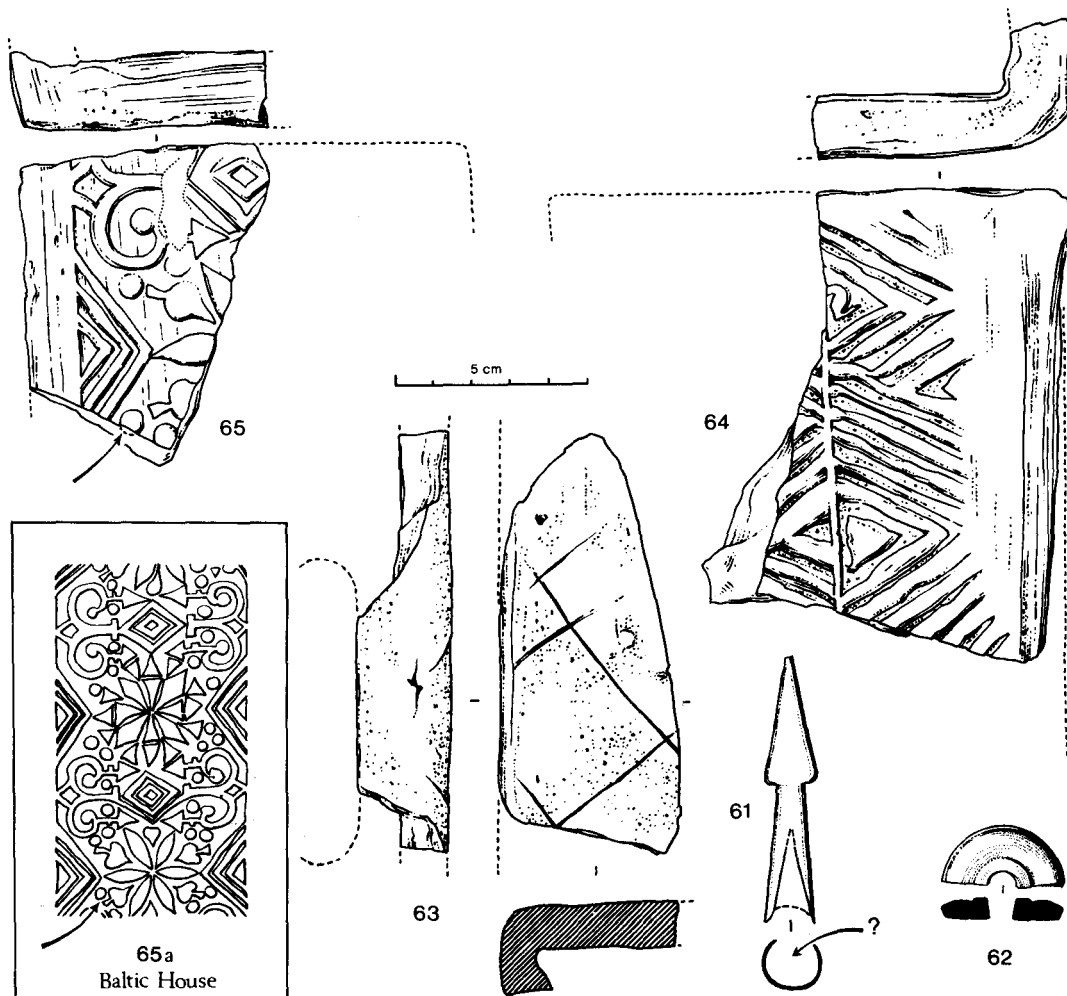


Fig. 13. Cannon Street 1975: Roman objects of iron No. 61 (1/4), bone No. 62 (1/4); Roman decorated flue-tiles Nos. 63-65 (1/4), No. 65a (1/4).

IRON NAILS

By Michael Rhodes

The excavations produced c. 22 nails of Type 1 (see Rhodes, 1977b, 63) which are so highly corroded that they may be identified only by radiography. Fifteen came from the destruction fill of two of the drains, Features B and D (E.R. Nos. 4090 and 4121 respectively) and these are small in comparison with similar examples from Angel Court (*ibid.*, Fig. 19), with an average length of c. 45mm and heads with an average width of c. 10.5mm. In view of the range of materials deposited in the fill of the two drains, there is no reason to suppose that these nails were employed in their construction.

BONE

By Hugh Chapman

(Fig. 13, No. 62)

62. (4110/8) Spindle whorl; half survives; flat underside, turned

concentric groove around outer edge on upper surface and raised rim around central hole, cf. Wheeler (1930, Pl. 46, No. 9). Residual in Pit 2 (illustrated).

CERAMIC BUILDING MATERIALS

By Chris Green

(Fig. 13, Nos. 63-65)

16.8kgs of Roman brick and tile were recovered from the Roman layers, the majority coming from the fill of Feature B (E.R. 4090). This small quantity does not warrant statistical analysis especially in view of its fragmentary condition. As at Billingsgate Buildings (Green, 1980, Nos. 697-708) both red (locally made) and pale yellow (Brockley Hill/Verulamium region ?) varieties are present. Scraps of tegulae, imbrices and bonding course bricks occur in both fabrics, although the yellow fabric forms a small proportion and is largely confined to the fill of Feature B. In addition the following decorated flue-tiles were found:

63. (4090/80) Fragment of a pale yellow box flue-tile with a diagonally scored key for plaster. From the fill of Feature B and therefore Hadrianic or earlier (illustrated).
64. (4091/79) Roller-stamped box flue-tile in red fabric. Not given by Lowther (1948), but broadly similar to his Group 5. From the fill of Feature C and therefore Hadrianic or earlier (illustrated).
65. (4086/78) Stamped box flue-tile. This is one of the most ornate flue tile designs, thought by Lowther (*ibid.*) to have been made from a bronze die fixed to a wooden core, but despite the absence of wood-grain impressions it seems more likely that the usual carved wooden roller was employed. Lowther's Die 9 (illustrated here, No. 65a) is

almost identical, but the type specimen (from Baltic House, City of London, Museum of London Acc. No. 24598) is more deeply cut and differs at the point indicated; thus it appears that at least two dies were cut from the same pattern. A further version of the design (London, unprovenanced, Museum of London Acc. No. 24597) is a double-width die, with consequent variations. The design is not entirely abstract: the curvilinear part of the border recalls the *peltae* which frequently flank carved inscriptions (see Thompson, 1968; pers. comm., H. Chapman) while the 'leaves' around the compass-drawn motif are also seen as stops in similar inscriptions (e.g. Collingwood and Wright, 1965, Nos. 263 and 592). Unstratified (illustrated).

CHALK TESSERAE

By Michael Rhodes

(Fig. 14, Nos. 66-68)

Although a considerable number of mosaics have been discovered in London, little has been published about their dating and practically no work has been done on the size and petrology of the tesserae employed in their construction. Information in these areas could prove to be useful for deducing the nature of the industries responsible for the production of London's mosaics and, in view of this, the Cannon Street tesserae are discussed in greater depth than might otherwise be thought necessary.

The six, small used tesserae were submitted to Martyn Owen for petrological examination. He comments that all are, in fact, of the same material, a hard tough variety of the Chalk, but that since thin bands and nodules of this particular lithology occur throughout the succession, especially at the bases of the Middle and Upper divisions, it is not possible to give an exact provenance. They fall into two groups in respect of their dimensions. Nos. 66 (E.R. 4110/70.2, illustrated) and 67 (E.R. 4110/70.3) are relatively shallow (c. 10mm) and have a surface area of c. 16 x 14mm. In contrast Nos. 68 (E.R. 4110/70.1, illustrated), 69 (E.R. 4090/71.1) and 70 (E.R. 4090/71.2) have a small surface area (c. 11 x 8mm) and are relatively deep (19 to 25mm). No. 71 (E.R. 4090/73) is smooth on two surfaces, perhaps because it was re-set at some stage, so that its original dimensions are in some doubt. All of the tesserae were knapped into shape.

Three mosaics are known from the immediate area (see Fig. 2 and Merrifield, 1965, Gazetteer Nos. 87, 106 and 108) and although no illustrations of these survive, all are known to have contained white tesserae.

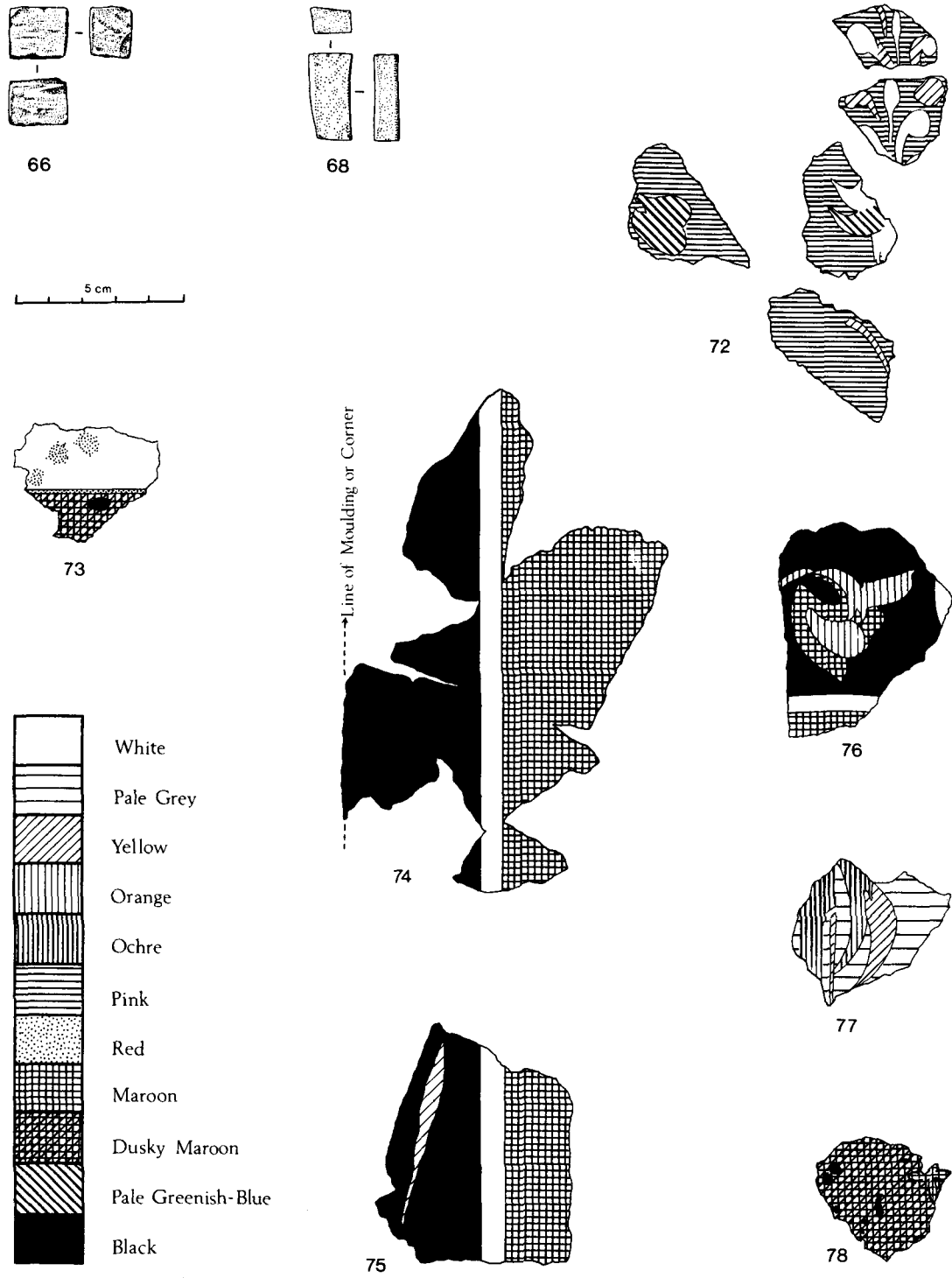


Fig. 14. Cannon Street 1975: Roman tesserae Nos. 66-68 ($\frac{1}{2}$); Roman painted wall-plaster Nos. 72-78 ($\frac{1}{2}$).

No dating evidence for these mosaics is available although three of the tesserae described here (Nos. 69, 70 and 71) come from the destruction fill of Feature B which dates from the early 2nd century. They must therefore have come from a mosaic which had been partially destroyed or repaired by this date (although this layer has been subject to some contamination, see p. 13). This places its probable date of construction (late 1st to early 2nd century) well before the first main phase of mosaic-laying in Britain (c. AD 150-200, see Rainey 1973, 14). It appears nonetheless that mosaics were far from unknown in London at this relatively early date. A pavement found in 1841 under the French Protestant Church in Threadneedle Street (see R.C.H.M., 1928, Pl. 50) is now thought likely to be of early 2nd-century date (D. Neale, pers. comm.), a number of very fragmentary late 1st or early 2nd-century mosaics have been recovered from the 1978-9 excavations at Watling Court (see Richardson, 1979) and tesserae (all white) have been recovered from a number of Flavian and Trajanic deposits on a variety of sites (E.R. 1117, early Flavian; E.R. 259C and 1023, Flavian; E.R. 716 and 792, 1st to 2nd century; information from P. R. V. Marsden) and from a dumped deposit on the Billingsgate Buildings Site, see Rhodes (1979, Nos. 688-689).

Tesserae Nos. 66, 67 and 68 are from Pit 2 and are therefore residual.

PAINTED WALL-PLASTER

From notes by Joan Liversidge

(Fig. 14, Nos. 72-78)

Small quantities of painted wall-plaster were recovered from the construction trench of one of the drains (Feature B: E.R. 4018) dated to the end of the 1st century at the earliest, and from a deposit that filled the same drain after its destruction (E.R. 4090) dated to the Hadrianic period. All of the plaster may have been redeposited more than once and if so is likely to have been painted before the end of the 1st century.

The decoration is extremely fragmentary and the painted surfaces are both abraded and stained, making accurate description and interpretation difficult. The pieces are grouped according to their principal background colour and each group is described in order according to its size. The variety of colours suggests that plaster from more than one room is represented and some of the fragments are angled, suggesting that they may have come from near a door or window.

PINK (7.5R 7/6). Over one third of the fragments are of this colour. Two pieces are angled and five others (No. 72, illustrated) bear parts of a floral design in white (2.5Y, altered by staining?) and yellow (10YR 8/6) with blue-green leaves (?) (5G 8/2), perhaps from a pilaster strip or a garland as at Verulamium, cf. Liversidge (1971, 88 and Pls. XXVII and XXVIIIa). From the fill of Feature B.

WHITE. All of this material was recovered from the fill of Feature B, except for one fragment from its construction trench (No. 73, illustrated). This comes from a place where the white abutted a blackish zone formed by painting a thin layer of black over red (5R 6/10). The white area appears to have been decorated with red stippling and the black zone with black stippling.

MAROON (5R 5/6). There are several plain pieces in this colour, one of which is sharply angled. On others, the maroon zone (painted first) is separated from black (N4) by a white dividing line c. 7mm wide. This was applied after the black, on top of the maroon. In one group of fragments (No. 74, illustrated) the plaster has broken along the line of a moulding or internal corner in the black zone, parallel to the white band and c. 40mm from it. In another (No. 75, illustrated) the black zone is decorated by a yellow (10YR 8/6) tapering streak. All of the material comes from the fill of Feature B.

BLACK (N4). A further group of black fragments from the fill of Feature B appear to have come from a different wall area. One is angled and another has the remains of a green (5G 8/2) decorative motif. Another (No. 76, illustrated), this time from the construction trench, has a flower (?) in maroon (5R 5/10) and orange (5YR 7/8).

YELLOW (2.5Y 8/6). Several relatively large fragments have a black band (N4), c. 5mm wide, bordering a white zone. Another very small fragment bears the remains of white decoration. From the fill of Feature B.

BLUE-GREEN (5G 8/2). One fragment comes from the place where a blue-green area abuts maroon (5R 5/6); the two are divided by a roughly-executed white line, c. 4mm wide. From the fill of Feature B.

BLUE-GREY (10BG 7/1) A small quantity comes from the fill of Feature B.

GREY (5GY 9/1). There is only one piece (No. 77, illustrated) and this has a floral (?) motif in yellow (2.5Y 9/4) and ochre (10YR 6/6). From the construction trench of Feature B.

DUSKY MAROON (2.5R 5/4). Four small fragments. The largest (No. 78, illustrated) is stippled with black (N4) and has the remains of more decoration in maroon (5R 6/8). From the fill of Feature B.

ORANGE (10R 6/8). One fragment. From the fill of Feature B.

MIDDLE AND LATE SAXON

POTTERY

By Michael Rhodes

(Fig. 15, Nos. 79-87)

Fourteen sherds of pottery representing nine vessels have been identified as Saxon although the exact date of some of these finds is in doubt. This is because of the general difficulty of recognising and dating London's Saxon pottery which has already been discussed at some length (see Rhodes, 1980).

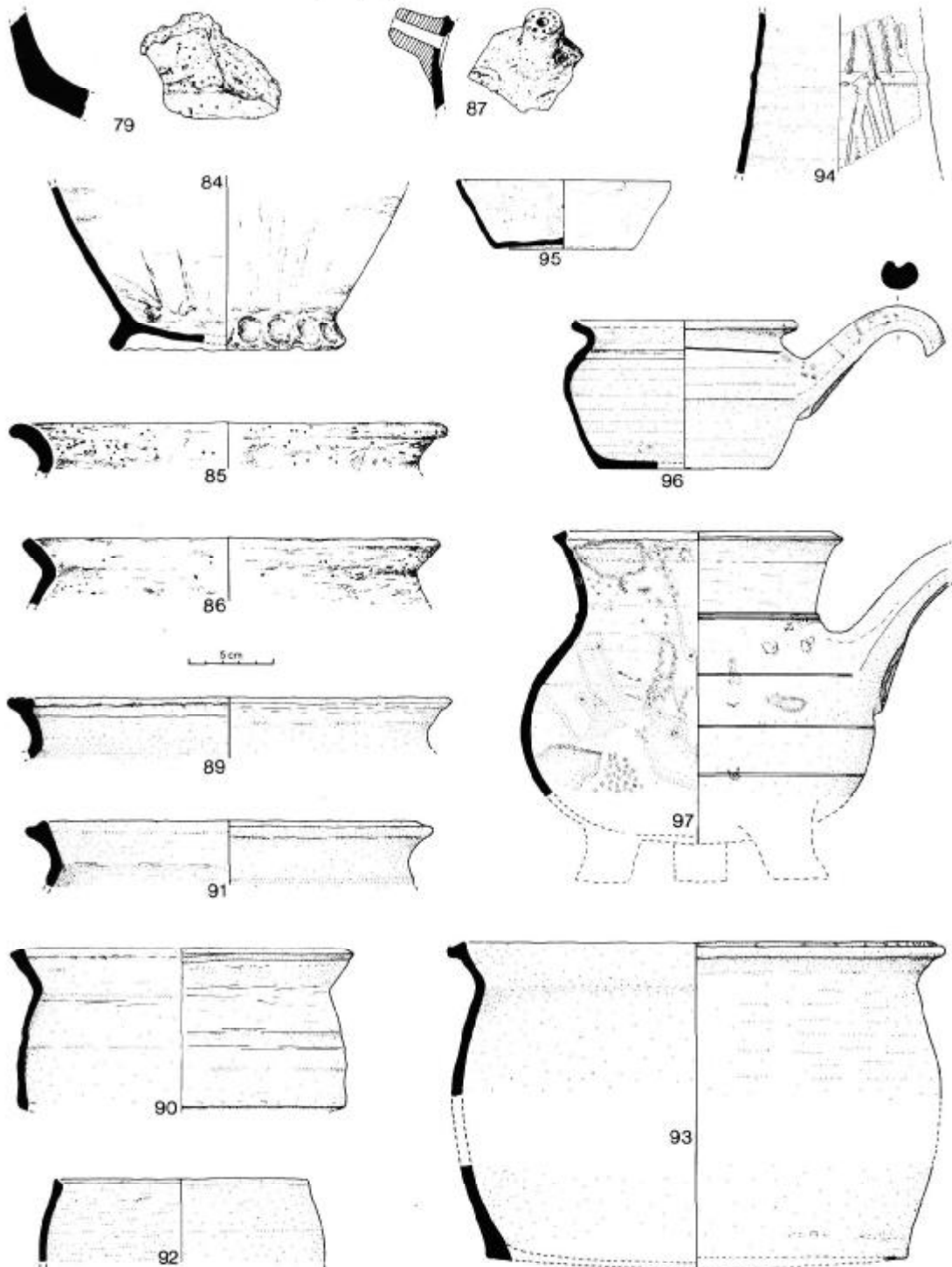


Fig. 15. Cannon Street 1975: Saxon pottery Nos. 79-87 (4); Medieval pottery Nos. 89-97 (4).

Of the six stratified vessels that are represented, four are associated together in a pit-group in which, as usual (*ibid.*) they are greatly out-numbered by residual Roman sherds; in this case the ratio is over 6:1. This emphasises the strong possibility that some of the pits which contain only Roman pottery may also be of Saxon origin.

Pit 11; E.R. 4088. Probably 9th or 10th century

79. Sherd from the basal angle of a sagged base cooking pot. The fabric is soft, powdery and has an irregular fracture. The inclusions are abundant, fine to very coarse (< 4mm) fossil(?) shell; moderate, medium to very coarse (< 3mm) charcoal; moderate, fine to very coarse (< 2mm) although predominantly medium, sub-angular, light brown, clear and red quartz; sparse to moderate sub-visible to very fine, white, yellow and blue although predominantly white mica; sparse, coarse and very coarse (< 4mm) limestone or chalk; sparse, coarse, round, ill-sorted, red grog. The colour is varied due to very irregular firing (probably in a bonfire). The core is black (N2.5), light red (2.5YR 6/6) with some brown (7.5YR 4/2). The external surface is black (N4) with some very pale brown (10YR 7/4) and the internal surface is light olive grey (5Y 6/2). The vessel was hand made and its surfaces were wiped prior to firing. No fabric parallels are known, although London fabrics with a combination of shell and charcoal are usually mid or late Saxon; a suggestion which is reinforced by the crudity of its manufacture (illustrated).
80. Two sherds in a fairly hard, powdery fabric with an irregular fracture. The inclusions are abundant, very fine to coarse (< 3mm) fossil shell; moderate, very fine to fine, irregular, predominantly red but with some black iron ore; moderate, sub-visible to very fine white mica; sparse, medium to coarse, sub-angular, red and light brown, with some clear, quartz; and sparse, coarse charcoal. The colour is dark greyish brown (10 YR 4/2) with a pinkish grey (7.5YR 6/2) internal surface. No fabric parallels are known. Both sherds seem to have originated from the same hand-made vessel, probably a cooking pot, with fingered surfaces.
81. Two sherds in a fairly hard, soapy to powdery fabric, with irregular fractures. The inclusions are abundant, fine to very coarse (< 2mm) although predominantly medium, flat and irregular limestone; moderate, medium to coarse, irregular, brown iron-ore; sparse, medium, ill-sorted, sub-angular, clear quartz; and sparse, sub-visible, white mica. The colour is dark grey to grey (5YR 4/1-5/1) with very dark grey external surfaces (5YR 3/1) and light brown (7.5YR 6/4) and reddish brown (2.5YR 6/4) internal surfaces. The external surfaces are smoothed and the internal surfaces fingered. The sherds come from a hand-made vessel, probably a cooking pot. No exact fabric parallels are known, although London fabrics with moderate to abundant inclusions of both iron and limestone seem to be either Roman or mid to late Saxon, and as these sherds seem to be from a hand-made cooking pot they probably belong to the latter date range.
82. Small sherd from a wheel-thrown storage jar. The fabric is hard, rough and has an irregular fracture. The inclusions are bimodal (abundant, well-sorted, fine, sub-angular and sparse, ill-sorted, very coarse, sub-angular) clear and light brown quartz; moderate, very fine (with some moderate to coarse) rounded black iron-ore and moderate, very fine, white mica. The core is pale reddish grey (10R 7/1) although the surfaces are dark grey (N4). This fabric belongs to a group of fabrics, reasonably common in late Saxon London, which, although probably not from Thetford or Ipswich (pers. comm. Caroline Dallas and J. Cherry), are undoubtedly in the Thetford tradition.
- The sherd comes from near the top of the vessel (now missing) and consists mainly of part of a thumbled strip which was applied under the edge of the rim. This diagnostic feature indicates that it comes from a distinctive type of storage jar of the Thetford tradition, see Hurst (1957, Fig. 4, Nos. 2-6 and p. 50, dated 9-11th century) and West (1963, P.3, L.4, No. 11, 251 and Fig. 43; P.3, L.4, Nos. 11-13, 253 and Fig. 43; P.7, No. 6, 254 and Fig. 44; P.13, L.1, No. 17, 264 and Fig. 48). Two sherds of similar form are known from London. They come from a medieval pit at Billingsgate (E.R. 1329) which included a considerable number of late Saxon sherds, and from a deposit on the New Fresh Wharf excavations of 1975 (SM 75, Context 150) which has been dated using C14 analysis to AD 870±60 (uncalibrated), see Miller (1977, 48). With this evidence in mind, a 9th or 10th-century date seems likely.
- This group also contains 39 residual Roman sherds.
- Pit 13; E.R. 4093*
83. Sherd from the shoulder of a small cooking pot. The fabric is fairly hard, harsh to the touch and has irregular fractures. The inclusions are abundant, moderate to very coarse (1.5mm) but predominantly moderate, sub-angular, white, grey and clear quartz; sparse, moderate, rounded, red and black iron ore; and sparse, very fine and fine, white mica. The colour is grey to light grey (5YR 6/1), with a dark grey (N4) to grey (5YR 6/1) internal margin, a reddish yellow (7.5YR 5/2) external surface with some brown (5YR 6/6) and a reddish yellow (5YR 6/6) internal surface. The vessel is hand-made with wiped surfaces. The sherd is very light-weight and has a rather spongy appearance, suggesting that it could be a waster. A sherd of the same fabric comes from a medieval deposit containing residual Saxon sherds on the New Fresh Wharf excavations already mentioned (SM 75, Context 37). To judge by the inclusions, both may be wasters of *Early Medieval Sandy 1*, see Orton and Miller (forthcoming) and if this is the case it is not likely to be earlier than the 11th century (C. R. Orton, pers. comm.). There is, however, no reason why both this sherd and its New Fresh Wharf equivalent should not belong to a less common type, possibly dating to before the Conquest. At c. 8-9mm, both sherds are rather thicker than is usual for *Early Medieval Sandy 1* (C. R. Orton, pers. comm.), suggesting that this could well be the case. This deposit also contained 6 residual Roman sherds.
- Pit 2; E.R. 4110*
84. Four sherds from the base of a red-painted ware spouted pitcher. The fabric is very hard, finely rough and finely irregular (hackley at 20x). The inclusions are abundant, very fine to medium, but predominantly fine, sub-angular, clear quartz; moderate, very fine to medium, predominantly very fine, irregular black and red iron ore and sparse, very fine, white mica. The colour is yellow (2.5Y 8/6), with a greyish brown (10YR 5/2) external margin and surface, and a greyish brown (2.5Y 5/2) internal surface. The vessel is hand-made and there are smoothing marks on the inside and outside of the sherd. A fragment of pottery in an identical fabric but with red paint (none is present on this example) comes from the C14-dated deposit at New Fresh Wharf to which reference has already been made (see No. 82).

The form of the base with its thumbled foot-ring is typical of the smaller Pingsdorf-type spouted-pitchers, sometimes called wine-amphorae, commonly found in London, see Dunning (1959, Fig. 28, Nos. 1-10 and pp. 55-56). Their date has been given as 10th and 11th century (*ibid.*, 56) although Pingsdorf-type ware of mid-9th-century date is known (Dunning, 1956, 226) and there seems to be no particular reason why this sherd should not be ascribed to the late 9th century as suggested by its parallel from New Fresh Wharf (illustrated).

Unstratified; E.R. 4086

85. Sherd from the rim of a cooking pot. The fabric is fairly hard, powdery and has an irregular fracture. The inclusions are abundant, very fine to very coarse (< 3mm) but predominantly coarse fossil shell; moderate to abundant, fine to very coarse (< 2mm) but predominantly fine to medium charcoal; moderate, very fine to very coarse (< 4mm) flat, white limestone; moderate, very fine to very coarse (< 1.5mm) but predominantly medium, irregular, brown iron ore; moderate, very fine, white mica and sparse, moderate to very coarse, red, light brown and light grey quartz. The colour is grey (5Y 5/1) with mostly pink (7.5YR 7/4) surfaces although there is some black (N2) on the external surface. The vessel was hand-made and the surfaces were wiped prior to firing. No exact parallel to the form or fabric is known. A late Saxon date is suggested (illustrated).
86. Sherd from the rim of a cooking pot. The fabric is hard and smooth, with an irregular fracture. The inclusions are abundant, very fine to very coarse (< 2mm) although predominantly medium to coarse, flat limestone; moderate, fine to very coarse although predominantly medium, light brown and red quartz; moderate, fine to very coarse (< 2mm) although predominantly fine, irregular charcoal and moderate, very fine with some fine, white mica. The colour is grey (5YR 5/1) with very dark grey (N3) surfaces. The vessel is hand-made with a fingered external surface. Both internal and external surfaces were wiped prior to firing. A closely similar though not identical fabric came from the Billingsgate Buildings excavations of 1974 (Rhodes 1980, No. 718). The form, with its squarish sharply-everted rim, occurs in *Saxon Shelly I* fabrics which seem to have been most common in the late 9th century (*ibid.* and Rhodes, forthcoming), (illustrated).
87. The spout of a spouted pitcher. The fabric is extremely unusual. It is hard, rough with an irregular fracture and has the following inclusions: abundant, medium to very coarse (< 3mm) although predominantly coarse, rounded brown grog; bimodal (abundant, well-sorted, very fine rounded and moderate, ill-sorted, medium, irregular) black iron ore; moderate, medium to very coarse (< 1.2mm) although predominantly medium, angular light brown, grey and white quartz; moderate, very coarse (< 2mm) angular flint; moderate, medium to very coarse (< 2mm) although predominantly coarse irregular limestone; moderate (abundant on surfaces), very fine (some fine), white and yellow mica; sparse, well-sorted, coarse, irregular feldspar and sparse very coarse (< 3mm) fossil shell. The colour is grey (6N with some 4N) with a light brown (7.5YR 6/4) external surface and a light brownish grey (2.5Y 6/2) internal surface. The vessel was hand-made and the external surface at least was wiped prior to firing. No fabric parallels are known.

The short spout is as unusual as the fabric because, unlike the majority of spouts, it was not formed around the potter's finger. It seems instead to have been made by rolling a piece of clay around a smooth more-or-less circular pin of wood or bone, c. 8mm in dia., inserting this into a pre-cut hole on the shoulder of the pot and fixing it in position by smoothing the clay on both sides. It was not until this stage that the pin was extracted (from the outside) which is demonstrated by the regularity of the hole and ridges of clay around the inside opening which formed as it was pulled out. The end of the spout, which is flattened, is decorated by a ring of small (c. 1mm) roughly circular stab marks. In London spouts do not seem to occur in coarse fabrics after the 10th century.

Below the spout, around the girth, are traces of wide (c. 3mm), lightly incised wavy lines. This feature is also unusual on Saxon vessels although it may be found on examples of *Langhale-Thetford ware* (see Hurst, 1976, 321, Fig. 17.7, Nos. 1 and 5), and on one or two 11th-century cooking pots from London (see Clark, 1973, No. 3 and Orton and Miller, forthcoming). The characteristics of this sherd are best accommodated in the late Saxon period, although its unusual nature suggests that it is not of local origin (illustrated).

LOOM-WEIGHT

By Michael Rhodes

(Fig. 19, No. 88)

88. (4086/7) Loom-weight of baked clay, domed on top with a saucer-shaped underside. It falls into the 'bun-shaped' class according to Hurst's tripartite classification (Hurst, 1959, 23). The central hole is irregular and appears to have been pierced from both sides. The clay is soft-baked, dirty and full of

organic inclusions as well as pieces of limestone, iron ore and quartz sand visible with a hand-lens, and one or two small flints. It also contains a small freshwater gastropod suggesting that it may be riverine silt. The upper surface was smoothed prior to baking which, to judge from the uneven pattern of oxidisation and reduction, was probably undertaken in a bonfire. As usual there are some slight traces of wear on the inside edges of the centre hole at the point of suspension.

Bun-shaped loom-weights are fairly common in the City and inner London with at least nineteen other known examples in the Museum of London. The only locally-found Saxon loom-weights not of this type are four examples of the 'intermediate' variety from the Strand (*ibid.*, 24). This particular example is remarkable for its small diameter of c. 95mm. Most of the other bun-shaped loom-weights have diameters between c. 110 and 140mm, with an average of c. 125mm; the only exception is a loom-weight of c. 100mm dia. from the Strand (Haslam, 1975, 22 and Fig. 6, No 4). London loom-weights of this type are also generally flatter and less well-formed. As with this example they are all of coarse clay, although nearly half are definitely of brickearth. The smoothed upper surface is typical.

Hurst (1959, 23) gives the date of this variety as late Saxon, although it may have continued in use as late as the 12th century (*ibid.*, 25). They were used in warp-weighted looms which seem to have been increasingly replaced by beam-tensioned looms towards the end of the Saxon period (Wilson, 1976, 271). Unstratified (illustrated).

MEDIEVAL

POTTERY

By Clive Orton

The medieval pottery from this site came from isolated features and therefore cannot be discussed in terms of a sequence. Initially about 30% of it was unstratified although as much as possible has now been related to stratified groups by finding stratified sherds to which it could be joined. Of the rest, the more interesting pieces are described and discussed.

Early Medieval Features:

(Fig. 15, Nos. 89-93)

Pit 18; E.R. 4109

89. Rim sherd of cooking pot with everted rim, expanded by thumb impressions on top edge. Very hard fabric with irregular fracture and fairly smooth feel. The main inclusions are abundant colourless and brownish (sub) angular quartz, up to medium size with a few coarser grains, and moderate angular red iron ore, up to coarse size. There are also sparse, white and pinkish quartz, and organic inclusions. The fabric is grey (N6), with dark grey (N4) to light brownish grey (10YR 6/2) surfaces. Wheel-thrown, with traces of wiping on the exterior (illustrated).

90. Profile sherd of shallow cooking pot with straight, everted rim and sagging base. Hard fabric with irregular fracture (tending to laminar) and fairly smooth but 'lumpy' feel. Inclusions are moderate, colourless and brownish, sub-angular or rounded quartz and moderate, angular, red and black iron ore, both up to very coarse size. Light grey (N6) to greyish brown (10YR 5/2) fabric with grey (N5), dark grey (N4) and/or pale brown (10YR 6/3) surfaces. Probably hand-built, but extensive wiping and smoothing make it difficult to be certain (illustrated).

91. Rim sherd of cooking pot, everted and expanded. Fabric as No. 90. Burnt (illustrated).
Also two sherds of 'early medieval sandyware plus shell' (see Orton and Miller, forthcoming). Expanded rims as Nos. 89 and 91 are conventionally dated to the later 11th or 12th century (see, for example, Clark (1973) Nos. 6, 7). At New Fresh Wharf, they first occur in coarse fabrics alongside 'early medieval ware' in contexts that seem to have an 11th-century date. An 11th or possibly early 12th-century date is therefore suggested for this group.

Pit 17; E.R. 4114

92. Rim sherd of bowl with slight internal thickening, possibly for a lid. Hard fabric with irregular fracture (smooth between inclusions) and finely rough feel. Abundant, medium sub-angular quartz, mostly clear or colourless but some white or brownish. No other inclusions. Grey (N5) core with dark grey (N3 to 4) interior margin and surface, very pale brown (10YR 3/3) exterior margin, dark grey patches on exterior surface. Wheel-thrown. Burnt (illustrated).

Also one sherd as No. 90, one of *blue-grey ware* (Orton, 1980, No. 725) and two micaceous sherds.

The form of the rim sherd is unfamiliar, but the fabric seems similar to the 'early medieval ware' group at New Fresh Wharf. A late 11th or early 12th-century date is again suggested.

Pit 19; E.R. 4125

93. Rim, base and body sherds of cooking pot with everted rim, expanded by thumb impressions on top edge (cf. Nos. 89 and 91). Hard fabric with hackly fracture and rough feel. The main inclusions are abundant, medium to very coarse, colourless and greyish, sub-angular quartz; there are also sparse inclusions of black iron ore and flint. The fabric is light grey (N7 to 8) with dark grey (N4) surfaces. Hand-built, with smoothed surfaces. The fabric is very similar to the *Limpsfield ware* (see e.g. No. 99), but the form is earlier than those found at Limpsfield; an 11th or early 12th-century date is likely (see discussion of pottery from Pit 18) (illustrated).

Medieval Features:

(Fig. 15, No. 94)

Context 8; E.R. 4092

One sherd of *London-type slipped jug* (see Orton and Miller, forthcoming) and one of an undiagnostic sandy fabric. Probably 13th century.

Pit 4; E.R. 4103

94. Body sherds of 'Surrey' ware with applied decoration. Hard fabric with irregular fracture (smooth between inclusions) and slightly rough feel. Abundant, reddish/brownish, sub-angular quartz inclusions, up to medium size, with sparse clear quartz, black iron ore and white mica. Reddish yellow (5YR 7/6) fabric with yellow (10YR 8/5) interior surface. Wheel-thrown. Clear glossy glaze on exterior, coloured green over applied strips of 'white' clay (upper part) and dark reddish brown (5YR 3/3) over strips of 'red' clay (lower part). Spots of clear glaze on interior (illustrated).

Also one sherd of *London-type slipped jug* and one of 'West Kent' ware (see Orton, 1977c, 82). An examination of specimens from the Mill Green kilns (Hurst, 1968, 207), supplied by Mrs. E. Sellers, and comparison of them with examples in the Department's Fabric Type Series, strongly suggests that at least some of the so-called 'West Kent' fabrics are from the Mill Green kilns in Essex. The Mill Green site lies on Claygate beds (Mrs. E. Sellers, pers. comm.), and since these beds do not occur in west Kent it is difficult to envisage that the sources of similar fabrics could be located there. A fuller discussion will be included in the New Fresh Wharf pottery report (Orton and Miller, forthcoming). Overall, a late 13th or early 14th century date is indicated.

Late Medieval Features:

(Fig. 15, Nos. 95-97 and Fig. 16, Nos. 98-107)

Pit 15; E.R. 4089

95. Base and most of rim of small dish. The fabric is hard but rather 'crumbly' with a finely irregular fracture and a slightly rough feel. The main inclusions are abundant, very fine and fine (and some medium), clear, colourless and greyish, sub-angular quartz. Sparse, black iron ore, white mica and organic (grass?) inclusions are also present. The core is partially light grey (N6) with reddish yellow (5YR 6/8) margins and surfaces. Wheel-thrown. There are areas, patches and spots of pitted clear glaze ('splash-glaze') on the interior, and spots on the exterior. The rim is very twisted (but drawn as straight) and the vessel may be a waster (illustrated).
Also rim sherd of almost identical vessel with copper mottling in the glaze.
96. Profile and handle of skillet or shallow pipkin. Fabric as No. 95. The base is flat and it is unlikely that there were any feet. Burnt (illustrated).
97. Rim and body sherds of large pipkin. Fabric similar to that of No. 95, but the black iron ore is moderate. Core colour is light red (2.5YR 6/8) and the margins are reddish yellow (7.5YR 6/6). There are irregular zones of a micaceous 'white' slip on both surfaces, and spots and patches of clear glaze, with copper mottling, mainly on the interior. The general finish has an 'untidy' appearance. The base appears to be rounded from the curve to the lower profile, and it has therefore been reconstructed with three applied feet. Burnt. The shape is reminiscent of that of a bronze jug in the Museum of London (Acc. No. A4587) dated c. 1400 (Perkins 1940, 199-200 and Pl. 41) (illustrated).
These vessels, possibly with others in similar fabrics, from New Fresh Wharf (see Orton and Miller, forthcoming), seem to form a distinct group, for which the term '*late medieval splash-glazed ware*' is suggested. It seems to represent the continuation of the local tradition of splash-glazed pottery, which supplied many of the jugs found in London from the 12th and 13th centuries. Here, however (and in the later medieval phases of New Fresh Wharf) jugs are exclusively in '*Surrey*' wares (see below), but the 'splash-glaze' tradition continues in a range of 'kitchen' forms. The general standard of finish is poor, although the vessels are well made in a technical sense. It seems likely that while the Surrey kilns supplied the finer 'table' wares, more local kilns met the need for cheap, rough, pottery for kitchen use.
A cooking-pot rim of this fabric, found at the Custom House site (Thorn, 1975, Fig. 16, No. 259) has been identified as *Aardenburg ware* (Dunning, 1976 191). The form matches the typical *Aardenburg* cooking pot (Burger, 1962-3, Afb. 51), but as this form is also known in '*Surrey*' ware (Orton, forthcoming), this match cannot be taken as a sure indication of source. The fabric does not match that of a jug base (Thorn, 1975, Fig. 15, No. 242) also attributed to *Aardenburg* (Dunning, *op cit.*). *Late medieval splash-glazed ware* appears to constitute about 5% of the 14th-century pottery at the New Fresh Wharf site (Orton and Miller, forthcoming). A percentage as high as this is unlikely if it is to be attributed to *Aardenburg*, especially as the proportion of imports from other sources is small. A local source for '*late medieval splash glazed ware*' is therefore maintained.
98. An almost complete jug in '*Surrey*' ware, similar to *Cheam* fabric but probably not identical (see Orton, 1977C, 82 for description: a further discussion by Orton and Miller is forthcoming). There are three pronounced corrugations between shoulder and girth, suggesting imitation of a metal prototype. The base is slightly sagging with six pulled feet.

There is a small pinched spout and the handle has been stabbed (illustrated).

Also in this fabric is the base of a jug with constriction, also imitating a metal prototype, comparable with Perkins (1940, 227, No. 2).

99. About half of a bowl with drooping flanged rim and deeply sagging base. Hard fabric with laminar fracture (smooth between inclusions) and rough feel. The main inclusions are abundant moderate to coarse, colourless, greyish (and brownish) subangular quartz. Sparse, black iron ore and white mica are also present. The fabric is light grey (N6 to 7) with grey (N5) surfaces. Wheel-thrown, with wiping marks on exterior. Incised wavy lines on top surface of flange. This fabric is similar to that produced at *Limpsfield* (examples supplied by Mr. B. Wright: see Prendergast, 1974), and the form is similar to a bowl (No. 62) from the *Scearn Bank* site (*ibid.*, 73) but smaller (illustrated).
Also base sherds of a large pitcher, possibly of 'bung-hole' type (see No. 100). Fabric very similar to No. 99, but has dark grey (N3 to 4) exterior and light grey (N7) interior surfaces.

Also one more sherd of '*Surrey*' ware and one of '*West Kent*' ware.The predominance of '*Surrey*' ware suggests a 14th or 15th-century date for this context, as does the presence of metallic skeudomorphs (Nos. 97 and 98), although evidence from Trig Lane (Orton, forthcoming) suggests an earlier starting date for some 'metallic' forms, probably in the late 13th century. At that date, or in the early 14th century, however, one would expect a much higher proportion of other wares. The absence of late 14th/15th-century forms (e.g. biconical or barrel-shaped jugs) or fabrics (e.g. *Farnborough Hill*) indicates a mid-14th-century date as most likely for this group.

Fill 343; E.R. 4123

100. About one quarter of base of 'bung-hole' pitcher in *Cheam/Kingston ware*. Probably from *Cheam*, where such vessels are known to have been made (Marshall, 1924, 12-15) (illustrated).
Also base sherd of jug in same fabric (shape as at *New Fresh Wharf*).
101. Most of rim, base and lower body, and complete handle, of a jug. Very hard fabric (almost vitrified) with smooth fracture and rough feel. Abundant clear, colourless and greyish quartz, most very fine and some medium-sized grains, with moderate inclusions of white and gold mica, up to medium size, and sparse black iron ore. Grey (N5) fabric with brown (7.5 YR 5/3) exterior margin and surface. Wheel-thrown, with some knife-trimming at the base. No glaze or slip. Burnt. This jug appears to belong to the general category of '*Tudor brown*' wares, which were produced from the late 15th century onwards (Turner, 1971, 105). It is not, however, a product of the 1969 *Cheam* kiln (Orton, forthcoming), which is one local source of this type of vessel (illustrated).
Overall, a date in the second half of the 15th century seems most likely.
Unstratified; E.R. 4086
Unstratified sherds were found to join with Nos. 95 and 99 from Pit 15, and Nos. 100 and 101 from Fill 343. It therefore seems possible that other of the unstratified vessels may have the same date range as these groups, i.e., 14th or 15th century. The following vessels fall into this category:

Late medieval splash-glazed ware (see No. 97)

102. About one third of profile of skillet with strap handle. Slightly sagging base and simple rim. This extends the range of forms recorded in these fabrics (illustrated).

Surrey ware, probably Kingston

103. Half of base and lower body of jug with 'scale' decoration. There are similar examples in the Museum of London collection, e.g., Acc. No. A20308.
104. Rim sherd of shallow dish with simple rim. A less complete example was found at Angel Court (Orton, 1977C, No. 594) (illustrated).
105. Complete dish or lid. Heavily burnt. There are many such vessels in the Museum of London collection, e.g. Acc. No. A5193 (illustrated).
Also rim of jug of form as at New Fresh Wharf (Note: this rim has been used in the reconstruction of the detail of that form).

Imports – Stoneware

106. Almost complete beaker of *Siegburg stoneware*. Very hard fabric with smooth fracture and slightly harsh feel, light grey (N7) in colour. No visible inclusions. Reddish yellow (7.5YR 6/6 to 8) patches on exterior. A similar, but larger and decorated, example from Siegburg (Bock, 1971, No. 136) is dated late 14th or 15th century.
Also base sherd of *Raeren stoneware* with 'frilled' foot-ring.

Imports – Other

107. Rim/handle sherd of large jug or pitcher. Hard fabric with finely irregular fracture and fairly smooth feel. Abundant

very fine greyish sub-angular quartz inclusions, with some fine or medium-sized grains, and sparse white mica and black iron ore. Light grey (N7) core with yellow (10YR 7/6) interior margin and reddish yellow (7.5YR 7/8) interior surface. Wheel-thrown. Thick glossy olive-green glaze, with darker mottling, covers most of exterior and upper zone of interior. The fabric is similar to that of a handle found at New Fresh Wharf which matches closely examples from Scarborough in the British Museum reference collection. However, this form is not known from the Scarborough kiln (P. Farmer, pers. comm.) (illustrated).

CRUCIBLE

(Fig. 16, No. 108 and Figs. 17 and 18)

108. (4086/68) Crucible, wheel-thrown, roughly spheroid with a flattened zone just above the girth. The rim is slightly thickened on the interior and has a pinched and raised spout. Clive Orton describes the fabric as: 'very hard, pale grey with a finely irregular fracture, laminar in places. Although it has started to vitrify, abundant inclusions of fine (0.1 to 0.2 mm) quartz and sparse pieces of black ironstone may be distinguished. Both surfaces show flash glazing'.

The specimen was submitted to John Evans who scraped samples from the bottom of the inside surface for analysis. An examination was made by emission spectroscopy and the results are summarised in Fig. 17. Appropriate quantities were also digested with mixed concentrated acids and the solutions obtained, after suitable dilution, were analysed by atomic absorption and flame photometry (for sodium and potassium). The data obtained from these analyses is shown in Fig. 18. John Evans comments that the results do not, unfortunately, give a clear indication of the crucible's function, but it could have been used in enamelling processes of some description. The relatively high levels of sodium, potassium and phosphorus would seem to favour a wood-burning process. Unstratified, but probably medieval (illustrated).

Element

Fe	CA	Cr	Pb	Na	K	Mn	Al	Ni	Co	Ag	Zn	Ti	Cu	Si	Mg	Sn
T	S	-	P	S	P	T	S	T	-	T	T	-	T	S	S	-

S lines suggest concentration greater than 1%

P lines suggest concentration less than 1%

T lines suggest concentration less than 0.1%

- indicates element not detectable

Fig. 17. Cannon Street 1975: Emission spectroscopy analysis of a sample from crucible No. 108.

Percentage composition*									
Fe ₂ O ₃	CaO	MgO	Al ₂ O ₃	K ₂ O	CuO	PbO	Ag ₂ O	M ₂ O ₃	P ₂ O ₅
1.19	33.33	11.90	5.95	1.19	14.29	10.71	0.28	1.45	1.07

* Remaining material, insoluble silicates, etc.

Fig. 18. Cannon Street 1975: Quantitative analysis of a sample from crucible No. 108.

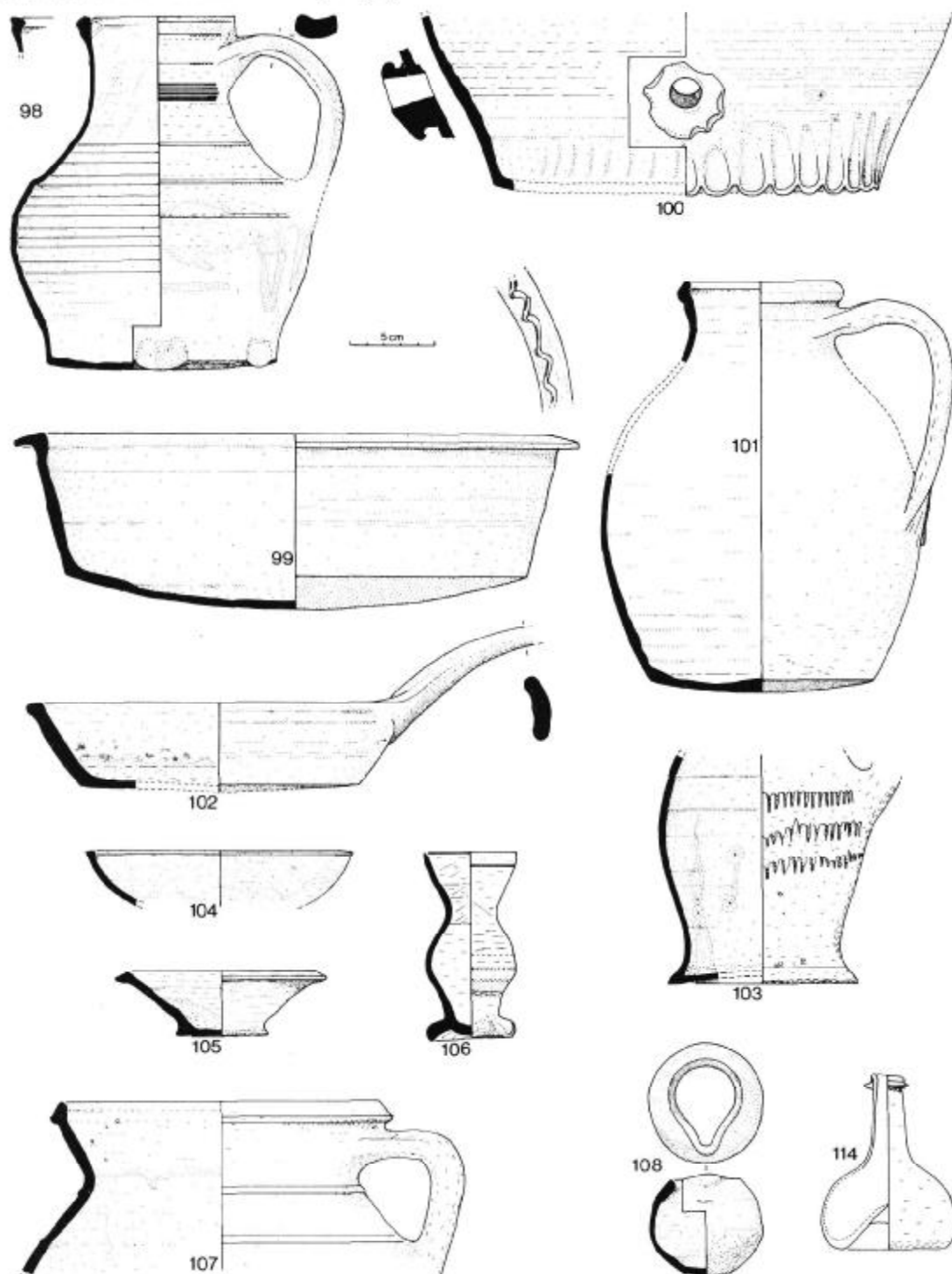


Fig. 16. Cannon Street 1975: Medieval pottery Nos. 98-107 (4); Medieval(?) crucible No. 108 (4); post-medieval glass bottle No. 114 (4).

STONE

(Fig. 19, No. 109)

109. (4123/9) Hone, worn on all four sides and seemingly well-used. The top end is broken off although the lower has rounded edges which, despite a roughly-broken area in the

centre, suggest that this end may be original. D. T. Moore identifies the rock as Norwegian ragstone: Ellis Type IA 1 (see Ellis, 1969, 137-143). From Fill 343 and therefore probably dating from the second half of the 15th century (illustrated).

FLOOR TILES

From comments by Elizabeth Eames

(Fig. 19, Nos. 110 and 111)

Four floor tiles were recovered, of which two (Nos. 110 and 111) are of Penn type, although their fabrics differ suggesting that they were manufactured of clays from two separate sources. The tiles probably came originally from the nearby church of St. Thomas Apostle, although one was later put to a secondary use in a fireplace. Penn tiles are known from a number of other City of London churches, notably St. Brides, Holy Trinity Priory (see Eames, 1978, No. 89357) and St. Bartholomew the Great, Smithfield. Penn tiles are dated to about the middle third of the 14th century. Details of the fabrics of all these tiles are available on request.

110. (4086/67) Penn tile, cf. Hohler (1942, 58). Unstratified (illustrated).
 111. (4086/75) Penn tile, cf. Hohler (1942, 76). Unstratified (illustrated).
 112. (4086/76) Plain red tile, 115 x 112mm with a thickness of 26-29mm and chamfered sides. Source unknown. The core

is reduced suggesting a 13th or 14th-century date; most 15th-century tiles are fully oxidised. Unstratified.

113. (4086/77) Plain, yellowish-red tile, 137 x 133mm with a thickness of c. 24mm and chamfered sides. Worn and put to secondary use in a fireplace with the result that the surfaces are now obscured. Source unknown. From Fill 343 and therefore not later than about the second half of the 15th century.

POST-MEDIEVAL

GLASS WINE-BOTTLE

By Clive Orton

(Fig. 16, No. 114)

114. A complete small wine-bottle in very good condition. It is

thin-walled and made of a slightly yellowish green glass with a large prunt in the hollow of the base. A similar example bears a seal dated to 1704 (Hume, 1969, 63) and it is broadly similar to bottles in the range 1700-1730 so an early 18th century date seems likely. Its volume is $\frac{1}{4}$ pint, suggesting that it was used as an individual 'carafe' rather than for storage or transportation. Unstratified; E.R. 4086 (illustrated).

APPENDIX I

NOTE ON THE MAMMALIAN REMAINS FROM THE ROMAN, SAXON AND MEDIEVAL LEVELS

By Caroline Bird and P. L. Armitage

Bones of domestic horse, ox, sheep, pig, dog and cat, together with those of roe deer and hare were recovered from the series of Roman drainage channels and from the Roman, Saxon and medieval rubbish pits. No detailed analysis of the material was carried out owing to the small size of the sample (188 bone elements). A full list and description of the identified bones in the form of a level III archival report is available on request from the British Museum (Natural History) and from the Department of Urban Archaeology. Under the computer based catalogue scheme of the BM(NH) the specimens have been assigned the following registration numbers: ARC 1977 R5196 to R5290

APPENDIX II

HUMAN BONES

From notes by Merry Morgan

Following the archaeological excavations, building contractors found a few unstratified human remains which were subsequently donated to the Museum. These probably found their way onto this site as the result of disturbances to the once-neighbouring churchyard of St. Thomas Apostle, which was mostly destroyed by road-widening in the 19th century (Huelin, 1968, Item 35) although a portion survived as late as 1940 (Cobb, 1942, 110). The church itself was destroyed in the Great Fire of 1666 (Jenkinson, 1917, 171) and it is unlikely that its graveyard would have been used for burials after this date.

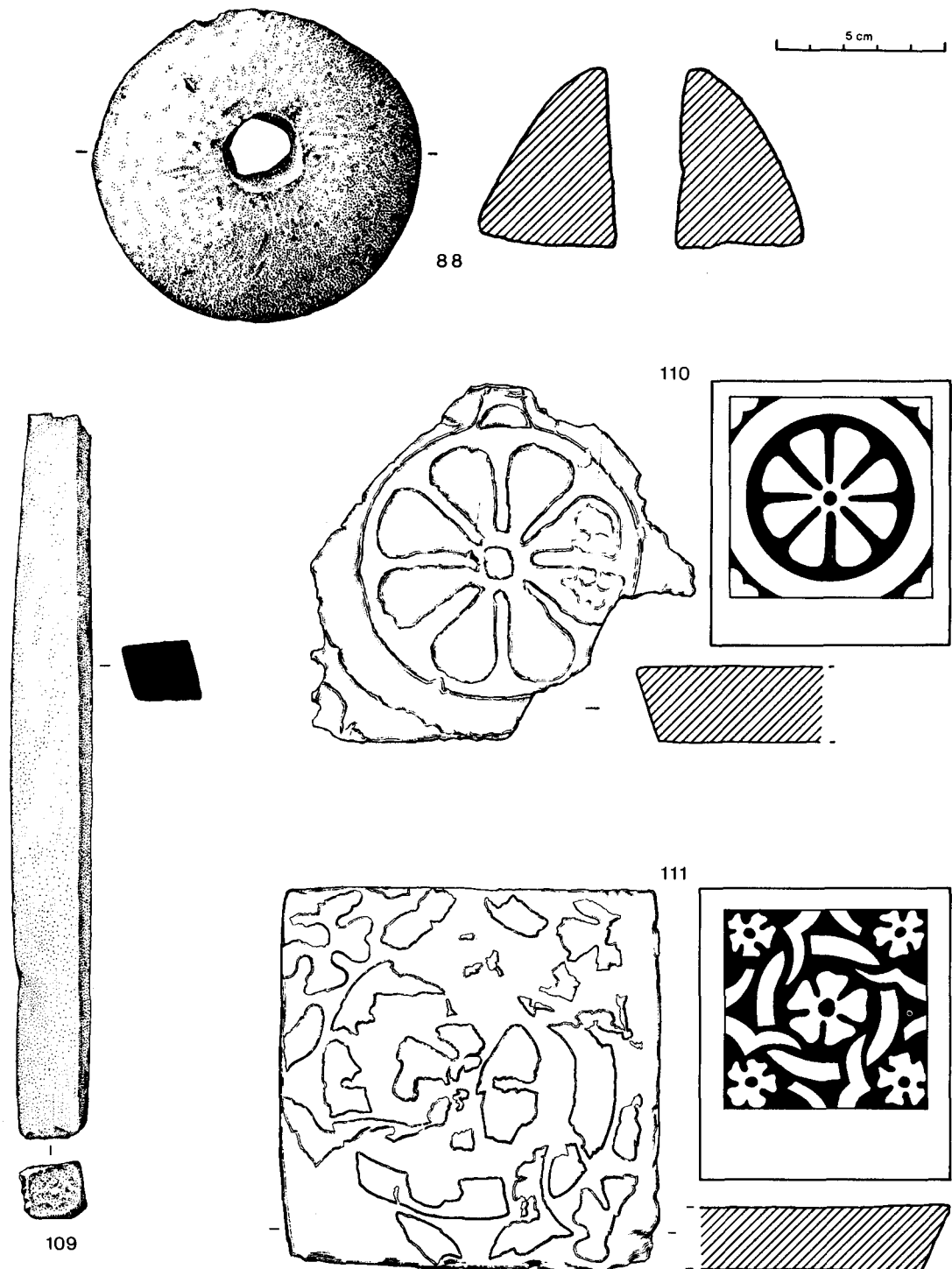


Fig. 19. Cannon Street 1975: Saxon loom-weight No. 88 ($\frac{1}{2}$); Medieval hone No. 109 ($\frac{1}{2}$); Medieval floor-tiles Nos. 110-111 ($\frac{1}{2}$; insets $\frac{1}{4}$).

The bones, which come from at least three individuals, consist of the calvaria of a child aged about 5-7 years, the calvaria of an adult of indeterminate sex, aged about 40-45 years and the proximal end of a right adult male (?) femur. Full details of these specimens are available on application to the Museum of London.

One further item is of particular interest: the major portion of the vertex of a skull, probably over 50 years (estimate based on the obliteration of most of the cranial sutures through fusion, see Vallois, 1937) has been pierced by a neat circular hole, made from the outside, precisely at the bregma. This tapers from 7.5mm on the outside to 3.5mm on the inside and appears to have been made with a pointed metal blade since the internal surface of the hole has scrape marks and shallow vertical grooves and none of the regular horizontal marks left by a drill. No sign of healing or osteitis is present.

The practice of making holes in human skulls occurred in Britain in prehistoric times, see Parry (1921); continuing through the middle ages (see Lisowski 1967, 653-4) and even into the 20th century (Margetts, 1967, 677). Because there is no sign of healing around this example it may represent an unsuccessful attempt at surgery (trepanation). This explanation is, however, not entirely satisfactory as earlier examples tend to be very much larger and to avoid the sutures, especially the suture junctions, presumably because of the compactness of the bone in these places and the many important arteries lying directly underneath. The position of the hole suggests two further possibilities. Firstly, at the point of balance of the skull, it lies at the ideal place at which to attach a cord in order to suspend the skull as a trophy. This follows a suggestion by Parry (1921, 10-11) concerning two British Iron Age skulls which have an equilateral triangle of three small round holes near this point. Secondly, its place in the centre of the top of the cranium may have had some symbolic significance, although the nature of the beliefs which might be represented are open to speculation.

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The illustrations are by Barbara Garfi (Nos. 62, 66, 68, 88 and 109), Chris Green (Figs. 11-12), Clive Orton (Nos. 89-108 and 114), Dave Parfitt (Nos. 61, 110 and 111), Jacqui Perry (Nos. 79 and 84-87) and Pamela White (Figs. 8-10 and Nos. 72-78).

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