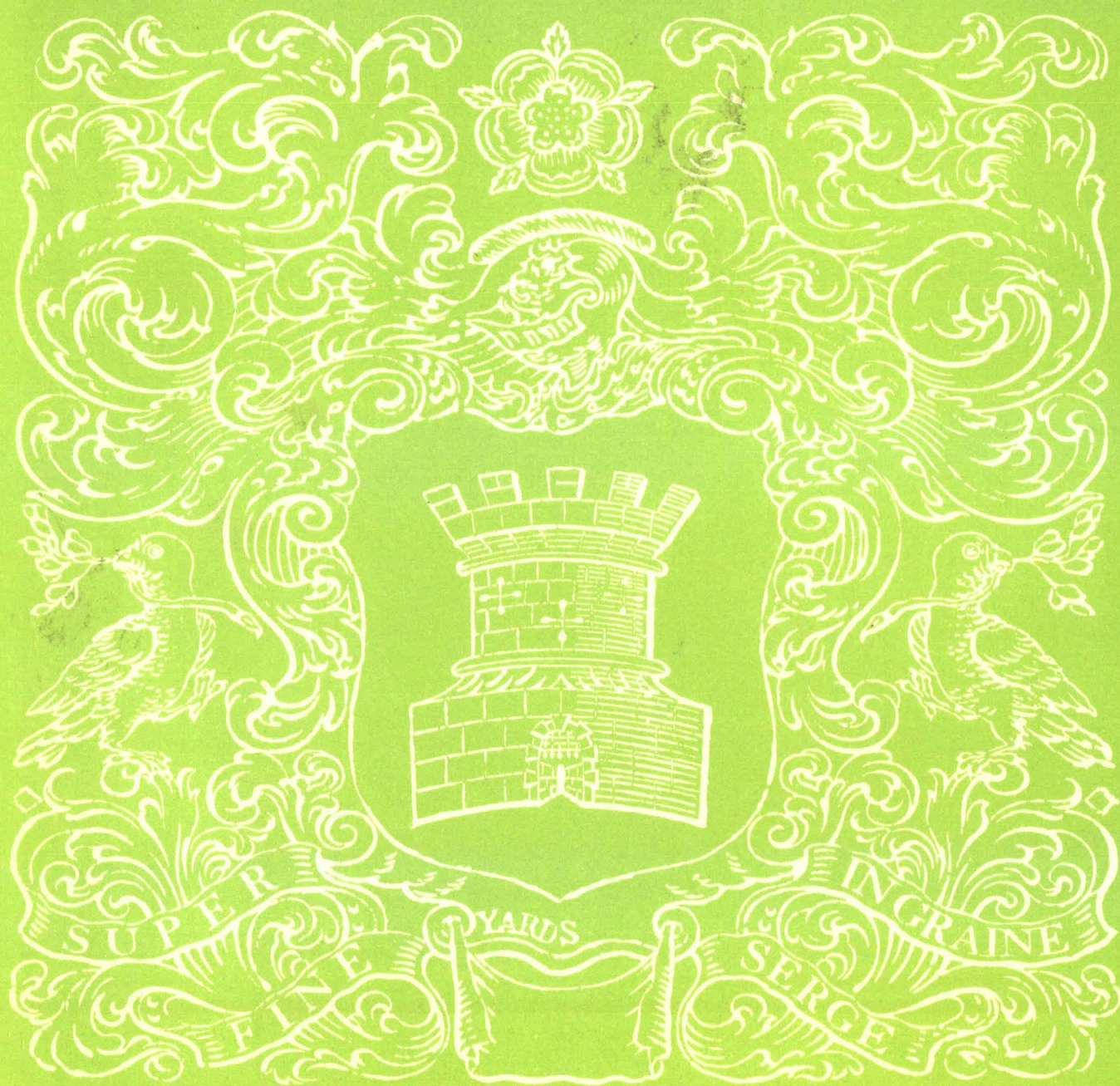


**MEDIEVAL & POST-MEDIEVAL
FINDS FROM EXETER
1971-1980**

J.P. ALLAN



The city of Exeter was one of the largest and most prosperous of British historic towns. For much of the period 1000–1800 it ranked amongst the top six English provincial centres and served as the social, ecclesiastical, industrial and commercial capital of the South-West. In the 16th to 18th centuries the prodigious volume of woollens passing through the port of Exeter brought the city into trading relations with many places in Northern Europe, the Western Mediterranean and the Americas.

Between 1971 and 1980 the Exeter Museums Archaeological Field Unit carried out over 30 excavations in the city which recovered an exceptionally rich and varied collection of finds. These include the largest and best-dated assemblages of medieval and post-medieval pottery from South-West England, derived from stratified sequences and numerous pit groups dating from Saxo-Norman times down to the later 18th century. The finds from Exeter comprise a wide range of imported wares together with important collections of glass, metalwork, coinage and objects of leather and wood.

Medieval and Post-medieval Finds from Exeter presents a catalogue and quantified analysis of all the finds from the recent excavations as well as the most important unpublished material from pre-1971 sites. There are general discussions of each class of artefact by John Allan and 38 other British and Continental specialist contributors. Throughout the volume extensive use has been made of the exceptionally rich body of documentary evidence from the city. Sources such as the Exeter and London Port Books, Town Customs Accounts, Wills and Inventories greatly illuminate and augment the conclusions drawn from the archaeological evidence. This pioneering study has, for example, yielded much fresh evidence concerning such topics as the retail prices of ceramics and other wares, the uses to which certain vessels were put, and where in the house they were most commonly to be found.

A comprehensive study of Exeter's ceramics trades gives evidence of the value of particular classes of imports, the scale of the various trades, and the merchants and trade routes involved. They also show the city's role in the redistribution of imported wares, both inland and by sea to Cornwall, Ireland and the American colonies. The work underlines some of the complexities to be taken into account in interpreting distribution patterns of traded artefacts.

(continued on back flap)

The front cover shows an impression taken from an 18th-century wooden block used to stamp the tillet wrappers of cloth bales exported from the port of Exeter (Exeter Museums).

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MEDIEVAL AND POST-MEDIEVAL FINDS
FROM EXETER, 1971-1980

Exeter Archaeological Reports: Volume 3

MEDIEVAL AND POST-MEDIEVAL FINDS FROM EXETER, 1971-1980

by J.P. Allan

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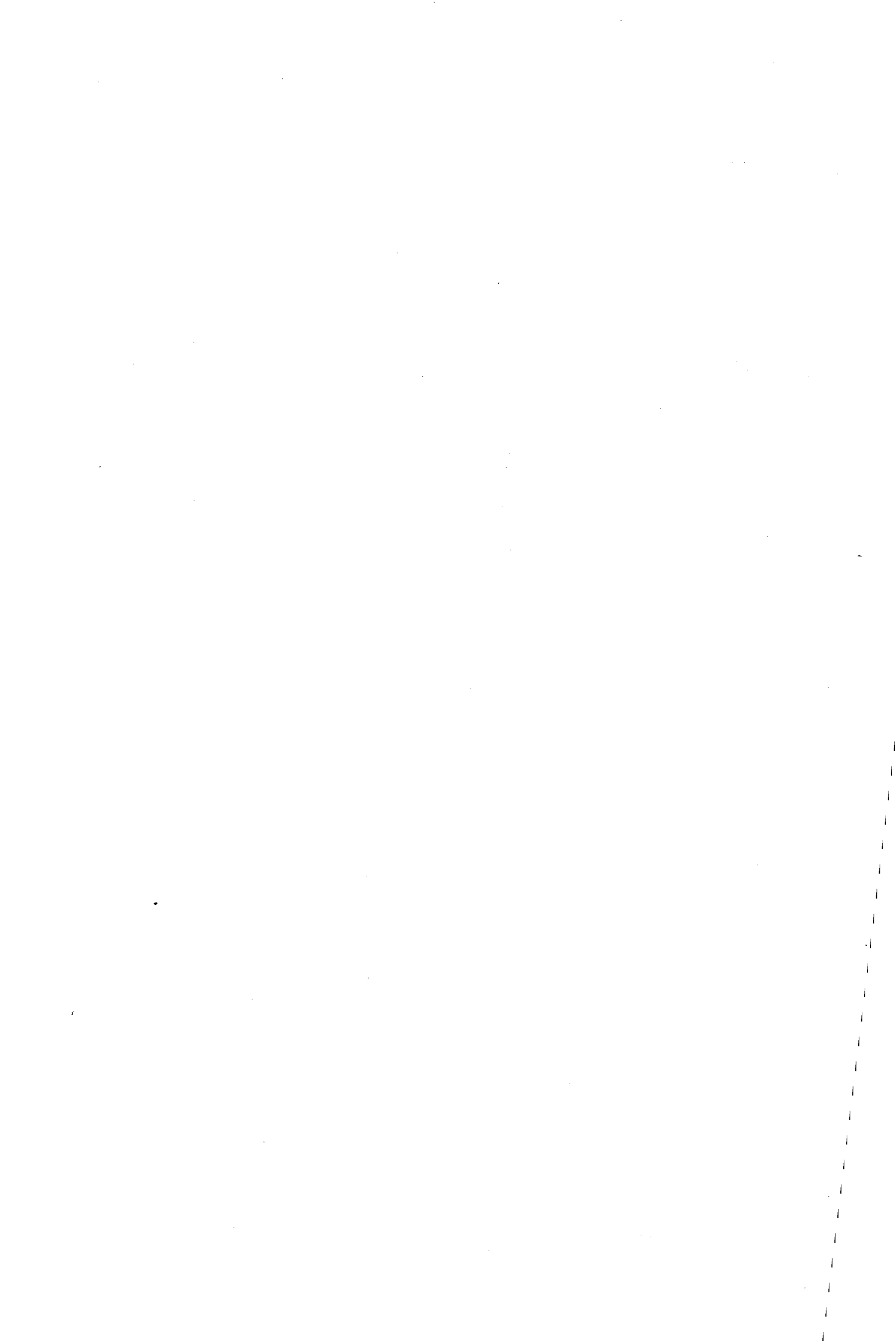
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INTRODUCTION

In *c.* AD 55–60 a site on a sloping spur overlooking a river crossing about 6.5 km above the head of the Exe Estuary was chosen for the construction of a fortress by the Roman Second Augustan Legion.¹ Following the departure of the legion *c.* 75, the town *Isca Dumnoniorum* was founded within the 38 acres (15.4 ha) enclosed by the fortress defences. This developed into a moderately prosperous *civitas* capital and received a stone town wall enclosing 92.6 acres (37 ha) around 180–200. Little is known about the period which followed the collapse of Roman town life in the late 4th or early 5th century. A late Saxon *burh* was established within the Roman town wall, probably under Alfred. In the 11th to mid 12th century Exeter ranked as perhaps the 7th city in England.² This early prominence was followed by a steady decline relative to other major English towns; for example it ranked 27th in the Lay Subsidy of 1334 (Glasscock 1975). There was a dramatic rise in the city's fortunes in the late 15th century (Carus Wilson 1963) and in the 1520s Exeter was once again listed in about 6th or 7th position in the rankings of English towns (Hoskins 1956). The heyday of the city's commercial life came in the period between *c.* 1670 and 1720, with the rapid expansion of the trade in woollen goods to the Low Countries (*idem* 1935; Stephens 1958). These years were followed by a period of relative commercial stagnation and the city was quickly overtaken by other growing urban centres of the 18th century.

Since its inception in 1971, the Exeter Museums Archaeological Field Unit has conducted some 32 excavations in the city. The present volume is the first of several in which the results of excavations on medieval and later sites will be presented; it contains an analysis of the finds from sites excavated between 1971 and 1980. It would have been possible to produce finds reports as appendices to the report on each individual site. However it has become increasingly clear that a single finds volume provides a much more suitable vehicle for their publication. Only by combining the evidence from many sites is it possible to piece together the sequence of pottery development within the city and to assemble the dating evidence for that development. By examining the total quantities of the traded artefacts (imported pottery, querns or mortars, *etc.*) it becomes possible to consider Exeter as a market for these products, and to compare the pattern of their importation with that in other towns. These goods hardly ever occur on individual sites in sufficient quantities to allow numerical studies of any value. Again, by collecting the evidence from all sites, one can begin to tackle such issues as the pattern of coin loss or the distribution of luxury goods within the city. A single finds volume has the important additional merit of avoiding much repetition. These advantages seem to the writer to outweigh the difficulties which will sometimes arise from the fact that the contexts of the finds are described separately in companion volumes. At Exeter this is much less of a problem than it might be elsewhere. The hill-slope topography of most of the city is only occasionally conducive to the accumulation of deep medieval and later stratigraphy, and on the majority of sites the medieval buildings levels have been destroyed by later terracing or by cellars. The bulk of the finds can no longer be related to identifiable structures, occupations or social levels.

Exeter has one of the richest provincial collections of documents in Britain, particularly of the late medieval and early modern periods. In the present volume extensive use is made of its customs accounts and probate inventories. All the Port Books relating to the city, together with most of its other customs documents, have been examined, as have all the city's probate inventories surviving in the Devon Record Office or Public Record Office. However only a few of the other classes of unpublished documents have been examined; in the future the study of finds from the city could probably be considerably enlarged by progress in this area.³

NOTES

1. For accounts of the Roman city see Bidwell 1979; *idem* 1980.
2. For an account of the city between *c.* 400 and 1100 see Allan *et al.* forthcoming.
3. The uses and limitations of these documentary sources are discussed in the writer's MPhil thesis 'The Post-Medieval Pottery of Exeter, 1500–1750', 1983 (Exeter) and in MF 33–41.

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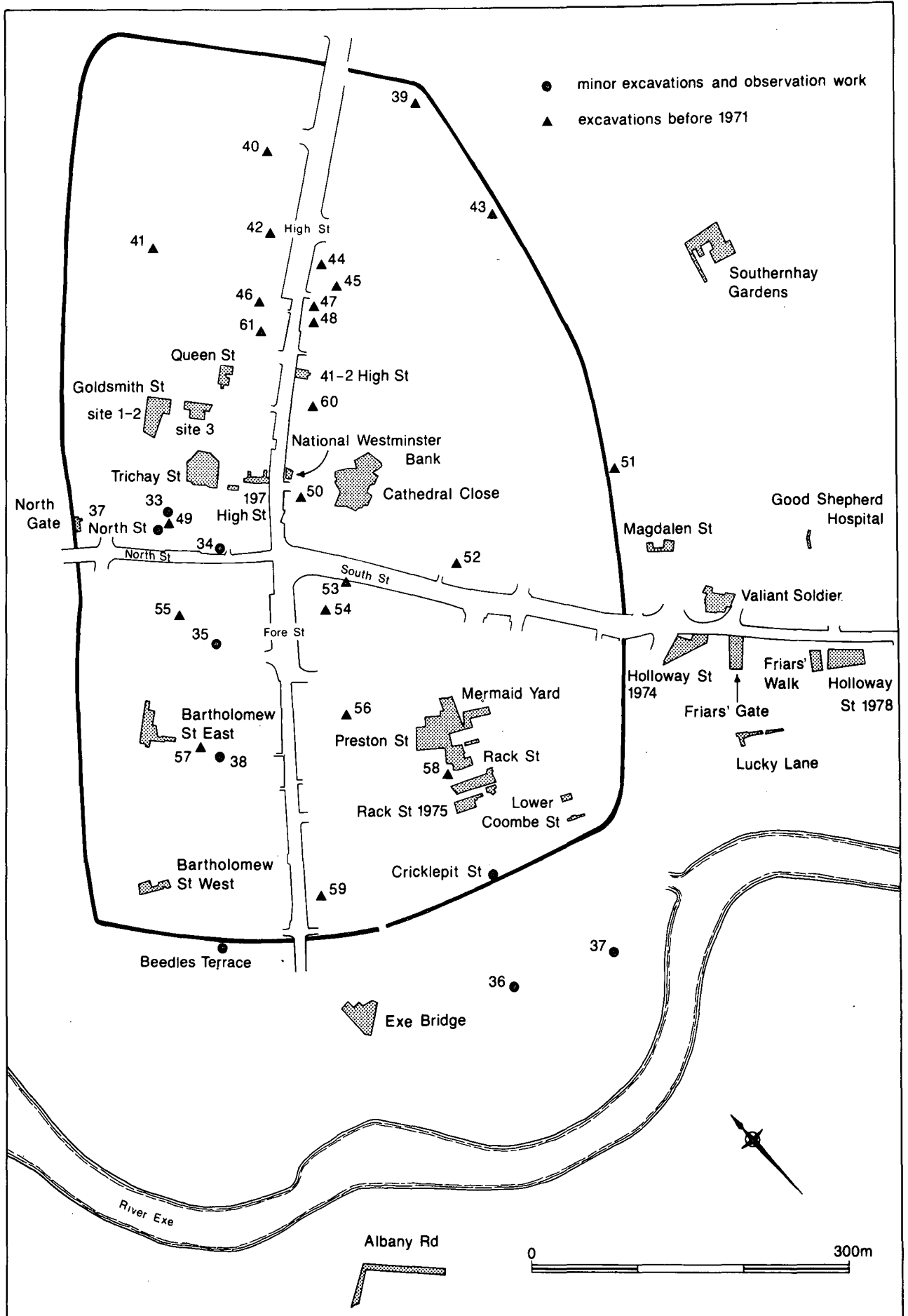


Fig. 1. Sites excavated in Exeter up to 1980.

THE SITES EXCAVATED

The collection presented here comes from the following sites:

(a) *Excavations by Exeter Museums Archaeological Field Unit, 1971-80*

Site	Date of excavation	Site code
1 Goldsmith Street sites 1 and 2	1971	GS sites 1, 2
2 Goldsmith Street site 3	1971-2	GS site 3
3 Queen Street	1978	QS
4 Trichay Street	1972-3	TS
5 197 High Street	1973	197 HS
6 37 North Street	1971	37 NS
7 North Gate	1978	NG
8 41-2 High Street	1980	41-2 HS
9 National Westminster Bank	1977	NWB
10 Cathedral Close	1971-6	CC
11 Bartholomew Street East	1980-1	BSE
12 Bartholomew Street West	1974	BSW
13 Beedles Terrace	1976	BT
14 Mermaid Yard	1977-8	MY
15 Preston Street	1976-7	PS
16 Rack Street	1977-8	RS
17 Rack Street 1975	1974-5	RS 1975
18 Lower Coombe Street	1979	LCS
19 Cricklepit Street	1974	CR
20 Southernhay Gardens	1974	SG
21 Magdalen Street	1976	MS
22 Good Shepherd Hospital	1979	GSH
23 Valiant Soldier	1973-4	VS
24 Holloway Street 1974	1974	HL 1974
25 Friars Gate	1973-4	FG
26 Friars Walk	1974	FW
27 Holloway Street	1978	HL 1978
28 Lucky Lane	1980	LL
29 Exe Bridge	1975-9	EB
30 Albany Road	1978	AR
31 Flowerpot Lane (off map)	1978	FPL
32 Polsloe Priory (off map)	1976-9	PP

(b) *Observation work by Exeter Museums Archaeological Field Unit, 1971-80*

33 38 North Street	1974	38 NS
34 46 North Street	1974	46 NS
35 Mary Arches Street	1975	MA
36 Commercial Road	1975	CLR
37 Shilhay	1975	SH
38 St Nicholas Priory (excavation)	1971	NP

(c) *Previous excavations in the city*

39 Bedford Garage kiln	1931
40 Post Office site, Castle Street	1934
41 College extensions, Gandy Street	1909
42 Lloyd's Bank, High Street	1950
43 Post Office Street	1950

44	29 High Street	1952
45	'Behind St Stephen's church'	1950
46	229 High Street (Bowden's)	1930
47	Wyman's Well	1950
48	Colson's Basement	1959
49	38 North Street	late 19th-century
50	City Bank, Broadgate	1875
51	Convent Garden	1928
52	Roman Catholic Church, South Street	1883
53	St George's, South Street	1946
54	St George's, trench II	1946
55	Gaumont Cinema	c. 1935
56	Smythen Street	1930-5
57	St Nicholas Priory	Unknown
58	Central School, Rack Street	1891-5
59	126 Fore Street	1951
60	48 High Street	1921
61	225-6 High Street	1921

The find-spots of a few objects can no longer be located.

Following the establishment of Exeter Archaeological Field Unit in 1971, excavations were concentrated in two areas: the Cathedral Close (site 10) and the future site of the Guildhall shopping centre (sites 1-6). The former proved to be the site of the Anglo-Saxon minster with its attendant graveyard (Henderson and Bidwell 1982). The latter area produced a remarkable range of evidence of medieval and post-medieval activities; this was derived principally from several hundred rubbish pits and industrial pits, some of them waterlogged. Occupation had been continuous since the 10th and 11th centuries, but unfortunately post-medieval terracing had destroyed nearly all the accumulated medieval stratigraphy and with it the remains of medieval and later houses in this area (Collis 1972). These excavations produced many of the finest groups of finds reported upon in the present volume.

In 1973 attention turned to the suburb outside the South Gate, where a new road scheme, followed in later years by the construction of houses, threatened a number of areas (sites 21-8). These revealed scattered 11th- and 12th-century occupation; some of the sites (24-8) fell within the area donated to the Greyfriars in 1291-2, reverting to urban housing in the late 16th and 17th centuries.

In recent years the construction of new housing has provided the principal stimulus to excavation. Housing schemes in the southern and western quadrants of the walled city have been preceded by extensive excavations (sites 14-19, 11-13 respectively). Many of these sites slope markedly towards the river Exe, and again much of the stratigraphy has been destroyed by erosion or terracing.

Three sites, 197 High Street, Exe Bridge and Polsloe Priory, present a different picture, with well preserved medieval stratigraphy and sequences of medieval buildings. These are described in detail below (pp. 41-2, 60-7).

NOTES

1. It should be noted that the southern quadrant of the city between South Street and Fore Street is known, somewhat confusingly, as the West Quarter.

ACKNOWLEDGEMENT

This volume reflects the corporate effort of many people, to all of whom I am most grateful. My chief debt is to Christopher Henderson, director of the Exeter Museums Archaeological Field Unit since 1975, who has offered much advice and constructive criticism at all stages of this work, greatly to the improvement of the text; I am also thankful for much encouragement on his part. I wish to thank Mrs S. Blundell, who prepared many fine line-drawings, particularly of the post-medieval pottery; and Miss B. Jupp and Messrs S.R. Blaylock and W. Widgery who drew most of the maps and diagrams. The photographs are the work of Mr D.B. Sinclair. The type-script was prepared by Mrs E. Holden, Miss V. Schoeters, Mrs F. Silvester and Mrs P. Wakeham.

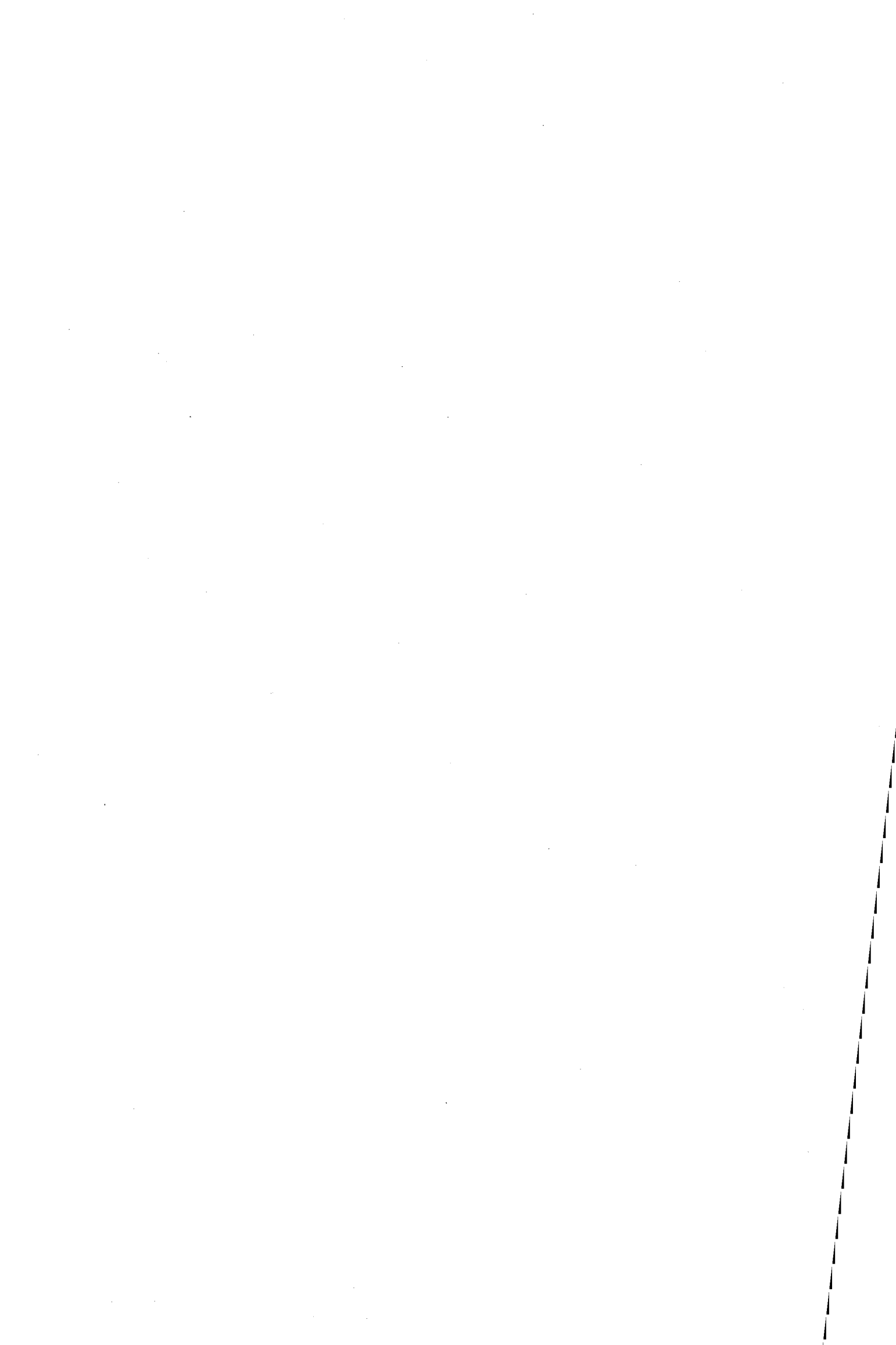
Most of the excavation and post-excavation work was financed by Exeter City Council and the Department of the Environment, who, with the University of Exeter, have also borne the bulk of the cost of producing this volume. The excavations in the Guildhall area in 1971 were directed by Dr J. Collis and supervised by G. Black, J. Reading, E. Wayman, D. Whipp and C.G. Henderson, who subsequently directed excavations on Guildhall sites in 1972-4. The 1971 Cathedral Close excavation was directed by M. Griffiths and supervised by Mrs A. Johnson (née Gentry), A. Johnson and P. Bidwell, who directed that excavation in subsequent years. Since that time, most of the supervision of excavations in Exeter has been undertaken by S.W. Brown, J. Pamment, J. Hunn, C. Tracey, J.R.L. Thorp and P. Weddell. To them I am grateful for the high quality of excavation which has allowed the recovery of so much reliably stratified material. I also wish to thank our volunteer helpers, in particular Messrs B. Joy and W.R. Bridgwater who have devoted many hours of their leisure time to the archaeology of the city.

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I. INTRODUCTION TO THE POTTERY

I. THE COLLECTION

The collection comprises rather more than 40,000 medieval and 36,000 post-medieval sherds; they weigh well over one tonne. The post-medieval series is the more bulky, with dozens of complete pots. There are at least 1143 medieval and 1772 post-medieval imported vessels. The volume of stratified material at each period is shown in Figs. 6 and 60. It will be seen that there is a steady rise in the quantity of material available for study from the 10th to the 12th and 13th centuries; this collection is derived almost entirely from urban rubbish pits. In the 14th century the practice of burying refuse in open pits in back gardens was largely abandoned and there is a marked decline in the amount of late 14th- and 15th-century material available for study. Here as elsewhere (e.g. Southampton: Platt and Coleman-Smith 1975, 2, *passim*), there is for some reason a large number of early 16th-century pit groups. There are rather fewer groups of c. 1550–1650, but a huge quantity of ceramics of the years c. 1650–1720, and a scatter of later material.

In addition, Exeter Museum has a collection of medieval and later pottery derived from earlier excavations or salvage work in the city which is almost entirely unpublished. It contains many complete pots and exceptional finds; the most important are published here.

2. METHOD OF ANALYSIS

Selection of material for publication

The series is obviously far too large for the illustration of all the stratified groups and this is not in any case particularly desirable. There are for example about 250 Saxo-Norman pit groups; some 45 of these have been selected for illustration. Three categories of evidence have determined the selection. First, all medieval groups which contain any form of dating evidence have been included, and so have those which produced timber objects which may be capable of dendrochronological dating in the future. Second, series of intercutting pits or sequences of deposits which demonstrate the succession of ceramic types have usually been included. Third, a selection of the major groups which contain most of the imports and complete pots has been drawn; in addition, a series of the more interesting individual items selected from the groups which have not been illustrated has been appended to each section. In the belief that a more sophisticated analysis of the coarsewares than that attempted here may yield useful results, all the vessels in each of the selected medieval pit groups have been drawn. This is not possible with the major post-medieval groups, which contain far too many pots to allow presentation in this way. In these instances two or three of the largest groups of each half-century have been drawn quite fully with only a selection of the more important vessels in others.

Identification of fabrics

All groups were divided into fabric types. After visits to local and national museum collections it was possible to attribute most post-medieval and some medieval wares to kiln centres. The remaining wares have been allocated fabric numbers in the usual manner. The fabrics were defined entirely on visual characteristics, occasionally with a hand lens. Use was made of D. Peacock's key to the common inclusions of pottery (Peacock 1977) and calcareous particles were tested with acid. It must be admitted that the categorisation of the medieval coarsewares is quite elementary; nevertheless, the divisions of fabric made on visual grounds have almost entirely been supported when tested by thin-sectioning.

Method of quantification

Since all indices used in pottery quantification have serious weaknesses when used alone, the sherds, minimum number of vessels and weights of each fabric type were counted in each group. The weighing of the medieval sherds did not produce a very different picture from that provided by the sherd counts and this count is not presented here. However, the weighing of many post-medieval groups, when used with the two other indices, served to underline the different breakage patterns of coarse and fine wares. Many pits

contained intact or near-complete coarse pots which presumably were discarded because they were foul. Intact fine wares were much less common. The results of this exercise may be seen in Figs. 56 and 60.

Residual material

Most medieval groups from Exeter contain some residual finds. This is a particular problem with the intercutting cesspits from which many of the finest 11th- to 14th-century groups of pottery are derived. Between 10% and 40% of the sherds in such contexts are usually residual Roman wares. Since the plain coarsewares of the 11th century are identical to those of the early 14th century it is unfortunately very difficult to distinguish residual medieval material in many of these groups. For this reason the deposits on newly occupied sites, such as the late 12th/early 13th-century group from Bartholomew Street West (616-23) and the early 13th-century group from Exe Bridge (688-717) provide the only reliable guide to the forms and proportions of coarsewares in use in the late 12th and 13th centuries. In the 14th and 15th centuries residual finds almost certainly form a considerable fraction of most of the Exe Bridge deposits. However several large groups (1446-1550) lack the typical coarsewares of the 12th and 13th centuries and probably contain very little residual material.

In the post-medieval period the picture is rather different. The major pit groups contain surprisingly little distinguishable residual Roman or medieval material. Only two of the major groups presented here (1784-1809 and 1882-1961) contain more than an occasional residual sherd.

II. THE MEDIEVAL POTTERY

1. CLASSIFICATION

A. THE FABRIC TYPES

When analysis of Exeter's medieval pottery was begun, blocks of fabric numbers were assigned to the major categories of pottery in the following manner:

- (a) Fabrics 1–19 Exeter kiln wares.
- (b) Fabrics 20–39 medieval coarsewares.
- (c) Fabrics 40–59 wheel-thrown jugs.
- (d) Fabrics 60–79 tripod-pitchers and hand-made sandy wares.
- (e) Fabrics 80–99 ridge tiles.
- (f) Fabrics 100–20 micaceous wares.

In the event, only a minority of the numbers were used. Some of the fabrics were subsequently attributed to kiln sources, enabling their fabric number to be replaced by an attribution. Therefore the series of numbers is not continuous; with the identification of further wares in the future new fabrics can be added to the series. Full fabric descriptions, defined by thin-sectioning, will be found on pages 32–4.

Note: In view of the great variation in their surface colour, Munsell colour descriptions of many of these wares have been excluded.

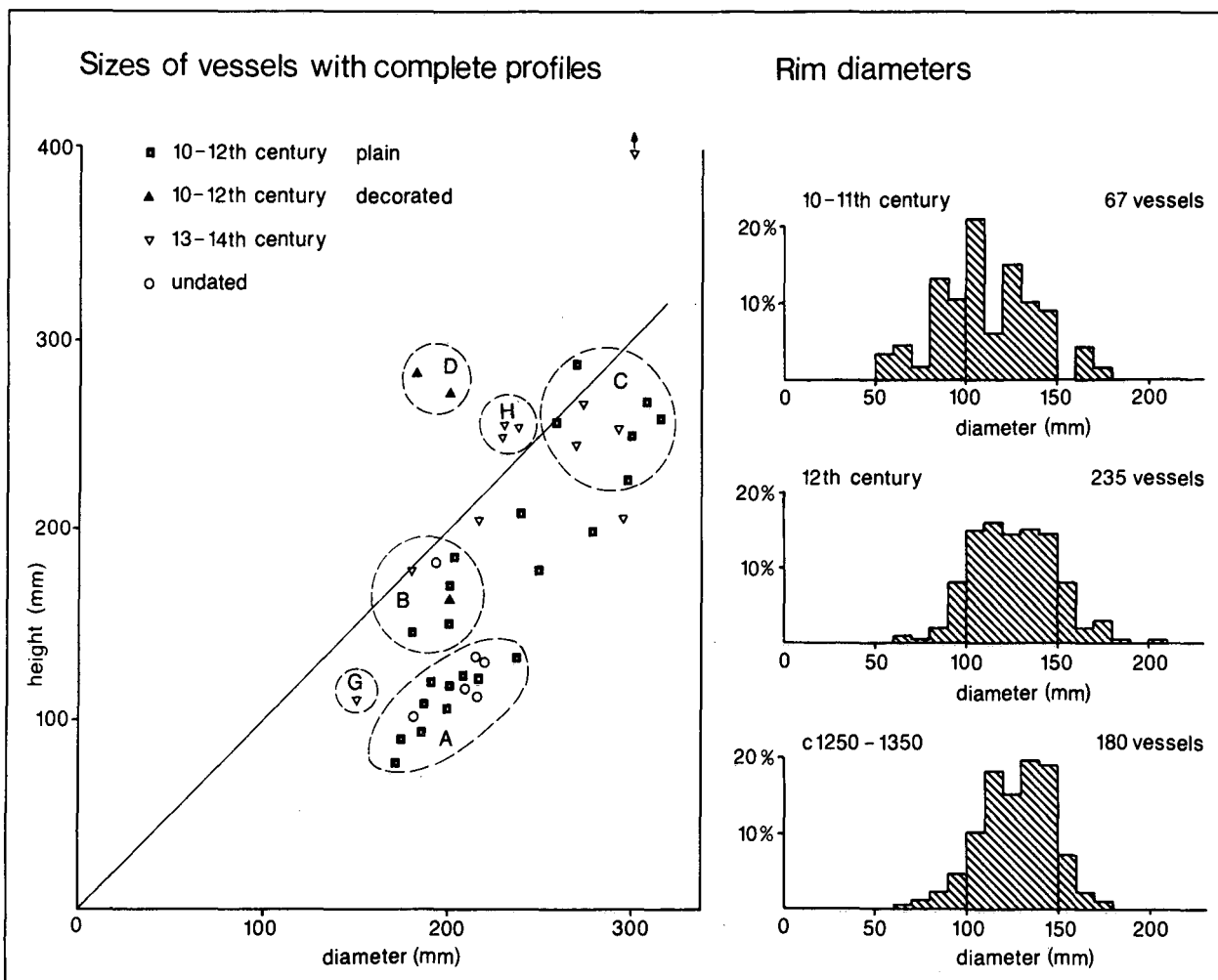


Fig. 2. Sizes and rim diameters of medieval coarsewares, with suggested grouping of vessel forms of fabric 20, type 1.

(a) Exeter kiln wares

Fabric 1: Bedford Garage ware (pp. 27–30).
 Fabric 2: Goldsmith Street ware (pp. 136–8).
 Fabric 3: Valiant Soldier ware (pp. 242–7).

(b) Medieval coarsewares

Manufacture: Fabrics 20–8 are all hand-made wares. Bases were evidently constructed separately from vessel walls: a distinct join is commonly visible where the edge of the base has been drawn over the exterior of the wall (e.g. 304, 372). Finger impressions are very commonly visible on the internal surfaces of the walls, especially their lower parts, showing that they were 'pulled up' by hand (e.g. 288, 546). Distinct junctions can occasionally be detected in the broken edges of sherds from the upper parts of the body (e.g. 206). These presumably reflect the addition of separate pieces of clay (?coils) in manufacture. Similar junctions are more commonly visible in rim sections (231, 233–5, 570, 590, etc.). Rims are often irregular in profile, but show horizontal surface striations; they may have been smoothed on a turntable. These wares are never glazed, nor have any glaze spots been noted. This strongly suggests that their production was quite separate from that of glazed wares. The coarsewares were very probably fired in clamps rather than kilns.

Fabric 20

Description: Rough gritty fabric with quartz sand filler and prominent chert inclusions. The colour is very variable in 11th/12th-century groups: light red, light to very dark grey, light and dark browns. The elaborate wares are commonly oxidised; this perhaps reflects their stacking at the top of the clamp, and may have been deliberately effected. Thirteenth- and 14th-century wares are consistently reduced to mid or dark grey.
Forms: The dimensions of all the Exeter cooking pots of fabric 20 with complete profiles are shown in Fig. 2. They have tentatively been grouped into six vessel shapes (types 1A–D, G, H), with a few miscellaneous vessels falling outside those groups. Two vessel forms (1A, 1H) are very distinctive and appear to have a comparatively restricted date-range. Fig. 3 shows a provisional type-series of vessel shapes and rim forms. Since the pots are hand-made, classification of rims is a somewhat subjective exercise, and some rims vary considerably in profile from one side of the vessel to the other. The elaborate closed forms (1D–F)

may perhaps have served a different function but since they are sometimes sooted, they have been listed as cooking pots. Form 7 (storage jars with applied thumbed strips) is known only from a few sherds (305, 307), so no illustration appears in the type-series.

Date: In circulation before c. 1020 (223–6); still the most common fabric when Saintonge polychrome sherds were in use (1423–45). The type had died out by the early 15th century (1463–1511) (Fig. 6).

Typological developments: Rims: Some of the most common rim forms (Fig. 3, rims U, X) were in use from the earliest groups (?late 10th century) until the late 13th century or later (1, 2, cf. 1246–86). Some more complicated rims and large, thick rim types (Q, R, S, ?W) appear to have died out by c. 1200. At about that time the cupped form (T) made its first appearance (716) and is much the most common type of the late 13th and early 14th centuries.

Vessel forms: The change in rim type c. 1200 is accompanied by the introduction of a different shoulder form: the high rounded shoulder is a universal feature of the 11th/12th-century wares (forms 1A–1F), but this is replaced in the mid and late 13th-century groups by a low sloping shoulder (form 1H; 1365, 1374, 1441–5, etc.) The evidence for the date of the complete vessel forms is shown in Fig. 2. Unfortunately there are few complete profiles, especially of the larger vessels.

Decoration: The distinctive combed wares, the elaborate vessels with applied strips, spouts and handles, and the unusual forms are absent from horizon B groups. They are characteristic of horizon D but are present in only a few groups of horizon E. The absence of any combed sherds or any unusual forms from several hundred early 13th-century sherds of fabric 20 at Exe Bridge is decisive evidence that these decorated wares disappeared before c. 1200.

Parallels: Sherds of this type are widely distributed in South Somerset and throughout Devon. The most westerly distribution point is Launceston Castle (summary of distribution in Allan and Perry 1982, 88). Thin-sectioning of the wares from Okehampton Castle and Lydford in West Devon strongly suggests that they were transported considerable distances from East Devon or South Somerset (Vince and Brown 1982).

Fabric 21

Description: Refined oxidised ware with a scatter of quartz and chert fragments. Some oxidised light buff or brown, often with a

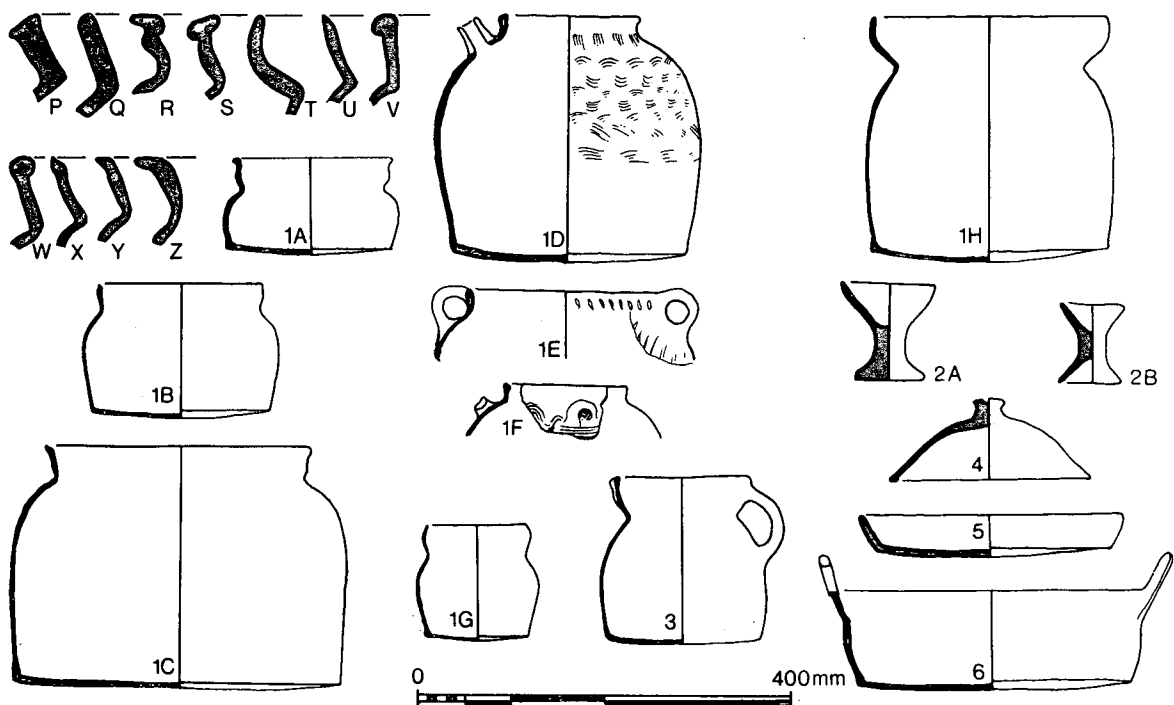


Fig. 3. Type-series of chert-tempered coarsewares of fabric 20 (scale of rims 1:4, vessel profiles 1:8).

grey core. This fabric is both superficially and in thin-section very similar to fabric 43 and these wares may well have a common source.

Forms: Only a few examples from plain cooking pots recognised.
Date: Late 14th/mid 15th-century: 119; in EB 898.

Fabric 22

Description: Wares heavily tempered with large limestone fragments, often leaching out to leave a vesicular fabric. Colour varies between red, light brown and greys.

Forms: Only plain cooking pots known. No complete examples.
Date: 10th/11th-century (Figs. 6, 10). Absent from the major 12th-century groups, e.g. GS 258 (302-34).

Fabric 23

Description: Wares tempered with limestone and chert. Colours principally greys and browns.

Date: Principally 10th/11th-century, but almost certainly in use as late as the mid 14th century (e.g. 1459-60).

Fabric 24

Description: Sandy ware with a scatter of calcareous and chert inclusions. All examples have reduced dark brown or grey-brown surfaces.

Forms: Only cooking pots with thin hand-made bodies and smooth (?wheel-finished) rims are known (1458).

Date: Late 14th/early 15th-century (1458; in EB 449-51).

Fabric 25

Description: Fine calcareous fabric with soapy texture, some sand and quartz grains. Buff-brown or fawn surfaces, some with light grey core.

Forms: Hand-made cooking pots, with smooth (?wheel-finished) rims. Some impressed thumb-prints on rims (1457).

Date: Late 14th/early 15th-century (1457, 1510).

Fabric 26

Description: Fabric tempered with much coarse sand, lacking chert or other visible inclusions.

Forms: Bodysherds only.

Date: The few examples known are mid and late 13th-century (in GS 120, GS 256).

Fabric 27

Description: Fine-grained sand-tempered ware, usually with fawn-brown surfaces.

Forms: Hand-made cooking pots, some with quite elaborate smooth (?wheel-finished) rims (e.g. 1461, 1511).

Date: Mid 13th/early 15th-century.

Fabric 28

Description: Shell-tempered ware, fired light or mid grey or fawn.

Form: Single example known (211).

Date: 11th/12th-century.

(c) Wheel-thrown jugs

The following wares are wheel-thrown and lead-glazed. Glaze covers only the upper half of the external surface of jugs.

Fabric 40

Description: Fine clay matrix with a scatter of fine sand and occasional unweathered clay pellets which protrude through the surface. Most vessels are fired pink-red (7.5YR 6/6; 5YR 5/8) but some are reduced dark grey (2.5Y 4/0).

Forms: Fig. 4 summarises the vessel forms of fabrics 40-3. All forms are wheel-thrown. They are: (1) jugs (decoration optional); (2) costrels; (3) bottles; (4) handled cooking pots; (5) pans and (6) water pipes. Forms 3, 5A and 5B are represented only by fragments and have been restored in the type-series. All forms except 6 were made in fabric 40.

Decoration: The most common type is the use of metallic stripes, usually applied vertically. The following techniques were also used in a wide variety of combinations:

- (1) Brushed white slip lines (1433-5).
- (2) Applied clay strips, sometimes thumbbed (1402, 1591).
- (3) Applied clay pellets, sometimes metallic (1429).
- (4) Dot-and-circle decoration (1360).
- (5) Sgraffito decoration (1405).
- (6) Slip and copper-green glaze (1431).
- (7) Roller-stamping (1595).
- (8) Face-on-front decoration (1406).
- (9) Face-on-rim (1429) or face-above-rim decoration (1577).
- (10) Incised grooves (1397).
- (11) Finger-pinching (1395).
- (12) Impressed combing (1318).

All handles are flat; they are almost invariably knife-slashed, but are occasionally perforated by a sharp point (1429). Spouts are pulled (1430), parrot-beak (1578), anthropomorphic (1577) or absent (1517). The lower parts of the body commonly display

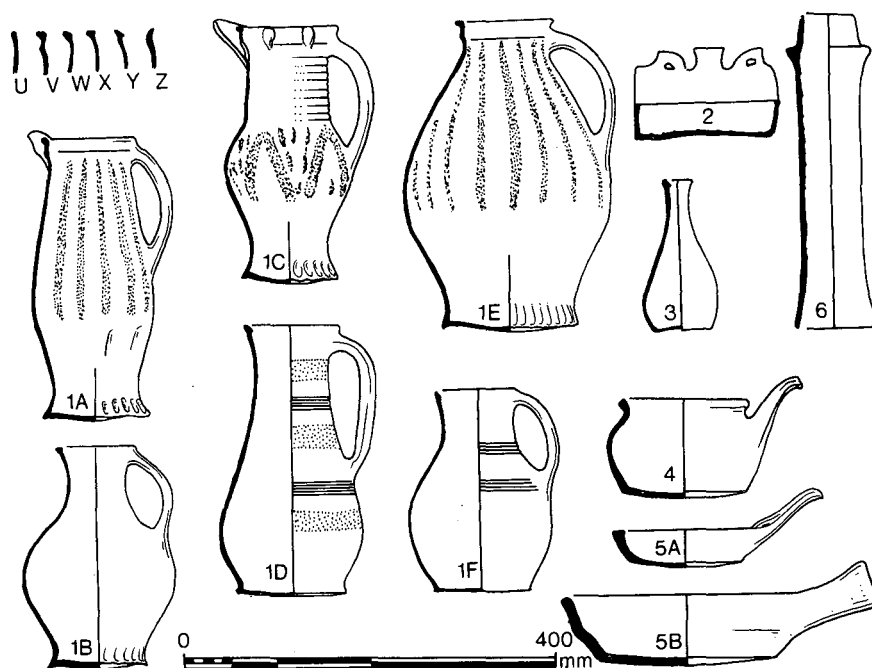


Fig. 4. Type-series of local jug fabrics 40-3 (scale 1:8).

knife-trimming (1429–30).

Glaze: All jugs are glazed on their upper halves and unglazed below. This varies in colour from light green (5Y 5/4) to very dark green (5Y 4/4) or orange-brown (10YR 5/8). The small types 2–5 are usually glazed light green, presumably because they were placed higher in the kiln stack during firing.

Date: The following evidence is relevant to the date of introduction of these jugs:

- (1) They are absent from the many groups attributable to the first half of the 13th century (horizon F).
- (2) They appear to have been introduced at about the time that Saintonge wares came into use on the Exeter market (above).
- (3) The group GS 120, containing a coin of 1242–7, probably lost before 1250, shows that they were in use by 1250 if the coin is not residual.
- (4) They were clearly in common use two phases before the new ranges of c. 1300 were erected at Polsloe Priory: many sherds are present in PP 636 (as 838–43).

The evidence for the end of the production of fabrics 40–3 is as follows:

- (1) They are the most common fabrics in an Exe Bridge group which appears to date to the early 15th century (1463–1511).
- (2) In the series of deposits probably attributable to c. 1450 at Exe Bridge they form at least 23% of all sherds (as 836–7).
- (3) There are a few fragments in some groups of horizon K (mid/late 15th-century); in PP 1582–3 of c. 1500 they form 9.5% of local wares (p. 91).
- (4) They are absent from the many early 16th-century groups from the city. The production of these wares therefore seems to have ceased between c. 1450 and c. 1500.

Typological developments: The fabric was in use for at least two centuries; during that time ornament changed from predominantly metallic to slip decoration; ring bases were introduced in

the mid or late 14th century, and there may have been some changes in rim forms.

Distribution: The distribution of fabrics 40–3 is shown in Fig. 5. They are rare at Plymouth, where only two or three vessels have been recognised (*contra* Broady 1979, 52) and no sherds have been identified elsewhere along the south coast of England.

Fabric 42

Description: Fabric characterised by scatter of brown mudstone lumps, making a coarser texture than fabric 40. Colours of fabric, glaze and decoration as fabric 40.

Forms: Fig. 4, types 1A, ?1D, 5A, 5B, 6.

Date: As fabric 40.

Fabric 43

Description: Fabric 40 with addition of coarse quartz, flint and chert. These certainly have a common source, since fabric 43 handles are sometimes applied to jugs of fabric 40.

Forms: Fig. 4, type 1A.

Date: Late 14th/15th-century.

Fabric 44

Description: Wheel-thrown sand-tempered ware, usually fired light or mid grey, with mottled yellow-green, mid green or green-grey glazes. This fabric is often hard-fired.

Forms: Jugs with collared rims appear to be the most common form, but more vessels are represented only by a few body-sherds.

Decoration: The use of applied clay scales on the body is a characteristic of this type (e.g. 1124, 1611).

Date: 13th-century. Some were in use before the middle of the century. This type is absent from the groups containing Saintonge polychrome wares.

Parallels: D. Dawson has suggested that some of these wares are Bristol products.

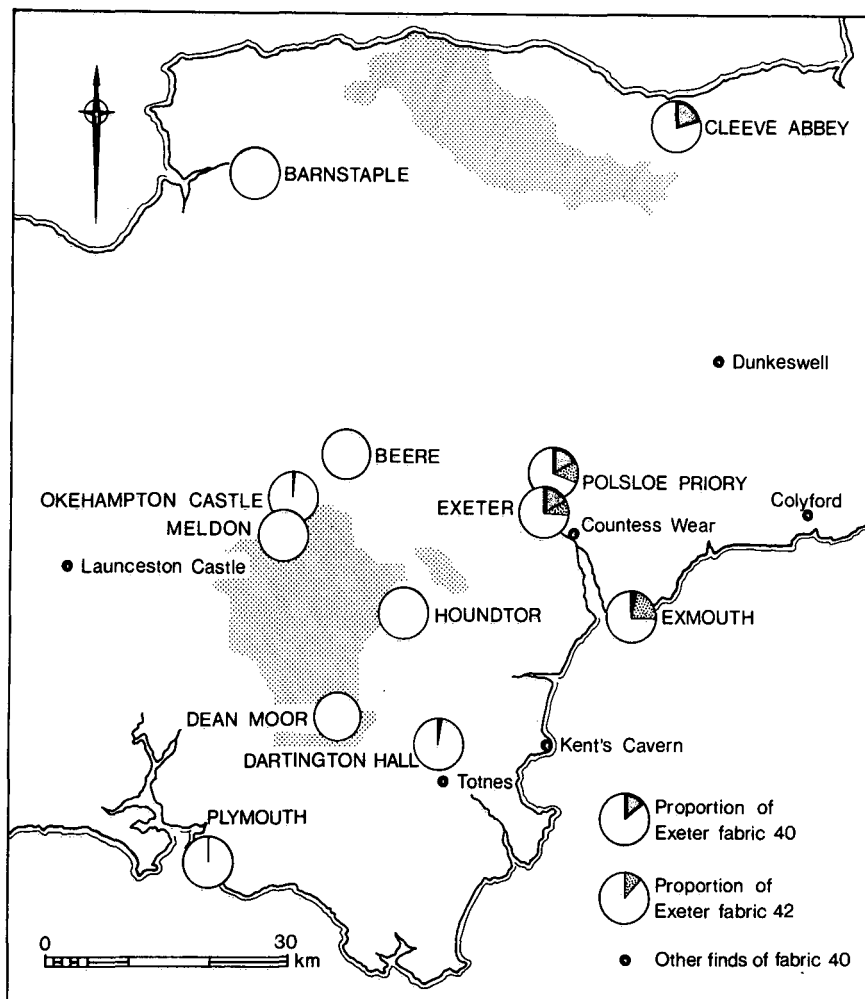


Fig. 5. The distribution of jug fabrics 40–3 (c. 1250 to late 15th-century).

Fabric 45

Description: Wheel-thrown fine-textured fabric with a little fine sand tempering, with very sparse calcareous inclusions. Usually oxidised to pink-red or cream-fawn. Glazes vary between mottled light green-yellow, mottled orange, and blotchy red-brown.
Forms: Jugs only known form.
Date: As fabric 44.

*(d) Tripod pitchers and hand-made sandy wares**Fabric 60*

Description: Hand-made sandy ware with chert inclusions. This ware is almost invariably fired light grey with a thin mid green glaze.

Forms: Globular tripod-pitchers (616) are the most common type, but there are a few jugs (1392).

Decoration: Commonly combed on body and neck (977, 1048); a few applied strips (976); rare rouletting on rim (1243).

Date: Late 12th- to mid 13th-century (Figs. 6, 24). Absent from the series of mid/late 13th-century wares from Polsloe Priory (Fig. 29) so probably rare after c. 1250.

Parallels: There are examples in several Somerset collections, e.g. Ilchester (Pearson 1982, 174). Somerset may be their source.

Fabric 61

Description: Very fine-grained sandy ware with good mid green glaze.

Forms: Jug 1244 and bodysherds.

Decoration: Combing on body.

Date: The few examples in the collection are mid/late 13th-century.

Fabric 62

Description: Sand-tempered ware, usually fired pale grey, coarse cream, with rather thin yellow-green or mid green glaze. Some examples may be wheel-thrown.

Forms: Globular jugs (e.g. 1075); both rod- and flat handles are present.

Decoration: Common use of broad scored grooves on handles (744, 1364). Thumbed bases (1023).

Date: Characteristically mid 13th-century, but some sherds late 13th-century (Figs. 24, 29, listed as Dorset type).

Parallels: This type is rare in Devon collections outside Exeter. Dorset is probably the source of much of this ware; both fabric and decoration are matched, for example, at Christchurch and Poole.

Fabric 64

Description: Fabric with large-grained sand temper. The grain size appears larger than in fabric 62. Blotchy green-black or mid green glaze.

Forms: Only a few examples, but these include tubular-spouted vessels 826 and 1171.

Decoration: Scored lines around spouts (826); applied strips on handle (110).

Date: Early and mid 13th-century; some could be late 12th-century (108).

*(e) Ridge tiles**Fabric 80*

Description: Fabric with fine sand temper, many fine calcareous inclusions and a few large calcareous lumps. Open-textured. Most examples have mid green or yellow-green glaze.

Forms: Tiles with moulded crests (2964).

Date: No medieval examples. Common in 16th-century deposits. Very few in groups after c. 1650.

Fabric 81

Description: Sandy ware with scatter of mica fragments. Colours vary between mid grey and light red. Glaze is usually thin and patchy.

Forms: Tiles with moulded crests (2950).

Decoration: Some have white-painting (2950).

Parallels: This distinctive type is paralleled by finds from Dartington Hall, Berry Pomeroy and Buckfast Abbey in South Devon (unpublished). A source in South Devon, perhaps around Totnes, is likely.

Decoration: Some have white-painting and scored lines.

Date: 16th/17th-century.

Fabric 82

Description: Fabric with scatter of sand and chert grains, considerably finer than 83.

Forms: Knife-cut crests.

Date: 15th/early 16th-century contexts.

Fabric 83

Description: Fabric tempered with sand and many rounded brown stone lumps. Mottled mid green glaze.

Forms: Knife-cut crests (2951).

Decoration: Some stab-marks on outer surface (2951).

Date: Late 14th/early 16th-century contexts.

Fabric 84

Description: As 83 but without the sand temper.

Forms: Uncertain.

Date: 14th/15th-century contexts.

*(f) Micaceous wares**Fabric 101*

Description: Hand-made ware with brown stone temper. The single known example is fired fawn-brown.

Form: No. 1449.

Date: Probably 14th-century.

Fabric 102

Description: Hand-made coarseware with scatter of black and white micas and quartz fragments. The few examples are buff-fawn and unglazed. This fabric is similar to the coarsewares of Okehampton and Meldon (Allan 1977, fabric 1) but does not match them precisely.

Forms: Scraps of jugs and cooking pots.

Date: 14th/15th-century.

Fabric 103

Description: Highly distinctive pale buff fabric with fine glistening inclusions and sparse red 'grog' lumps. All examples have a pale green glaze with pitting. This may be imported.

Forms: Jugs.

Decoration: Knife-blade decoration, impressed with edge of the blade, is very characteristic of this class (1058-9). Some sherds have applied clay ornament on rims (1056) and bodies (923, 1288).

Date: Early and mid 13th-century.

Parallels: Only examples seen by the writer are from Southampton, where they are also believed to be imported (e.g. unpublished sherds from West Hall, marked 70: 2: 33d; Platt and Coleman-Smith 1975, 2, No. 337 is almost certainly an example).

Fabric 104

Description: Fabric packed with glistening minerals, fired fawn and grey, unglazed. This may be imported (p. 37).

Form: Wheel-thrown cooking pot (1161).

Date: c. 1200-50.

Fabric 105

Description: Sandy grey, brown or fawn ware with black micas, sometimes with a thin mid green glaze.

Forms: Jugs with flat handles (698, 735); cooking pots (863); firecover (1413).

Decoration: Thumbed handles (735); wavy lines on body (1413); applied face-masks (1472-3).

Date: Early 13th-century (698) to mid or late 15th-century (809).

Parallels: These finds are closely paralleled by vessels from the Totnes-Dartington area of South Devon (e.g. Exeter Museums Acc. Nos. 59/1932/1 and 2, from Dartington Hall). That area is their probable source.

Fabric 106

Description: Fine wheel-thrown ware with golden and white micas. Examples have all-over good mid green glaze. Rare type here.

Forms: Jug 1513.

Date: Late 14th/early 15th-century.

Fabric 107

Description: Very fine matrix with scatter of rounded mica, quartz and rock fragments. Calcareous inclusions form a distinctive element in this fabric; some have leached out, leaving a

pitted surface. All examples are pale pink-buff and unglazed.
Forms: 1475-6 and bodysherds.

Date: Only known examples late 14th/early 15th-century, but this is a rare fabric.

B. DATING

Although many medieval groups and sequences of ceramics have been found in the city, the quantity of primary dating evidence remains quite small. Only six medieval coins or jettons come from contexts in which they were not demonstrably residual. Dendrochronology provides useful evidence for the construction dates of two features (GS 315, TS 191) as well as a series of *termini* after which several other groups were deposited; unfortunately few of the latter are very helpful, since it is clear that timbers were often thrown away a long time after they were felled. Vital dating evidence is provided by the pottery from deposits which can be related stratigraphically to two major structures. Perhaps the more useful of these is the medieval Exe Bridge, constructed *c.* 1200; two of the later medieval phases on this site are documented (p. 60). Also of considerable value are the many finds in contexts which can be related to the construction levels of the west range and other buildings erected *c.* 1300 at Polsloe Priory (p. 67). The imported pottery is often as poorly dated as local wares and has only occasionally been employed as dating evidence; since recent work in southern England appears to support Dunning's proposed date of *c.* 1300 for Saintonge polychrome wares (Allan 1983b, 200-1), this has been assumed to indicate the date of associated wares. In addition, the leather provides important dating evidence for one group (1451-6) and a very few small finds appear to be closely datable.

Whilst this amounts to considerably more evidence than is available in many English towns, it is insufficient to provide a chronological framework for the whole sequence. It is apparent however that a number of pit groups, some of them from different sites, display a very similar range of wares, sometimes with closely comparable proportions of the various pottery types and similar decorative features or rim forms. They presumably belong to the same period. These have been designated as a *ceramic horizon*. The horizons have been lettered A-K in the manner, for example, of Baldwin-Brown's divisions of Anglo-Saxon churches, elaborated by the Taylors (Taylor and Taylor 1965, I, xxiv-xxv). The succession of these horizons may be seen on several Exeter sites; there is little doubt about their chronological order. A few periods may still have eluded us; for example we have no finds which can firmly be attributed to the mid or late 14th century. The dating evidence for each horizon is presented below. As more evidence becomes available in the future it will no doubt prove necessary to modify the dating of some horizons.

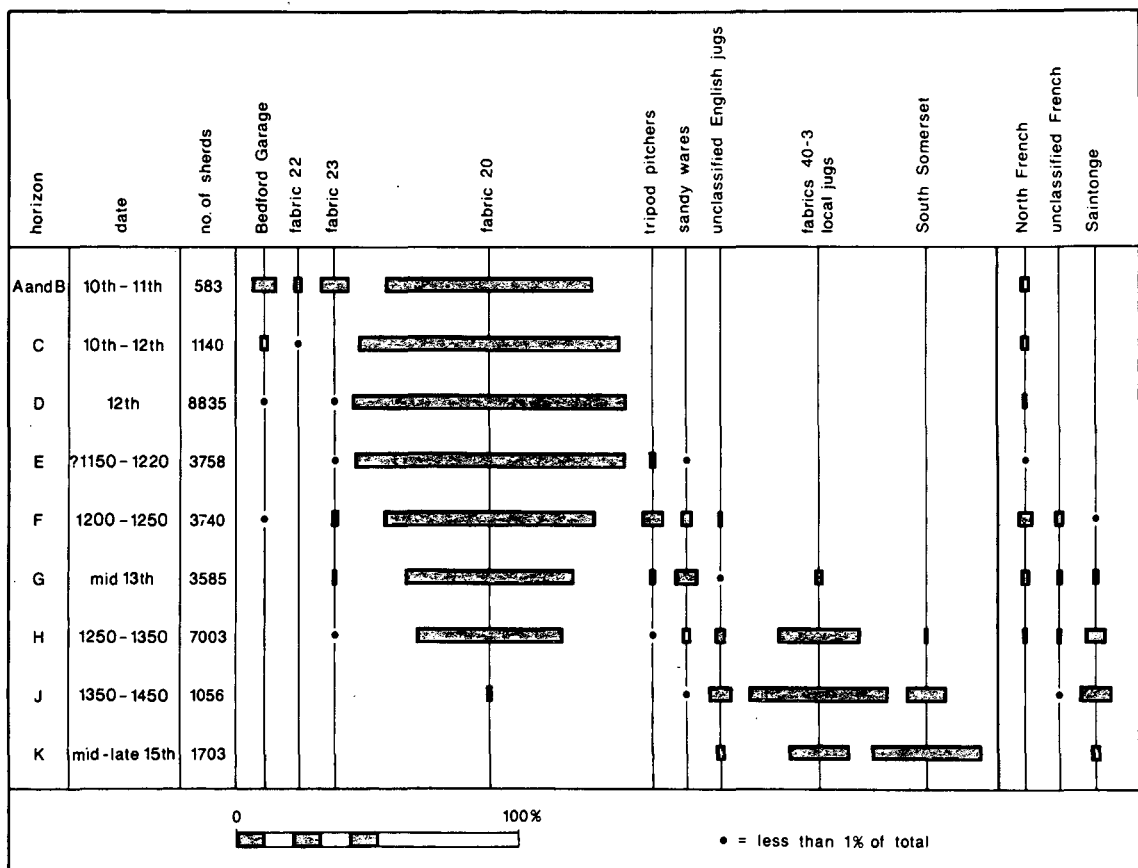


Fig. 6. Seriation of the principal classes of medieval pottery (by sherd count).

C. THE CERAMIC HORIZONS

Horizon A

Groups which may precede the emergence of local fabric 20. Some contain no pottery at all (TS 67) or only an occasional imported vessel (QS 360). Others contain Bedford Garage ware with fabrics 22 and 23. All contain only a few sherds and much bone.

Typological features: Small plain coarsewares; no combed sherds or elaborate forms.

Stratigraphic position: No evidence.

Dating evidence: None.

Imports: Hamwih Class 11; unglazed Beauvais ware.

Date: ?10th-century: fabric 20 was in circulation before c. 1020.

Horizon B

Groups containing fabric 20, but with Bedford Garage ware and fabrics 22 and 23 in sufficient quantity (here defined as more than 6% of sherds) to suggest they are not residual. Most contain little pottery and much bone.

Typological features: All cooking pots; no combed wares; no elaborate coarsewares (storage jars, handled vessels, lamps). The small fabric 20 form 1A cooking pots seem to be a particular feature of this phase (155, 342).

Stratigraphic position: Under horizons C and D: HS phases 2–6 under phases 7–11 (Fig. 10); GS 229 and 297 cut by GS 279 (190–217); GS 333 cut by GS 314, GS 284 (150–89).

Dating evidence: (i) HS phases 2–6 stratified below coin E.1 lost c. 1072–86. (ii) Timber in GS 297 felled after c. 980.

Imports: Beauvais and Normandy red-painted wares and cooking pots; Hamwih Class 11; Normandy gritty ware.

Date: Late 10th/11th-century. Fabric 20 may not come into circulation before c. 1000 (cf. Cheddar: Rahtz 1974, 104). If so, these groups are 11th-century.

Horizon C

Groups containing predominantly fabric 20, also Bedford Garage ware or fabrics 22 and 23 but in insufficient quantities to determine whether they are residual (c. 2–6%). This horizon probably includes groups dating to the period when Bedford Garage ware and fabric 22 were falling out of use, and groups of horizon D with residual sherds.

Typological features: Some combed sherds.

Stratigraphic position: Over horizon B; under horizon D: TS 283 under TS 221 and TS 276 (427–63).

Dating evidence: None.

Imports: Normandy gritty and gritty glazed wares; Normandy red-painted; north French yellow-glazed white wares.

Date: Late 10th/12th-century. If fabric 20 began only c. 1000, these groups are 11th/12th-century.

Horizon D

Groups containing only fabric 20 local wares, or so few (less than 2%) sherds of Bedford Garage ware and fabric 22 that they can be dismissed as residual. No local glazed wares.

Typological features: Elaborate forms decorated with combing and impressed combing; spouted vessels; applied handles; lamps; shallow dishes; occasional stamped sherds. Some very large vessels.

Stratigraphic position: Over horizons B, C; under horizon E: HS phases 8–11 under phases 12–13 (35–109). Under horizon F: TS 191 cut TS 270 (888–921), etc.

Dating evidence: Stone S.1., after c. 1100. After Bedford Garage ware went out of use c. 1100 (pp. 27–8); pre-local glazed wares which were in circulation before c. 1200 (below).

Imports: Much Normandy gritty ware and gritty glazed ware; Beauvais red-painted ware; north French storage jars; north French yellow-glazed white wares.

Date: 12th-century.

Horizon E

Groups containing fabric 20 with small quantities of hand-made glazed pitchers (fabrics 60 and 64). No north French green-glazed sherds.

Typological features: Some elaborate coarsewares still present (e.g. 666) but rare. Few complete vessel forms yet known.

Stratigraphic position: Over horizon D.

Dating evidence: Vessel 835 demonstrates that local glazed wares were in use before c. 1200.

Imports: Andenne-type ware; Normandy gritty ware; blau-grau ladle.

Date: Late 12th/early 13th-century. The large groups which lack the wheel-thrown jugs and north French green-glazed wares are probably pre-c. 1200.

Horizon F

Groups containing fabric 20 with hand-made glazed pitchers (fabrics 60 and 64) and wheel-thrown globular jugs. No local jugs (fabrics 40–3); north French green-glazed sherds and Rouen wares are common in these groups.

Typological features: No combed or elaborate fabric 20 vessels; fabric 20, rim T first appears. Combed pitchers and jugs, rarely with applied strips. No applied decoration on jugs.

Stratigraphic position: Over horizon D (above); under horizon G: (i) EB groups 1–4 under groups 15, 18; TS 146 cut TS 174 (1062–71). Several groups stratified below Saintonge polychrome sherds: GS 243 (1018–43); EB groups 1–14 (above); RS 380 and 402 (p. 69).

(ii) EB groups 1–14 immediately post-date the construction of Exe Bridge c. 1200 (p. 60).

(iii) Major groups lacking fabrics 40–2 may be presumed to precede the introduction of these fabrics c. 1250 (below).

Dating evidence: None.

Imports: Much north French green-glazed: Rouen; 'Orléans-type'; fabrics 103, 104. Saintonge sherds are present in some of the later groups. Also London Rouen-copies.

Date: c. 1200–50.

Horizon G

Groups containing much fabric 20, glazed tripod pitchers (fabrics 60, 64) and wheel-thrown jugs, but also small quantities of fabric 40. The major groups of this type contain Bristol-type sherds and other wheel-thrown sandy wares, sometimes with London wares.

Typological features: First examples of cooking pots with slack shoulders (1214, 1226); fabric 40 with metallic or white-painted stripes.

Stratigraphic position: Over horizon F; under horizon H: GS 263 under GS 228, the latter with Saintonge polychrome sherds (1562); GS 120 under GS L.25–9, the latter with Saintonge polychrome sherds (1072–94).

Dating evidence: Coin E.8 of 1242–50 (associated with 1072–94).

Imports: Rouen; north French green-glazed; Saintonge green-glazed; fabric 104.

Date: Mid 13th-century (? c. 1240–70).

Horizon H

Groups in which fabric 20 is still the predominant type, but with many local (fabrics 40–2) jugs and few or no tripod pitchers or wheel-thrown sandy wares.

Typological characteristics: The fabric 40 and 42 jugs all have thumbled bases; metallic stripes and dot-and-circle decoration common, some sgraffito decoration. Fabric 20 rims predominantly cupped (form T).

Stratigraphic position: Over horizons F, G. No useful relations with later medieval horizons.

Dating evidence: (i) Several groups of this type precede the new buildings at Polsloe Priory of c. 1300 (838–59). Some of these come from wall robbing of c. 1300.

(ii) Glass vessel G.1 from GS 135 appears to be late 13th- or early 14th-century type (p. 265).

(iii) Saintonge polychrome and all-over-green sherds in several groups: EB groups 15–18 (782–91); RS 208 (879–87); Wyman's

Well (1388-94); QS 112 (1423-45); GS 252 (*not ill*).
Imports: Saintonge polychrome, all-over-green and green-glazed. A few Rouen and north French green-glazed.
Date: Late 13th/early 14th-century (*c.* 1250-*c.* 1330); no clear evidence of end date, but the latest major groups all contain Saintonge polychrome sherds. Some groups contain tripod pitchers, wheel-thrown sandy wares, north French green-glazed or Ham Green wares, which all seem to have gone out of circulation by *c.* 1300.

Horizon J

Groups containing developed types of cooking pots (fabrics 21, 24, 25) with local jugs including fabric 43 and South Somerset-type wares.

Typological features: Fabric 40 and South Somerset-type sgraffito wares; thumbled ring-bases (1483); costrels and handled pans.

Stratigraphic position: No useful relations.

Dating evidence: (i) TS 169 constructed after *c.* 1300, with late 14th/early 15th-century leather (p. 327).

(ii) These groups lack the South Somerset 15th/16th-century wares which were in circulation by *c.* 1450.

(iii) HS 141 with jetton J.4 of late 14th/early 15th century (110-18).

(iv) Polsloe Priory 1325, one of a series of dorter floors with

groups of this type, contains J.3; late 14th/early 15th-century.
Imports: Saintonge green-glazed; Spanish amphora and tin-glazed sherds.

Date: *c.* 1350-1450.

Horizon K

Groups with a mixture of fabrics 40-3 and South Somerset 15th/16th-century wares. Hardly any cooking pots. North Devon type 14 (p. 150).

Typological features: Jugs with thumbled ring bases (as 836), twisted handles, sgraffito decoration. Two-handled cups; pans; costrels.

Stratigraphic position: At Polsloe Priory several groups of this type post-date those of horizon J in the dorter area, but precede the Dissolution of 1539 by three or more phases.

Dating evidence: Group probably associated with the construction of the new bell tower at St Edmund's, Exe Bridge, *c.* 1450 (836-7).

Imports: Saintonge green-glazed including bib-glazed; Tudor Green; Langerwehe, Raeren, Beauvais stonewares; South Netherlands maiolica; Valencian tin-glazed.

Date: *c.* 1450-1500. The Raeren stonewares and South Netherlands maiolica sherds favour a date after *c.* 1470 for some of these groups.

D. SUMMARY

The 10th and 11th centuries

The earliest medieval pottery so far found in Exeter probably belongs to the late 10th century (p. 11). At that time little pottery was in circulation. Groups of the 11th century are dominated by hand-made chert- and limestone-tempered wares (fabrics 20, 22-3). The only recognisable forms are plain cooking pots. In addition, there were in use high-quality wheel-thrown cooking pots, storage jars and lamps made at the Bedford Garage kiln; a few of these vessels were glazed.

The 12th century

Around 1100, Bedford Garage ware and fabric 22 went out of use. The gritty coarseware (fabric 20) was now produced in much larger quantities. Elaborate combed vessels, spouted and handled wares, lamps and dishes are characteristic of this period; some of these types may have been in use before *c.* 1100. The mass-production of this kind of pottery virtually excluded other coarsewares from the Exeter market. Hand-made glazed wares were arriving in the city before *c.* 1200, but there is no evidence for the date when they first came into the city.

The 13th and early 14th centuries

Globular wheel-thrown sandy jugs and glazed hand-made tripod pitchers were both in use by the beginning of the 13th century. By that time the elaborate 12th-century coarsewares had fallen out of currency, perhaps because their functions were now performed by glazed wares or imports. In the years around 1250 the production of decorated wheel-thrown jugs (fabrics 40-2, and later fabric 43) began. The most common type was a tall narrow jug, often decorated with metallic stripes or dot-and-circle decoration. In the late 13th and 14th centuries two distinct types of pottery were supplied to Exeter: wheel-thrown glazed wares made in kilns, and hand-made coarsewares, presumably fired in clamp kilns. The fabric, the manufacturing techniques and even some of the rim forms of the coarsewares remained unchanged from the late 10th to the late 13th or early 14th century.

The late 14th and 15th centuries

By the late 14th or early 15th century the traditional coarseware production (fabric 20) had ceased. A few more refined cooking pots were still in use (fabrics 24, 25, 27), but in small quantities. Jugs form more than 90% of 15th-century groups; there are also a few lobed cups and shallow pans, but no bowls. Local jugs of fabrics 40-3 dominated the local ceramics market, with increasing emphasis on sgraffito and brushed slip decoration in addition to the metallic stripes of the late 13th and early 14th centuries. Dot-and-circle decoration

seems to have gone out of use; new features included the use of chert temper in some wares, particularly in handles (fabric 43) and the use of 'ring' or 'thumbed ring' bases (as 835, 836). South Somerset wares, which had been arriving in the city at least from the mid 13th century, became a prominent feature of all assemblages; sgraffito-decorated jugs were their most popular product. Production of highly decorated pottery was not confined to the late 13th/early 14th century: face-on-front jugs and vessels with applied plastic decoration were still made in the early 15th century.

In the mid or late 15th century the production of fabrics 40–3 ceased. Many of the South Somerset wares which were in common use in the 16th century were already current by *c.* 1450. By the end of the 15th century, two-handled cups, chafing dishes, cisterns and a few jars were in circulation, showing that the diversification of vessel types, which reflected changes in domestic habits, was well under way by *c.* 1500.

2. DISCUSSION

A. THE DATE OF THE EARLY MEDIEVAL POTTERY

The excavations have recovered no pottery which can be dated to the period between the late 4th century and the revival of urban life in the late Saxon period. Both sub-Roman local pottery and imported Dark Age wares are absent, and no Middle Saxon sherds have yet been identified in the collection. Neither grass-marked nor grass-tempered sherds are present.

The date of the earliest medieval pottery at Exeter remains a matter of uncertainty. The earliest datable group is a small series of sherds (223–6) from a pit (GS 287) cut by a timber-lined well (GS 315) constructed of oak boards felled *c.* 1020. A slightly later horizon may be identified at 197 High Street, where a coin (E.1), minted in 1072–4 and lost before 1086, was stratified in a layer which preceded those deposits which contained probable 12th-century wares. A third context in the city may be ascribed with some confidence to the early years of the 12th century (see 127–30). No other pre-*c.* 1200 deposit from the city is closely datable.

The earliest pottery from the excavations may of course be considerably earlier than these three contexts; indeed one of them (at 197 High Street) succeeds five phases of medieval activity. Since pottery is present in nearly all the earliest medieval deposits, it is necessary to consider the evidence for the date of the primary late Saxon occupation on the sites excavated. There is considerable evidence to attribute the re-establishment of urban life at Exeter to the late years of Alfred's reign (Allan *et al.* forthcoming); outside the area of the Anglo-Saxon monastery in Cathedral Close, nearly all the medieval finds will date after *c.* 890. In the areas of Goldsmith Street and Trichay Street, which have produced the bulk of the early medieval pottery, dendrochronology provides the principal evidence for the earliest date of their occupation. The felling dates of many of the timbers are not at all helpful in dating associated pottery, since structural timber was often discarded several centuries after felling (e.g. GS 201, TS 169). However, if it may be presumed that such timbers were normally used in the vicinity, they offer the best indication of the date of late Saxon occupation in the areas excavated. The felling dates pre-*c.* 1200 are as follows:

	949 ± 9?	1056 ± 9
	962 ± 9?	1074 ± 9
after <i>c.</i>	980	1114 ± 9
after <i>c.</i>	1020	1167 ± 9
after <i>c.</i>	1040	1167 ± 9
after <i>c.</i>	1040	1180
	1040 ± 9	1197 ± 9

The series suggests that these areas were probably occupied by the middle of the 10th century. At least from the early years of the 11th century they were apparently occupied by substantial timber buildings (p. 320). The earliest pottery might be earlier than the earliest dendrochronology dates but comparison with the sequence of wares from Cheddar Palace (Rahtz 1974, 104–5), the only site in South-West England with firm dating evidence at that period, suggests that this is perhaps unlikely. The extreme rarity of pottery at Cheddar in contexts of pre-*c.* 930 is the best indication available at present that earthenware played little part in the material culture of the South-West at that time. At Exeter, a very small number of pit groups may belong to such a virtually aceramic period (below), and only a few others appear to precede the emergence of the ubiquitous gritty early medieval coarsewares which were in circulation in the city by *c.* 1020 (above) and seem to have come into use at Cheddar *c.* 1000 (Rahtz 1974, 104). The use of ceramics in a *burh* may have differed considerably from that in a rural palace in an adjacent county (cf. Hurst 1977e, 76, n.8) so the Cheddar sequence may not be paralleled at Exeter, but it may be noted that pottery is first regularly found in other late Saxon towns in the west of England in the late 10th or early 11th century (e.g. Hereford: Vince 1977, 64; Gloucester: *ibid.*; *idem* 1979, *passim*).

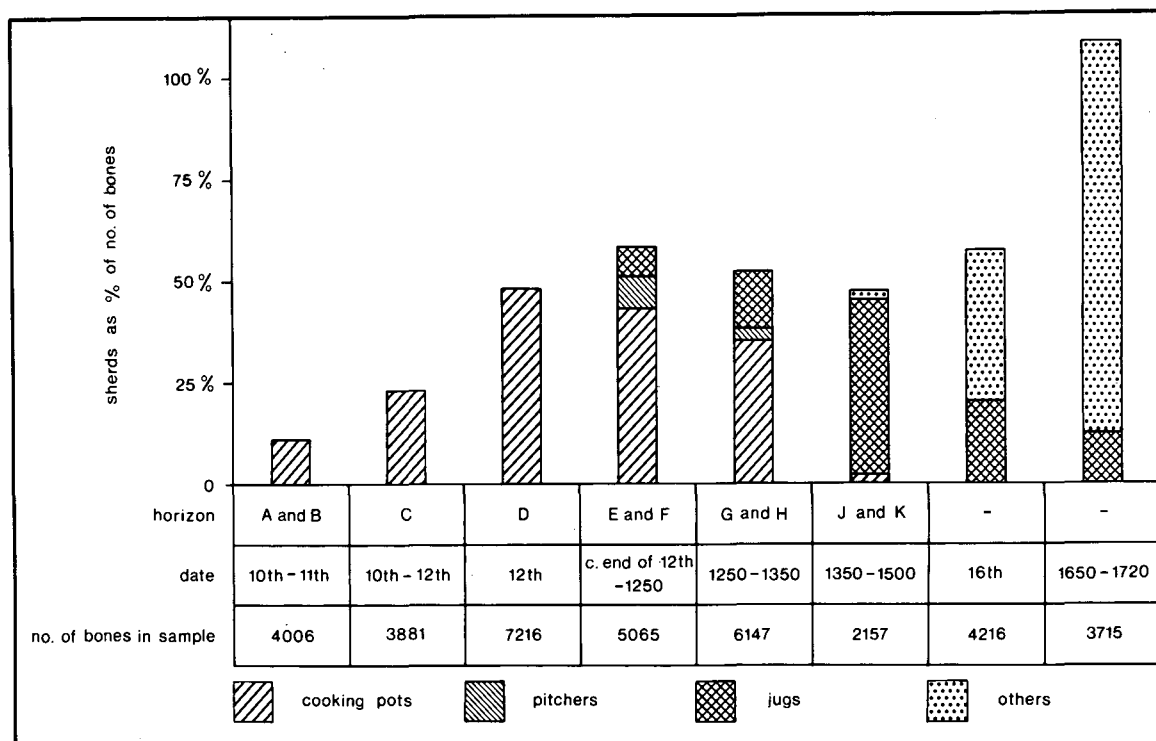


Fig. 7. Relative quantities of pottery and bone in medieval and later deposits.

B. THE QUANTITY OF POTTERY IN CIRCULATION

It has been suggested on a number of occasions, most recently by T.J. Miles (Miles and Miles 1975, 288-9) that late Saxon Devon was aceramic. Whilst this may have been true in some parts of the county, clearly it was not the case at Exeter. Pottery was certainly in use here before *c.* 1020, and probably in the late 10th century; it was not introduced into the city at the Norman Conquest.

Nevertheless, it is apparent that the earliest medieval deposits contain fewer sherds than those of later medieval date. As Vince (1977, 65-73) has shown, comparisons of the relative quantities of bone and pottery at different periods provide the best means devised so far of assessing the volume of ceramics in circulation. Comparisons of the number of sherds and bones in the principal medieval and later groups examined by M. Maltby (1979) are shown in Fig. 7,¹ which shows that much less pottery was in use in the 10th/11th centuries than in the 13th and 14th. The general pattern of ceramic usage indicated at Exeter is very similar to that suggested by Vince for Hereford and Gloucester (Vince 1977, 68-72). Each of these late Saxon towns appears to have had only a limited amount of pottery in circulation.

The evidence for an aceramic phase in the 10th century is very weak. Two large early medieval pits (TS 67, QS 360) contained over 100 bones and no local pottery, and several other small groups contained between 20 and 50 bones but no sherds. These probably belong to the period when pottery was rare, but they hardly demonstrate an aceramic phase. Indeed none of them can be shown from its stratigraphic position or associated finds to be a particularly early group. It should be noted that pottery was already in use in the primary medieval deposits at 197 High Street (p. 42).

There appears to have been a steady growth in the quantity of coarse pottery in circulation up to the early years of the 13th century. The subsequent slow decline in the production of cooking pots probably reflects the growing use of metal cauldrons in Exeter households. If so, cauldrons were to be seen in many houses by the end of the 13th century, although no groups of that date lack earthenware cooking pots. By the early 15th century the metal vessels had almost completely supplanted their earthenware counterparts.

NOTES

1. Groups containing much residual material or concentrations of butchers' waste or horn cores have been excluded from this table.

C. THE SOCIAL DISTRIBUTION OF THE CERAMICS

In view of the strong evidence for pronounced differences between the ceramic collections of rich and poor

households in the post-medieval period (pp. 101–4), an attempt was made to map the proportions of imported ceramics on each site in the hope of identifying similar patterns in the medieval period. The results for the period c. 1250–1350 are shown in Fig. 55a. The differences are far less pronounced than in the post-medieval groups. Since we know very little about the social levels of many of the excavated houses, the reasons for this are currently unknown. It is notable however that imports are present on all sites, even poor ones (868–87). The contrast between the houses of the urban poor with some imports and those of the peasantry in rural areas with hardly any is an interesting one. It may perhaps suggest that it was the lack of networks for redistributing these wares rather than their cost which makes them rarities on peasant sites.

D. THE TYPES OF VESSEL IN USE

All the recognisable late Saxon local wares at Exeter are cooking pots. Since glazed pitchers and bowls were in common use in many parts of England at this date, pottery may have served more limited functions here. There seems to be some diversification of forms and functions in the 12th century with its large spouted vessels, storage jars, lamps and lids, but these are all rare types and may yet be found in earlier contexts. There are no examples of the so-called ‘bee-skeps’ (Musty *et al.* 1969, 107) in the collection.

It has been noted (Jope and Thelfall 1958, 125; Beresford 1974, 128) that bowls are surprisingly rare on rural sites in the South-West throughout the medieval period. This is also the case at Exeter, even in the 15th century, and must reflect different household practice from that in eastern England.

The 15th century appears to be characterised by an increase in jug usage, but there are very few vessels of other types in groups of that date. Among the rare late medieval forms, local costrels are known only in the 15th century (805, 864–5, 1501) although they are very occasionally to be found elsewhere in Devon in the years around 1300 (e.g. at Okehampton Castle). The Exeter evidence lends support to the suggestion of T.J. Miles (Miles and Miles 1975, 282–3) that most Devon examples are of late 14th- or 15th-century date.

E. THE SAXO-NORMAN IMPORTED POTTERY

by Richard Hodges and Ailsa Mainman.

The Saxo-Norman imported wares from Exeter form one of only two major collections of early medieval imports from the south coast of Britain; the other is that from Southampton. The Exeter collection consists of at least 178 vessels, most of them represented by only one or two sherds. The imported wares make up between one and two per cent of the stratified Saxo-Norman pottery. In addition there are a number of unusual sherds which could be either Roman or medieval in date; these have been excluded from the report.

The study of Saxo-Norman pottery imported into Britain is beset by a number of problems. The most notable difficulty is the paucity of published material in northern and western France. This problem has recently been alleviated to some extent by Leenhardt’s study (Leenhardt 1983); by Langouët’s excavation of the Trans kiln (Langouët and Mouton 1978); and by Giot’s researches in western Brittany (Giot 1971). However the late Gerald Dunning’s work still dominates this field of study, and in particular we owe him a great debt for illuminating the range of wares which are believed to have been made in the Seine Valley. In the immediate future the publication of Dr Jean Chapelot’s researches in the Beauvaisis and further study of the imported wares from other southern English ports will advance the subject some way beyond those tentative papers by Dr. Dunning, now 20 to 30 years old.

In this report the fabrics of the various imported wares are described individually. It is however likely that several Normandy types, although different in fabric or surface treatment, were in fact made in the same kilns or production centres. Thin-sections of selected sherds of each fabric-type from Exeter have been prepared in an attempt to define their sources and inclusions. This has been useful in describing the fabrics, but most of the wares come from areas without highly distinctive mineral inclusions.

In preparing Table 1, which shows the quantities of each fabric, it has proved possible in most cases to distinguish individual vessels; however a few contexts contained several Normandy gritty wares and in these instances only a minimum estimate is presented. Table 1 also indicates the likely forms of the vessels; in the case of the red-painted wares, it is perhaps doubtful whether all the sherds did in fact belong to pitchers.

The fabric types

(a) Hamwih Class 11

Fabric: Hard fine white or cream-buff wheel-thrown ware with rounded quartz-sand inclusions. Many sherds show secondary blackening of the fabric. None is glazed. The identifications of two of the vessels from Exeter were confirmed by thin-sectioning.

Hamwih Class 11 has been discussed elsewhere (Hodges 1977, 243, 249; *idem* 1981, 19–20, 70–5). Examples of this ware from post-Carolingian contexts are known from Southampton (Platt and Coleman-Smith 1975, 2, Nos. 858–60) and Wareham (Hinton and Hodges 1977, 63–4) as well as from Exeter. The origin of this ware remains uncertain but a source in the Seine Valley has been proposed, since Merovingian vessels in a similar fabric are known from cemeteries in this region.

(b) *Normandy gritty wares*

Fabric: Hard, off-white wheel-thrown ware containing much angular and sub-angular opaque quartz filler up to 5mm across which commonly erupts through the surfaces. Surface colour varies between off-white and pale grey, sometimes with patches of reddish-fawn bloom.

These wares form a distinctive element in the Normandy pottery tradition; fabrics with prominent and prolific quartz-sand inclusions occur in the area between the Seine and eastern Brittany. It is quite likely that the wares were produced in several centres, although none has yet been located. There is some dispute regarding the earliest wares, the kiln debris from Trans being a possible crude variant of this tradition (Langouët and Mouton 1978; Hodges 1981, 74–5). It is also uncertain whether these wares were made by potters who also produced other fabrics, such as Hamwih Class 11. Although many of the Exeter finds belong to the 12th and early 13th centuries (Table 2), attention should be drawn to the important finds from a 'charcoal burial' (124) and from High Street (5) which are almost certainly 11th-century or earlier; this ware seems to have been imported over a long period. The vessels from Exeter encompass the full range of these highly distinctive wares and notably include red-painted and glazed vessels and others which have blackened surfaces. Most of the vessels in this fabric are jugs, and these arrived on the English south coast in considerable numbers (Hodges 1977, 249–52, Pl. I; Platt and Coleman-Smith 1975, 2, No. 875). In addition to the jugs, however, there are from Exeter three cresset lamps (5, 95, 971) which clearly belong to the Normandy gritty ware tradition. Platt and Coleman-Smith have published a close parallel to these from a 13th-century context in Southampton (*ibid.*, 2, No. 919). Dunning noted early Norman lamps of this type from Bramber and Pevensey Castles in Sussex, and another in the Musée des Antiquités at Rouen (*ibid.*, 2, 49). One from Rubercy in Calvados is dated between 1170 and 1204 (Lorren 1977, Fig. 24, No. 15).

(c) *Normandy gritty glazed wares*

This class includes a range of glazed wares belonging to a common tradition but showing considerable variety of fabric. They were probably made in several different areas within Normandy or adjacent regions. Two broad fabric types are represented:

(i) Vessels with thick red (10R 5/8) or pink bodies containing variable quantities of large sub-angular quartz, a scatter of iron oxide inclusions and sparse calcareous lumps up to 4mm. The thick orange-brown or orange-green glaze sometimes displays pronounced iron-bleeding. Some vessels are decorated with roller-stamped applied strips.

(ii) Sherds with rough off-white fabrics containing sub-angular and angular quartz inclusions and sparse iron oxide. These are glazed yellow or pale yellow-green, sometimes with flecks of iron-bleeding. Some examples have applied thumb-stamped strips and a roller-stamped rim. This series is close in fabric and decoration to Normandy gritty wares.

Although the glazed wares of Normandy have received less attention than the unglazed types, examples have been excavated on castle sites there; imported examples are also known from a number of urban sites in Britain (e.g. Platt and Coleman-Smith 1975, 2, No. 906).

(d) *Fine yellow-glazed white wares, possibly from Normandy*

Fabric: Fine white ware with only a sparse scatter of fine quartz-sand inclusions and a few iron-oxide lumps. These wares have a thick, hard, even, yellow glaze, sometimes with a little iron-bleeding.

In addition to the distinctive Normandy gritty and gritty glazed wares, the collection contains a series of high-quality white wares with a variety of yellow glazes. The attribution of these sherds presents particular difficulties; inspection of a series of them by various continental scholars suggests that some are visually indistinguishable from Low Countries products. However, in view of the rarity at Exeter of definite Low Countries or Rhenish imports of either early or later medieval date, northern France remains the most probable source of these wares. So little pottery has been published from the Loire, the Beauvaisis or the Paris Basin that these cannot be dismissed as potential areas of origin.

(e) *Beauvais wares*

Fabric: Very sandy light buff or light brown ware (10YR 7/4 to 10YR 8/6), sometimes with a light grey core. In thin-section the quartz-sand grains appear ill-sorted, usually ranging in size from c. 0.01 to 0.1 mm, with occasional grains up to 0.5 mm. They tend to have fairly clean anisotropic clay matrices; grains of biotite and

iron ore are often visible. Red paint (2.5YR 3/2), applied by a brush or in splashes, forms the most common form of decoration, but a few examples belonging to this class have both red paint and small spots of glaze, suggesting that they were fired with glazed wares.

In the present report, red-painted wares with hard sandy fabrics have been attributed to the Beauvaisis, whilst those with smooth buff or white fabrics have been attributed to Normandy. This division may prove an over-simplification; it should be noted that some features, such as the broad strap handles, occur in vessels of both fabrics, and some sherds do not fall readily into either category.

(f) *The other French wares*

As well as the finds of Saxo-Norman wares from the Beauvaisis and Normandy, now being recognised in increasing numbers on English sites, the Exeter excavations have produced a range of wares which are apparently quite unparalleled elsewhere in England. These are not very numerous, and most fabrics are represented by a single vessel only. They include two remarkable red earthenware cooking pots (89, 243), a micaceous jug handle (345) and sherds with roller-stamping similar to that from Meudon (427). The petrology of most of these wares indicates a source in western or north-western France; they clearly merit further study.

Discussion (with J.P. Allan)

(a) *Documentary evidence regarding Exeter's trade*

There are only a few documentary references to the Saxo-Norman trade of Exeter, but these are extremely useful in providing a glimpse of the city's early commercial life, and form a necessary background to any discussion of the archaeological evidence. Until at least the late 12th century Exeter was the only south-coast port among the top dozen towns in England. Hill's ranking of the Anglo-Saxon mints places it seventh (Hill 1974, 280-1) and it held a similar position as late as the mid 12th century (Biddle 1976, 501), but in the later years of that century its national position began to decline. The writer of the *Gesta Stephani* mentions the city's flourishing shipping trade in the mid 12th century (Potter 1976, 33), and this trade may have been an important reason for the city's early prominence. Indeed William of Malmesbury contrasted the poverty of the local agriculture with the wealth and magnificence of the city and stated that there was in Exeter a great concourse of strangers who brought to it an abundance of every kind of merchandise (Whitelock 1955, 277-83).

The strangers were not a new phenomenon; late Saxon Exeter evidently had a considerable community of foreign merchants. Orderic Vitalis states that when the city resisted William I in the siege of 1068 these merchants were detained by the citizens of Exeter to augment their fighting force (Chibnall 1969, 211 ff). In his brief description of the city he adds that it lies beside the closest routes to Ireland and Brittany. The city is not, in fact, readily accessible to Ireland, but the statement suggests a trading link which is unlikely to be reflected in the ceramics. Further evidence of the Irish connections of the city is to be found in the post-Conquest period, when St Nicholas Priory possessed several estates there.

(b) *The sources of the pottery*

As Table 1 shows, most of the Saxo-Norman imported pottery found at Exeter came from northern France. At least 82% is identical to pottery from that area, and many of these vessels were probably made at kiln centres close to Rouen, either in the Seine Valley, the Beauvaisis, or to the north-east of the city. It is possible that some vessels may prove to be of Breton origin, though conforming to the ceramic traditions of Normandy. However the distinctively tempered wares of probable Breton origin are rare. So little is known about the pottery from western France that wares from this area may also have been attributed in error to Normandy; however we believe the number of such mistakes to be small.

This pattern of importation, so strongly dominated by north French wares, prefigures that of the later medieval period, when no Low Countries redwares and few Rhenish stonewares were reaching Exeter (below). A similar pattern is seen at Southampton, providing confirmation that the southern English ports were linked commercially to northern France at this time (Hodges 1977, 249-52). There are, however, interesting differences between the Exeter and Southampton collections. The latter is particularly rich in Normandy gritty and buff wares, but the more unusual Breton and western French wares found at Exeter have not yet been identified there. In view of Exeter's strong commercial interests in Brittany and western France at a later period (Touchard 1967, *passim*), these wares probably reflect the rather different commercial orientation of the Devon port. Of the Rhenish wares, it seems that only the *blau-grau* ladles occur in any numbers beyond the North Sea catchment area dominated by Rhenish ceramic products. These ladles may have been brought to Southampton, Exeter and Ireland as curiosities or as utensils fulfilling a specific function, rather than as accoutrements to the principal Rhenish trades (*cf.* Dunning *et al.* 1959, 59-60).

	Total No. of sherds	Total No. of vessels	Pitchers	Cooking pots	Storage jars	Lamps	Jugs	Ladles
<i>Normandy</i>								
Hamwih Class 11	25	11		11				
Unglazed gritty wares	109	59+		2		1	11+	
Red-painted	10	6	?6					
Buff wares	12	10	1	2	1	1		
Gritty glazed red wares	14	8	?8					
Gritty glazed white wares	14	13	?11+					
Yellow-glazed white wares (?from Normandy)	31	20	?20					
Early Rouen-type (red wares)	4	4					4	
<i>Beauvais</i>								
Red-painted	30	4	4					
Unpainted	9	4	4		1			
<i>Beauvais or Normandy</i>								
Red-painted	13	4	?4					
<i>Brittany</i>								
Micaceous	12	3	1		1			
Meudon-type	4	2		1				
<i>?Paris area</i>								
Hamwih Class 25	3	3		2				
<i>?Loire Valley</i>								
	12	1		1				
<i>?North-West France</i>								
	2	1	1					
<i>Belgium-Flanders</i>								
Andenne	5	4	?4					
Flemish grey ware	1	1						
<i>Rhineland</i>								
Blau-grau	10	4						4
<i>Source unknown</i>								
	17	16		1				
TOTAL	337	178	64	20	3	2	15	4

Table 1. The forms and sources of Saxo-Norman imported pottery at Exeter.

It seems clear that Rouen was the most important of a group of north French ports which supplied ceramics to Exeter from kilns in their hinterland. It remains to be seen whether it will eventually be possible to use the pottery as a means of gauging the volume of trade as well as its direction (*cf.* Platt and Coleman-Smith 1975, 2, 17-19).

(c) *The function of the imports*

Most of the imported wares are almost certainly decorated pitchers or jugs; only a few cooking pots, storage jars, crucibles and lamps have been found. It is difficult to estimate the significance of such incidental items of trade, especially as some of them may have survived for many years as favoured alternatives to the duller English tablewares. The small number of imported cooking pots and utilitarian vessels merely emphasises the

growing range of such products being made in England by this time. The Exeter collection can best be evaluated by comparison with those of other ports in the British Isles, such as Southampton, Dublin and London; such comparisons should then be examined with the documentary evidence. One may, however, suggest that these pots were produced specifically to be traded since they appear to be uncommon in Normandy itself, even on rich sites such as castles (e.g. Decaens 1968; Lorren 1977). This also seems to be true of later Saintonge polychrome wares which are common on English sites (including Exeter) but rare in western France.

(d) *Cross-Channel trade in the Saxo-Norman period*

Our understanding of cross-Channel trade in the 11th and 12th centuries remains comparatively slight despite some useful documentary studies (e.g. Platt 1973, 6–16). The wealth generated by this trade is well attested, for example by the merchants' stone houses of Southampton, but precisely when it began is still a matter of contention. There is good reason to believe that late Saxon England was wealthy (Sawyer 1965), but the evidence for long-distance trade at this time is still quite sparse (Hodges 1982, ch. 9). Indeed the re-establishment of the earlier Anglo-Carolingian trade networks may well date only to the first or second quarter of the 11th century. This was a period of general economic expansion (Gem 1975; Hinton 1978) which may owe something to the emergence of the Norman and Flemish states. Imports firmly attributable to this period are scarce in Southampton (Platt and Coleman-Smith 1975, 2, 19) and very rare elsewhere on the south coast.

A chronological examination of the stratified Exeter finds is therefore of importance in identifying the periods of their importation. Table 2 presents the results; it shows that, although examples of the principal Saxo-Norman imported fabrics are present in groups of the 10th or 11th centuries, most of the stratified finds are in deposits of the 12th century. In part this simply reflects the fact that pit groups belonging to this period are much more common, particularly in the peripheral areas of the city where excavation has concentrated in recent years. Comparisons between the proportion of the total pottery assemblages formed by imported wares in the 10th–11th centuries and the 12th are not helpful in considering whether 12th-century imported wares really are more common, since much less local pottery was in circulation in the earlier period.

Ceramic horizon	A & B	C	D	E & F	G & H	Later medieval
Date	10th–11th	11th–12th	12th	Late 12th– c. 1250	c. 1250– 1300	14th/15th
Hamwih Class 11	3		1			
Normandy gritty	3	3	15	8	4	1
Normandy buff		1	2	1	3	
Normandy gritty glazed		3	10	5	3	
Beauvais/Normandy red-painted	2	2	9			
Plain Beauvais	2	1	2	1		
?North French fine yellow- glazed white wares	1	1	7	2		
Andenne-type			2	1		
<i>Blau-grau</i>				1	1	
Others	3	3	6	2		
Total	14	14	54	21	11	1

Table 2. Chronological distribution of the stratified examples of the major Saxo-Norman imported wares at Exeter (Min. No. ve.).

At least two of the Normandy gritty wares (5 and 124) are in firm pre-Conquest contexts. However, comparison with the Pevensey find from an early post-Conquest pit (Dunning 1958, Fig. 2, No. 5) shows that the latter is typologically earlier in the sequence of these wares than several Exeter examples, and most of the Southampton vessels as well (Hodges 1977, 251). In the 13th century, Normandy gritty wares are present

in sufficient numbers to suggest they continued in circulation at least until the middle years of the century. In this respect the find from Exe Bridge (821) which comes from a site without 12th-century wares is important. All the other late finds are of one or two sherds and come from sites with earlier occupation. By the late 13th century the few Normandy gritty sherds form only a very minor component of the series of imported wares from the city; they must by that time have ceased to arrive at Exeter, or have been only an incidental item of the ceramics trade. Similarly, glazed Normandy gritty wares and Normandy buff wares seem to have arrived in the city in the 13th century in diminished numbers. With the exception of the rare *blau-grau* ladles, the other types have a pronounced *floruit* in the 12th century, followed by a quite rapid decline.

It appears therefore that the majority of the Exeter imports belong to the 12th century; some of the richest groups (e.g. 553-94) are probably attributable to the middle or later years of the century and this is also the case at Southampton. In addition, similar wares have been found in contexts of this period at the castle of Rubericy in Calvados (Lorren 1977, esp. 128-9, 159-66). If the rising number of imports does indeed reflect a growth in the scale of the trade supporting their importation, they suggest a rapid development of commercial relations in the mid and late 12th century. It was perhaps this period which saw the marked development of the Anglo-French trade which expanded during the 13th century. The pattern of commercial practice and the nature and scale of the major cargoes of this trade elude archaeological identification. Nevertheless the value of imported pottery in reconstructing economic patterns cannot be denied, as Dunning showed. The main goal must now be to construct models of intra- and inter- site variability in order to use these data in testing historical hypotheses.

University of Sheffield,
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Note: Lists of early medieval imports in the catalogue will be found on pp. 39-40; individual vessel descriptions will be found on pp. 40-1.

F. EARLY MEDIEVAL LOW COUNTRIES WARES

by F. Verhaeghe (Belgian National Fund for Scientific Research) and H.L. Janssen (Town Archaeologist, s'-Hertogenbosch, The Netherlands).

Two sites in Exeter have produced sherds from yellow-glazed pitchers of types directly comparable to certain Low Countries products, particularly those from Andenne and part of Dutch Limburg. The presence of these wares and also of Paffrath-type *blau-grau* ladles (649) at Exeter must be a reflection of trade contacts — whether direct or indirect — with the Rhine-Meuse-Scheldt delta.

Two sherds from a single vessel (127) came from the Cathedral Close: 127a was stratified in the robbing trench of the apse of the Saxon minster church, which was probably demolished in the early 12th century; the apse also yielded a coin of William II minted in 1089-92 and probably lost before c. 1100. A single sherd (624) from a second vessel was found at Trichay Street in a pit containing late 12th- or early 13th-century pottery. The dates of the Exeter sherds would allow an identification with either Andenne ware (production periods, I: late 11th-century-1175; II: 1175-1225 (Borremans and Warginaire 1966, 86-7)) or Dutch Limburg products.

On the whole the Andenne fabric is very fine and has a smooth surface; the glaze is generally very pure, although dark brown specks owing to ferrous inclusions do occur.' The technical characteristics of 624 suggest that this sherd has the best chance of being a genuine Andenne import, while for 127 such an identification is possible but remains doubtful.

During the late 11th and early 12th century, the Dutch Limburg kilns of Brunssum and Schinveld also produced a ware of the same general type as Andenne ware, although apparently only to a limited extent. The outer surface of these vessels is almost completely covered with lead glaze. Typologically they show hybrid characteristics; one gets the impression that influences are present from the Rhineland (such as the Rhenish spouted-pitcher shapes) and from Andenne (such as the high collared rims); some other characteristics, however, such as some of the rim-forms and the applied strip decoration running over the handle, suggest influences from yet another source and remind one of the so-called Lime Street pitcher (cf. *infra*; Bruijn 1962-3, 356 (period A); *idem* 1964, 135, 137-41; *idem* 1965, 19-21). The fabric is generally somewhat coarser than that of Andenne, mainly because of the wider grain size range of the tempering material (Janssen and De Paepe 1976, 219, 222, Table 1).

The study of the 11th- and 12th-century partially-glazed pottery from Antwerp (Belgium) has indicated that other centres produced a ware which is similar to those from Andenne and Dutch Limburg, but which starts a little earlier and is technically slightly different. The Antwerp finds have technical features which are identical to those of the Exeter sherds 127a and b. The most important of these are the pimply surface with numerous fairly fine quartz grains breaking through it in a regular pattern, the regular presence of softer reddish inclusions (grog ?), and the generally numerous dark brown ferrous specks in the yellowish or slightly

olive-green lead glaze (Verhaeghe 1967, 254–7, 298).² The typological indications provided by the Antwerp finds confirm that they are different from the Andenne or Dutch Limburg products. Thus high collared rims, fairly typical of the Andenne pitchers and cooking pots, are absent;³ the little strap-handles are attached to the shoulder and not to the rim (*ibid.*, 128ff);⁴ and the spouts are made in a different way. A number of the Antwerp finds are directly comparable to the so-called Lime Street pitcher from London, both typologically and technically; but although the Lime Street pitcher has exact parallels among the Antwerp finds, it apparently does not have them among the Dutch Limburg or Andenne products (Dunning *et al.* 1959, 61–2; Verhaeghe 1967, 216–17, 345). Recently, another exact parallel to the Lime Street pitcher was found in Alkmaar (the Netherlands): this has the same typological characteristics, including the use of applied strips, and even its dimensions are almost identical to those of the Lime Street pitcher; the lead glaze has olive-green tinges, a feature not uncommon among the Antwerp finds and probably due to very slight reduction during firing. The Alkmaar pitcher comes from the earliest occupation layer in the town and this layer appears to start at the end of the 11th century.⁵ Finally, another site, the castle at Valkenburg (in Dutch Limburg), has provided some supplementary indications. The building and occupation layer, which are sealed by a destruction layer which can probably be dated to 1122, yielded some fragments of early Brunssum-Schinveld glazed pottery, but also a few glazed sherds whose technical characteristics are more closely paralleled by the Antwerp, Alkmaar and Lime Street finds than by the Andenne and Brunssum-Schinveld products (Janssen forthcoming).

Thus at present four different sites have yielded early glazed pottery datable to the second half of the 11th or early 12th century which is different from both the Andenne and the Dutch Limburg wares. Where it was made remains unknown, but some indications allow us to formulate a reasonable hypothesis. Possibly the origins of these wares are to be looked for in the area of northern or north-eastern France. Indeed, while far from identical, the Antwerp, Alkmaar, Valkenburg and London finds are not totally dissimilar to the Andenne products, and R. Borremans and R. Warginaire have suggested that production started fairly suddenly and expanded very quickly in Andenne, possibly because of the immigration from an eastern or north-eastern French region of potters who were searching for an adequate supply of suitable clays (Borremans and Warginaire 1966, 88). Many of the rim-forms in northern and north-eastern France find their parallels among the Antwerp sherds and *vice versa*, and the same is true also for the rims of both the Lime Street and the Alkmaar pitchers. This would fit in very well with the hypothesis of (a) French centre(s) having produced these vessels. Furthermore, this hypothesis also presupposes that this (or these) as yet unidentified centre(s) started its (or their) production slightly before Andenne did, a chronological aspect which is supported by some of the Antwerp finds, which are closer to the middle than to the end of the 11th century (Verhaeghe 1967, 309–60). Lastly, it may also be noted that Antwerp is easily linked with northern France by way of the Scheldt, one of the oldest and most important trade-routes of the area.

The Alkmaar and London finds do not contradict this hypothesis. They may possibly also indicate a coastal distribution pattern. The Valkenburg finds on the other hand suggest that these wares may have been distributed as far east as the Meuse; this would fit in well with the above-mentioned hybrid character of the Brunssum-Schinveld glazed products, which are also linked to some extent with the Andenne wares. As two of the Exeter sherds (127a and b) are more closely paralleled technically by wares from this unidentified production centre than by the Andenne and Dutch Limburg wares, they may possibly come from this (or these) as yet unknown French centre(s). The chronological data for the Exeter sherds do not contradict this hypothesis, even if they do not confirm it either.

The late 11th or even early 12th century would normally be regarded as a little early for Andenne products to have reached Exeter and, although a rapid and fairly distant distribution of the Andenne pottery is not impossible, the hypothesis that the pottery reached Exeter from northern or eastern France is more attractive on historical grounds. A Dutch Limburg origin is unlikely: the technical features argue against it. Furthermore, in view of their hybrid character, the Brunssum-Schinveld early glazed wares appear to be a more peripheral phenomenon; they have not yet been found outside Dutch Limburg and it therefore seems unlikely that they would have travelled as far as Exeter. Neither should it be forgotten that production of the Brunssum-Schinveld glazed ware appears to have been limited to a short period and glazing was apparently only a minor activity of the Limburg potters (Bruijn 1965, 21).

Clearly, the problem of the origins of the Exeter sherds, as well as of some of the Antwerp, London, Alkmaar and Valkenburg finds, will be solved only when a more thorough investigation of the northern and north-eastern French pottery has taken place. In the meantime, it may be noted that care should be taken with the identification of early medieval partially-glazed products, both in the British Isles and on the Continent.

NOTES

1. We wish to thank Mr R. Borremans of Brussels for this information.

2. The finds come from the excavations in the old town centre by A.L.J. van de Walle (1961, 123ff). The Antwerp finds could easily be as early as the middle of the 11th century (Verhaeghe 1967, 378ff).
3. Except when the sherds could be identified as genuine Andenne products, some of which were found in later contexts in Antwerp (Verhaeghe 1967, 106ff).
4. In Brunssum-Schinveld this also occurs (Bruijn 1964, 106ff).
5. Height of the Alkmaar pitcher: 305mm; maximum diam: 245 mm; diam at the rim: 125 mm (Cordfunke 1979, 52–4). It may be noted that the Alkmaar pitcher has a sagging base, confirming the reconstruction of the Lime Street pitcher (Dunning *et al.* 1959, Fig. 33).

November 1980

G. THE IMPORTED POTTERY, *c.* 1200–1500.

Exeter's collection of later medieval imported pottery is probably the fifth largest in Britain, after those of Dublin, Southampton, Hull and London. At least 965 vessels are represented, the majority only by one or two sherds, and there are merely a dozen complete profiles.

The proportion of imports

The late 12th and early 13th centuries saw a marked growth in the proportion of imported pottery in circulation in the city (Fig. 6). Imported vessels, of which Normandy gritty wares are the most common, make up only about 1% of horizons D and E. The more striking French green-glazed jugs form 8% of sherds in horizon F (*c.* 1200–50). Imports form (by sherd count) between 7% and 11% of the total assemblages of mid 13th- to early 15th-century date (Fig. 6), averaging 10% of a series of major pit groups from the Guildhall sites. With the arrival of Raeren stonewares and the other new types of imported ceramics in the late 15th century the proportion rises to 16%, but since this sample is derived principally from Polsloe Priory, which is rather rich in such wares, it is not directly comparable to the samples from the city. It should be noted that there are no striking fluctuations in the quantity of imported pottery in use in the city between *c.* 1200 and *c.* 1450 or later. There is not, for example, a flood of imports in a restricted period around 1300 as Dunning's work might have suggested (Figs. 6, 24, 29). Nor is there any clear sign of a decline in the ceramics trade during the 15th century. All major groups contain a surprisingly similar proportion of imports.

These proportions are certainly lower than at Plymouth, Southampton or Hull (Allan 1983b, 193–6; Watkins 1978, 43–4). Since the quantity of imported pottery present on English sites declines dramatically at short distances from the ports, this may in part reflect the loss of the city's port facilities in the 13th century. There were continual difficulties in navigating ships up the Exe as far as Exeter. Topsham was already serving as its outport well before the closure of the Exe below the city in 1284 (Jackson 1972, 61–2) and thereafter all imported goods were unloaded at Topsham and carried by road to Exeter, a journey of six kilometres. It would be very instructive to see a substantial collection of medieval pottery from Topsham, since it may prove to be rich in imports. The smaller fraction of imports at Exeter may also reflect a lesser role played by foreign trade in the city's life than in Hull, Southampton or Plymouth, for Exeter was as much a regional and religious centre as a port.

The Mediterranean wares

The collection contains no definite examples of the exotic medieval wares of Mediterranean or Near Eastern origin which have been recorded on various British sites, particularly castles and abbeys (Hurst 1968). Their absence from urban sites with substantial collections of the more prosaic classes of imported pottery perhaps emphasises that these wares more probably arrived as gifts or as goods in travellers' baggage than as regular items of trade.

Iberian wares arrived at Exeter only in very small quantities before the 15th century: there are two tin-glazed vessels in contexts of the mid and late 13th century (**1196** and a scrap with **1562**) and one in a late 14th- or early 15th-century group (**113**). The first of these finds (**1196**) suggests that Spanish wares were arriving in England by the mid 13th century. The collection also includes two examples of the rare Iberian amphorae (**794**, **1463**); the recognition of this class of pottery is made difficult by the common occurrence of residual Roman amphorae in the city's medieval pits. No examples of medieval Merida-type wares have been found in contexts earlier than the mid 15th century. It was only with the arrival of Valencian tin-glazed wares of the mid or late 15th century that Spanish ceramics ceased to be rarities in Exeter households (p. 109). Plymouth's collection presents a similar picture, with a striking scarcity of Spanish and Portuguese wares of the 13th and 14th centuries, but several late 15th-century finds. Spanish wares of 13th- or 14th-century date seem more common finds at Southampton; perhaps the south-western ports were receiving these wares by coastal redistribution from the Mediterranean galleys arriving in Southampton. The rise in the number of Iberian finds in the mid and late 15th century, which is not a general phenomenon throughout Britain (Hurst

1977a, *passim*), may perhaps reflect the growth of the direct trade with Spain and Portugal which is evidenced in Exeter's late 15th-century customs accounts.

North French wares

Exeter is one of the few English sites with a large collection of medieval north French wares. Of the other south-coast ports, only Southampton has produced more than a handful of examples. At Exeter there are at least 176 vessels, and many of the 320 French green-glazed white wares whose sources are uncertain may well be north French.

There is a wide variety of different sorts, probably from a range of sources. The following specific types can be identified:

(i) Rouen jugs (Barton 1966a). Most are decorated with bands or panels outlined with rouletted strips (1197–8, *etc.*); two examples (839, 877) may have been decorated with bosses over brown-glazed slip. There is only one small fragment (unpublished) of the variant class with two coats of dull slip (as Allan and Weddell 1980, Fig. 3, No. 24). A near-complete costrel (1380) which has the fabric and glaze colour of Rouen wares is a remarkable find on an English site.

(ii) Elaborate jugs with sandy white fabrics, rich mottled green glaze and applied decoration in the form of pellets, curvilinear or rouletted strips (688, 727, 879, 966, 1111; cf. Platt and Coleman-Smith 1975, 2, No. 991). These probably come from Rouen: some of their features (eared rod handles, flat bases and tall collared necks) are paralleled there, and Dunning recorded one vessel of this type in Rouen Museum (unpublished drawing, B.M.). Two remarkable vessels with applied spirals of clay (1305, 1560) might also belong to this class.

(iii) Jugs with a fine white sandy fabric, copper-mottled green glaze, hollow tubular handles and distinctive decoration in the form of rows of incised diagonal grooves across the body (888); in addition to the four examples known at Exeter, these are present at Southampton (substantial unpublished fragment from Aberg's Wool House, trench A, pit 1; cf. Platt and Coleman-Smith 1975, 2, 35). Dr J. Chapelot has drawn attention (*pers. comm.*) to the discovery of at least five jugs of this type from excavations in Orléans. They are provisionally called 'Orléans-type' here, since they may be local to that area.

(iv) Jugs with a fine sandy white fabric, light green mottled glaze and applied vertical strips. These are represented only by scraps at Exeter, but there are more complete examples at King's Lynn (Clarke and Carter 1977, 20, 25–6) and elsewhere. As Dunning showed in his discussion of a fragment from Totnes Castle, Devon (Rigold 1954, 247), this type is paralleled by finds in Oise and the Beauvaisis.

(v) Jugs in a sandy pale grey micaceous fabric with applied rouletted vertical strips smoothed onto the body (the join is hardly visible), with thick even green glaze. This type has recently been published from Bristol (Ponsford and Price 1979, Fig. 9, No. 22) where it is known as Bristol Pottery Type 192 (*ibid.*, 24). The Exeter fragments, unfortunately all small, have not been drawn. Although quite similar in style to the Normandy green-glazed jugs (type (ii), above), the fabric and glaze are different. Their precise source is uncertain.

(vi) Green-glazed jugs with a sandy white fabric with a few prominent quartz inclusions up to *c.* 3 mm, with broad flat handles, wavy lines on bodies and clear mottled yellow-green or mid green glaze. One example from Exeter has been published by Dunning (1964a, Fig. 10, No. 8); some of the finds from recent excavations (e.g. 689) are almost identical. The type seems to come from Normandy, probably from around Rouen (*ibid.*, 361).

(vii) Highly decorated north French jugs with a sandy red fabric, decorated with applied scales and iron-rich strips. The single example of this class (846), the first recognised in England, was first mistakenly identified by the writer as a possible example of Aardenburg-type ware (Allan 1983b, 205), but F. Verhaeghe has now recognised it as a product of the potteries making similar wares in North France (pp. 24–7).

There are in addition many fragments which are currently difficult to categorise.

These types belong principally to the early and mid 13th century (Figs. 6, 24, 29). A single example (57) is stratified in a context of horizon D, and seems to belong to the late 12th century. Both the Rouen jugs and several types of north French green-glazed jugs were in use shortly after *c.* 1200, as the series from Exe Bridge (688–97) shows. They are most common in those groups which precede the use of fabrics 40–3 (horizon F), where they make up at least 5%, and perhaps 9%, of all sherds. If it is accepted that fabrics 40 and 42 were introduced *c.* 1250 (p. 6), these groups are earlier than that date. It is difficult to determine when they went out of use. They form a diminishing proportion of assemblages after the mid 13th century (Fig. 6) but some examples in late 13th-century groups (e.g. 1232) can hardly be dismissed as residual. A few examples of both large Rouen jugs (844) and north French green-glazed wares (879) are in contexts of *c.* 1300; it is uncertain whether they are residual. Evidence from elsewhere on the south coast (Allan 1983b, 198), and from Hull (Watkins 1978, 43), suggests that with the exception of the small footed Rouen jugs, which have not been recognised in the Exeter collection, they were not arriving in England in any quantity after *c.* 1300.

	Sherds	Min. No. Ve.	Forms
<i>?Mediterranean</i> (1 vessel)			
Unclassified	1	1	unknown 1616
<i>Spanish and Portuguese</i> (12 vessels)			
Andalusian tin-glazed	3	3	2 jugs
Valencian tin-glazed (c. 1500)	3	2	dishes
Other Spanish tin-glazed (c. 1500)	2	2	dishes
Amphorae, 14th- or early 15th-century	3	2	
Merida-type, 15th-century	4	3	1 lid, 1 bowl
<i>Saintonge</i> (424+ vessels)			
Polychrome	145	23	jugs
Sgraffito	13	3	jugs
All-over-green glazed	54	17+	jugs
Mottled green-glazed	1212	381+	1 mortar, 1 ?horn, 3 <i>pégaux</i> , 1 ?figurine, jugs
<i>North French</i> (176+ vessels)			
<i>Céramique à œil de perdrix</i>	1	1	mortar
'Orléans-type'	40	4	jugs
North French green-glazed	320	101+	jugs
Rouen	144	62	1 costrel, jugs
?North French highly decorated	2	1	jug
Beauvais stoneware (c. 1500)	3	2	1 ?cup, 1 ?costrel
Beauvais combed earthenware (c. 1500)	3	1	dish
Beauvais yellow-glazed (c. 1500)	2	2	small jugs
Martincamp type II (c. 1500)	2	2	flasks
<i>French, unlocated</i> (320 vessels)			
Green-glazed white wares	691	320	jugs and scraps
<i>Low Countries and German</i> (32 vessels)			
<i>Blau-grau</i>	3	1	ladle
Racren stoneware	52	27	mugs
Langerwehe stoneware	2	2	unknown
South Netherlands maiolica	2	2	1 dish, 1 flower vase
	<u>2707</u>	<u>965+</u>	
<i>Possible imports</i> (?Breton)			
Micaceous fabric 103	13	8	jugs
Micaceous fabric 104	18	14	cooking pot; jugs
	<u>31</u>	<u>22</u>	
<i>Non-local English</i> (97 vessels)			
Scarborough	1	1	unknown
Scarborough, doubtful	2	1	?aquamanile
Doncaster	2	2	aquamaniles
Lincoln	2	2	1 aquamanile
Nottingham	2	1	jug
North-cast or cast English, not precisely located	7	5	2 jugs, 1 aquamanile
Cistercian ware	1	1	?cup
London-type, late 12th/13th-century	59	19	18 jugs, 1 cooking pot
Surrey white wares, 15th-century	8	5	cup; scraps
Ham Green	17	7	jugs
Bristol wheel-thrown	23+	11+	jugs
Bristol wheel-thrown, possible	16	12	jugs
Dorset white ware	1	1	unknown
Dorset 'red-painted'	2+	1	unknown
Dorset sandy wares, probable	131+	28+	3 cooking pots; jugs
	<u>274+</u>	<u>97+</u>	

Note: (1) Imports of types used both before and after 1500 have been included only if they are in pre- or c. 1500 contexts.

(2) The list of imports incorporates a few minor amendments to that in Davey and Hodges (1983, 205).

Table 3. Total quantities of imported pottery at Exeter, c. 1200–1500.

Saintonge wares

Saintonge wares are absent from the series of at least 13 imported French green-glazed jugs of the beginning of the 13th century at Exe Bridge, and from the groups containing very similar wares from the Guildhall excavations (e.g. 888–997). They must have been rarities in the city at that time, or they were not arriving at all. The earliest datable group containing Saintonge sherds is Goldsmith Street 120 with its coin of the 1240s (1072–94). However they may have been arriving a little earlier, since a few groups of horizon F (GS 612, VS 256) contain them. The subsequent popularity of Saintonge wares at Exeter may be seen in Fig. 6. The considerable number of late 13th- and early 14th-century finds presumably reflects the vigour of the city's western French trade at that time. This may be seen more clearly in the documentary evidence for the city's wine trade. In 1300, for example, the tonnage of wine imported at the customs port of Exeter-with-Dartmouth was about the same as that at Southampton, Hull and Sandwich and only a little less than the quantity brought to Bristol and Boston, which were then the leading provincial ports in this trade (James 1971, 96). There is no clear sign that supplies of Saintonge pottery dwindled markedly in the late 14th and early 15th centuries, as earlier work seemed to suggest (Hurst 1974b, 222). Rather, there is a decline in the total number of groups datable to this period because, here as elsewhere (Platt 1976, 89), the practice of digging open pits for the disposal of rubbish died out in the 14th century. This causes difficulties in interpretation, since the volume of evidence in the late 14th and early 15th centuries is much smaller than in the preceding century. There is indeed only one really substantial group (1463–1511) and the imports in this instance may not prove typical, either of the whole city or of the period between c. 1350–1450. The group might, for instance, belong to the years of vigorous trade with South-West France, whilst the periods of severe dislocation in this trade in the late 14th century (James 1971, 109; Carus-Wilson 1963, 6–7) might be expected to contain fewer imports. Nevertheless it may be noted that the picture of undiminished Saintonge imports in the early 15th century is paralleled by the evidence from Hull (Watkins 1978, 44). It may not however be typical of the English ports. In the late 14th and 15th centuries the West Country played an increasing role in the Gascon wine trade (James 1971, 93–118) and may perhaps have figured more prominently in other western French trades (Touchard 1967, *passim*). Indeed, whilst Exeter's Saintonge pottery imports decline steadily from the mid 15th century, perhaps never recovering from the disastrous depression in the western French trade during the 1450s (Carus Wilson 1963, 8–9), Plymouth presents a different pattern, with at least one major collection of these wares in a group of the end of the century (Woolster Street, unpublished).

With the exception of one mortar fragment from Rack Street (not drawn) and one remarkable ?horn from Exe Bridge (742), Exeter's collection consists of jugs; there is not the variety of forms seen at Southampton. The 23 polychrome jugs include one in a drain fill (PP 972) which is contemporary with, or immediately precedes, the construction of the standing west range of Polsloe Priory of c. 1300. Saintonge all-over-green glazed jugs are absent from horizons F and G, and the earliest examples have polychrome associations (1424) or date to the end of the 13th/early 14th century (1388–94). There are a few ?late 14th-century scraps, but only one (?residual) in the early 15th-century series from Exe Bridge (1463–1511). More unusual than these types are vessels with brown-glazed vertical strips (1201, 1565) and those with sgraffito decoration (1566); both are represented by only three vessels. One sgraffito-decorated vessel (unpublished) is in a context of c. 1300 or slightly later at Polsloe Priory (PP 962). Jugs with applied bosses are equally rare (three examples); one near-complete vessel from the excavations of 1981 (unpublished here) is associated with Saintonge polychrome wares, so the type is unlikely to have died out by c. 1275, as has been suggested elsewhere (Platt and Coleman-Smith 1975, 2, 26). Of the common types, those with applied vertical thumbled strips (1354) clearly had a long life from the earliest groups of the mid 13th century to the early 15th (at least two vessels associated with 1463–1511).

?Breton wares

There are no examples of *céramique onctueuse* (Giot 1971; Hodges 1978b) at Exeter. There are however two fabrics of uncertain origin in the collection (103, 104) which may be Breton. Both are highly micaceous, and the latter contains granitic inclusions (p. 37). Since these are high-quality wheel-thrown wares and appear in Exeter before the production of local jugs (Fig. 24) it seems unlikely that they are local. Fabric 103 is also present in Southampton (unpublished sherds from West Hall, marked 70:2:33d; Platt and Coleman-Smith 1975, 2, No. 337).

Low Countries and German wares

Groups which precede the arrival of Raeren stonewares show a striking paucity of Rhenish or Low Countries finds. There are neither Siegburg or Langerwehe stonewares, nor recognisable Low Countries redwares, in deposits belonging to the years before the end of the 15th century.

H. A SHERD OF A *ŒIL DE PERDRIX* POTTERY FROM LAVAL (*Dépt.* Mayenne, France)

by Ann Dornier and Ann Woods

This type of pottery takes its name from its characteristic dot-in-circle stamp. The vessel form is a truncated cone (inverted) with three handles and a spout. There are external applied linear bands set diagonally on the body and applied circular face masks round the outside of the rim. The stamp is used to provide the eyes of the masks and to decorate the handles and the applied bands and in the latter two cases it is often grouped in pairs. There appear to have been several centres of production in the area north of the Loire; this is clear from the variant examples which have been found in the *départements* of l'Ille-et-Vilaine, Morbihan, Loire-Atlantique, Maine-et-Loire, Sarthe and Orne. Until recently it was considered to be probably 11th/12th-century, but an archaeomagnetic survey of the Laval *atelier* (see below) has yielded a date-span of late 13th/early 14th-century.¹

This Exeter sherd is on visual grounds clearly an example of *à œil de perdrix* pottery: it has the characteristic form and decoration and rather coarse fabric which is predominantly creamy-buff with a pale grey core and traces of a creamy orange-rust 'wash' (Fig. 23, No. 687).² Two sherds from the *atelier* No. 1 at La Hardelière in Laval and the Exeter sherd were thin-sectioned.³ The thin-sections of the three sherds revealed that all were of similar composition (MF 5). All three consist of an anisotropic fired clay matrix with a variety of inclusions, chiefly quartz. These fragments are predominantly sub-rounded and range in size from 0.1 to greater than 3 mm in length. Other common inclusions are hornfels and various types of schist, up to 3 mm in length. Also occurring, although less frequently, are fragments of sandstone, quartzite (again in the same size range) and some opaque iron minerals. Infrequently occurring arkose (up to 2 mm), siltstone (the largest being 5 mm in length), and granite (maximum 2 mm long) fragments are also present. These inclusions are sub-rounded to rounded. From the variety of inclusions (igneous, sedimentary and metamorphic types are present), the general similarities in size and the degree of rounding, it appears that all are naturally occurring within the clay and none has been added as a filler. Their presence and rounding could be the result of river transportation of the clay from the site of its formation.⁴

The findspot of the Exeter sherd was the fill of an otherwise undated inhumation burial in Cathedral Close. As the current dating for La Hardelière *atelier* No.1 is late 13th/early 14th-century, the inference is that the burial is of this period or later. The vessel could have arrived in Exeter as the result of trade, but, if it is genuinely an isolated example, it may just have been brought over in the baggage of someone from Laval.

NOTES

1. Personal communication from J. Naveau. The most recent summary of what is known about this pottery (with the earlier dating) is to be found in Naveau 1979, 23–34.
2. Drawing by David Higgins of the Department of Archaeology, University of Leicester.
3. We are indebted to J. Naveau for his co-operation and generosity both in sending the Laval sherds for analysis and in putting at our disposal the results of his own research.
4. We would like to thank Dr R.J. King of the Department of Geology, University of Leicester, for assistance with the mineral identification.

University of Leicester,
April 1983.

I. THE SHERD OF CONTINENTAL HIGHLY DECORATED POTTERY FROM POLSLOE PRIORY

by F. Verhaeghe (Belgian National Fund for Scientific Research)

The mid or late 13th-century context Polsloe Priory 1335 yielded a shoulder fragment of a highly decorated jug, imported from the Continent and presumably from north-eastern or northern France (846). The relatively hard and orange-red fabric is finely tempered with fairly evenly distributed sand grains, some of which are rounded. Occasionally a few larger quartz-like inclusions occur, as well as some dark greyish ones and a rare pinkish pebble fragment. The unglazed inner surface of the sherd shows a fine grain and is somewhat pimply; it also shows slight traces of a whitish wash. The outer surface is completely covered with a thin, somewhat unevenly distributed, pinkish slip, which continues underneath the applied decoration and is in turn almost completely covered with a thin layer of fairly good-quality yellowish lead glaze. The pinkish slip gives the glaze a slightly brownish-yellow tinge. The glaze itself may have been obtained by means of sprinkling lead filings directly onto the already once-fired body, before firing it a second time; it may also have been obtained by first applying a water and flour dressing to the leather-hard body and then sprinkling it with pounded lead-oxide, as prescribed in Eraclius' *De coloribus et artibus Romanorum*.¹ It is not quite clear which technique was used, but the presence of a few semi-spherical small pits underneath the glaze clearly suggests that a method involving minuscule fragments of lead (-oxide) was employed.

The sherd is clearly a shoulder fragment of a wheel-thrown jug, apparently with a fairly tall and slender body, and a shoulder that was not very wide. This can be deduced from the general inclination and curvature of the fragment, the apparent diameter of the turning-grooves and the position of the applied decoration.

This decoration consists of elongated oval fields of applied scales; the fields are delineated by small applied slip-lines of triangular section. These slip-lines consist of orange-pinkish slip (presumably made with the same clay as that used for the body) and are applied over the pinkish body slip. They stand out as reddish-brown lines underneath the glaze. They are also flanked by a few parallel scratches, suggesting that the normal technique of application was used.² The scales are rather small and do not overlap each other; the fragment suggests that five or seven of these fields occurred on the body. It is also to be noted that for one field of scales the potter used pinkish slip, while for the next one he used orange slip; thus, with the help of the yellowish glaze, a contrast of colours was achieved: one field of scales looks brownish-yellow, while the other one has reddish-brown scales.

One final element deserving comment is the presence of a horizontal ridge with a sharp edge almost immediately above the fields of scales. This ridge was made when turning the vessel: the pinkish body slip covers it and does not separate it from the body as it does with the applied slip-lines and scales. Similar ridges — and also grooves or even a combination of both — often occur on Low Countries highly decorated pottery, where they generally appear to function as limit-markers of the zone with applied, stamped and/or rouletted decoration.³

Discussion

Generally speaking, both the fabric and the technological and morphological features of the Polsloe Priory find bring us into the realm of the northern or north-eastern French highly decorated pottery of the 13th century. Some of these features, particularly the use of a slip covering the body and the use of an applied slip decoration, might seem to suggest the Low Countries and more particularly Flanders as the area of origin of this item, but several other elements argue against such an identification.

The Low Countries highly decorated wares — mainly produced in the Flemish towns (e.g. in Brugge and Kortrijk and probably also elsewhere)⁴ and in the western coastal area of the Netherlands (e.g. in Haarlem)⁵ — generally have a less harsh reddish fabric. The fabric is more orange and somewhat lighter, presumably owing to the use of clays with a fairly high chalk content. The temper is also finer, more evenly distributed and denser than in the case of the Polsloe Priory find; it is also more uniform and consists mainly of rounded sand grains.

The type of applied decoration is also somewhat different from that normally found in Flanders. The scales are smaller and do not overlap each other; in Flanders, the use of fields of scales occurs, but such fields are rare and furthermore generally triangular,⁶ lines and (generally vertical) bands of scales flanked by applied slip lines being far more common.⁷ Another difference is found in the slip itself: the Flemish products always have a very white slip, never a pinkish one, and the same is true in the case of the applied slip decoration. Finally, the range of colours and particularly the colour combination — which are in fact part of the decoration — are different as well. The Flemish wares almost always include some copper-green, while red-on-white slip decoration is almost completely absent. The use of white applied slip — given a yellowish tinge by the yellow glaze cover — on the orange-red fabric is fairly common among the Flemish products, but the same is not true in the case of the combination red-on-white-on-red. A few such items do occur in Flanders: a jug from Raversijde (near Ostend);⁸ one from Duinen Abbey in Koksijde;⁹ a jug from Lille (northern France)¹⁰ (all three with a 'flore' and applied strip decoration); a jug from Saint-Martens-Latem (near Gent) with a white body slip and vertical, applied reddish slip-lines;¹¹ and a few fragments of similarly decorated jugs from three moated sites in western coastal Flanders.¹² Another comparable example, but this time covered with copper-green instead of yellowish glaze, is known from Aardenburg (north of Brugge).¹³ But by and large this particular combination of colours is very rare among the Flemish finds, and, more important, appears to be absent from the Brugge and Kortrijk kiln finds. It is not impossible that these few Flemish finds are themselves imports from the south, particularly in view of their distribution along the coast and along the Scheldt. However this hypothesis remains to be proven.

All this suggests that we have to look elsewhere for the origin of the Polsloe Priory item, while keeping in mind that it still shows some links with the Flemish highly decorated wares. The most obvious area seems to be northern or north-eastern France. This type of fabric does occur there and the style and colours of the decoration remind one, at least to a limited extent, of the Seine Valley and even some Normandy decorated pottery, without making any positive identification possible. One should not however look as far south as Normandy or even the Beauvaisis, the fabrics in these areas being different from that of the Polsloe Priory find.¹⁴

There are as yet no exact northern or north-eastern French parallels known to the present writer, but the well-known lack of systematic surveys and even of adequately published excavation finds in this area goes a

long way towards explaining this. Red-on-white applied slip decoration does occur in this region, for instance at Lille¹⁵ and also at Harnes (Pas-de-Calais).¹⁶ The same is also true in the case of fields of scales, even though oval fields delineated by slip-lines are not yet paralleled there.

Taking into account the present state of our knowledge of the medieval pottery from the area between Normandy and the Beauvaisis, and the Franco-Belgian border, it is very hard to give a positive identification. However one may suggest a tentative hypothesis which fits with what is known about the general history of north-west European highly decorated pottery, and particularly about the Flemish wares. It also fits with the general date of the Polsloe Priory context in the mid or late 13th century. In Flanders, these wares become prominent only from c. 1250 onwards. A few odd fragments may belong to the years before c. 1250 and it would seem that the production of these wares started as the result of the importation of some French models. One of the elements here is the fact that some of the Brugge products — particularly the high, almost straight-sided jugs with trefoil mouth and beak — go directly back to presumably south-western French models, the type and shape being unknown in Flanders before their appearance.¹⁷ In northern France the production of true highly decorated pottery may start as early as the beginning of the 13th century; this is demonstrated by a jug with applied floral decoration found in Douai in an early 13th-century context.¹⁸ In this context one should not forget that the use of applied strips of triangular section is already there in the 12th century, for instance on some of the Andenne products,¹⁹ the Andenne production itself being linked with north-eastern France.²⁰

The point is that the history of north-western European highly decorated pottery is very much that of a gradual northward spread of a fashion, each area adapting this fashion to its own taste and technical possibilities. The northern French link is still very much missing from this picture, but there is bound to be one.²¹ The Polsloe Priory find could very well be part of that missing link and is therefore of interest to the study of the continental medieval pottery as well.

Its presence in Exeter is understandable, since more French imports turned up here and the existence of — direct and indirect — (trade-) links with France has been sufficiently demonstrated (pp. 20–3). The same is true of other parts of the English south coast. Imports of Flemish highly decorated pottery are known along the eastern seaboard of the British Isles,²² but they seem to be somewhat less common along the south coast of England, and up till now Dorset seems to have yielded only one fragment belonging to this group.²³ This distribution pattern favours a northern or north-eastern French identification for the Polsloe Priory find, rather than a Low Countries one. The item may also have reached Exeter via the south — e.g. via Normandy — rather than by way of London, but this cannot be proven.

One final point may be mentioned here. The evidence from Flanders and France suggests that highly decorated pottery is a luxury ware consisting almost exclusively of high-quality jugs. These are clearly intended as tablewares, quite probably for pouring wine. In archaeological contexts their number is usually relatively small. But even in contexts belonging to the less well-off one or two regularly turn up. So the presence of such an item in a small Benedictine nunnery is not altogether surprising: the appreciation of wine was not restricted to rich nobles and traders alone.

NOTES

1. Cf. de Boüard 1974, 68–9 and 74–5. Experiments carried out by A. Bruijn have shown that the sprinkling of lead filings directly onto the fabric allows the potter to obtain a good lead glaze (Bruijn 1962–3, 418–19), but this technique seems to be somewhat more recent than the one described in Eraclius' late 12th-century recipe, which may have been composed in northern France. It is to be noted that the Andenne-type wares produced in the Meuse Valley in Belgium, with the characteristic horizontal band of yellow glaze on the shoulder, were presumably glazed in the way Eraclius indicates; the Andenne glaze indeed shows very much the same technical features as the glaze on the Polsloe Priory sherd. It should also be noted that the Brugge waster evidence clearly suggests that highly decorated pottery was often fired twice: a first time when the body-slip was applied and the decoration finished, a second time to glaze the item (Jacobs and Verhaeghe 1980, 89; Verhaeghe 1982). The same may very well be true in the case of the present find.
2. As described by van der Leeuw (1975, 81–2 and Fig. 28.2).
3. Verhaeghe 1982. For a number of examples, see for instance Schimmer 1974, *passim*. It may be noted here that the term 'Aardenburg ware' used by several authors (e.g. Dunning 1976; *idem* 1968, 47–8) to designate the Flemish highly decorated pottery of c. 1250–1325/1350 is rather misleading: Aardenburg now lies in the Netherlands but was at the time part of medieval Flanders and lies only c. 15 km north of Brugge. Furthermore, there are as yet no clear indications that highly decorated pottery was indeed produced in Aardenburg, most of the items found there probably coming from Brugge Potterierei production centre (see note 4, below).
4. Verhaeghe 1982. For Brugge, see also Jacobs and Verhaeghe 1980: De Witte 1980a; *idem* 1980b. For Kortrijk, see Despriet 1981. A probable waster-find comes from Gent: Verhaeghe *et al.* 1975, No. 414 and Fig. 17, left.
5. For Haarlem, see Schimmer 1979 and van der Leeuw 1975. The Haarlem kiln, dated to the 14th century but probably somewhat earlier, may have been operated by an immigrant Flemish potter. On the western and coastal distribution of the finds of highly decorated pottery in the Netherlands, see Janssen 1983, 137–43.
6. See for instance Barton 1977a, Fig. 16, No. 21.
7. See for instance De Witte 1980a, Figs. 9–10; Despriet 1981, Fig. 10, 1–3; Trimpe Burger 1962–3, 512–13 and Fig. 22; Verhaeghe 1970, Fig. X. This type of decoration also occurs in Lille (Debersée 1967, 664–5, No. 4) and one also finds it in Caen in Normandy (cf. note 14 below).
8. Dunning 1968, 48–9 and Fig. 26, 2.

9. Museum of Duinen Abbey in Koksijde (western part of the Flemish coastal area).
10. Barton 1977a, 52, Fig. 16. No. 22; Dunning 1976, Pl. 1, 4.
11. Van der Plaetsen 1978, 50, Fig. 20.
12. Verhaeghe 1977, 1, 666-7.
13. Trimpe Burger 1962-3, 514 (B14) and Fig. 24.
14. See for instance Dunning 1968, 44-6; Barton 1966a, 74. (Light orange to buff fabrics occur, but no orange-red ones, while the temper is somewhat different from that in the Polsloe Priory fragment. The use of a wash of red slip and white applied decoration is also to be noted, but the decorative style is different). Generally, the fabric is very clear to whitish (Fauverge 1968, 381). Scale decoration also occurs in Normandy but mainly with the use of vertical lines, occasionally with the use of vertical bands. Interestingly, the scales are often small; they occasionally consist of brownish-red clay but most are made in the same clay as the body fabric (*ibid.*, 397-9, 389-90 and Figs. 6-7 and 9). Concerning the characteristics of the pottery of Paris, see Barton 1966b; Nicourt 1974; Meyer *et al.* 1981; here too, direct parallels to the Polsloe Priory find are absent.
15. See note 10, above.
16. Bacquez *et al.* 1974, 314, Pl.9, and Pl.XVI, Nos. 450.04 and 450.01). (The descriptions mention only the colour of the glaze, not that of the decorative elements.)
17. Verhaeghe 1982; Jacobs and Verhaeghe 1980, 83 (top right). The same is true of the jugs with bridge spouts, which again have no predecessors among the Flemish products; a few examples of this type of jug turned up in Brugge among the Potterierei waster finds (De Witte 1980a, Figs.8-10).
18. Demolon and Barbieux 1979, 323 and Fig. 24,2; see also Verhaeghe 1982, Fig. 22 and note 120. This particular item has a pinkish fabric and the applied slip lines consist of reddish clay.
19. Borremans and Warginaire 1966, Fig. 31, 12. It may also be noted that in period IIb (first quarter of the 13th century) the Andenne products include examples of jugs with applied slip lines in reddish clay; there is however no body slip, the whitish Andenne fabric providing the right colour background (*ibid.*, Pl.14).
20. *Ibid.*, 88. There are indeed typological links with the Normandy wares (see for instance Fauverge 1968; Verhaeghe 1983).
21. See note 14.
22. Dunning 1976; *idem* 1968, 47-9. These wares also turn up fairly regularly in Scottish ports, notably in Aberdeen and Perth (*ex inf.* G. Haggarty, C. Murray, W. Lindsay and Miss L. Blanchard).
23. Dunning 1976, 188 (recording the find from Woolcombe Farm, Toller Porcorum, Dorset).

Gent,
January 1982

J. BEDFORD GARAGE WARE

In 1931 a mediæval pottery kiln was found and partially excavated at the Bedford Garage, a site lying within the north-eastern corner of the walled city. Lady (Aileen) Fox re-excavated the kiln in 1955 and published it with the late Dr. G.C. Dunning (Fox and Dunning 1957). It was circular in plan and belonged to J. Musty's type 1b, having a single flue and a raised oven floor (Musty 1974, 44). The floor was pierced by a series of vents but was not supported on a central pedestal. The kiln's chief products were small unglazed cooking pots, but two richly glazed sherds and four fragments of storage jars with applied thumbled strips were also found. There was at that time very little stratified mediæval pottery from Exeter, and the kiln was dated to the 14th century or later by reference to three sherds found in the construction trench of a late mediæval water conduit (the 'Underground Passages') and by general parallels between these wares and late mediæval pottery at Oxford.

Sherds identical in form and fabric to Bedford Garage ware have proved to be fairly common finds in recent excavations: more than 320 have now been identified, the majority from stratified contexts. In addition, an unpublished collection of sherds from the 1931 excavation has been found in Rougemont Museum and this adds a little to the known range of fabrics, glazes and forms. The new material provides a much larger sample of the kiln's output and makes possible a reconsideration of its date.

It is now clear that the kiln operated in the Saxo-Norman period. The parallels between the kiln products and the sherds from the 'Underground Passages' are, in fact, far from close: the latter are late mediæval jug sherds, one (Fox and Dunning 1957, Pl. XVa, bottom left) a micaceous ware, the others with a very fine fabric (possibly fabric 40) decorated with applied strips.

Stratified examples of Bedford Garage ware are now known from many early mediæval pit groups, in which they are normally associated with local coarseware cooking pots and a range of Saxo-Norman imported wares. The principal dating evidence may be summarised as follows:

- (i) At 197 High Street the ware accounts for 13% to 17% of the pottery in the first six phases of occupation. Phases 7-10 contained a few sherds, but none occurred in the large groups of pottery from phases 11-13 (Fig. 10). Bedford Garage ware was in use during five phases of occupation prior to the loss of coin **E.1** in *c.* 1072-86. The earliest deposits are likely to belong to the beginning of the 11th century or a little earlier.
- (ii) A single sherd (as **127-30**) was found in association with the coin of William II (**E.2**, minted in 1089-92) from the apse of the Saxon minster church, which was probably robbed in the early 12th century.
- (iii) A few sherds (as **464-93**) in TS 347 were associated with discarded thin oak boards felled in *c.* 1056, but these sherds may be residual.

There are several indications that the ware was no longer in use after the early 12th century. The High Street sequence suggests that the quantity in circulation diminished rapidly after the last quarter of the 11th

century (Fig. 10). Several pit groups firmly attributable to the 12th century do not contain sherds of this type: there are none in the group excavated by Aileen Fox from near St George's church (Dunning and Fox 1951), or in QS 49 and 57 (545-94) or TS 227 (379-419); and only a single sherd occurs in the very large pit group GS 258 (302-34). Each of these groups contains several hundred sherds of pottery. Further, the ware is absent from a number of sites lying on the periphery of the early medieval occupation. Bartholomew Street East is perhaps the most informative of these, since it contained a large number of 12th-century pits suggestive of occupation spanning much of the century. Sites such as Exe Bridge, Polsloe Priory and Bartholomew Street West, where there was no occupation before the late 12th century, have produced no Bedford Garage ware at all.

There is thus quite good evidence that Bedford Garage ware was in circulation throughout most of the 11th century and that manufacture probably ceased shortly after *c.* 1100. Production may well have started in the 10th century, since a few groups containing this fabric (e.g. TS 439) lack the most common type of early coarseware (fabric 20), which was certainly in use by *c.* 1020 (p. 11). However, in the absence of dating evidence before *c.* 1020 it is not possible to determine the period when production commenced.

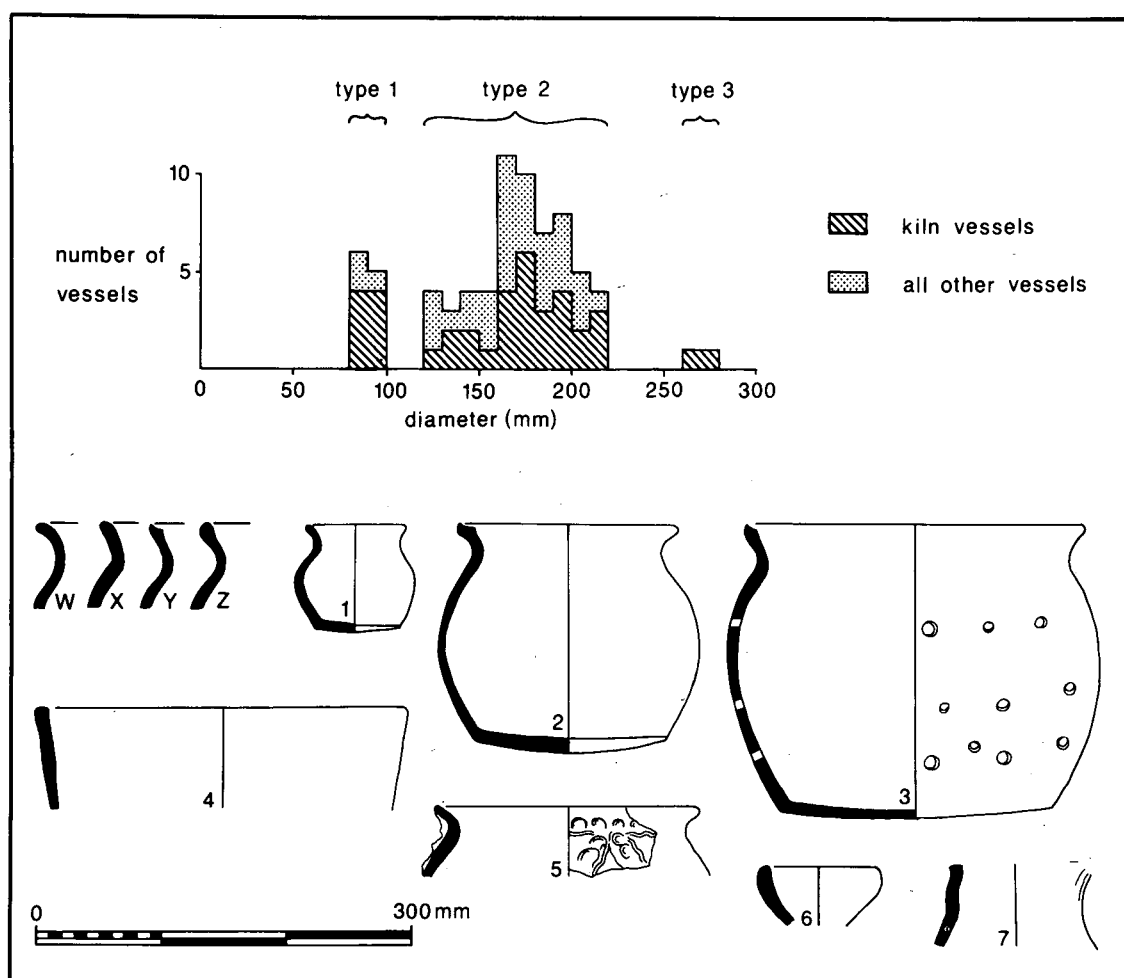


Fig. 8. Rim diameters of Bedford Garage wares, with type-series of forms (scale 1:8).

Forms and use

All but three of the Bedford Garage ware vessels from recent excavations are cooking pots. Dunning (Fox and Dunning 1957, 50) suggested that these were made in a graduated range of sizes. The rim diameters of all the vessels from the kiln and from recent excavations are shown in Fig. 8. It is now apparent that the cooking pots can be separated into two main groups according to size (types 1, 2). The rim forms fall into only four basic types (W-Z). There can be little doubt that most of these vessels served in cooking, as many display pronounced external sooting. Some are also sooted on the internal surface of the rim, and this sooting often extends a little into the interior of the body, indicating that these pots were used without lids. A much larger form of vessel (type 3) comes from the kiln debris in the museum collection (656-8) but has not been found elsewhere; such vessels are pierced in a manner to which S. Moorhouse has recently drawn attention. He has

suggested (pers. comm.) that some late medieval vessels pierced in this way were used in the production of white lead, and would have been suspended from rods threaded through the holes. In the Low Countries very similar vessels have been published as 'so-called solder-pots' (Trimpe Burger 1962-3, 522). These wares might alternatively have been used as small braziers, or as chafing vessels. The Exeter kiln debris was of course never used and therefore lacks residue which might indicate the function of this type.

Types 4 and 5 are also known only from kiln waste; the function of the former is unknown, and indeed it is uncertain whether the drawings (659-60) are presented the correct way up. Type 5 was reasonably identified by Dunning as a storage jar. Type 6 lamps are known only from recent excavations (661-2). The single type 7 fragment may perhaps be a sherd of a jug-like vessel, and is comparable to a similar enigmatic fragment of Winchester ware (Biddle and Barclay 1974, Fig. 7, No. 40).

Glaze

Only three glazed sherds, forming 2% of the collection, are present among the kiln wares published by Fox and Dunning, although a few others have small glaze spots. No accurate estimate can be made of the proportion of glazed wares among the sherds excavated in 1931, since it is clear that bodysherds were discarded and some of the collection seems not to have survived. However they are very rare among the surviving fragments from that excavation. They make up 3% of the Bedford Garage wares from all other excavations in the city. In all instances the glaze is thick and lightly crazed; it varies in colour from yellow (7.5YR 7/6) to orange-brown (10YR 5/6), light green (5Y 5/4) or olive green (5Y 6/4), and is always external, normally covering only part of the sherd. It is probable that all the glazed sherds excavated so far come from vessels with only dribbles or patches of glaze. Examples of vessel types 1 and 2 are certainly present amongst these fragments; one comes from a larger form, perhaps of type 3. Several show clear evidence of sooting and were presumably used as cooking-pots.

Typological developments

No evidence has been found to suggest that there were any developments in the forms of Bedford Garage ware. The kiln material contains both flat and sagging bases and all the forms of rim. Individual pit groups likewise contain a variety of rims (18-19, 132-3, 195-6, 495-6) and there is no evidence that one base form preceded the other.

Proportion in use

It is difficult to judge the true proportion of Exeter's 10th/11th-century pottery market made up by Bedford Garage ware. This fabric comprises 15% of the rather small series of late 10th/11th-century wares from 197 High Street (1-28) and 9% of all groups of horizons A and B. These figures probably under-estimate the true proportion of the ware in use, since the more fragile hand-made wares tend to break into many more fragments and probably had shorter lives before breakage (cf. Vince 1977, 65-7).

Distribution

Although common enough at Exeter, Bedford Garage ware is known from only one site outside the city: a single sherd has been found at Lydford, Devon (Allan 1981, 133, No. 1). Very little Saxo-Norman pottery is present in Devon's museum collections, so the rarity of finds outside the city is unsurprising.

Discussion

Bedford Garage ware is the fifth class of Saxo-Norman wheel-thrown pottery to be recognised in southern England (Hurst 1976, 338; *idem* 1977e, 77). It provides the first recorded instance of a pottery kiln operating within the defences of a Wessex *burh*, but this location may be compared to those of Saxo-Norman urban kilns in eastern England. The kiln was situated in the north-east corner of the town, well to the rear of any known street frontage. It is one of several of Saxo-Norman date which belong to Musty's type 1b: examples at Thetford, Torksey and Stamford were all of this class (Musty 1974, 44-62). The closest parallel to the Exeter structure is Thetford kiln 1, which likewise lacked internal support and had a raised oven floor pierced by vents (Knocker and Hughes 1950, 43-4).

The kiln products are the only local Saxo-Norman wheel-thrown wares known from Devon and Cornwall. They belong to a quite different tradition from all other south-western wares; the latter are crude and unglazed and were presumably clamp-fired. As Hurst (1977e, 77) has pointed out, Bedford Garage ware is

not closely comparable to the other classes of Saxo-Norman wheel-thrown wares of southern England, but is paralleled by Chester-Stafford ware¹ and by some of the products of northern France. The former shares the oxidised fabric and the general vessel shape; some of the rim forms are also similar.² On the other hand, there are important differences between the Exeter products and the Chester-Stafford series. The use of glaze here is paralleled elsewhere in western Britain only among a few vessels at Hereford.³ Chester-Stafford's rouletted wares and quite common bowl forms are unparalleled here, whilst the similarity of rim forms may not be very significant, since they are so simple.

The Exeter kiln products are also analogous to some north French pottery, sharing for example with Hamwih Class 11 and other Normandy buff wares the thoroughly oxidised fabric, sometimes with simple rim forms. The high-quality glaze and the use of applied thumbed strips on the bodies of large vessels are similarly paralleled in Normandy. In view of the clear evidence both for regular commercial contacts with Normandy before the Conquest and for the presence of a pre-Conquest Norman merchant community here (p. 15) this might be taken as evidence of a north French potter working in the city, comparable perhaps to those postulated at Castle Neroche in Somerset (Davison 1972, 42-6) or at Stamford in Lincolnshire (Kilmurry 1980, 176-95). These similarities may, however, have arisen in other ways. Hamwih Class 11 and analogous wares are found at Exeter in the earliest Saxo-Norman deposits (e.g. 680) so might have been copied, or have created a demand for pottery of this kind. Since the kiln technology was in use in England, and there was in any case such a diversity of potting traditions in late Saxon England, there is no particular reason to postulate an immigrant potting community.

NOTES

1. It now appears that Chester ware was made at Stafford (J. Rutter, pers. comm.).
2. Rim form W cf. Carrington 1977, 17, forms 1D(i), 1D(iii); rim form Y cf. *ibid.*, form 3(i).
3. I am grateful to A. Vince for this information.

K. THE OTHER ENGLISH WARES

It was apparent whilst excavations were in progress that there was a substantial collection of imported French pottery at Exeter; only after more detailed study were ceramics from a variety of English sources recognised. Since undistinctive and unfamiliar fragments will have escaped recognition, non-local English wares are probably considerably more common than the list of Exeter's imports (p. 22) suggests.

The series of at least a dozen vessels from the potteries making richly glazed and highly decorated wares in Yorkshire, Nottinghamshire and Lincolnshire is a surprising aspect of the collection. They include vessels visually identical to wares from Scarborough, Doncaster, Lincoln and Nottingham, and a variety of other sherds which seem to belong to kilns in this area but have not yet been attributed to particular centres. Five of the vessels whose form can be identified are aquamaniles and the others are decorated jugs; this was evidently a trade in high-quality specialist pieces which the local potteries of South-West England could not supply.

Whilst Exeter lies far beyond the known distribution area of Lincoln, Doncaster or Nottingham products, recent research into Scarborough ware (Farmer 1979) shows that this fabric at least was arriving at a number of south-coast sites, almost certainly via the coastal trade. It may be presumed that the other wares of North-East England arrived by the same route, a journey preceded in some instances by river transport from the kilns to the coast. The nature of the trade which distributed these wares to Exeter invites consideration. It appears to have emerged only in the 13th century, since the widely traded Developed Stamford Ware of the preceding period is absent from the city. Carter's suggestion that it was the coal trade which brought the distribution of these wares along the east coast (Clarke and Carter 1977, 448) is not an impossible explanation, even at Exeter, since Newcastle coal did occasionally reach the city from an early period (Stephens 1958, 36-7). Coal has been found in early 14th-century deposits at Exe Bridge, and is listed in the Town Customs Accounts at least from the reign of Edward III (*ibid.*). However, most coal came from South Wales until the 18th century (*ibid.*; Hoskins 1935, 100-8). The trade in Derbyshire lead provides an alternative cargo with which the ceramics may have travelled. The Fabric Rolls of Exeter Cathedral record regular purchases of lead at Boston fair in the late 13th and early 14th centuries (Bishop and Prideaux 1922, 38), and other religious houses and rich merchants must have needed similar supplies. The purchase of agricultural products, particularly grain, in eastern England provides a further possible mechanism; this trade was recorded in several of the city's Coastal Port Books of the reign of Elizabeth and later and it may well have had medieval origins. However it was conducted principally through the East Anglian ports, whose local wares have not been recognised here. It is of course possible that the wares of North-East England arrived here by redistribution from East Anglia or London.

The decorated jugs of the capital arrived in considerable numbers (at least 18 vessels) in the 13th century.

Most of the stratified examples are present in groups of horizons F (c. 1200–50) and G (mid 13th-century), but one near-complete sgraffito-decorated jug (1401) and a single sherd from a second vessel of the same class (cf. 879–87) come from groups of the end of the 13th or the early 14th centuries. Rouen-copies and jugs in 'north French style' make up the majority of these finds; both are represented by at least seven vessels. In addition there are two jugs of 'early standard' type in a group of horizon F (QS 51, unpublished), and a single London-area cooking pot (1609). Bristol wares show a similar chronological distribution, with Ham Green wares arriving throughout the 13th century but no examples identified so far of the Redcliffe wares and other products of the 14th and 15th centuries.

It is currently difficult to judge quite how much pottery was coming from Hampshire and Dorset. There are only single examples of the Dorset wares with red-painted stripes (cf. Platt and Coleman-Smith 1975, 2, No. 946) and Dorset white wares from the Poole-Christchurch area. However a number of cooking pots (856, 1436) and several of the sandy ware jugs of fabric 62 (744, 1075) display stylistic details which suggest a Dorset origin. The identification of many tourmaline fragments in the latter series (p. 34) strengthens the case for believing that these are Dorset products. They form a common component of groups of the 13th century (28+ vessels). Many hand-made sandy ware sherds in the collection may be from the same source, and a few further bodysherds match quite closely the kiln waste excavated by R.G. Thomson at 61–2 High Street, Southampton; more petrological work on this class of pottery would be extremely useful, since it is difficult to classify these vessels solely by visual examination.

In contrast to the evidence for extensive coastal trade, there is little sign of long-distance land transport. For example, no Laverstock wares have been identified here, nor have cooking pots from inland sites outside the south-western counties.

All the various types of non-local English wares become less common in deposits dating after c. 1300: the later medieval groups contain hardly any examples. It seems that the growth of a high-quality local pottery industry and increasing importation of Saintonge wares made them no longer able to compete in the Exeter market.

Somerset wares

The potteries of Somerset, which were probably selling their wares at Exeter as early as the 12th century (p. 33), gradually succeeded in capturing the city's ceramics market in the 14th and 15th centuries (Figs. 6, 29). Their cooking pots (1049, 1146), tripod pitchers and possibly some jugs arrived here in the 13th century, but it was only with the production of sgraffito-decorated finewares that Somerset products became very common. Exeter provides important evidence for the dating of these vessels. The sgraffito-decorated jugs were arriving here by c. 1300, for one sherd of this type was found in a wall trench (PP 934) of that date at Polsloe Priory. Three further examples are associated with Saintonge polychrome wares (885–6, 1425), but they are more common in the deposits of the late 14th or early 15th century (e.g. 1477–83). By c. 1450 these wares were being replaced by jugs of a different style (836–7; 15th/16th-century South Somerset wares, Fig. 64) which dominated the Exeter market by c. 1500; the group from Polsloe Priory 1582–3 contains hardly any other local products (1541–5).

A note on the decorative styles of the local jugs

Most of the traits used by the potters who produced jugs of fabrics 40–3 were in common use throughout southern England. Thus the application of face-masks and applied pads to jug rims (1429) and the use of clay pellets or strips, sometimes enriched with iron to achieve a black glaze (1427) were features of potteries from Bristol¹ to Laverstock² and Southampton.³ Jugs decorated in this manner were brought to the city at the time that local jugs were first produced (1118, 1120) and these may have served as models for imitation, or may perhaps have created a market for ceramics decorated in this way. The occasional production of face-on-front jugs (1406) or applied clay pads, sometimes with spiral decoration (1406; 1289) is reminiscent of the wares of Bristol,⁴ Hampshire,⁵ Sussex⁶ and Wiltshire.⁷ Again, the use of metallic stripes (1317), sometimes with dot-and-circle decoration (1580) or impressed combing (1318), which is so characteristic of many local products, is paralleled in Somerset⁸ and Wiltshire.⁹ All the vessel forms are common to much of southern England. The use of 'parrot-beak' spouts (1317–18) and vertical thumbled strips (1394) mirrors their use on Saintonge jugs, and may have been copied from them. However, these features were also common in other southern English potteries and need not necessarily derive directly from the imported wares.

The origin of the sgraffito wares is a more interesting problem. In 1964, Hurst (1964a, 363–4) reviewed the evidence for the possible sources of the use of sgraffito decoration in the post-medieval pottery of the South-West. At that time it appeared probable that the technique was adopted from the late medieval pottery of South-East England, and it seemed possible that there was some connection with the sgraffito wares of the

East Mediterranean. However, it is now clear that sgraffito-decorated jugs were used at Exeter before *c.* 1300 and were a very common feature of the 14th- and 15th-century potteries of South-West England. Many of the products of south-western and south-eastern England are therefore broadly contemporary. However one series of jugs — those decorated in 'north French style' — is noticeably earlier in date than any known so far in the South-West. Recent excavations in London have shown that the London wares were in circulation by *c.* 1180 (Vince, pers. comm.) and it is of the greatest interest to see that they were arriving in Exeter by the end of the 12th century or early years of the 13th. The use of sgraffito on these jugs is clearly only one of a range of techniques employing slip to achieve polychrome effects, some of them in imitation of Rouen jugs. There is no particular need to consider a source in the East Mediterranean for the fashion. Hurst's suggestion that the sgraffito-decorated wares of the South-West derived from South-East England may well be correct, but the style was adopted at an earlier period than was apparent in the 1960s.

NOTES

1. Faces on rims at Ham Green (Barton 1963b, 98, No. 21) and Bristol; iron-rich strips at Bristol (Dawson *et al.* 1972, 5, Nos. 8–11).
2. Face masks, iron-rich strips and applied pads at Laverstock (Musty *et al.* 1969, Figs. 16, 17, 19).
3. Applied masks on rims and clay pellets among kiln waste excavated by R.G. Thomson from 61–2 High Street, Southampton.
4. Examples in Bristol ware from various Bristol sites.
5. E.g. at the Bentley kiln (Barton and Brears 1975, 73, No. 12).
6. Summarised by Barton (1979, 107–15) where the various Sussex face types are described.
7. Faces on front and pads at Laverstock (Musty *et al.* 1969, Fig. 20; Figs. 15–21).
8. Various unpublished finds in Taunton Museum collection.
9. Musty *et al.* 1969, Fig. 15, No. 110; Fig. 17, No. 133.

3. PETROLOGICAL AND CHEMICAL ANALYSES

A. THE PETROLOGY OF THE PRODUCTS OF THE BEDFORD GARAGE KILN

by Alan G. Vince

Three sherds from the Bedford Garage kiln were thin-sectioned and a further quantity examined visually. The ware is hard to very hard and none of the products seen had the grey or black core commonly found in late Saxon pottery as a result of the short duration of firing. Most vessels were oxidised pink to reddish-yellow (7.5YR 7/4 to 7.5YR 6/6) or reduced light grey (5Y 6/1).

There is a considerable range in the quantity of temper but the clay matrix in all samples is very similar, consisting of optically anisotropic baked clay with scattered angular fragments of quartz, from 0.02 mm to 0.3 mm across. The temper consists of angular to rounded inclusions from 0.2 mm to 1.0 mm (average 0.5 mm). Quartz, chert and sandstone fragments are the most common while a small quantity of acid igneous rock fragments and their constituents was present. The quartz fragments vary from large, angular, clear grains to smaller milky grains and polycrystalline fragments. The chert is porous, often brown or dense brown. Some might be classified as an indurated mudstone and are barely translucent in plane polarised light. The sandstone fragments vary considerably in colour and texture although most have a silica cement, a variable quantity of brown inclusions and mica and a maximum grain size of *c.* 0.2 mm.

Fragments of plagioclase feldspar and a single large grain of sanidine were recorded together with a little rounded iron ore, a rounded fragment of granite (composed of microcline feldspar and quartz) and an angular fragment of altered feldspar.

Both the variable quantity of temper and its uneven distribution within the fabric show that the quartz, chert and sandstone sand were added to the clay. The temper, in its combination of rock types, was quite distinctive in thin-section and well-tempered kiln products should be characterised with no difficulty using petrological methods.

Winchester,
October 1978.

B. PETROLOGICAL ASPECTS; THE MEDIEVAL POTTERY OF EXETER UNDER THE MICROSCOPE

by Duncan H. Brown and Alan G. Vince

Fifty-three samples of pottery and tile were examined in thin-section; they consisted of examples of each type fabric, together with a selection of the more unusual sherds and those with distinctive inclusions.

The collection may be divided broadly into two groups: those with a quartz-sand and sedimentary temper,

and those with igneous and metamorphic inclusions. None of the samples has a petrology precisely similar to those of the Bedford Garage wares, which display occasional fragments of lava from the Exeter traps and a mixture of sedimentary and lightly metamorphosed rocks. There is thus no petrological evidence to show that any of the type fabrics was made in Exeter.

The nature of the inclusions of the group of wares with metamorphic and igneous temper implies a source further west than Exeter, but most are currently difficult to locate more precisely. Three samples believed on visual examination to be North Devon wares proved to be closely comparable in thin-section. At least one vessel (1095) may be of Cornish origin; two others (a sample sherd of fabric 104 and 807) almost certainly come from deposits very close to outcrops of metamorphic rock; further wares (fabrics 81, 101, 105) probably derive from sources close to the granite.

Amongst the wares with sedimentary temper, the most distinctive are those containing inclusions of glauconite (fabrics 24–7, 40, 43, 60–1). The nearest source of this mineral is some 15 km to the east of Exeter in the Otter Valley. A second series of fabrics (22–3, 64, 80, 82) contains both limestone and flint or chert. This combination of minerals likewise suggests a source east of Exeter, perhaps in South-East Devon or further east. Fabrics 60 and 80 are comparable both in thin-section and on visual examination to South Somerset products, and this may also be the production area of fabrics 20, 21 and 43, which are all tempered with quartz-sand and flint or chert. However the quantity of inclusions varies so widely that no single source can be suggested for them all.

Finally, two fabrics (44, 62) are distinctive light-coloured clays with rounded quartz-sand temper. They differ only in grain size, and the petrology of both wares is comparable to the tripod pitchers of South-East Wiltshire and the jugs of East Dorset. This evidence supports the suggestion made on typological grounds (p. 7) that fabric 62 comes from Dorset.

The fabrics

Note: fabrics 1–3 are the wares of the three Exeter kilns, and are described elsewhere (p. 32; MF 67; p. 247).

(a) Pottery

Fabric 20 contains abundant rounded and sub-angular quartz between 0.1 and 1 mm in size, the sub-angular fragments tending to be smaller. There is also moderate flint or chert, rounded and angular (most up to 1 mm, some as large as 2 mm) and rare silicified sandstone. The very fine clay matrix is anisotropic and contains sparse scattered quartz and muscovite (see also p. 37).

Fabric 21 contains sub-angular quartz (up to 0.6 mm) and very coarse angular chert or silicified sandstone fragments (up to 2 mm), both in moderate quantities. There are also sparse sub-angular red clay pellets. The matrix has angular quartz (up to 0.1 mm) and rare muscovite.

Fabric 22 Two samples were sectioned. One contains abundant rounded to sub-angular limestone fragments, most of them heat-altered, up to 2 mm in size. Pieces of flint or chert, angular to sub-angular (up to 1 mm) are also present in moderation, together with sparse sub-angular to rounded quartz (up to 2 mm). There are also sub-angular red clay pellets up to 1 mm. The matrix has moderate angular quartz (up to 0.1 mm) and sparse muscovite. The second sample is broadly similar, but also contains mudstone and glauconite whilst the limestone is sparry in character.

Fabric 23 contains moderate inclusions of angular quartz, flint or chert, and micro-crystalline limestone (all up to 2 mm). There are also sparse fragments of shell and red clay pellets (both 2 mm). The clay matrix is anisotropic and contains sparse angular quartz and red clay pellets.

Fabric 24 contains moderate sub-angular and rounded quartz (up to 0.5 mm) with coarse-grained chert and fragments of a sandstone with siliceous matrix, both rounded and up to 2 mm in size. There is also sparse rounded quartz and calcite (up to 1 mm) and what may be either clay pellets or glauconite, also sparse. The matrix is anisotropic with scattered angular quartz and red iron ore.

Fabric 25 Two samples were examined. Both contain sparse rounded quartz (up to 2 mm), moderate angular quartz (up to 0.3 mm), sparse large fragments of flint or chert (4 mm long) and sparse, rounded glauconite (up to 0.2 mm). One also displayed finely-divided limestone with euhedral outline (up to 2 mm) and heat-affected crystalline calcite and phosphate. These inclusions imply a source east of Exeter. The matrix is anisotropic with scattered angular quartz and iron ore.

Fabric 26 contains abundant rounded quartz (up to 1 mm),

occasional iron ore and rounded glauconite (both 0.2 mm). The matrix is anisotropic with sparse angular quartz.

Fabric 27 contains abundant, well-sorted, rounded and sub-angular quartz averaging 0.2 mm across and abundant rounded glauconite of the same size. This is basically a glauconite sand. The anisotropic matrix contains scattered angular quartz and muscovite.

Fabric 28 This highly calcareous fabric has abundant shell (up to 2 mm) with brown-stained edges. There are sparse inclusions of rounded and sub-angular quartz (up to 1 mm), chert (c. 0.5 mm) and red clay pellets (up to 0.5 mm). The matrix is anisotropic and full of carbonate.

Fabric 40 Two samples were examined, both containing abundant angular to sub-angular quartz (up to 0.4 mm but mainly much smaller), moderate quantities of muscovite (c. 0.2 mm), chert of similar size, and clay pellets (up to 1 mm) which have much less quartz. Fragments of glauconite are also present (up to 0.2 mm). The matrix is isotropic; its contents are obscured by the mass of quartz tempering.

Fabric 42 contains inclusions (c. 0.25 and 0.5 mm) of sub-angular quartz, flint or chert, sandstones and mudstones. There are also fragments of what is probably a fine-grained metamorphic rock. The matrix contains quartz and muscovite.

Fabric 43 contains moderate quantities of sub-angular quartz (up to 1 mm), flint or chert (up to 2 mm), and sparse inclusions of rounded glauconite (c. 0.2 mm) and clay pellets (up to 1 mm). The matrix contains moderate angular quartz and muscovite (up to 0.1 mm).

Fabric 44 contains abundant sub-angular and rounded quartz (up to 0.3 mm) and sparse quartzite and flint or chert of the same size, with sparse sub-angular clay pellets (up to 0.6 mm). The very fine, light-coloured matrix is anisotropic.

Fabric 45 contains abundant angular quartz (up to 0.4 mm). There are sparse inclusions of rounded quartz, angular flint or chert and red clay pellets (up to 1 mm). Sparse quantities of red and black iron ores (both up to 0.2 mm) are also present. The matrix is anisotropic and fine-textured.

Fabric 60 contains abundant sub-angular quartz (up to 1 mm). There are sparse inclusions of angular chert or flint (up to 1 mm), rounded black iron ore (up to 0.5 mm), white clay pellets (up to 2 mm) and glauconite (up to 0.2 mm). The matrix is anisotropic and contains scattered angular quartz.

Fabric 61 contains abundant sub-angular quartz (up to 0.2 mm), moderate rounded quartz (between 0.1 and 0.4 mm), sparse inclusions of muscovite (0.1 mm), rounded altered glauconite (up to 0.3 mm), angular flint or chert (c. 0.4 mm) and sub-angular clay pellets (up to 2 mm). The clay matrix is anisotropic and indistinguishable from the ill-sorted inclusions.

Fabric 62 contains abundant sub-angular and rounded well-sorted quartz (c. 0.5 mm) and sparser quartzite of the same size. Tourmaline and a fine-grained sandstone are present, rare and similarly sized. There is also a large limestone fragment 3 mm long. The anisotropic matrix is of a very fine clay devoid of inclusions other than the sand temper.

Fabric 64 contains moderate rounded to sub-angular quartz-sand (average c. 0.5 mm), sparse fragments of quartzite and limestone (both 0.5 mm) and flint or chert (up to 1 mm). The isotropic matrix is also very fine. This is not distinguishable in thin-section from fabric 62.

Fabric 101 contains moderate sub-angular sandstone fragments (up to 1 mm) and sparse 1 mm sized inclusions of rounded to angular quartz, sub-angular feldspar, fine-grained slate-like metamorphic rocks and biotite. There is also a 1 mm long sub-angular piece of lava with zoned feldspar. The matrix is anisotropic and contains scattered angular quartz and muscovite. This fabric, with a high proportion of orthoclase feldspar and mixed sedimentary, metamorphic and igneous rocks, is probably derived from a source west of Dartmoor.

Fabric 102 contains fine angular or rounded quartz, rarely 1 mm across, with abundant fragments no larger than 0.1 mm. There is also feldspar (up to 1 mm), fine muscovite and rounded igneous rock (up to 0.3 mm). Sub-angular iron ore (between 0.3 mm and 1 mm) and biotite (up to 0.3 mm) are also present. All these inclusions, the quartz excepted, are sparse. There are no fine-grained or sedimentary rocks. The matrix is anisotropic, with abundant quartz, which is indistinguishable from the temper.

Fabric 103 The inclusions consist of angular quartz, quartzite and muscovite (c. 0.1 mm) present in a matrix holding a few 1 mm sized fragments of a fine-grained metamorphic rock and sparse biotite (0.3 mm), some fragments of which are very long, thin and angular. I. Freestone suggests that these minerals are not metamorphic but come directly from a granite affected by greisenization, which produces a rock composed chiefly of muscovite and quartz.

Fabric 104 contains moderate muscovite and biotite (up to 1 mm) with sub-angular fragments of a rock composed of quartz, muscovite and biotite (also up to 1 mm). There is also sparse, rounded quartz (up to 0.8 mm) and angular tourmaline (0.4 mm). No granite rock fragments are present. The matrix is anisotropic and has muscovite and biotite (0.4 mm) and quartz (0.2 mm). The muscovite is very fresh, implying that it came directly from an outcrop of low-grade metamorphic rock.

Fabric 105 contains a mixture of granitic and metamorphic inclusions with a high proportion of biotite and tourmaline (up to 1 mm). Muscovite, angular quartz and angular feldspar (also 1 mm) are present in moderation with angular fragments of a fine-grained metamorphic rock (up to 1 mm). The fine clay matrix contains scattered iron ore. This fabric is similar to fabric 81 and may come from the same source.

Fabric 106 contains fine angular and rounded quartz (mainly 0.1 mm, but up to 1 mm), fine muscovite, rounded igneous rock (up to 3 mm), sub-angular iron ore (0.3 to 1 mm) and biotite (up to 3 mm). There are no fine-grained or sedimentary rock inclusions. The matrix is anisotropic, with abundant quartz indistinguishable from the temper.

Fabric 107 contains inclusions ranging between 0.5 and 1 mm, of

quartz, feldspar, muscovite, chert, limestone and sparse calcite with fragments of metamorphic and sedimentary rock. The anisotropic fine clay matrix contains sparse quartz. The range of inclusions is similar to that of North Devon wares, but they are finer and more weathered, and the presence of a carbonate, together with the different nature of the matrix, suggests a different, unknown source.

(b) Ridge-tiles

Fabric 80 contains abundant angular to sub-angular quartz (average 0.2 mm) and moderate to sparse inclusions of glauconite (0.1 mm), with larger pieces of flint or chert, one piece being 0.7 mm. There are also sparse clay pellets (up to 1 mm) and sparse limestone fragments (2 mm). The matrix is anisotropic and contains scattered angular quartz.

Fabric 81 contains moderate quantities of angular to sub-angular quartz (well sorted and on average 0.5 mm) and 1 mm sized pieces of biotite. Sparse fine-grained metamorphic rock fragments, possibly slate (up to 1 mm), sparse feldspar, slightly altered, and sparse tourmaline, zoned with alteration (both c. 0.5 mm) and a 0.5 mm piece of a brown-stained sandstone are present. The matrix is anisotropic and contains scattered angular quartz and possibly muscovite. This fabric is quite similar to the local coarsewares of Okehampton and Meldon (Vince 1978, fabrics A to C) but it contains more biotite; it probably comes from a source close to the granite. Fabric 105 may well be from the same source.

Fabric 82 contains moderate quantities of rounded quartz, quartzite and sub-angular flint or chert, with red clay pellets (all up to 2 mm), together with sparse limestone (up to 0.5 mm). The quartz and quartzite are the most common. The clay matrix is fine-textured and has scattered angular quartz (up to 0.1 mm), red clay pellets and muscovite.

Fabric 83 The most common inclusions are sub-angular pieces of fine-grained sedimentary rocks, sandstones, siltstones and probably mudstones, present in moderation up to 2 mm in size. The addition of a piece of a fine-grained metamorphic rock may indicate that some of the sedimentary pieces are slates or phyllites. There are also sparse to moderate rounded quartz grains (up to 0.5 mm) which appear highly polished in hand specimen, and sparse 2 mm sized rounded clay pellets. Two fragments (0.4 mm) of a basic igneous rock and one piece of silicified sandstone are also present. The matrix contains abundant angular quartz (up to 0.4 mm) and similarly sized muscovite. Quartz grains of this highly polished type are characteristic of the Cretaceous and later sediments of South-East England, but the absence of glauconite and the presence of metamorphic rocks in the present sample suggest a source in the South-West. A possible source is a river sand of re-worked Devonian and later sediments, such as might be found in South-East Devon.

Fabric 84 contains abundant, mostly angular, quartz (up to 0.4 mm and often much smaller). There are pieces of quartzite and flint or chert (up to 2 mm) and sparse 1 mm sized fragments of altered basic igneous rock and biotite with one piece of dirty feldspar. Rounded pieces of a dirty fine-grained sandstone (up to 2 mm) are present in moderation. The isotropic matrix contains angular quartz. The sandstone is similar to that in fabric 83, but the quartz quantities distinguish the two.

Acknowledgement

We would like to acknowledge the help of Ian Freestone of the British Museum Research Laboratory, who examined all of the samples tempered with igneous and metamorphic rock fragments.

Museum of London,
February 1982.

C. FABRIC ANALYSIS OF CRUCIBLE SHERDS FROM EARLY MEDIEVAL CONTEXTS

by Hilary Howard

Introduction

The techniques of petrological analysis have recently been applied to a wide range of refractory debris from

prehistoric Britain with interesting and informative results (e.g. Howard 1980a; *idem* 1980b). However, until the present study, the efficacy of these techniques in illuminating the refractory technology of later periods remained untested. The recovery of early medieval crucible sherds from five distinct workshop areas within the city of Exeter provided the ideal opportunity to conduct such a test. It was hoped, through examination of the structure and fabric of these crucibles, to ascertain whether uniform manufacturing techniques and refractory recipes were current throughout the city during the 11th, 12th and 13th centuries, and whether a single or perhaps several sources of raw materials were exploited. It was also hoped that diagnostic minerals occurring in the fabrics would allow refractory sources to be located.

Twenty fragments of hard-fired ceramic, identified as the remains of metal-working crucibles, were submitted for fabric analysis. Seventeen came from sealed pit groups at five urban tenement sites — Goldsmith Street, Trichay Street, Queen Street, High Street and Exe Bridge — and were dated by associated pottery to the 11th–13th centuries. The three unstratified samples described were also recovered from these sites. A number of crucible fragments representing Roman metal-working in Exeter were additionally examined, and although the detailed results will be published elsewhere, Roman examples were considered in the present study for comparison with the medieval material, and to investigate technological change through time.

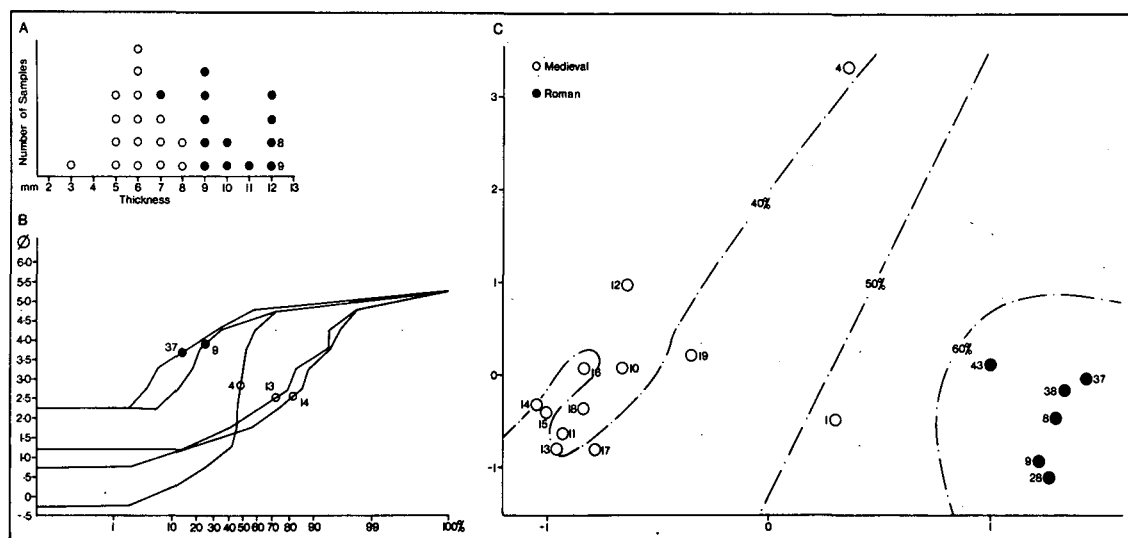


Fig. 9A. Thickness of crucible sherds of early medieval and Roman date.
 B. Principal components analysis of refractory samples with contours of packing density.
 C. Grain size cumulative frequency graphs for selected samples of refractory debris.

Manufacture, evidence of use and fabric

With the notable exception of five vessels, all recovered from a 12th-century pit (GS 56), the early medieval crucible sherds are uniformly thin-walled, well-made and extremely hard-fired. Slight unevennesses in wall thickness and rim shape suggest that refractory vessels were generally hand-made, but widely spaced parallel striations observed on one sherd from GS 288 suggest the occasional use of a turntable, either for production or final shaping. Fabrics are generally light grey through purplish-grey to black, denoting reducing conditions in use, but the rare yellowish-red (2.5YR 5/6–2.5YR 6/6) patches or thin outer surface layers of five samples indicate at least the occasional use of a somewhat ferruginous clay for crucible production. With the exception of the sherds from GS 56, slagging is slight and usually confined to a thin clear or greenish vitrified layer on both outer and inner surfaces. The sherds from GS 56 are heavily coated with a dense, uneven layer of black, slaggy material. Such slagging is reminiscent of Roman metal-working debris from the city. The heavy rim form and overall thickness of these samples are also more typical of the Roman sherds examined (Fig. 9A).

Inspection of fractured surfaces with the aid of a 10x lens revealed few fabric differences amongst the crucibles. All sherds contained an abundance of fine sand, and rare tiny whitish grains of sandstone or quartzite. A very occasional fleck of mica was noted. Minute voids (all less than 0.5 mm), generally elongate but sometimes cellular, were just visible in all samples.

Microscopic analysis

To test the apparent homogeneity of the early medieval refractory fabrics and to allow the detection of any subtle differences in fabric preparation, tiny samples were cut from all sherds (with the exception of GS 56a–c)

for examination under the petrological microscope. These samples were first impregnated with microcrystalline wax (the sandy, porous nature of the fabrics rendered consolidation essential), then mounted on microscope slides and ground to 0.03 mm.

In thin-section, all samples (except GS 56d and e) are seen to contain a medium to high tenor of sub-rounded and sub-angular quartz sand set in an isotropic clay matrix. Quartz grains are invariably heavily crazed, the result of rapid heating and cooling through 573°C, the α to β quartz transformation temperature (Kingery *et al.* 1960, 543). Many of the larger grains show strain, again indicative of thermal activity. Incipient artificial tridymite is present in some sections, either as lath-shaped or very occasionally distinctive 'arrow-head' crystals. Tridymite is a high temperature form of quartz, formed through slow heating to, and prolonged heating above, 867°C (*ibid.*, 70). The rarity of this mineral in the Exeter material suggests perhaps that the crucibles endured relatively short periods at these temperatures. A few sub-rounded grains (to 0.3 mm) of microcrystalline silica resembling fine-grained quartzite are scattered throughout most sections, and very rare threads of white mica are also present in samples from QS 82 and GS area 3. The tiny voids observed in hand specimen are clearly visible in thin-section. Most are elongate, measure 0.1–0.25 mm in length, and are usually aligned roughly parallel to the vessel wall. These voids, which suggest the burning out of finely divided carbonaceous material, occur in similar quantities in all samples save GS 56d and e. Rounded pellets of opaque iron oxides are common throughout, confirming the use of a ferruginous clay for crucible production.

Samples GS 56d and e differ significantly from all other crucibles from early medieval contexts. In thin-section, these samples display an unusually high density of fine (less than 0.06 mm) angular and sub-angular quartz silt. Extremely rare voids (none visible in sample GS 56d) are elongate and measure 2–3 mm. Both are heavily penetrated with artificial slaggy minerals which obscure much of the isotropic matrix.

Textural analysis

It would seem from the inclusion evidence that a consistent refractory recipe was used throughout the city during the medieval period. However, within this general homogeneity, some minor differences may be observed. Differences in proportions of sand to matrix, and size range of quartz sand inclusions could indicate different technological traditions or perhaps the exploitation of different refractory clay or sand sources.

In order to describe precisely and compare these minor variations, 100 quartz sand grains were measured (long axis) in each of 14 samples from early medieval contexts, and proportions of sand grains to matrix quantitatively ascertained. Similar analyses were also performed on four Roman crucible sherds from the 1st-century military *fabrica* to identify any significant differences between the refractory technologies of the two periods. The grain size distribution for each sample was recorded in \emptyset classes (Folk and Ward 1957), and to facilitate comparison of the 18 sherds, a principal components analysis of these data was conducted (Nie *et al.* 1975).

The results (Fig. 9B) demonstrate that the Exeter crucible fabrics divide into two distinct main groups on the basis of grain size and matrix-quartz inclusion density. Roman fabrics, densely packed with fine angular quartz silt, are significantly different from those of medieval date. Samples 8–9 from GS 56, already singled out by their unusual characteristics, so closely conform to the Roman pattern in both grain size range and packing density, it must be concluded that these represent residual material. With one exception unstratified above a late 12th- or early 13th-century pit, sherds from early medieval contexts within the city form a close-knit group. Matrix quartz silt is virtually absent, and grain sizes cluster uniformly around \emptyset 2 (0.25–0.5 mm). Packing density varies from 30–40%, in contrast to the 60% observed in samples of Roman date.

An unstratified sample from GS site 3 contains a higher proportion of fine grains, and is slightly denser than the remaining city centre sherds. This variability may not be significant, but the striking homogeneity observed within the central group strongly suggests that the 12th- and 13th-century artisans used crucibles made to a standard recipe, and that the sherd from GS site 3, unstratified, must be interpreted as an intruder.

The well-stratified sample from Exe Bridge, 823, which also displays individual textural characteristics, is perhaps more informative. Although similar in matrix-grain density to the bulk of 12th- and 13th-century crucibles, analytical results show two grain size peaks, representing fine matrix silt and an even distribution of larger grains (Fig. 9C). Again interpretation is limited by sample size, but it is possible that a smith with traditions different from those of the more centrally located craftsmen operated at Exe Bridge.

As no diagnostic minerals were observed in any of the thin-sections examined, it was not possible to locate the sources of sand and clay exploited. The area surrounding the city is exceptionally rich in sands and clays derived from the New Red Sandstone and Culm Measures (Ussher and Teall 1902, 88–92), and the Exe Valley too would have provided abundant suitable raw materials. Culm grits are absent in thin-section, therefore an exclusive derivation from the New Red formation is suggested. Although extensive field sampling and subsequent microscopic examination might help to define the range of possible sources

(Howard 1981), precise characterisation is unlikely to be achieved. Heavy mineral analysis of both raw materials and fired crucibles might yield useful results, but since the technique requires the destruction of a minimum of 20 gm of each sample, it is unsuited to archaeological ceramics in general, and rare small crucible fragments in particular.

In sum, therefore, this examination of crucible fabrics from 11th-, 12th- and 13th-century Exeter contexts has shown that at least two fabric preparations were favoured by the city's metal-workers, and it may be suggested that different contemporary schools are represented. Matrix silt, and differences in grain size distribution and shape, indicate the exploitation of more than one clay/sand source (of similar composition) rather than the differential preparation of the same raw materials. Lack of diagnostic minerals, however, precludes the identification of these sources.

Finally, it is instructive briefly to compare medieval refractories with those used by the Roman legionary metal-workers. The Roman crucibles are invariably finer and denser than their medieval counterparts, and sparsely distributed voids seem to represent minor additions of chopped organic material, perhaps dung. Medieval crucible makers, on the other hand, selected fabrics with less free silica, and chose to increase porosity by adding finely divided carbonaceous matter, probably in the form of sieved charcoal. The use of sieved charcoal to increase refractory porosity is attested in several ethnographic contexts (Williams 1967).

University of Southampton,
November 1981.

D. THE PETROLOGY OF THE POSSIBLE BRETON SHERDS

by D.F. Williams

Sherds from seven vessels (970, 1059, 1161, 1236; bodysherds in GS L.36, GS 307, TS 393) were submitted for examination. A Breton origin had been suggested for these sherds, since they are rich in micaceous inclusions but do not resemble any south-west English products. All except one come from early or mid 13th-century contexts.

In thin-section these samples show a similar range of inclusions, the main features of which are frequent quartz grains up to 1 mm, plentiful discrete grains of biotite and muscovite, chlorite, quartz-mica-schist and a little iron ore and quartzite. This composition clearly indicates an origin in an area dominated by metamorphic mica schists. The nearest large source of such rocks to Exeter is in Brittany, and this could be significant in view of the typological features of these sherds which led to the suggestion of a Breton origin. However, scattered outcrops of mica schists also occur in Devon and Cornwall, in the area of Bolt Head and the Lizard peninsula for example, and further work is needed in order to allocate more confidently this material to its source.

E. PETROLOGICAL ANALYSIS OF TWELFTH-CENTURY COARSEWARES FROM EXETER

by D.F. Williams

Ten samples of 12th-century coarsewares of fabric 20 were submitted for thin-sectioning. The object of the analysis was twofold: (1) to determine whether there were petrological differences within this very common fabric group, and (2) to consider the possible sources of the sherds. Five of the samples (303, 504 and 664, further sherds from GS 610 and 614) are comb-decorated; the others are plain. Sherds from each of the three Exeter kilns (Bedford Garage, Goldsmith Street and the Valiant Soldier) were compared in thin-section in order to consider the possibility of local manufacture of the 12th-century material.

All the sherds of fabric 20 appear fairly similar: they are hard, rough and sandy; in thin-section they all contain large grains of quartz (up to 3 mm), chert, sandstone, felspar, iron ore, quartzite and mica. All these inclusions occur in the three local pottery fabrics, so a fairly local origin is possible for these coarseware vessels. However the types of inclusion are all reasonably common, so an origin further afield cannot be ruled out.

F. MEDIEVAL FOOD RESIDUES FROM EXETER

by J. Evans and S.M. Elbeih

Samples from the bases of 11 local cooking pots (fabric 20) with encrusted internal residues, and sherds of one local and one imported Saintonge jug, both without visible residues, were examined. Neither jug produced worthwhile results.

The residues in the cooking-pots were initially classified into three groups based on their colours, namely,

black/brown, off-white or a mixture of both. All appeared to have an amorphous nature: no recognisable plant or other debris was observed in any sample. Once adhering soil and other mineral matter had been removed the residues appeared to contain little extraneous (mineral) matter.

All deposits were initially examined by infra-red spectroscopy. The spectra obtained from those systems containing a black/brown phase suggested the presence of complex organic mixtures. Those obtained from the off-white deposits suggested the presence of mainly inorganic materials such as carbonates. Powdered samples of both deposit and corresponding sherd were extracted with a series of solvents of varying polarity and each extract examined by infra-red spectroscopy. Many spectra suggested the presence of fatty and amino acid systems (such as glycerides and proteins).

Application of various chromatographic techniques to the solvent extracts enabled some of the substances present to be identified with certainty, and others at least tentatively. The experimental data obtained will now be considered in detail for each colour group of residues. One must remember that the interpretation of such data to identify actual foods must be circumspect as one is usually investigating either a carbonised material or a natural decay product.

Black/brown residues

(a) Samples from GS 112 (11th- or 12th-century) and GS 691 (associated with 494–520, 12th-century) were composed of similar material. Both contained a fat/oil system. The sample from GS 112 gave a glyceride pattern very similar to that obtained for chicken fat whilst that from GS 691 gave a pattern resembling that of linseed oil. Both extracts were saponified and the fatty acid levels obtained are shown in Table 4.

<i>Sample No.</i>	<i>Linolemic</i>	<i>Linoleic</i>	<i>Oleic</i>	<i>Stearic</i>	<i>Palmitic</i>	<i>Myristic</i>	<i>Others</i>
GS 112	trace	20	44	5	21	3	7
GS 691	60	14	15	5	4	–	2

Table 4: Approximate percentages of acid in two medieval cooking pots.

Although both residues contained the same amino acids, only very low levels were detected in GS 691. Acid hydrolysis of the GS 112 extracts gave glycine (54%) proline (27%) and alanine (12%) with traces of hydroxy-proline (*c.* 1%) and glutamic acid (*c.* 1%). Such levels suggest that the original material contained gelatin.

Both residues contained starch. Quantitative analysis gave a level of around 7% in both cases. Additionally both contained a small amount of glucose (most likely a decomposition product from the starch). GS 112 also contained low levels (*c.* 1%) of tartaric, citric and fumaric acids. GS 691 contained none of these acids.

Both residues contained calcium and magnesium carbonate with traces of iron, copper, lead, tin and zinc. GS 112 also gave a positive phosphate test, which on quantitative analysis accounted for approximately 0.5% of the residue. It is clear that both vessels contained aqueous systems. The presence of the amino acids, fatty acids and phosphate in GS 112 suggest that the pot once contained a meat stock (stew), possibly chicken. The presence of the starch (and glucose) would seem to indicate a stew, gravy or possibly soup.

In the case of GS 691 analysis indicates a cereal gruel. It would seem that the dish was flavoured or prepared with an unsaturated vegetable oil, possibly linseed. As no debris was noted in the sample it would seem probable that oil and not seeds were used. The low amino acid content could indicate the presence of very weak meat broth but most likely comes from contamination, possibly from inefficient washing of the vessel after a previous use.

The presence of the 'wine acids' in GS 112 would suggest that either wine or (less likely) ale was used in the stock. However it must be remembered that such acids usually result from fermentation and consequently may have come from the decay of vegetable matter in the stew. The absence of these acids from GS 691 shows that they are not being absorbed from the soil.

The relatively 'rich' metallic make-up of the inorganic phase indicates the use of metal utensils at some stage in the preparation of the food.

(b) GS 691, associated with 494–520, 12th-century. This residue contained the amino acids alanine, proline and valine, the carbohydrates glucose and fructose and the polybasic acids citric, tartaric, fumaric and succinic. The inorganic phase (excluding the 'carbonised' material) consisted of calcium and magnesium carbonates with traces of iron. This sample contained additionally a wood resin. It would seem, therefore, that the vessel had once contained a fermented mixture. The presence of the wood resin and the absence of starch and maltose would suggest wine rather than ale. The possibility of mead was considered but thought unlikely as no beeswax was detected. The absence of glycerides argues strongly against the interpretation that

the fermentation products were the results of the natural decomposition of a vegetable stew or gruel. (c) TS 146, associated with **1107-46**, mid 13th-century and TS 655, 12th-century. Neither of these residues gave any worthwhile results. No amino acids, carbohydrates or glycerides were detected. Although this information is disappointing with respect to vessel usage it is useful as it shows that such residues do not absorb organic material from the surrounding soil to any extent.

(d) GS 612, 12th-century. This residue was composed of wood resin. It would seem to have been used as a lining as opposed to being deposited from some system contained in the vessel. Analysis of the sherd itself gave no worthwhile results so one must conclude either that the lining was very effective or that relatively weak aqueous solutions were contained within the pot.

White residues

Four samples ranging in date from the 12th to late 13th century were examined. Three were definitely or probably water scales. The fourth showed a high concentration (c. 9%) of phosphate and gave a positive murexide test (for uric acid). This vessel may have held urine, but since it comes from a layer of cess, urine may have permeated the sherd after breakage.

White and black systems

GS 215, associated with **1196-1231**, mid 13th-century and GS 277, 12th-century. These two residues had the appearance of water scale except that areas of the deposit were severely blackened. Analysis of the white material showed it to consist mainly of calcium and magnesium carbonates (water scale?) with traces of phosphates. Upon extraction, however, some glycerides were detected which, upon saponification, yielded mainly some palmitic and stearic acids. Traces of sugars were also noted but none could be identified with certainty — one was possibly sucrose and another lactose. It could be, therefore, that the pots contained a sweetened milk system of some kind but such an interpretation is extremely tenuous.

North-East London Polytechnic,
October 1981.

4. THE CATALOGUE

A. THE TYPES OF EARLY MEDIEVAL POTTERY

Since only a restricted range of early medieval pottery types is present in the collection, a sherd-by-sherd catalogue has not been presented here. Instead, a list of the types of early medieval pottery is followed by descriptions of the individual vessels which are of particular interest, and lists of contexts. Fabric descriptions of the principal classes of import will be found on pp. 13-15.

<i>Normandy</i>		'Early Rouen' type red wares	1573 (?residual)
Hamwih Class 11	17, 680		
Unglazed gritty wares	5 (lamp), 124 (handle, p. 40), 147, 348 (red-painted and rouletted), 670 (handle), 671 (rouletted), 672 (with pinched bosses), 673, 681 (rouletted, sooted ext), 821 (with pulled lip). Some bodysherds are sooted ext, presumably from use in warming drinks (cf. Dunning 1958, 211)	<i>Beauvais</i>	
		Red-painted	39, 192 (spout), 430, 553
		Unpainted	131, 2379 (p. 41), 430, 494 (p. 41)
		<i>Beauvais or Normandy</i>	
		Red-painted	521 (rather sandy off-white ware)
Unglazed smooth buff wares	95 (lamp), 148, 545 (with spot of red paint), 557 (storage jar), 558-9 (both with spots of red paint), 669, 674, 971 (lamp)	<i>Brittany</i>	
		Micaceous	345 (p. 40), 374 (pp. 40-1)
Unglazed buff-pink wares	190-1 (cooking pots, red-painted)	Meudon-type	427 (p. 41)
Gritty glazed pink/red wares	256 (applied diagonal strip with thick yellow glaze), 271 (with confused rouletting), 287, 368 (handle), 379 (p. 41), 679 (handle)	?Paris area	
		Hamwih Class 25	682 (p. 41)
Gritty off-white wares, glazed yellow or orange	63, 452, 464, 554, 676-8, 683 (pushed-out boss, cf. Platt and Coleman-Smith 1975, 2, No. 901)	?Loire Valley	243 (p. 40)
Fine yellow-glazed white wares	66, 555 (spout with patch of red paint), 1355 (?residual)	<i>Belgium-Flanders</i>	
		Andenne	2556 (p. 41), 624 (pp. 18-20)

- inclusions in this vessel show it is almost certainly a product of a kiln in or close to Brittany. They suggest an upland origin and are consistent, for example, with an east Breton origin; the fabric is similar to a vessel found on the Île de Geignog off the Breton coast (Hodges 1977, 252).
- 379 Sherd with a very pale brown (10YR 7/3) hard smooth fabric, containing prominent quartz-sand inclusions less than 0.03 mm across. Relief-band with crudely decorated diamond rouletting and hard green glaze. The fabric and form are similar to the Beauvais pitchers and storage jars in the Musée des Arts Décoratifs at Beauvais (Oise) and it is possible that this is an early glazed version of such vessels.
- 427 Three hard wheel-thrown bodysherds, one with an elaborate band of roller-stamping on the shoulder. They have a light brown (7.5YR 3/2) *ext* and buff (7.5YR 6/6) *int*. *Thin-section* reveals a black anisotropic clay matrix with common ill-sorted sub-angular inclusions, mainly quartz sand and feldspars ranging from c. 0.01 mm to c. 0.1 mm across, with some larger metamorphic inclusions of c. 1 mm.
- In view of the metamorphic petrology of this vessel and its discovery at Exeter, an origin in the Breton peninsula seems likely. The likelihood of a Breton origin is increased by its decoration, since the one known kiln in this region of this period, at Meudon near Vannes (Martinière 1914), is typified by rather fine roller-stamped decoration. It should be noted however that it has a superficial textural similarity to Normandy gritty ware. It might, therefore, be a product of a kiln near St Malo on the edge of two regions, similar to the wares recently found at Trans (Langouët and Mouton 1978). Decorated wares of such fineness are rare in Normandy at this time whilst this ware is quite clearly in the later Carolingian tradition of pottery and is not likely to be a western Breton product such as the *céramique onctueuse* (Giot 1971). It seems likely therefore that this is an eastern Breton product which may best be paralleled with the Carolingian Meudon kiln débris and with the vessel published by Dunning (1943, Fig. 19, No. 1) from Île d'Hoedic.
- 494 Base of a large storage jar with applied thumbled strips. Hard light grey fabric with pink-fawn surfaces, coarse to the touch, containing only prominent sand grains, too small to measure. On the *int* are prominent finishing marks made by a knife or palette, and the *ext* of the base shows crude finishing. The vessel is probably wheel-thrown. This is almost certainly a Beauvais product and can be paralleled among the finds in the Musée des Arts Décoratifs at Beauvais.
- 556 Sherd in a very fine white fabric with good, clear yellow glaze. F. Verhaeghe and H. Janssen comment that this is very similar to Andenne ware but the sherd is too small for firm identification.
- 682 Rim of a hard-fired wheel-thrown vessel with a coarse granular texture, light orange-brown core (2YR 6/8) and black surfaces. *Thin-section* reveals abundant angular and sub-angular white quartz inclusions up to 1 mm in size. This highly distinctive fabric is matched by that of Hamwih Class 25 wares. The strange form of the rim may also favour such an identification, since this class has unusual typological features (Hodges 1981, 31). However its source remains uncertain.
- 684 Rim of an unglazed vessel with oxidised pink fabric and surfaces (5YR 7/4), with a scatter of opaque quartz and iron oxide inclusions up to 1 mm. Origin and date uncertain.
- 685 Small fine wheel-thrown cooking pot or ladle in a hard dark grey (7.5YR 4/6) fabric with dark grey surfaces. *Thin-section* reveals fine quartz inclusions up to c. 0.3 mm. Sooted *ext* and inside rim. Origin uncertain, possibly Rhenish.
- 686 Rim of a wheel-thrown vessel in a fabric showing a close visual match with Hamwih Class 11, with typical sooted surfaces. The form of the rim is however rather unusual for this class.
- English wares*
- 453 Sherd with applied thumbled strip. Fabric with much rounded quartz and quartzite, no large angular fragments. This is visibly different from the usual local fabric 20. The sherd is comparable to those from Castle Neroche, some of which have strips on the body (Davison 1972, 47, Nos. 1 and 3).
- 595 Brown and Vince write,
"This contains moderate rounded and sub-angular chert (up to 2 mm) some stained black or brown, with moderate quantities of quartz of similar size. Sparse fine-grained limestone is present or is indicated by voids. The anisotropic matrix contains moderate angular quartz (up to 0.1 mm) and sparse muscovite (up to 0.2 mm). These inclusions are almost entirely sedimentary, suggesting an origin east of Exeter. A second scratch-marked sherd (from FG 27) was similar in character, but also contained very sparse rounded feldspar."
- 610 Glazed sherds, probably from a pitcher, in a buff-fawn fabric with chert fragments. *Thin-sectioning* by Brown and Vince revealed no further distinctive inclusions.
- 675 Rim of a spouted pitcher. Grey-white fabric with much sub-angular quartz-sand filler giving pimply surfaces. Thick yellow-green *ext* glaze, over-fired and bubbled in places. The origin of this vessel is unknown: a source in the English Midlands or on the continent are both possible; examination by several continental and English scholars has not enabled its identification.

C. THE SEQUENCE OF EARLY MEDIEVAL POTTERY FROM 197 HIGH STREET (Figs. 10–12)

In 1973 a small (33 sq. m) block of medieval and Roman deposits preserved between two cellars was found at 197 High Street. This tenement lies in the central part of the High Street (Fig. 1). Excavations revealed the longest sequence of Saxo-Norman deposits excavated so far in the city, with 13 successive early medieval phases, the last containing tripod pitchers probably of late 12th-century date.

The sequence may be summarised as follows: a layer of dark soil 200–400 mm thick overlay the robbed walls of the latest Roman building on the site (phase 1); three rubbish pits and several stake-holes cut this deposit (phase 2). A possible hearth and a tip of oyster shells covered the infilled pits (phase 3); a thick dump of earth was followed by three more pits (phase 4), followed in turn by a timber building (phase 5). A thick earth deposit was later spread across the site and a gully was dug (phases 6 and 7); following this a new timber building was erected (phase 8). This was itself replaced by a further wooden structure within which were two hearths, one probably a replacement for the other (phase 9). Following the removal of this structure the site was levelled and another timber building was erected; it underwent two phases of alterations (phases 10–12). After that building went out of use it was sealed by a thin trampled layer (phase 13). Above this layer there is an abrupt change in the character of the ceramics and subsequent deposits are considerably later in date. The evident gap in the sequence may have resulted from truncation of the deposits upon the construction of a hall-house with a side passage some time in the 14th or early 15th century.

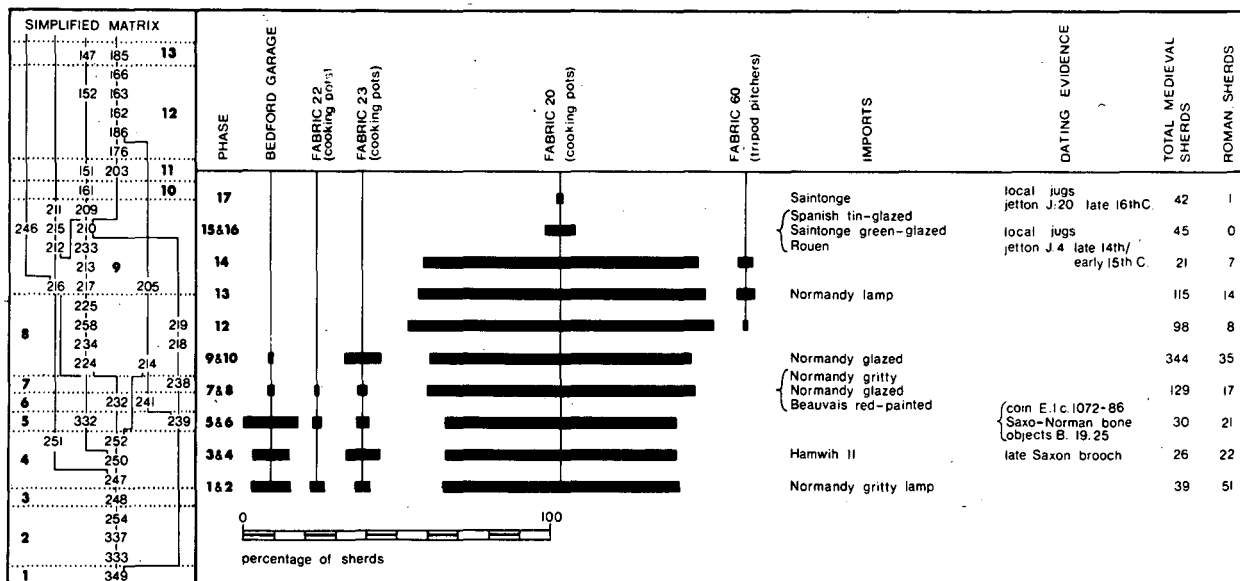


Fig. 10. The pottery sequence from 197 High Street.

Illustration No.	Context No. (HS)	Phase No.	Dating Evidence	Ceramic horizon	Suggested date
-	349	1	Scrap; fabric 20	-	
1-5	333	2		B	Late 10th/mid 11th
6-7	254	2		B	Late 10th/mid 11th
8	248	3	M.60. Late Saxon brooch	B	Late 10th/mid 11th
9-12	247	4		B	11th
13	250	4		B	11th
14-17	252	4	B. 19, 25. Saxo-Norman bone pin and whorl	B	11th
18-23	251	4		B	11th
24-6	332	5		B	11th
27-8	241	6	Coin E.1, 1072-c. 1086	B	Late 11th
29-34	232	4-7		C	11th/12th
35-41	238	7		C	Late 11th/early 12th
42-5	224	8		D	12th
46-9	218	8		D	12th
50-8	219	8		D	12th
59-60	213	9		D	12th
61-5	246	9		D	12th
67-73	210	9		D	12th
74-7	209	9		D	12th
78-82	211	9		D	12th
83-8	186	12		E	Late 12th/early 13th
89-94	176	12		E	Late 12th/early 13th
95-9	147	13		E	Late 12th/early 13th
100-9	185	13		E	Late 12th/early 13th
At this point there is a complete change in the pottery.					
110-18	141	15	J.4, early 14th/early 15th-century	J	
119-20	128	16		J	
121-3	109	17	Above J.20, late 16th-century		

The contexts of the High Street pottery (cf. Figs. 10-12).

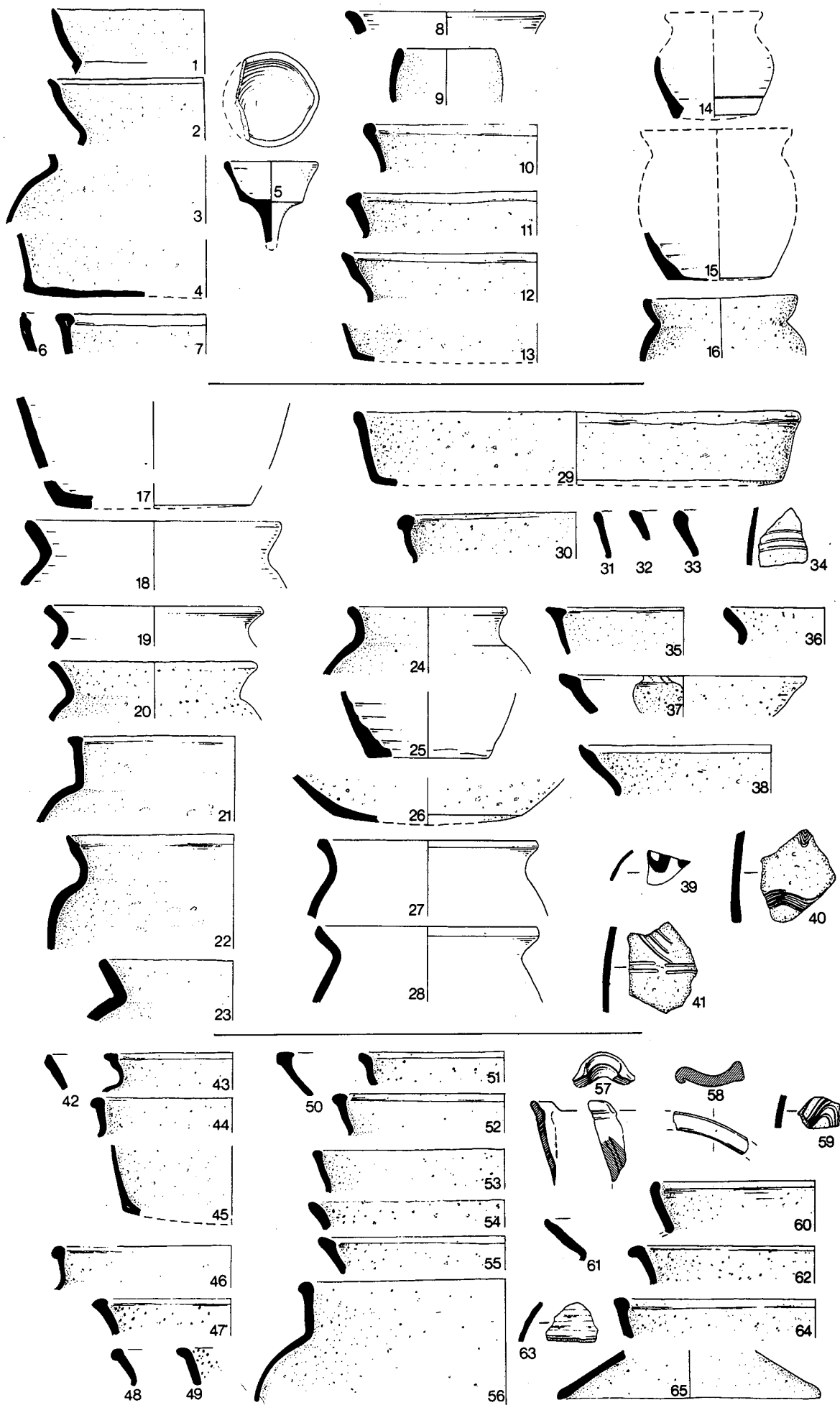


Fig. 11. Sequence of Saxo-Norman pottery from 197 High Street (scale 1:4).

D. THE CONTEXTS OF THE OTHER EARLY MEDIEVAL POTTERY

Illustration No.	Context No.	Type of context	Relations: cut	Relations: cut by	Dating evidence	Ceramic horizon	Suggested date
124	CC 45	Charcoal burial			Pre-c. 1100 grave		10th/11th
125	CC 8	Pit			See p. 40		Pre-1100
126	CC, unstrat						
127-30		Minster robbing			Coin E.2, 1089-92		?Early 12th
131-4	VS 199	Pit			No fabric 20	A	10th/11th
135-46	VS 73	Layer				C	11th/12th
147	FG, unstrat.						
148	HL 33	Pit			Residual (?)	H	1250-1350
150-8	GS 333	Pit		GS 314		B	Late 10th/11th
159-83	GS 314	Pit	GS 333	GS 284		D	12th
184-9	GS 284	Pit	GS 314			D	12th
190-206	GS 229	Pit		GS 297	Hamwih Class 11 sherd	B	Late 10th/11th
207-9	GS 297	Pit	GS 229	GS 279	Dendro. sample, after c. 980 (p. 320).	B	End 10th/11th
210-17	GS 279	Pit	GS 297			C	11th/12th
218-19	GS 331	Pit		GS 277		C	11th/12th
220-2	GS 277	Pit	GS 331	GS 215		C	11th/12th
223-6	GS 287	Pit		GS 271 315	Cut by GS 315, constructed c. 1020 (below).	C	Pre-1020
227-34	GS 271	Pit	GS 287 280			D	12th
235-9	GS 280	Pit		GS 271 270		D	12th
240-2	GS 305	Pit	GS 280			D	12th
243-55	GS 270	Pit	GS 280			D	12th
256-70	GS 315	Well	GS 287	GS 309	Dendro. date for construction c. 1020 (p. 320).	C	?Mid 11th/ 12th
271-86	GS 205	Pit				D	12th
287-94	GS 372	Pit				D	12th
295-8	GS 217	Pit			Dendro. date for boards in fill after 1040 (p. 320).		
299-301	GS 311	Pit				B	Late 10th/11th
302-34	GS 258	Pit			Stone S.1, after 1100	D	12th
335-41	TS 26	Pit			Very little pottery	B	Late 10th/11th
342-4	TS 29	Pit			Joins with TS 26	B	Late 10th/11th
345-7	TS 351	Layer				C	11th/12th
348-54	TS 334	Pit				C	11th/12th
355-8	TS 439	Pit				B	Late 10th/11th
359-67	TS 136	Pit				D	12th
368-73	TS 279	Pit		TS 221 146		C	11th/12th
374-8	TS 221	Pit	TS 279	TS 219 279		D	12th
379-419	TS 277	Robber trench	TS 331			D	12th
420-6	TS 331	Pit		TS 227		C	11th/12th
427-9	TS 283	Pit		TS 288		C	11th/12th
430-50	TS 288	Robber trench	TS 283	TS 221		D	12th
451	TS 278	Pit		TS 288, 276			Undated
452-63	TS 276	Pit	TS 278 283 288			D	12th
464-93	TS 347	Pit			Dendro. date for timber in fill after 1056 (p. 317).	D	12th
494-520	GS 691	Pit				D	12th
521-44	GS 56	Pit				D	12th
545-52	QS 57	Pit				D	12th
553-94	QS 49	Robber trench				D	12th
595-602	MY 197	Pit				E	Late 12th/ early 13th
603-10	MY 805	Pit				E	Late 12th/ early 13th
611-15	PS 303	Pit				C	11th/12th
616-23	BSW 123	Pit				E	Late 12th/ early 13th
624-48	TS 403	Pit				E	Late 12th/ early 13th

Illustration No.	Context No.	Type of context	Relations: cut	Relations: cut by	Dating evidence	Ceramic horizon	Suggested date
649-55	24 NS 1	Pit				E	Late 12th/ early 13th
656-60	Bedford Garage	Kiln			1931 excavation		
661	QS 39				Residual		16th
662	GS site 1, unstrat.						
663	GS 120				Residual		Mid 13th
664	'Exeter'				(No precise provenance)		
665	NWB 19	Pit				C	11th/12th
666	QS 60	Pit				E	Late 12th/ early 13th
667	NS 12	Pit				D	12th
668	GS 252				Residual		c. 1300
669	GS 38				Residual		16th
670	GS 156	Pit				D	12th
671	GS L.10				Residual		16th
672	GS 34				Residual		16th
673	PS 431	Pit			Unassociated		
674	GS 66	Pit				D	12th
675	TS 742	Pit			Unassociated		
676	GS site 1, unstrat.						
677	GS 98				Residual		Late 17th
678	GS 54	Pit				E	Late 12th/ early 13th
679	HS, unstrat.						
680	QS 360	Pit				A	10th/11th
681	TS, unstrat.						
682	PS 450				Residual		16th/17th
683	QS, unstrat.						
684	MS, unstrat.						
685	GS L.10				Residual		16th
686	MY 745				Residual		16th
687	CC 600	Grave					

Note: the sherd-by-sherd catalogue of the early medieval pottery will be found in MF 6-26.

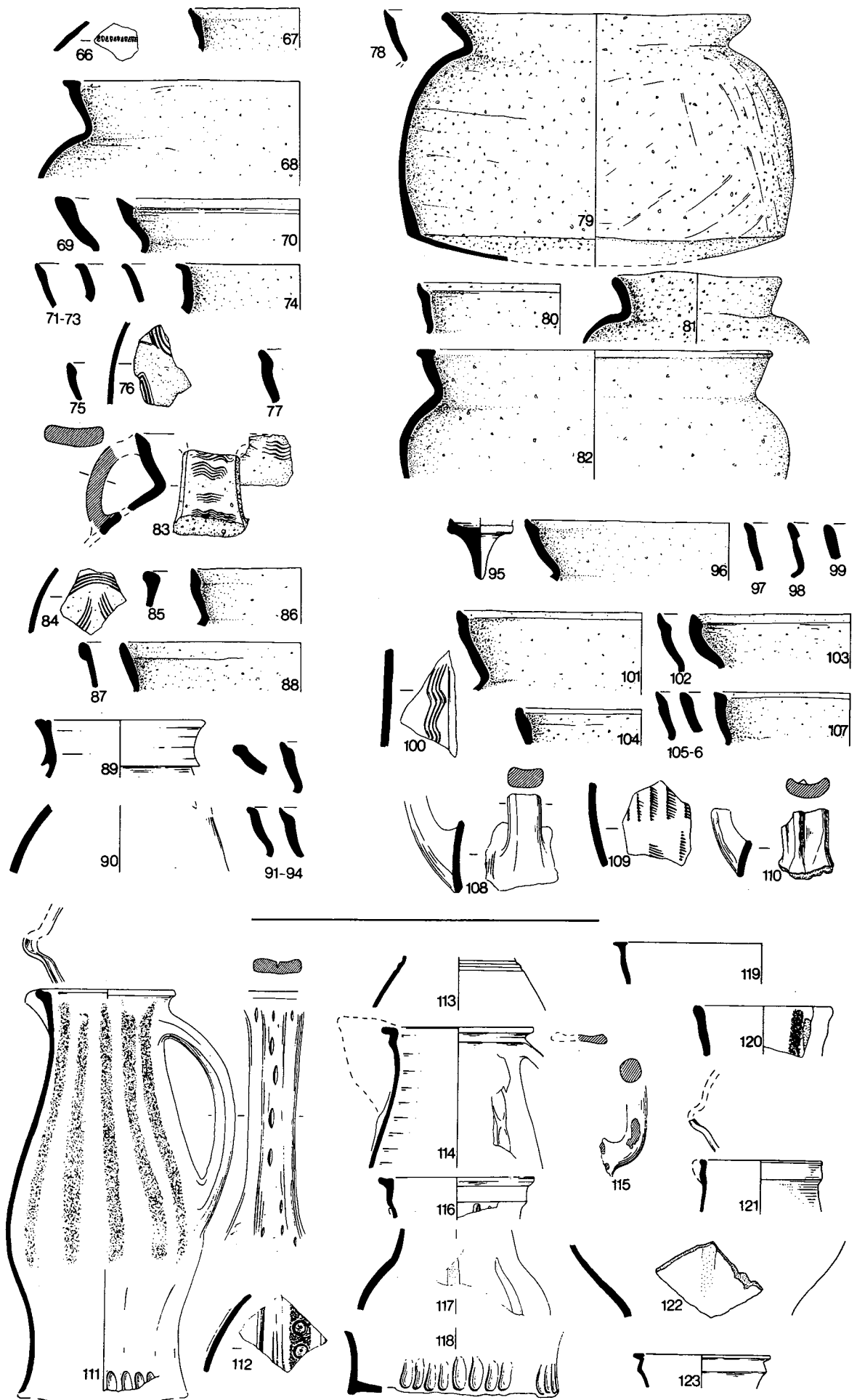


Fig. 12. Sequence of 12th- to 15th-century pottery from 197 High Street (scale 1:4).

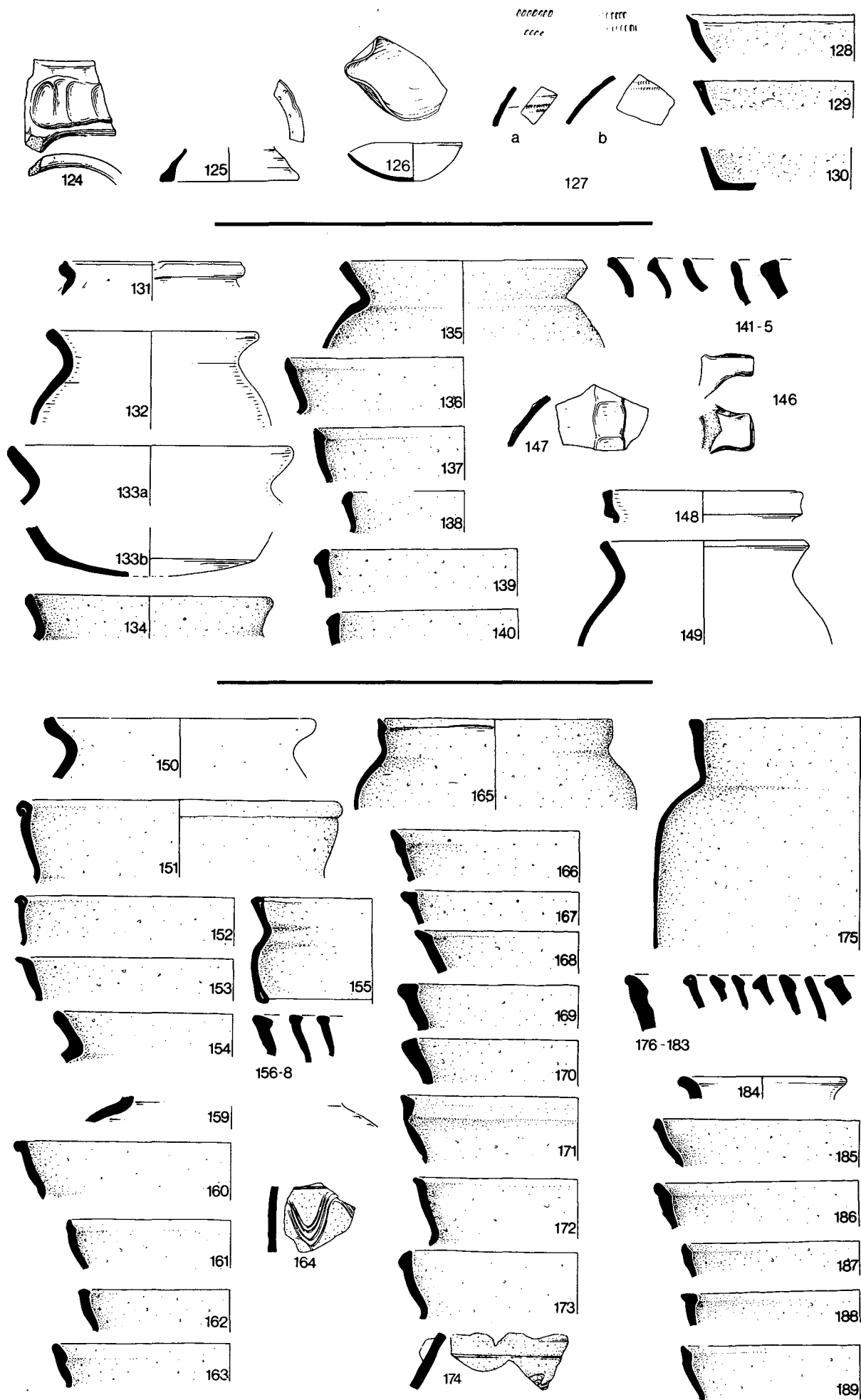


Fig. 13. Saxo-Norman pottery (scale 1:4 except details of 127 1:2).

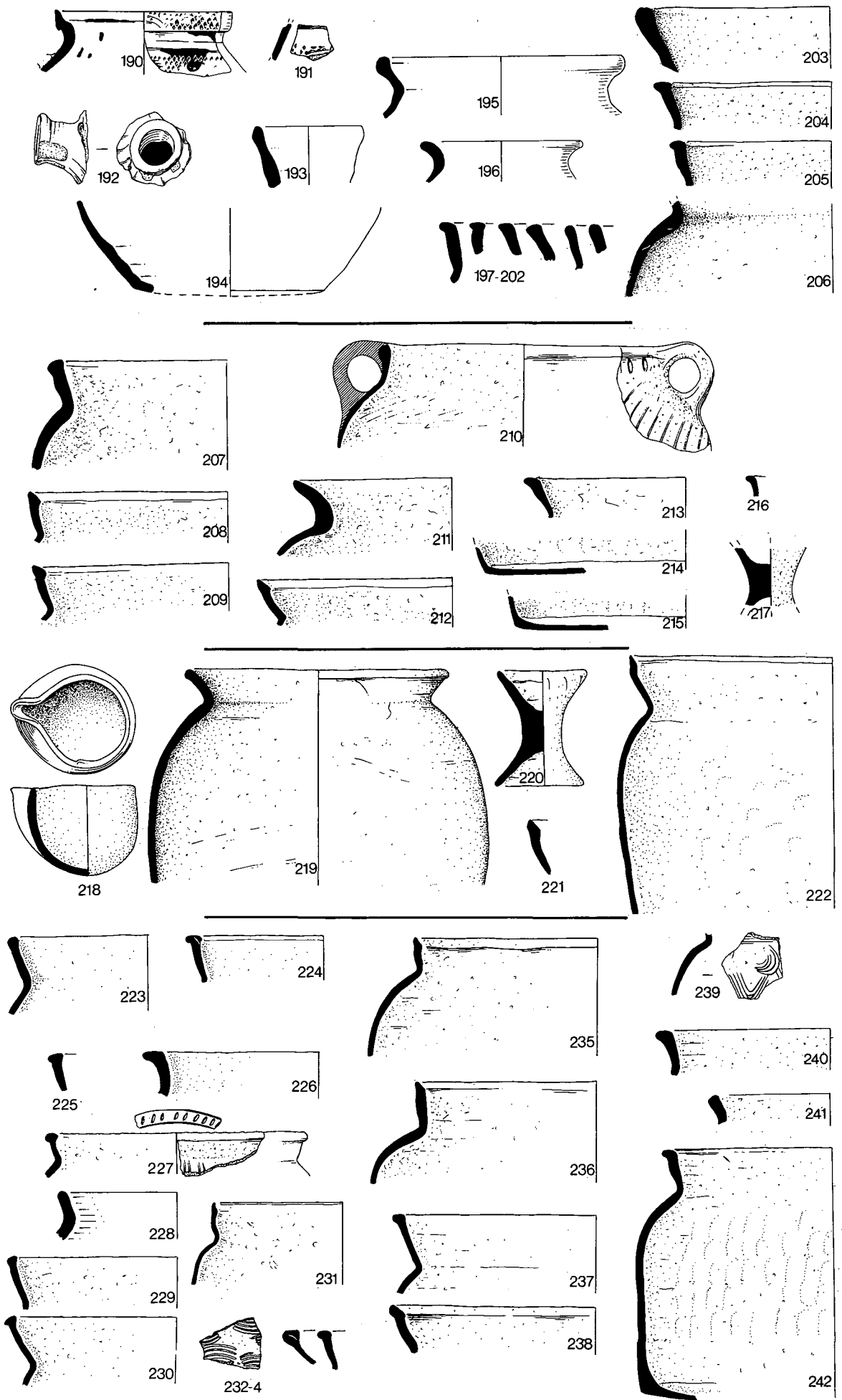


Fig. 14. Saxo-Norman pit groups from Goldsmith Street (scale 1:4).

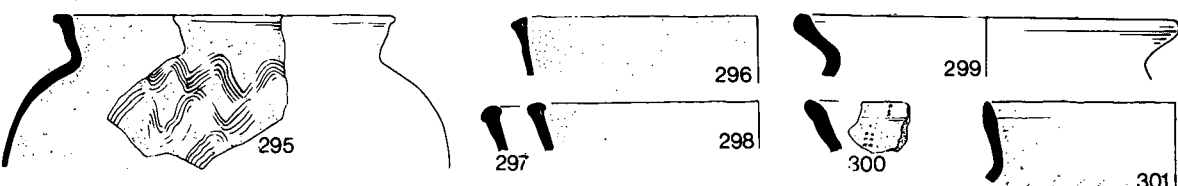
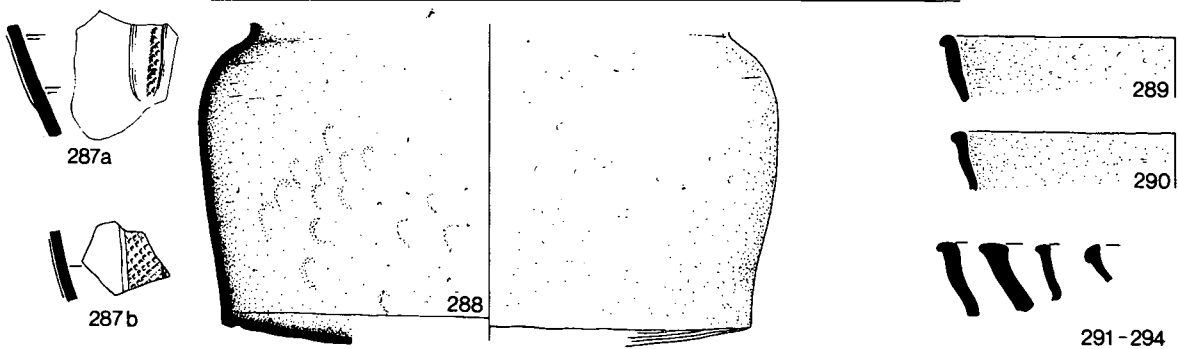
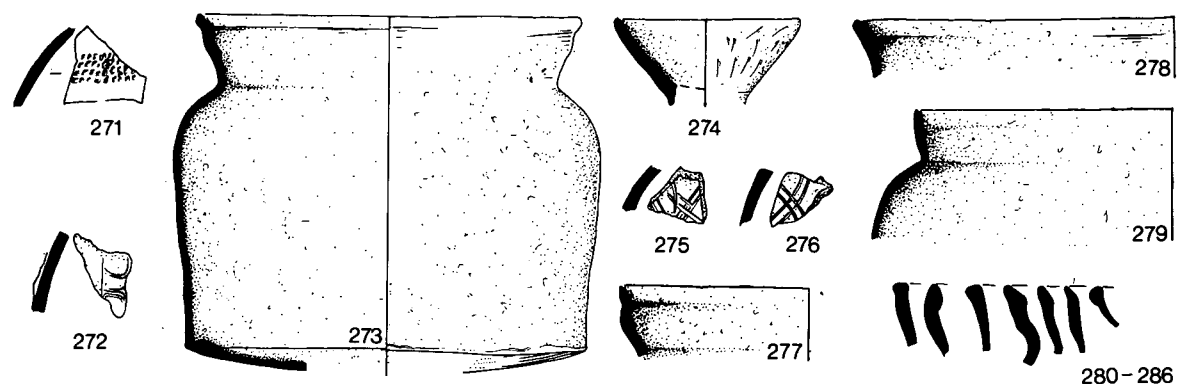
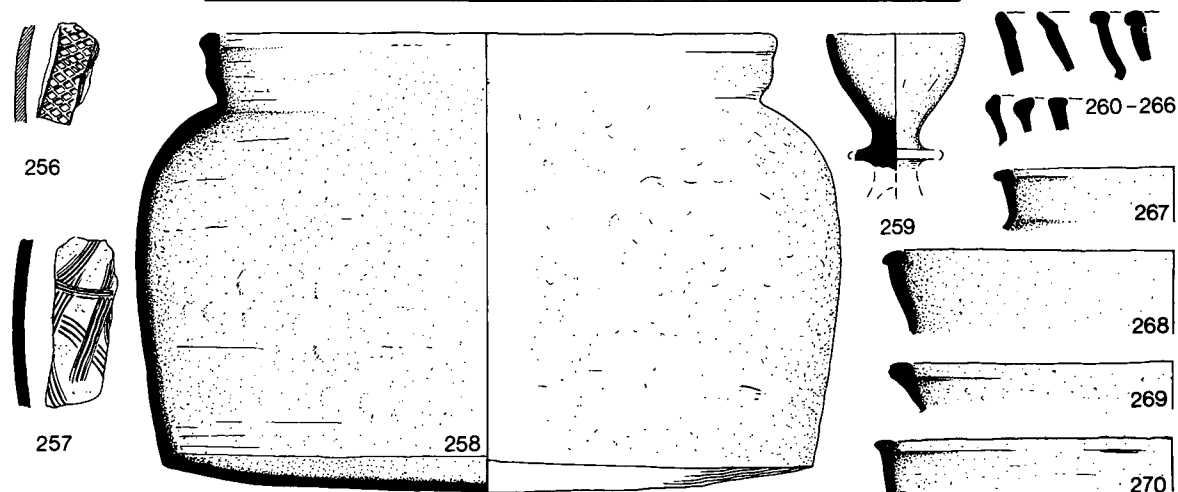
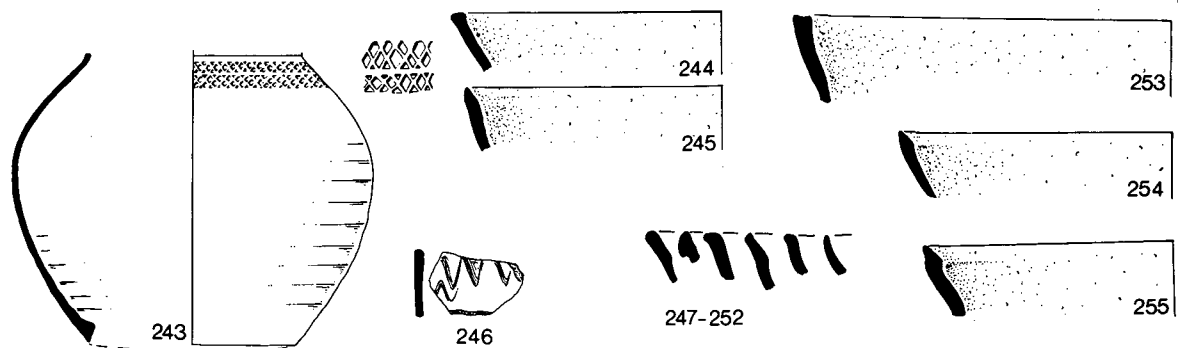


Fig. 15. Saxo-Norman pit groups from Goldsmith Street (scale 1:4).



Fig. 16. Goldsmith Street 258, 12th-century (scale 1:4).

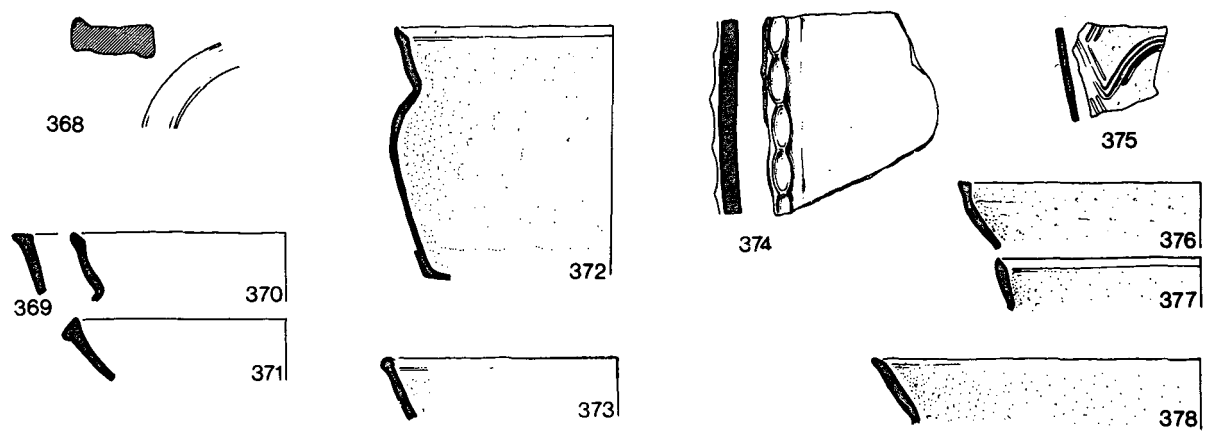
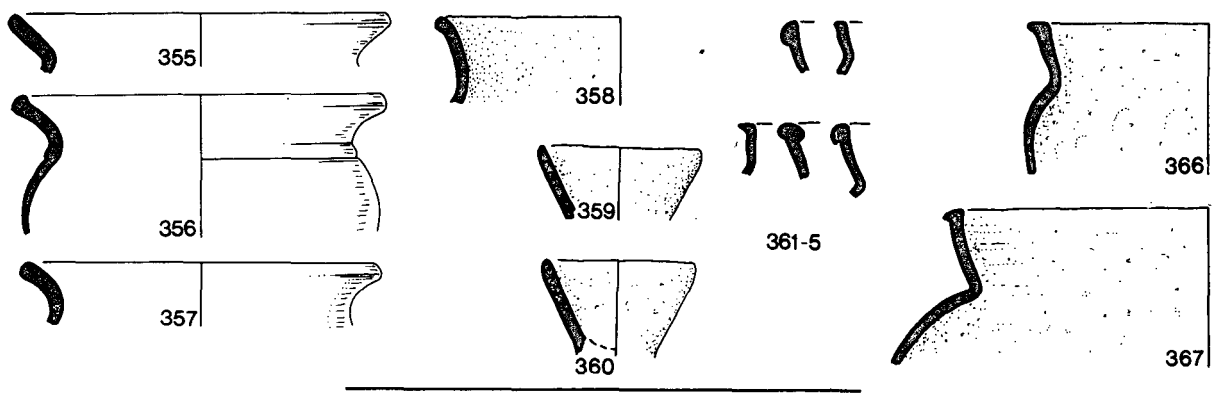
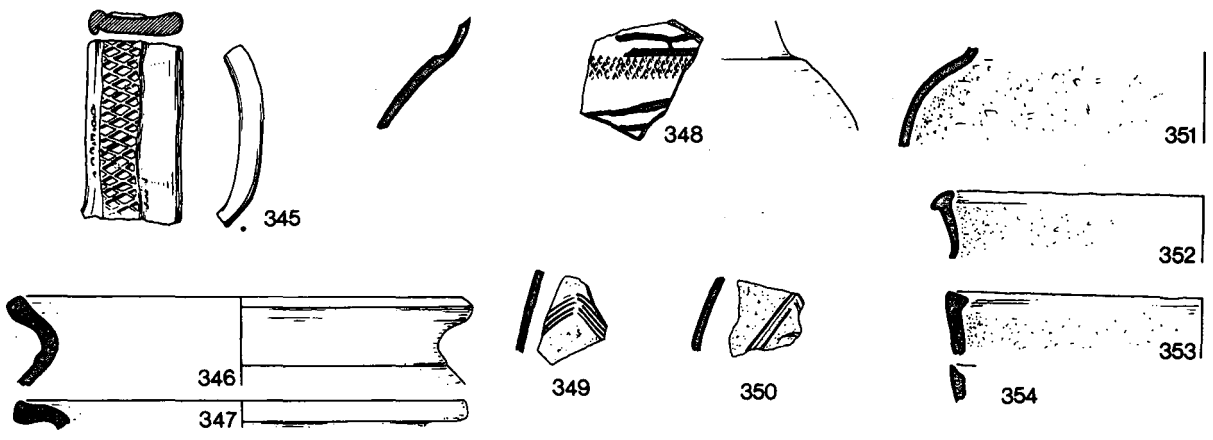
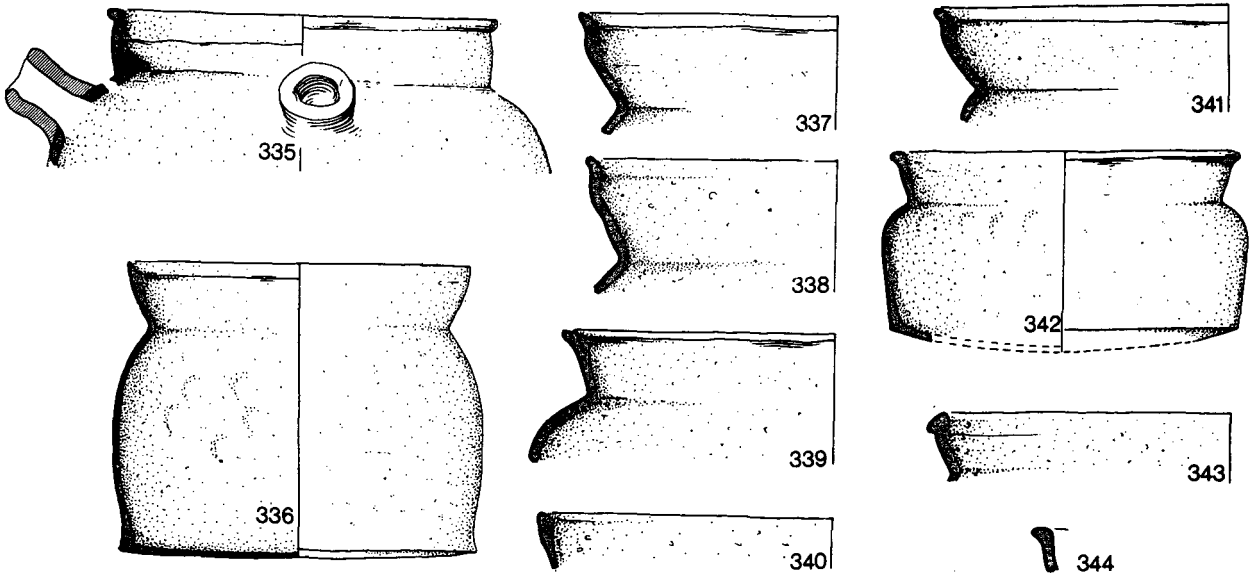


Fig. 17. Saxo-Norman groups from Trichay Street (scale 1:4).

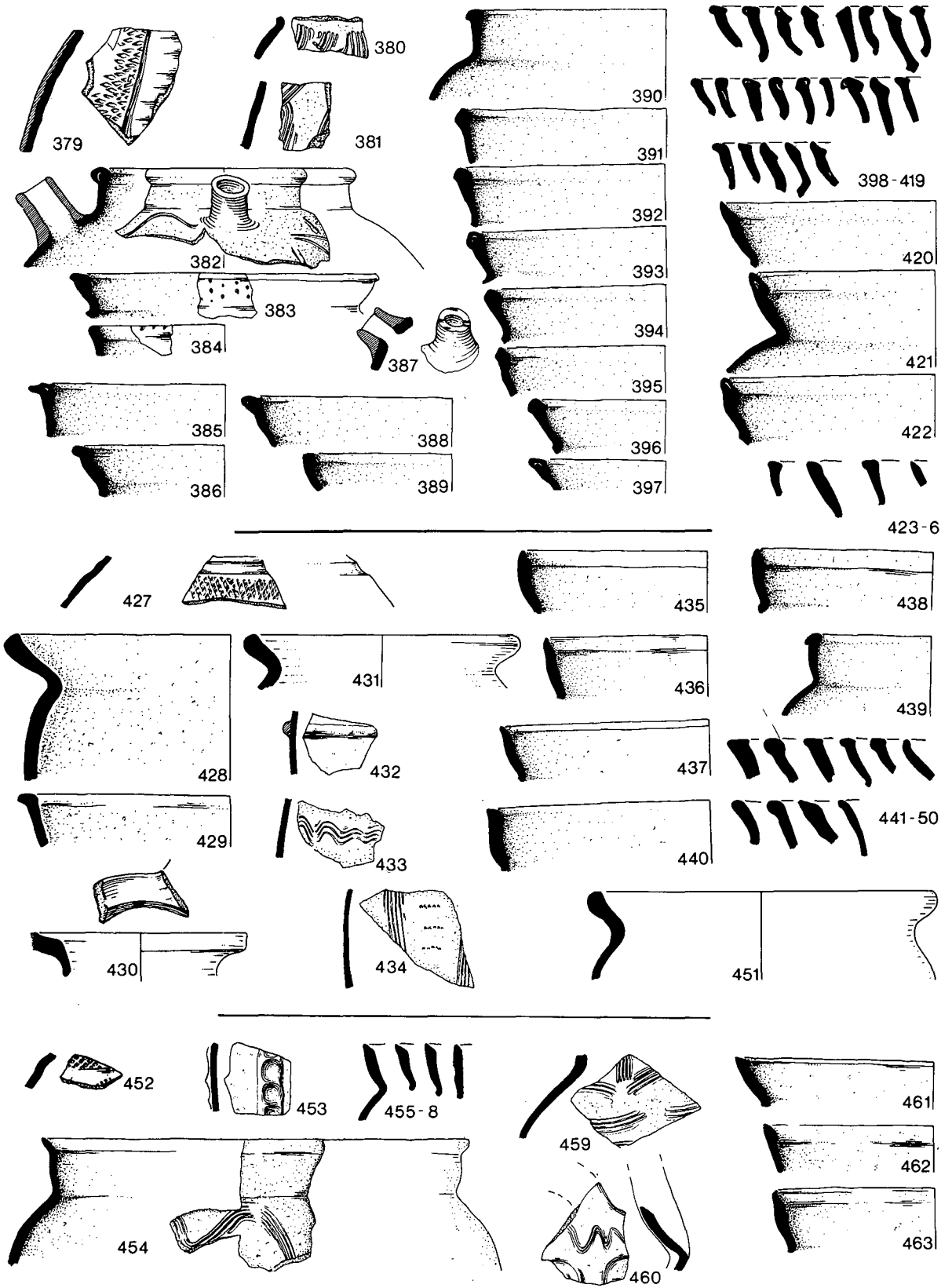


Fig. 18. Eleventh/twelfth-century groups from Trichay Street (scale 1:4).

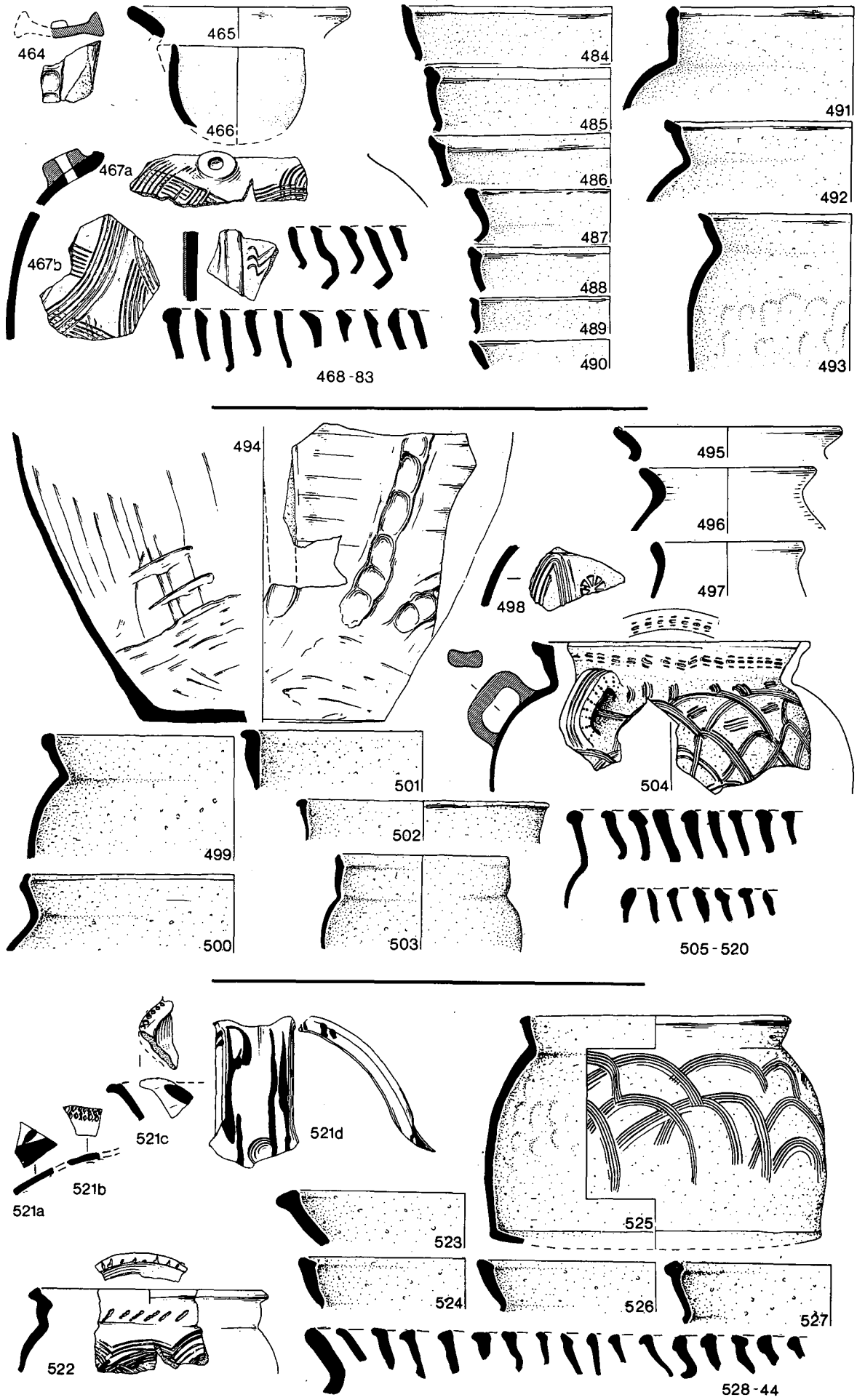


Fig. 19. Twelfth-century pit groups from Trichay Street and Goldsmith Street (scale 1:4).

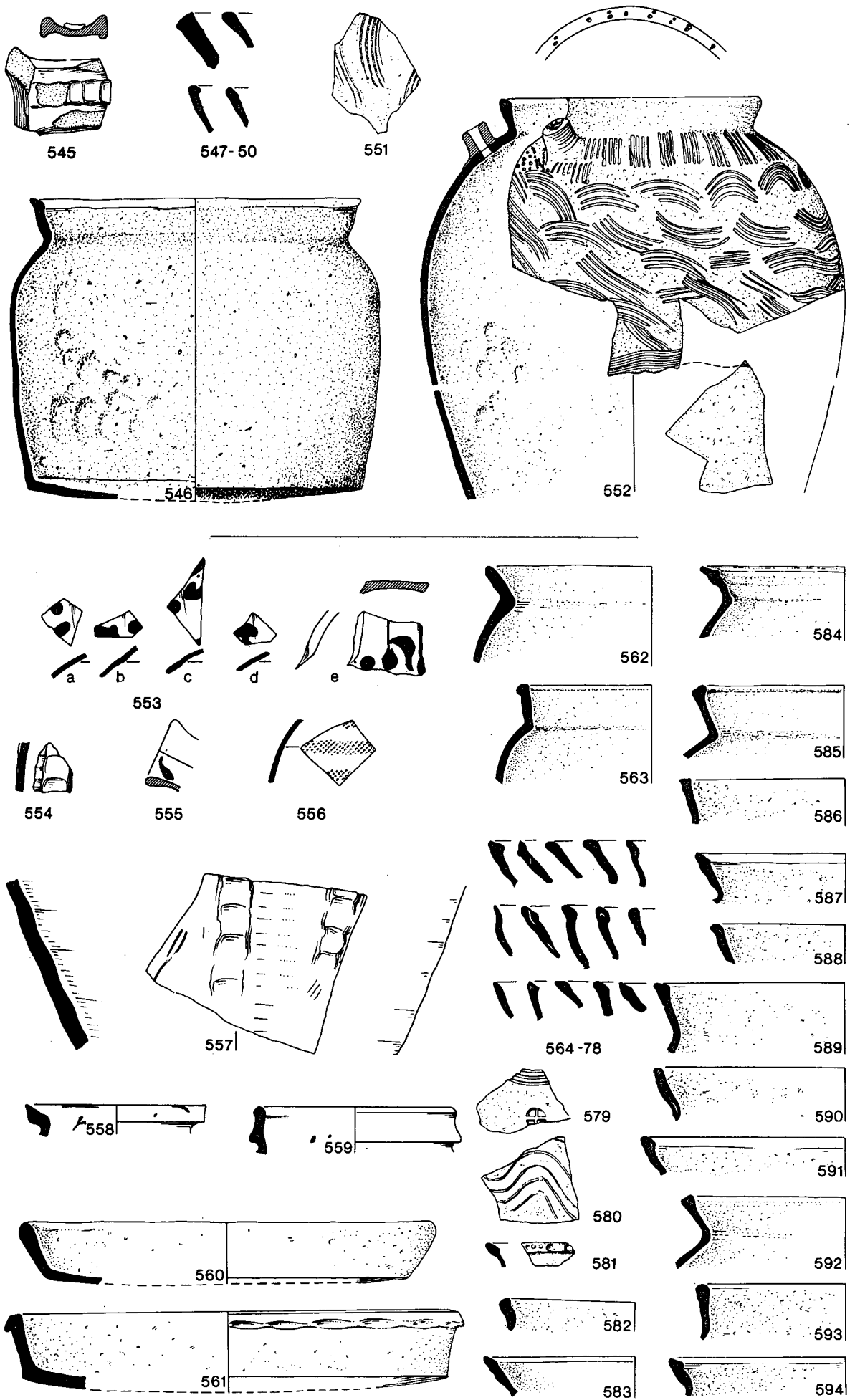


Fig. 20. Twelfth-century pit groups from Queen Street (scale 1:4).

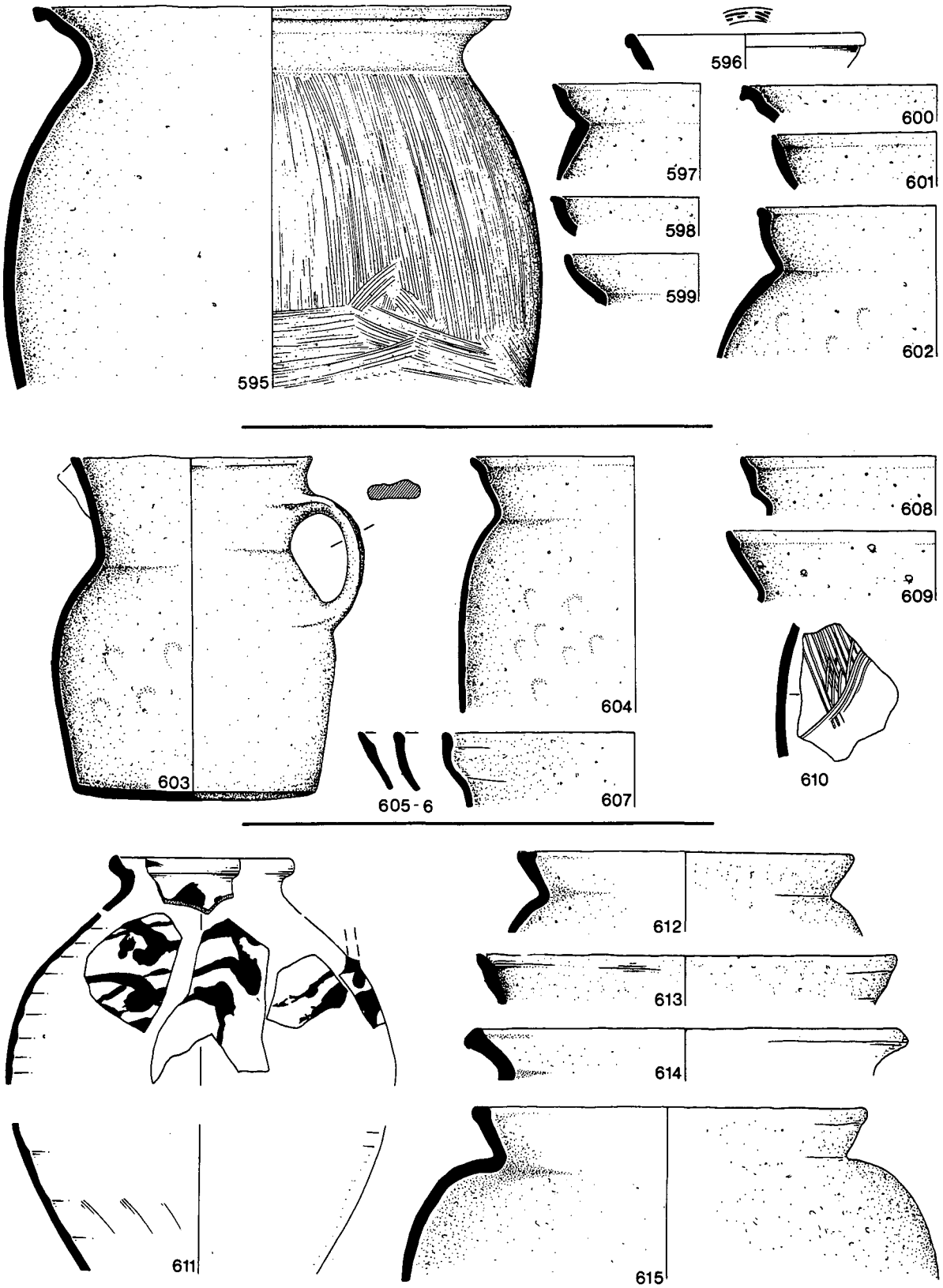


Fig. 21. Saxo-Norman pit groups from Mermaid Yard and Preston Street (scale 1:4).

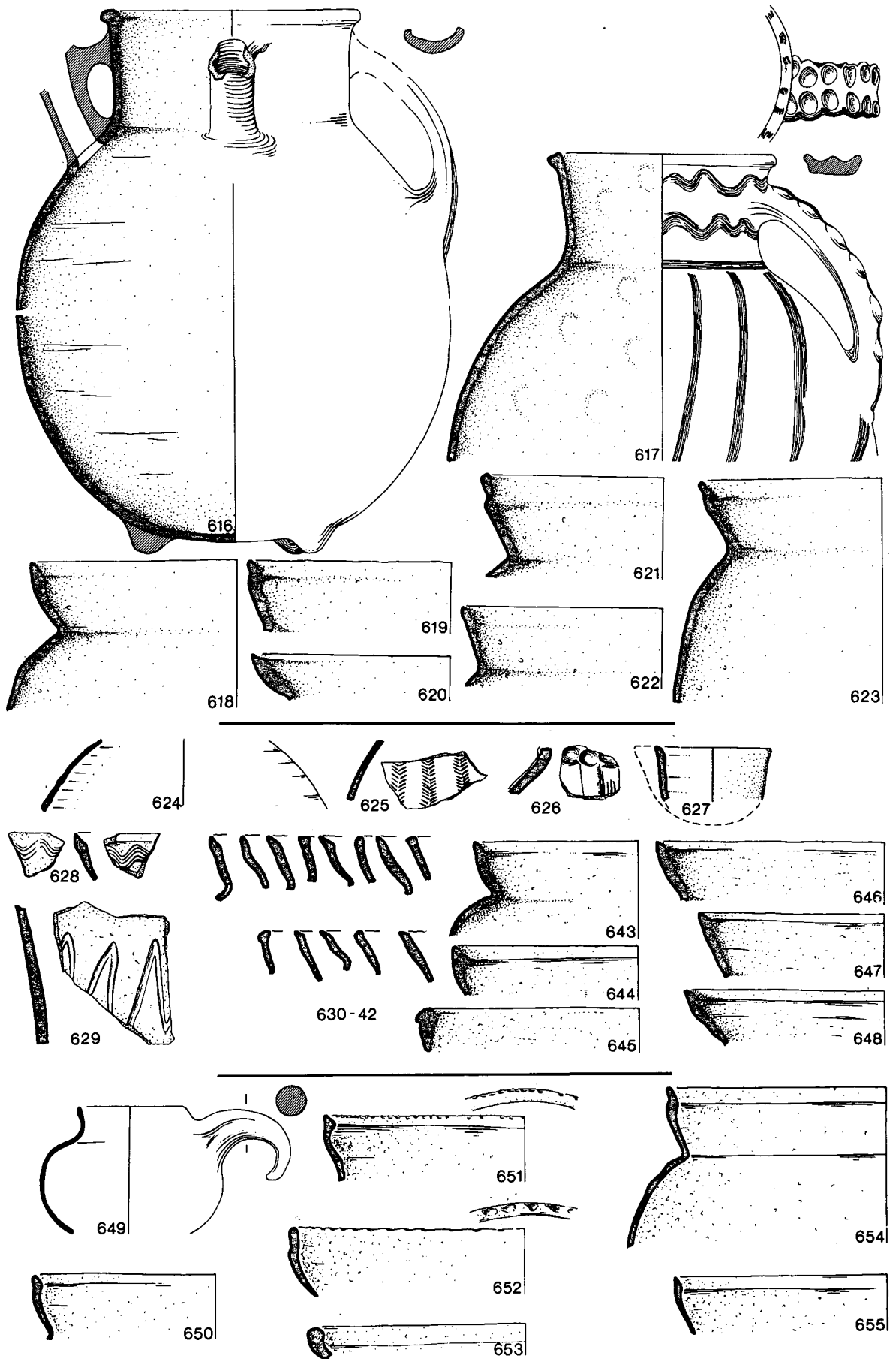


Fig. 22. Pit groups of horizon E, late 12th- or early 13th-century (scale 1:4).

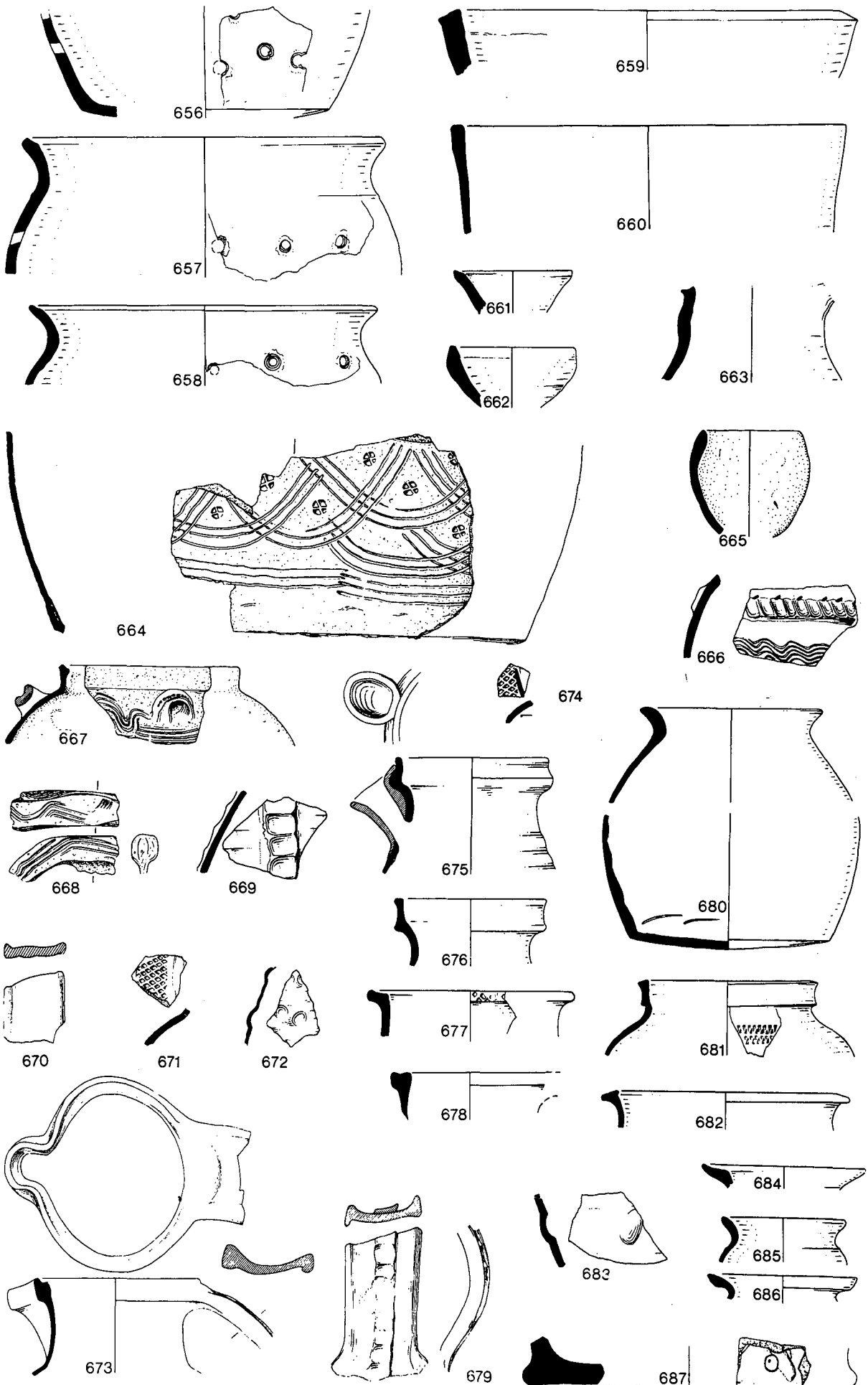


Fig. 23. Early medieval wares from other contexts (scale 1:4).

E. THE TYPES OF LATE MEDIEVAL POTTERY

	Illustration No.		
<i>Spanish and Portuguese</i>			
Andalusian tin-glazed	113, 1196	Ham Green	730, 1311, 1356
Valencian tin-glazed	1533, 1615 (see also post-medieval list)	Bristol	1073, 1120
Other Spanish tin-glazes (c. 1500+)	1534-5, 1547	?Dorset (fabric 62)	744-5, 856, 868-70, 894, 1022-3, 1062, ?1065, 1075, 1096, 1119, 1122, ?1127, 1151, 1154, ?1156, 1184, ?1238, 1309-10, 1312, 1364, 1604, 1606
Amphorae	794, 1463	South Somerset	774, 810-11, 818-20, 836-7, 853, 867, 878, 885-6, 1049, 1146, 1425, 1477-83, 1515, 1541-2
Merida-type (c. 1500)	1531-2		1543-4, ?1555-6, 1613
<i>Saintonge</i>			
Polychrome	1423, 1446-7	North Devon	704, 813, 859, 1371, 1543, 1557-8, 1610
Sgraffito	1566		
All-over-green	1424	<i>Local coarsewares</i>	
?Horn	742	Fabric 20	705-15, 720-1, 723-5, 737-40, 751-71, 778-80, 786-91, 793, 798, 872-6, 896-921, 926-59, 1004-17, 1026-43, 1046-7, 1052-5, 1061, 1066-71, 1081-91, 1099-1106, 1129-45, 1158-60, 1164-8, 1174-7, 1181-3, 1186-95, 1213-30, 1245-86, 1294-1304, 1320-51, 1365-79, 1414-22, 1439-45
<i>Pégaux</i>	1352, 1381, 1383		119, 777, 802
?Figurine (c. 1500)	1603	Fabric 21	716-17, 736, 748-50, 851, 871, 960, 1079, 1092, 1097-8, 1163, 1173, 1231, 1387, 1438, 1459-60, 1462
Mottled green-glazed	114, 121, 719, 729, 741, 803, 827, 830, 833, 840, 854, ?860, 1113, 1147, 1201-2, 1287, 1308, 1354, 1382, 1388, 1448, 1464-8, 1470, 1512, 1551, 1564-5, 1567-8, 1575-6, 1617	Fabric 23	1458
<i>North French</i>			
<i>Céramique à œil de perdrix</i>	687		808, 1080, 1437, 1457
'Orléans' type	888, 1044	Fabric 24	776, 843, 1027, 1128, 1180, 1461
North French green-glazed	57-8, 688-9, 691-7, 722, 727, ?822, 879, 963-7, 998, 1001, 1020, 1051, 1107, 1110-11, 1178, 1232, 1307, 1560-1, 1563, 1569-72	Fabric 25	
		Fabric 27	
		<i>Local jugs</i>	
Rouen	115, 718, 726, 728, 772-3, 839, 844, 877, 889, 962, 1019, 1149, 1197-9, ?1380, 1559, 1562	Fabric 40	111-12, 117-18, 122-3, 732, 746, 795-7, 800, 805, 825, 829, 831-2, 841, 845, 864-5, 882-3, 887, 1072, 1209-10, 1239-42, 1289-90, 1313, 1317, 1358-63, 1384-6, 1390-1, 1393-1400, 1402-8, 1427, 1429-30, 1432, 1450-2, 1455, 1484-92, 1577, 1579-80, 1583, 1585-95.
Lamp	971		?116, 120, 783, ?834, 880-1, 884, 1170, 1318, 1409-12, 1428, 1431, 1433-5, 1454, 1456, 1493-1509, 1578, 1581-2, 1584, 1593-4.
?North French, highly decorated	846		804, ?855, ?1607
Beauvais stoneware (c. 1500)	1537-8	Fabric 42	702, 731, 733-4, 828, 842, 892, 1073-4, 1116-18, 1123-4, 1611
Beauvais combed earthenware (c. 1500)	1536		700, 747, 1114-15, 1172
<i>French, unlocated</i>			
Green-glazed white wares	695, 697, 699, 822, 890, 961, 1200, 1206-7, 1233-4, 1305-6	Fabric 43	1121, 1150, 1153, 1292
		Fabric 44	
<i>Micaceous — ?French or English</i>			
Fabric 103	690, 923, 969, 1056-9, ?1162, 1288	Fabric 45	
Fabric 104	?807, 824, 968, 970, 999-1000, 1021, 1108-9, 1161, 1203, 1205, 1235-6	Fabric 47	
<i>Low Countries and German</i>			
<i>Blau-grau</i>	838	<i>Tripod pitchers</i>	
South Netherlands maiolica	1540, 1548-9	Fabric 60	703, 893, 922, 972-7, 1003, 1025, 1045, 1048, 1050, 1063-4, 1076-8, 1126, 1185, 1243, 1291, 1293, 1315-16, 1392
Raeren stoneware	1539	Fabric 61	1152, 1155, 1157, 1179, 1244
		(Fabric 62)	see ?Dorset above)
		Fabric 63	895, 1060
		Fabric 64	826, 1171, ?1314
<i>Non-local English</i>			
Doncaster	1208, 1597	<i>Micaceous</i>	
Lincoln	1596	Fabric 101	1449
Nottingham	1389	(Fabrics 103-4)	see above. <i>Micaceous — ?French or English.</i>)
North-east or east English, not located	743, 1169	Fabric 105	698, 735, 782, 809, 812, 814, 848, 863, 866, 1614
Cistercian ware (c. 1500)	1546	Others	799, 807 (?Cornish), 815, 1095, 1608
London-type	701, 852, 1112, 1148, 1401, 1601, 1609		
Tudor Green wares	816, 1552-3		