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The Hamwih pottery: The local and imported wares from 30 years' excavations at Middle Saxon Southampton and their European context

by Richard Hodges

with a contribution
by J F Cherry

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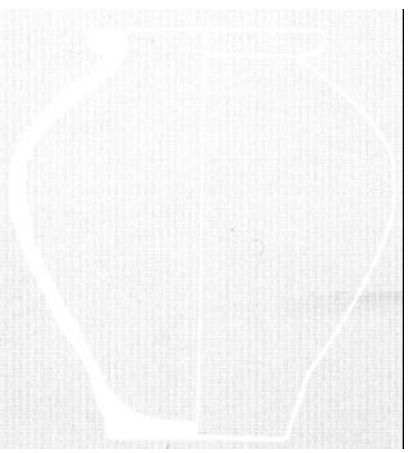

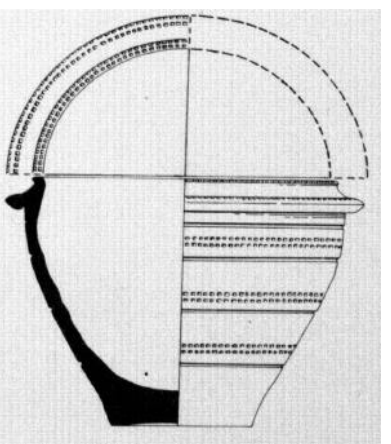

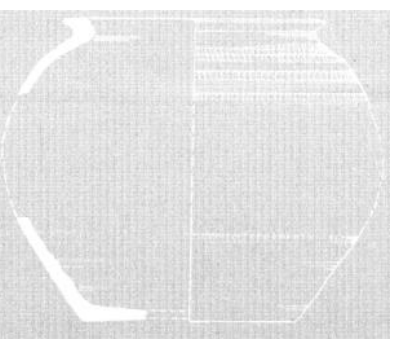

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Abbreviations and notes

SARC: Southampton Archaeological Research Committee
Site I-XX: refers to excavations by the Committee (Fig 1,3)
Site 11, Site 24 etc.: the Addyman and Hill (1968) code for all earlier excavations (Fig 1,3)
SM 69, HAM 69: excavations by J Pallister (Addyman and Hill 1968)
KL 'B'; KL 'C'; CLS 'B': etc.: excavations by D M Waterman and M R Maitland-Muller (Addyman and Hill 1968)
DMW: shortened personal (author's) code in place of Waterman/Maitland-Muller code. Used only for features 15, 16, 18, from KL 'C', site 11 in Addyman and Hill's code (1968)
F: Feature
P: Pottery sherd number
T-SP: Personal (author's) thin-section serial number
E1-2 etc.: Excavation grid square number used by SARC
Munsell Colour Charts used throughout

Hamwih

In this volume the name Hamwih is used when referring to the extensive settlement site on the shore-line of the River Itchen (cf Addyman and Hill 1968; 1969; Addyman 1973; Holdsworth 1976). It must be recognized, however, as Rumble (1977) has recently pointed out, that this name was used infrequently, if at all, in the 8th and 9th centuries to describe this site, and then only by Carolingian chroniclers.

To refer to it as 'Saxon Southampton', as Rumble recommends, begs many rather more important questions and may, in any case, cause confusion for those who have become familiar with the archaeology of Hamwih.

1 Introduction and acknowledgments

The pottery from the excavations over the last thirty years at Hamwih, Middle Saxon Southampton, is a remarkable collection. It is possibly the largest group of native wares of this period, as well as a unique assemblage of extremely varied imported pottery. This monograph on the pottery, based on the author's doctoral thesis (Hodges 1977a), has two principal aims. First, a classification of the wares is attempted, so that their origins are broadly documented. Secondly, a review of the pottery of the 8th and 9th centuries in northern Europe is presented, since the Hamwih wares greatly illuminate the history of the potters and pottery of this period. Further to these fundamental elements of this report there is a chapter concerned with the quantified ceramic data from a number of recent Southampton Archaeological Research Committee (SARC) excavations; there is also a chapter reviewing the dating of the Middle Saxon settlement in the light of a recent seriation analysis.

The importance of the Hamwih pottery was recognized by the first excavators of the site (Figs 1,1-3), M Maitland-Muller and the late D M Waterman (cf Maitland-Muller 1950, and references in Addyman and Hill 1968; 1969). Waterman was determined to publish some report on these wares, which he considered to be fundamental to the interpretation of the site (pers comm). Accordingly he travelled to the Netherlands to examine the pottery from the inter-war excavations at Dorestad, the great settlement at the mouth of the Rhine. To his dismay very few of the pots there bore any resemblance to those from the Hamwih excavations. With Waterman's assistance, Dunning drew attention to the Hamwih wares in his celebrated contribution to the Anglo-Saxon pottery symposium of 1958 (Dunning 1959, 50 2). His report was characteristically perceptive, especially as there was an absence of useful Continental comparanda. Hurst has also shown considerable interest in these wares. but he met the same difficulties that beset Waterman and Dunning (see summaries in Addyman and Hill 1969. 84--6, and in Hurst 1976). The present report benefits from two notable advances. First, the archaeology of medieval France has found its exponents in the past decade or so. Secondly, the use of petrology as well as other means of characterizing ceramics has facilitated the classification of wares for which there are no known parallels.

Inevitably. the conclusions which may be drawn from such a large body of data are enormous. These, however, arc intentionally limited in this report so that a full account of the pottery itself is possible. The imported pottery raises a great many new points about West Saxon trading networks in particular, as well as about the economics of the period in general. These questions are briefly considered in the final chapter, but they are also analysed in other papers (Hodges 1977a; 1977b; 1978b; Cherry and Hodges 1978). It is to be hoped that once these data, which have received scant attention previously, are published, any subsequent discussion will have some sound footing.

It will be apparent that the classification has reached different stages for different classes of pottery. This reflects the fact that this is the first publication of these wares (Hodges 1980 is but a small report extracted from this major one), and in some respects it must seem to be an interim one. The number of recent studies on French Carolingian kilns to appear in 1977 (Jacques 1976; Langouët *et al* 1977) as well as Carolingian settlement sites (eg Besteman 1974; Schweitzer 197576) underline the changing face of this subject, which was until ten years ago accurately known as the Dark Ages.

Further analytical work on many of these classes will prove to be profitable. Such research is certain to invalidate some of the conclusions reached here. As research into the techniques of sand-tempered wares continues, methods more suitable than thin-section analysis are certain to prove more useful. However, thin-section analysis is a cheap and pragmatic tool, and it may be that the statistical analysis of the sand inclusions will still be a valuable technique even when other methods are available (cf Peacock 1971). There is no doubt, however, that neutron activation analyses and experiments with the electron scanning microscope will be of use in further refining our information on the enigmatic imported classes of pottery.

This report owes much to the pioneering work on early medieval pottery undertaken since the last war. In particular, the studies of Dunning (1959) and Hurst (I 976) working in England, Tischler (1952) and Lobbedey (1968) in Germany, and Chapelot (I 973) in France must be mentioned with respect. The realization of this monograph, however, owes much to the excavators of Hamwih, and to the SARC which has seen fit to sponsor such research in Europe. This report also owes much to dozens of scholars in innumerable countries. These are listed below because their help was integral to the success of this research, and much appreciated.

I have been helped by many people in producing this study first as a thesis, then in a different form as this research report. Mrs B Cooper of SARC has typed and retyped manuscripts with much patience. Lynn Dyson Bruce and Carol George have toiled over the drawings, making light work of many difficult originals. Clive Tilley enthusiastically photographed the pots. Nick Bradford of Southampton University gave me tireless and cheerful guidance with the thin sections as well as many other chores.

Many scholars have generated ideas in conversations which are presented here, as well as helping with practical problems of ceramic research. I should like to acknowledge them for this kindness: Peter Addyman, Chris Balkwill, K J Barton, Dr M Bencard, Martin Biddle, Dr C Blindheim, Professor M de Boüard, Alan Carter, Tim Champion, John F Cherry, John Cherry, Pierre Demolon, Ann Dornier, the late Dr G C Dunning, Dr V I Evison, Alain Ferdière, Professor P-R Giot, Jane Holdsworth, Hans Janssen, Professor W Janssen, Dafydd Kydd, Dr L Langouèt, Monsieur P Leman, Per and Agneta Lundström, Dr U Lobbedey, Clive Orton, Dr P Perin, Dr A Renoux, Monsieur Cl Seillier, Bob Thomson, Professor W A van Es, Frans Verhaeghe, Hayo Vierck, Keith Wade, D M Waterman, Leslie Webster, David Whitehouse, and Sr J Zozaya.

I owe a special debt to the successive directors of SARC, Laurence Keen and Philip Holdsworth, and to colleagues with this unit; in particular I should like to thank Jennifer Bourdillion and Mick Monk for many stimulating conversations relevant to this research. Kath Barclay, John Hurst, Colin Platt, and Colin Renfrew have each spared me a great deal of time to consider the pottery and its interpretation, while David Hinton has tirelessly read and reread drafts on the subject. David Peacock has been my mentor in the ceramic research, while Jean Chapelot has guided me through the intricacies of French medieval pottery. From all these people I have gained immeasurably, and I am greatly in their debt for the privilege.

My wife, Debbie, has however been the most long-suffering and across many thousands of miles has helped me in more ways than may be accounted in completing this study.

[*June 1978*]

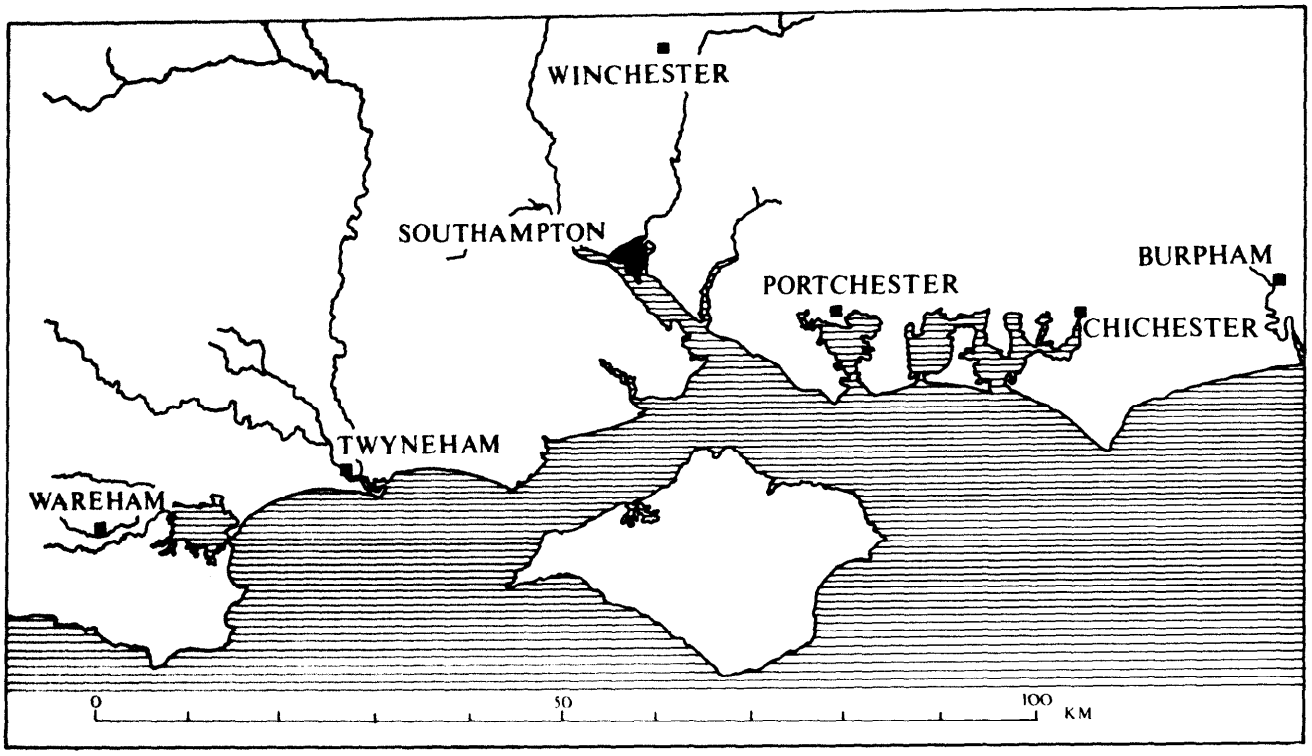


Fig 1,1 The Solent

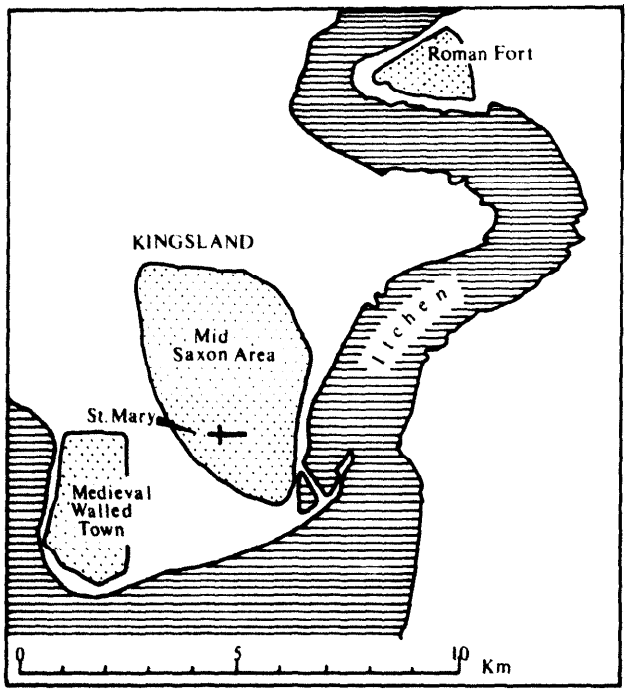


Fig 1,2 Sites on the Southampton peninsula

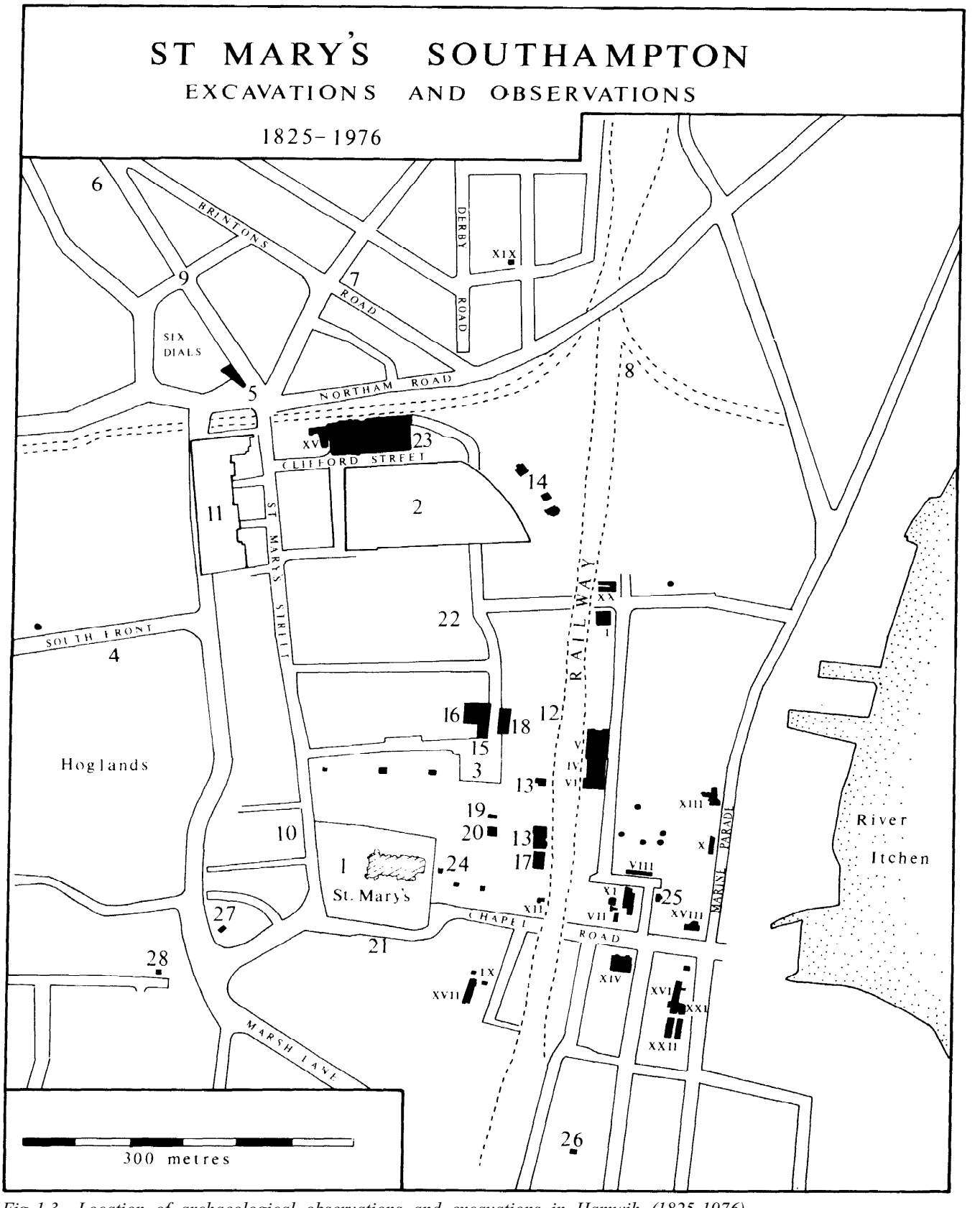


Fig 1,3 Location of archaeological observations and excavations in Hamwih (1825-1976)

A list of museums and collections visited in western Europe.

England

Museums
Roman Baths, Bath
Bristol
Canterbury
Carisbrooke
Chichester
Christchurch
Deal
Devizes
Dorchester
Dover
Exeter
Gloucester
Hastings
Hull
Ipswich
Jarrow
Lewes
Liverpool
London: British Museum
: Guildhall Museum
: London Museum
Maidstone
Norwich
Oxford
Portsmouth
Reading
Richborough
Salisbury
Taunton
Totnes
Truro
Winchester
Worcester
Worthing
also
Mr J Budden's personal collection: The Manor House, Chalton.

Archaeological units, etc
Canterbury (T Tatton-Brown)
Chester (M J McPeake)
Chichester (A Down)
Durham University Archaeology Dept (Professor Rosemary Cramp)
Exeter (M Griffiths)
Gloucester (H Hurst and A Vince)
Lincoln (Dr L Adams)
London (M Rhodes)
Norfolk Unit (A Rodgerson)
Northampton (M McCarthy)
Norwich (A Carter)
Oxford (R Holden)
Royal Commission on Historical Monuments (England), Salisbury Office
Suffolk Unit: Ipswich (K Wade)
WEMRAC (M Carver)
Winchester Research Unit (K Barclay)

Excavation collections, etc
Breedon-on-the-Hill (A Dornier)
Canterbury (Professor S S Frere)
Chalton (T Champion and M J Hughes)
Durham (M Carver)
Hamwih (P Addyman and D Waterman)
Jarrow (Professor Rosemary Cramp)
London, Whitehall (H M Green)
Mawgan Porth (E Greenfield)
Michelmersh (B Hopkins)
North Elmham (K Wade)
Peterborough (C Dallas)
Portchester (Professor B Cunliffe)
Ramsbury (J Haslam)
Wicken Bonhunt (K Wade)

Ireland

Museums
Ulster Museum, Belfast
National Museum, Dublin

Excavation collections
Carrickfergus (the late T Delaney)
Teeshon, Co Antrim (R Warner)

Belgium

Museums
Brussels: Musée Royal Art et Histoire
Ghent University Museum

Excavation collections
Andenne (R Borremans)
Ghent (J Vandenhoute)
Huy (J Willems and E Lauwerijs)
Lampernisse (F Verhaeghe)

Denmark

Museums
Ribe

Excavation collections
Ribe: Projekt for Historisk Arkaeologi (M Bencard and S Andersen)

France

Museums
Abbeville
Amiens
Angers
Angoulême
Arras
Bavai
Bayeux
Beaugency
Beauvais
Boulogne-sur-Mer
Caen
Châlons-sur-Marne
Charmont
Chartres
Châtillon-sur-Seine
Cherbourg
Dieppe
Dinan
Douai
Epernay
Etaples
Evreux
Hagenau
Laon
La Rochelle
Le Mans
Lille
Metz

Mont de Marsan
Montreu il-sur-Mer
Mulhouse
Nancy
Nantes
Niort
Noirmoutier
Paris: Musée des arts et traditions populaires
: Hôtel Carnavelet
: Notre-Dame
Périgueux
Provins
Rheims
Rouen
St Emilion
St Guénole
Saintes
Sarrebourg
Sedan
Sens
Soissons
Strasbourg
Troyes
Vannes
Valence
Verdun
Vézelay

Excavation collections
Beauvais (J Cartier, H Chami, J Chapelot)
Doué-La-Fontaine (Professor M de Boüard)
Douai (P Demolon)
Fécamp (Mme A Renoux)
Isle Aumont (J Scapula)
Orléans (A Ferdière)
Paris (P Perin)
St Alet (L Langouët)
Sorrus, etc. (P Leman)
Tavers (J-F Baratin)
Tours (H Galinié)

Luxembourg

Luxembourg Museum

Netherlands

Museums
Aardenburg
Middleburg
Utrecht

Excavation collections
Aardenburg-Souberg (J Trimpe-Burger)
Brunnsum-Schinveld (A Bruijn)
Dorestad (Professor W A van Es, P Verwers, P van Tent)
Valkenburg (H Janssen)

Norway

Kaupang collections (C Blindheim, E-K Hougen)

Spain

Museums
Madrid
Oviedo
Santander
Santiago Cathedral Museum
Soria
Toledo

Sweden

Museums
Lunds Kulturhistoriska Museet
Stockholm, Statens Historiska Museet
Uppsala University Museum

Excavation collections
Birka, Helgö etc (A Lundström)
Lund (C Wahlöö)

Switzerland

Basel: Historisches Museum

West Germany

Museums
Bonn
Harburg-Hamburg
Heidelberg
Mainz: Landesmuseum
: Römisch-Germanisches Museum
Munster
Schleswig
Speyer
Trier
Worms

Excavation collections
Munster (U Lobbedey)
Brühl-Eckdorf (Professor W Janssen)
Haithabu (K Schietzel)
Paderborn/Warendorf (W Winkelmann)

2 A classification of the local wares

Introduction

This is a preliminary study of the hand-made Middle Saxon wares from Hamwih. Five classes of these are defined in this chapter, and some observations on each are made. These were classified as a result of macroscopic examinations of the fabrics and not as a consequence of thin-section analysis, although a few thin sections of each class have been included. This means that each of these classes is readily identifiable, but that class 4, which is a miscellany, may in fact include several petrologically different wares for which new classes may need to be allotted. Moreover, further research is necessary to establish the precise sources of these classes; to do this, heavy-mineral, chemical, or neutron activation analyses may prove more useful than thin sections.

The quantities of each class in many of the larger pits from SARC and other excavations have been weighed and, with the aid of a seriation analysis, the varying quantities of these five classes have been used as a means of phasing the settlement. The table of weights (Table 5,l) and the discussion of the dating are to be found in Chapter 5, although a summary of the results is included with each class defined below.

This is probably the largest collection of Middle Saxon pottery from any site in England, and it can be seen in the perspective of Middle Saxon pottery production, in general, in Chapter 6. There the data from recent excavations permits some revision of previous studies by Dunning (1959) and Hurst (1959; 1978).

A further analysis of the forms of these classes may well reflect some culinary aspects of the inhabitants of Hamwih. This, however, is considered a secondary stage of the study of the Hamwih artifacts, to be undertaken in conjunction with an analysis of the faunal remains. Without doubt, the dating of many of the larger pit-groups should greatly facilitate a typological study of this kind.

Some general characteristics

There is a very limited range of forms in the large assemblage of local pottery. Most of the vessels were cooking-pots, or jars with flat bases which were probably added to the bodies of the pots. The bases may have been added after they had been made on a flat stone, and have none of the finger impressions characteristic of the bodies. Many of the class 2 cooking pots have thickened necks, a feature Addyman and Hill (1969, 84) noted, and which is less commonly a characteristic of the class 4 vessels. A few class 2 and class 4 vessels have pronounced shoulders, a feature of Middle Saxon pottery to which Dunning (1943a, 78) drew attention. Addyman and Hill (1969, 93) briefly examined the sizes of these cooking pots and, referring to the principal Hamwih classes (2, 3, and 4), considered many to be 150-180mm in diameter, while a smaller group seemed consistently to be 100-l20mm in diameter. A preliminary analysis of the rim diameters from SARC sites broadly confirms these sizes. A sample of some 96 rims with satisfactory profiles from the pits used in the seriation were measured by hand. The degree of accuracy is obviously limited, but the results have some value:

No of rims	*Approx dia, mm*
2	240
2	220
61	180
20	150
3	130
8	110

Variation in terms of individual classes and between those pits of phases 1 and 2 (see Chapter 5) and phase 3 was examined, but the results indicated no marked patterning. The sizes seem to be standard within the collection and throughout the duration of the settlement. Tentatively, therefore, it can be suggested that about 60% of the local pottery was about 180mm in diameter and about 20% 150mm in diameter. Large and small vessels are infrequent, though variations do occur. It remains to be seen whether these sizes are related to culinary habits as Addyman and Hill suggested. To understand this, bone sizes and the residues inside certain of these local pots will have to be systematically studied.

The colour of these classes remains fairly standard but, unlike the imported wares, it would be misleading to quote Munsell Soil colours for the varying reduced and occasionally oxidized shades. In brief, classes 1 to 4 are usually black in colour, though oxidized light red vessels are sometimes known. Class 5 is more commonly found in an uniform oxidized fabric. None of these classes is hard-fired, and consequently the sherds tend to crumble at the edges.

Class 1: Grass-tempered pottery

There is only a small collection of grass-tempered pottery, which includes large cooking pots, a few with everted rims (Fig 2, 1, 2), a bowl (Fig 2, 1, 3), and small simple vessels with upright rims (Fig 2, 1, 1). There are also examples of flat bases; no decorated sherds have been found. It remains to be seen whether all the organic inclusions in this class are in fact grass. Analyses by Mr J B Arthur of the 'grass-tempered' sherds from Cassington (Oxon) and Canterbury demonstrate that other organic temper such as ferns and wheat were used (see Chapter 6.2). It is clear, however, that this class has fewer organic inclusions and is also more sandy to the touch than, for example, the grass-tempered pottery from Old Windsor (Berks) or that from Ramsbury (Wilts) (cf Chapter 6.2). Apart from organic temper, occasional inclusions of flint or gravel up to 2mm across are visible in the surface of some sherds. Thin sections reveal (T-SP 151; 213) an optically anisotropic brown clay matrix with abundant quartz-sand averaging 0.0l-0.03mm across, as well as a few grains of sub-angular quartz-sand and iron ore about 0-2-0.4mm across. One thin section (T-SP 213) also reveals a large number of rounded fired clay pellets. In these thin sections the organic inclusions range from *c* 2.00 to 5.00mm long.

This class probably dates to the earliest settlement at Hamwih, around the beginning of the 8th century (cf Chapter 5.2a), although it is possible that these sherds are residual from some earlier as yet undetected settlement. The small number of sherds with distinguishable features give the impression that each vessel is typologically different, in contrast with the other hand-made classes, which may suggest that grass-tempered pottery was made by households within Hamwih for their own use rather than by specialist potters.

Class 2: Chalk-tempered pottery

This class is characterized by the prolific chalk inclusions, or by voids when these have been dissolved out by acids, ranging from c 2.00 to 5.00mm across. There are no other prominent inclusions, and the chalk-and-flint-tempered fabric often found in Hamwih is included in class 4, although it may have been made by the same potters. A slurry has often been added to the outer surface of this class which has a soapy texture. In thin section (T-SP 212) it has an optically anisotropic brown clay matrix with many large chalk inclusions ranging, in this case, up to 2.5mm across, a few fired clay pellets, a few grains of iron ore *c* 0.3-l.00mm across, as well as a very few inclusions of quartz-sand of two sizes: first, *c* 0.01-0.03mm across and, secondly, sub-angular grains averaging about 0.30mm across.

Cooking pots, jars, and, occasionally, bowls have been found in this class (Fig 2.1). There is also one curiosity from SARC XV, F 49 (P882), which is either a part of a skillet or a spout from a pitcher with a narrow opening (Fig 2,1,6). Many of the cooking pots have thickened necks, a feature to which Addyman and Hill (1969, 84) drew attention, and which is also a characteristic, though less common, of some class 4 cooking-pots. A very few cooking pots have pronounced shoulders.

The chalk inclusions suggest that this class was made somewhere near the Downs, at least 15 miles (25km) from Hamwih or, less likely, on the Isle of Wight. It has been found at Chalton Manor Farm (Hughes, forthcoming), Portchester Castle (cf Cunliffe 1970), and Gosport (Lewis and Martin 1973), although at none of these sites is it an important constituent of the Middle

Saxon ceramic assemblage. There is also a rim sherd found during field walking at Gunard, near Cowes on the Isle of Wight (Carisbroke Castle Museum: unpublished).

Class 3: Sand- tempered pottery

This is a distinctive sandy class which only occasionally has prominent inclusions such as angular flint or iron grains up to *c* 1 mm across. A variant, however, has a few prominent organic inclusions; this might perhaps represent a transition stage between class 1 and class 3, a point which warrants further analytical research. Class 3 varies in colour more than the other classes and is sometimes grey (10YR 6/1), and white occasionally; it has an oxidized core. It has a sandy texture and is always hand-made, often harder, in fact, than the other hand-made classes. In thin section (T-SP 150; 208) it has an optically anisotropic brown clay matrix which is packed with sub-angular quartz-sand ranging from *c* 0.2 to 0.5mm across, some of which in T-SP 150 are stained with limonite. There are also a number of iron ore and rounded limonite grains, as well as plagioclase felspar and flint or churt. The limonite is a characteristic of the Greensand, and may be derived from the Bagshot Beds near Southampton.

The thin-section analysis suggests that class 3 was probably made of clay from sources relatively near to Southampton, though exactly where may only be ascertained as a result of a detailed examination of these clays.

A variety of forms has been found in this class, and several decorative motifs were employed by its potters (see below). These include large cooking-pots (Fig 2,3,1; Fig 2,2,8); upright jars (Fig 2,2,2; PI 2,l); cooking pots with pierced holes for thongs (Fig 2,2,16); bowls (Fig 2,2,6,15); and a lamp (Fig 2,2,9) (cf Addyman and Hill 1969, fig 33, no 4) of the type which continued to be made in this region until the 12th century (Platt and Coleman-Smith 1975, 2, fig 140.176.177). There are also two pinched lugs probably from small bowls (Fig 2,2,10) which, incidentally, are paralleled in form in Denmark, where they are known as butterfly cups (pers comm, D Kydd). There is a variety of rims, many of which have been finely finished. Some rims have been thickened and trimmed square (Fig 2,2,1,5) while the majority of rims have just been trimmed neatly (eg Fig 2,2,11). The commonest rim form is the thin everted type. Nearly all the vessels in this class lack shoulders, unlike classes 2 and 4. Some vessels have been lightly burnished up and down the girth of the pot, and a few are so black that initially they may be mistaken for imported wares, the finish being so fine and smooth.

The seriation analysis of selected pit-groups in Hamwih discussed in Chapter 5 has suggested that this class was the most important hand-made pottery in the first half of Hamwih's existence. It seems that its production declined during the late 8th century, and by the 9th century there is only a small quantity in the pits; this could, of course, be residual (Fig 5,6). The nature of the archaeological record may partially conceal what occurred: it seems likely that it was a ware produced by a few potters only for one or, at most, two generations. The results of the seriation also emphasize the marked difference between the bottom and top fills of one very large pit, SARC XV, F 1 (Fig 5,7). The bottom layers contained 5kg of pottery, comprising 91% class 3, while the top layers contained *c* 0.5kg of pottery comprising 17% class 3 (see Chapter 5.2c). There were also some malformed vessels from the bottom layer (eg Fig 2,3,7). The high percentage of class 3 in the bottom layers suggests, in view of the seriation results, a very early date for this deposit. However, in the upper of the bottom two layers there were two BMC.49 *sceattas,* suggesting a mid-8th century date, at which period only about 30-55% of the local classes in these pits should comprise class 3 (see Fig 5,6). A possible explanation of the different dates for this large deposit is that it was composed of class 3 wasters which were used to fill up part of this pit during the 'secondary' *sceatta* phase, The malformed vessels support this hypothesis. This, of course, suggests that class 3 was made within the settlement. The theory is further strengthened by the discovery of an antler stamp (Fig 2,5,8) in SARC IV, F Ill. This stamp was used to decorate class 3 sherds (see below, decoration 9), examples of which have been found in nearby pits on this site (Fig 2,5,7). The large quantity of this class in Hamwih and its absence, unlike the other hand-made classes, from Middle Saxon sites in Hampshire tends to confirm the belief that class 3 was made for a short period in Hamwih. The only certain parallel from outside the settlement is one rim sherd from 19th century grave-digging at Lady St Mary's, Wareham (Hinton and Hodges 1977, Appendix).

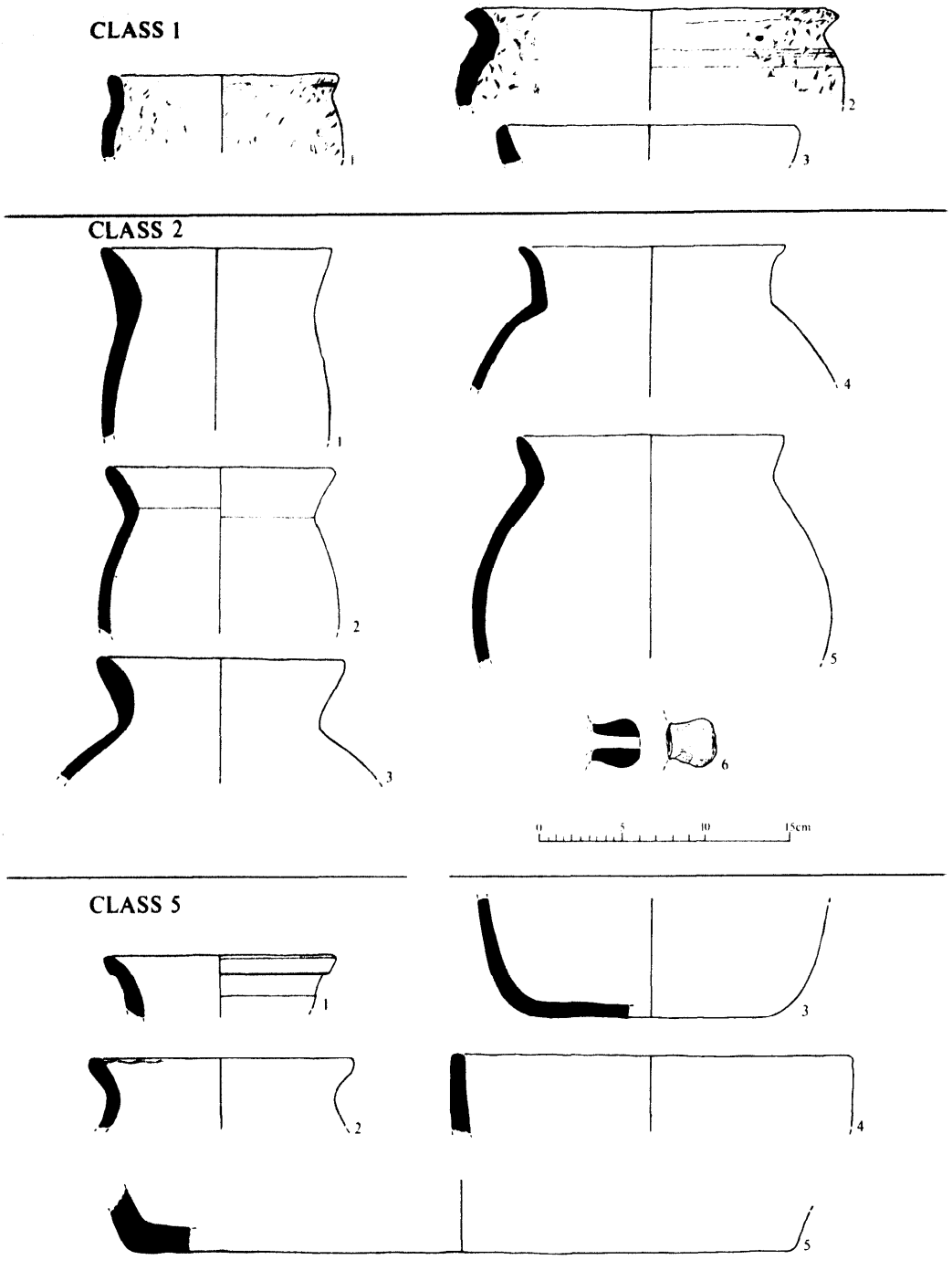
It has to be borne in mind that the thin-section analysis suggests that the local brick-earth found in Hamwih was not used to make this class, but that a clay from the Greensand was employed. This may have been a clay from the Bagshot Beds, which are found in the Hampshire Basin, and, while it is possible that the potters brought the clay to Hamwih, it has to be remembered that the class may also have been manufactured in a nearby settlement. Clearly, further analyses are desirable to clarify this problem.

TABLE 2,l Correlation of thin sections of local classes

A = Abundant
C = Common
S = Scatter
X = A few grains present
Q = Quartz-sand (grain sizes are approximate)

The sherds which have been analysed are listed in Appendix 4

Class	TSP' No	Q 0.01-0.03mm	Q 0.1-0.5mm	Q 0.5 1.0mm	Iron ore	Mica	Felspars	Chalk	Flint/ chert	Shell	Clay pellets
1	151	A	X		X						
1	213	A	x		X						S
2	212	S	S		X			C			S
3	150		A		C		X		X		
3	208		A		S				X		
4	205	A	X					C	C		
5	207		A		X	X				C	
5	211		A		X	X				C	



Class 1
1 XI, F56, 880
2 XI, F8, 31

Class 2
1 K.L. layer 8 'C', Pit 8
2 XIV, P17194
3 V, P1089
4 XI, F46, 855
5 XI, F46, 705
6 IV, F49, 882

Class 5
1 V, P460
2 V, F34, 505
3 I, F4, 397
4 I, F4, 450
5 I, P713

Fig 2,1 Local wares: classes 1, 2, and 5 (scale 1:4)

Class 4

This is a miscellany of fabrics which were tempered with flint, flint and quartz, and flint and chalk. In essence, it comprises those fabrics which cannot be included in the other, accurately defined classes. It is, however, a more homogeneous class than it might seem. The tradition of adding coarse temper to the clay seems to have begun by the early 8th century, and was probably by the end of the century the most important hand-made class in Hamwih. It was a tradition of potting which was maintained probably by several potters operating in Hampshire and West Sussex during the Middle Saxon period (see Chapter 6.3), and one that continued in Southampton and some rural areas of central Hampshire until the 12th century (cf Moorhouse 1971). Only a large number of analyses will establish whether the different tempering materials and the varying proportions of temper to clay relate to different sources and, by implication, different potters.

The inclusions in this class vary from *c* 1.0 to 4.0mm across, and there is a range of quantities of temper to the clay matrix. It is apparent that some fabrics have temper of a larger average size than others. Thin-section analysis (T-SP 205) of a flint-and-chalk-tempered sherd revealed an optically anisotropic brown clay matrix with chalk

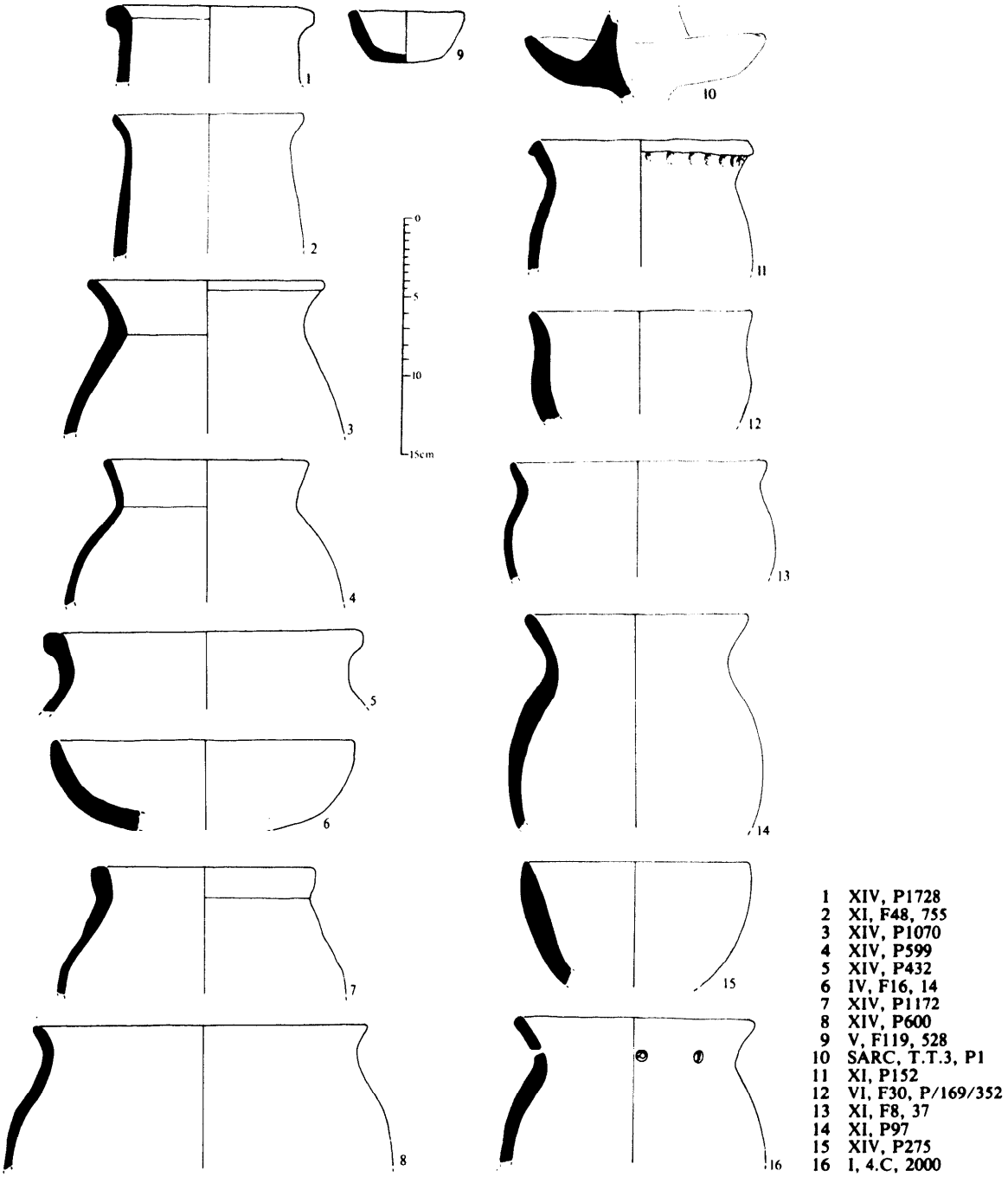


Fig 2,2 Local wares: class 3 (scale 1:4)

inclusions up to *c* 1.0mm across, and flint or chert up to *c* 0.7mm across. There was a fine scatter of quartz-sand *c* 0.01-0.03mm across as well as a few grains from *c* 0.2 to 0.7mm across. Two fired clay pellets were also present.

There are cooking-pots, jars, and bowls in this class (Fig 2,4), and also two crudely made handles presumably for pitchers, perhaps imitations of imported vessels (Fig 2,4,8). There is also a pierced lug, probably from a cooking pot, in this class. Some of the vessels have neatly squared or trimmed rims (eg Fig 2,4,1,2, and 4), while one has a trimmed inturned rim (Fig 2,4,4). There are also a few cooking pots with thickened necks (Fig 2,4,5), and with pronounced shoulders. The thick (? wire-cut) flanged base of one vessel, SARC XIV, F 28, P733, is almost certainly an imitation, presumably of an imported pot (Fig 2,4,8). One base from SARC IX, F 4—from a middle to later 8th century context (Fig 5,6)—has a lightly incised cross on the bottom (Fig 2,4,6). This is the only marked locally made base in the Hamwih assemblage. Myres (1969, fig 5, 1149) has published a parallel for a cross-incised base from Fareham (Hants) which he considers to be Pagan Saxon, although it remains a possibility, since it is unprovenanced, that it is Middle Saxon. Other incised and stamped decorations have been found on this class. These include one stamp decoration (see below, no 2) which has also been found at Port-Chester (Cunliffe 1974, fig 2, no 8), and at Winchester in graves of early 9th century date.

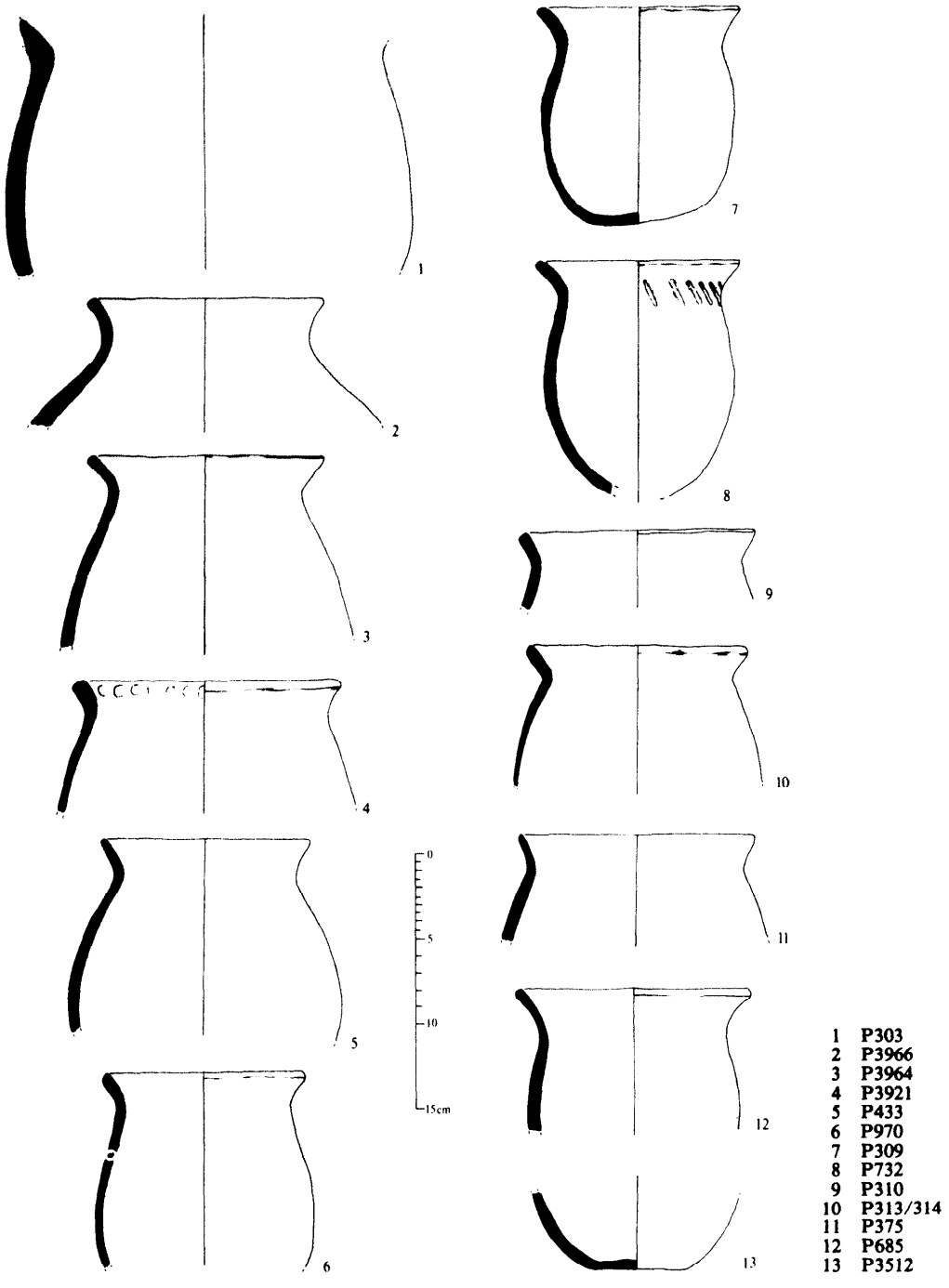
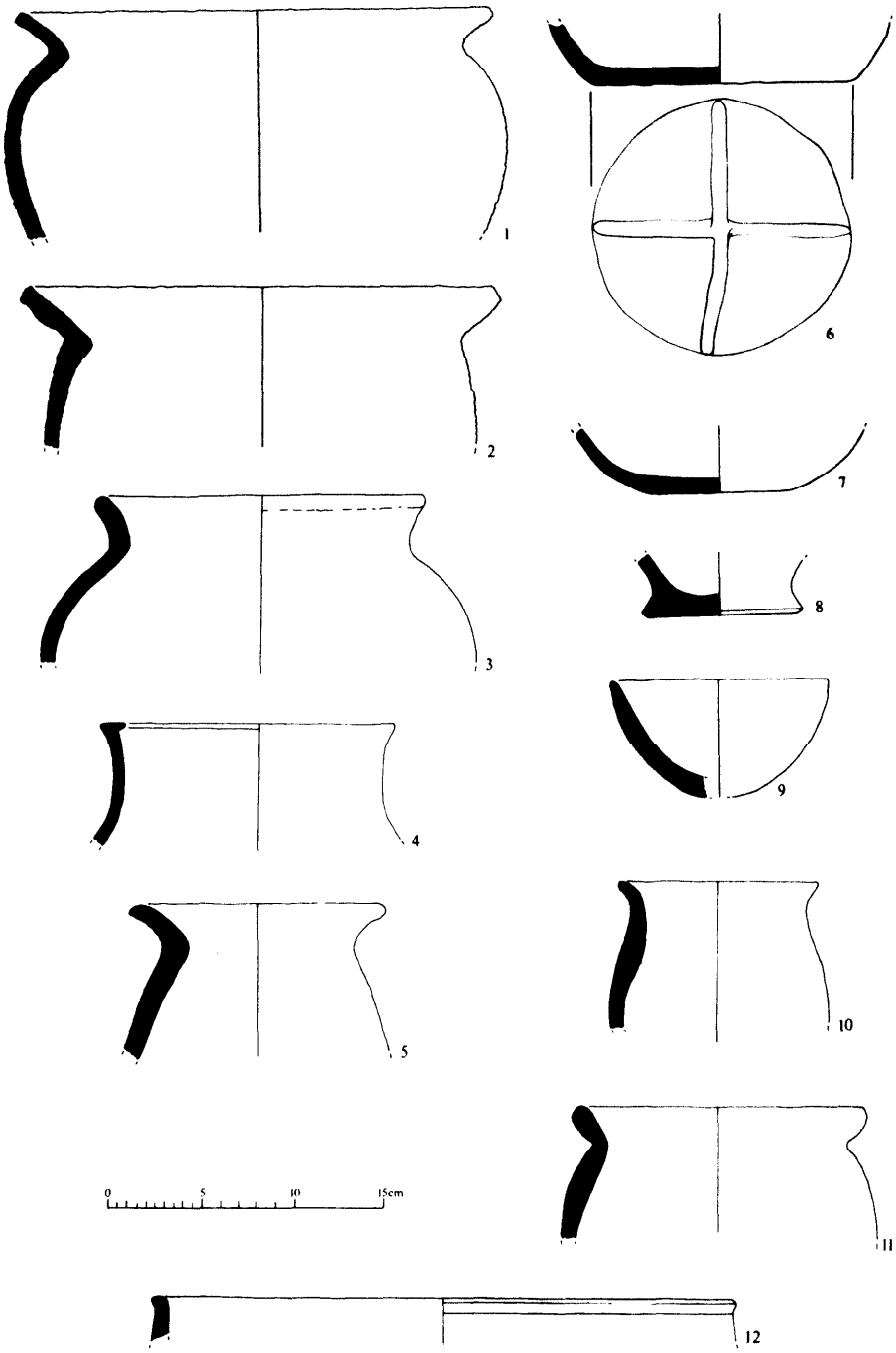


Fig 2,3 Local wares: class 3, a selection from SARC VX, F1 (scale 1:4)

Class 5: Shell-tempered pottery

This shell-tempered class has been found in later 8th to 9th century contexts in Hamwih (see Chapter 5.2b), and was presumably not made after the 9th century, since it has not been found in Southampton. The fabric is commonly oxidized a light red, but reduced black fabrics are sometimes found. It is a fine sandy fabric with long inclusions of shell ranging from less than *c* 1.0mm to about 5.0mm. It has a sandy texture. Thin section reveals (T-SP 207; 211) an optically anisotropic brown clay matrix with abundant sub-angular quartz-sand ranging from *c* 0.1 to 0.5mm across, as well as iron ore of the same size. There are also a few mica inclusions, as well as the shell, in this case up to *c* 2.5mm long.

A few cooking pots are known (eg Fig 2,1,2) as well as bowls with upright rims (Fig 2,1,4). However, amongst the small number of typologically distinguishable sherds are some slightly unusual forms. There is a very neatly trimmed rim, probably of a small jar (Fig 2,1,1), and two bases of a different type to those of the other local classes, One base from SARC 1, F 4, P450 (Fig 2,1,3) suggests that it was fashioned together with the lower half of the body rather than added to the bottom of the body. In this instance, the wall of the body rises a little more steeply than it does on other classes. A second base



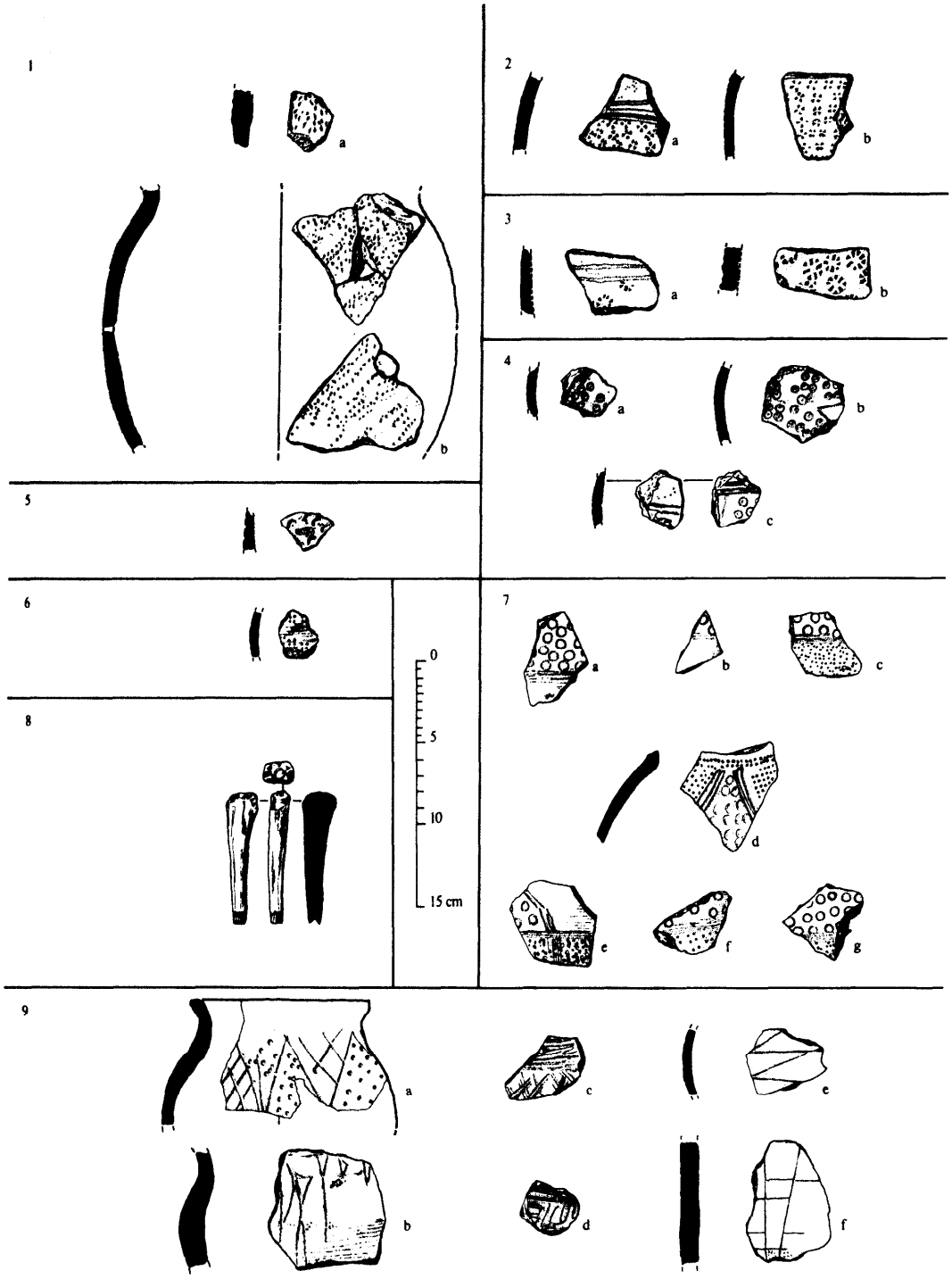
1 Ham, P5, layer 3
2 V, P309
3 XI, F46, 400
4 IX, F4, 2
5 VI, F30, 409
6 IX, P88
7 XIV, P1222
8 XIV, P733
9 KL 'C', 801
10 XI, P765
11 XI, F66, 930
12 XIV, P885

Fig 2,4 Local wares: class 4 (scale 1:4)

from SARC 1, unstrat., P713 is of an enormous vessel, possibly a platter (Fig 2,1,5). This form and fabric is paralleled exactly by a vessel found on the Middle Saxon farmstead at Whitehall, London. It should also be noted that this shell-tempered fabric was an important potting tradition during the early medieval period along the Flemish coastline. Similar oxidized vessels, in fact, have been found in recent excavations at Lampernisse and Ghent (see Chapter 7.7). In England, shell-tempered wares of this date have also been found at Gosport (Hampshire) and Sandtun (Kent). It is possible that these English sherds are imported wares, though it seems more likely that a tradition was adopted by coastal settlers of southern England and Flanders, utilizing readily available temper.

The decorated sherds

It is not necessary to consider the few decorated local wares from Hamwih as imitations of imported pottery as, for example, Addyman and Hill (1969, 84) and Cunliffe (1974, 133) have done. Stamped and incised decorations were a significant element in Pagan Saxon potting, although the attention given to these distinctive wares has perhaps been misleading in terms of their frequency in the ceramic assemblages of this period. In particular, the difference, if any, between the number of decorated vessels in the ceramic assemblages of settlement sites and cemeteries needs to be examined. At Salmonby (Lincs), for example, only 10% of the vessels from a *Grubenhaus* were decorated (Everson 1973);



1a XV, F52, 3770
1b XV, F52, 3361
2a KL 'B', F29, 539
2b XV, F52, 3035
3a XV, F66, 2642
3b XV, F56, 1862
4a XI, F47, 775
4b XI, F47, 775
4c XV, F52, 3035
5a XV, F22, 3035
6a XIV, F29, 1724
7a IV, F2150, 21
7b V, F17, 820
7c V, F17, 535
7d HAM 69, 559, 74
7e IV, F17, 564
7f V, F19, 840
7g V, F17, 536
8 IV, F111
9a CLS 'B', F69A, 780
9b KL 'B', F29, 540
9c KL 'B', F3, 730
9d KL 'C', F22, 638
9e VI, F36, 205
9f V, F16, 749

Fig 2,5 Local wares: the decorated sherds and a bone stamp (scale 1:4)

similarly, very few of the Maxey vessels, probably 7th century in date, had any decoration (Addyman 1964). The Hamwih sherds certainly represent far less than 10% of the local ceramic assemblage, but it has yet to be seen whether this is consistent or not with the ratio of decorated to undecorated sherds from Pagan Saxon settlement sites in Hampshire. No decorated sherds, for example, were found in the scatter of grass-tempered pottery which Mr J Budden found overlying the important Church Down, Chalton, settlement (pers comm, J Budden), nor in the excavations.

The decorated sherds from most of the excavations in Hamwih up to 1976 are listed below; only some already published by Addyman and Hill (1969, fig 35, 13-15, pl IXb) are omitted. It is worth drawing attention, however, to the incised spiral decoration they found on one sherd from their excavations (1969, pl IXb). There is no parallel from Hamwih for this motif, nor on any Early or Middle Saxon pots from England generally. Similarly, there are no imported wares with this sort of decoration which a local potter might have clumsily imitated.

In all, sixteen decorative styles have been found on the 45 sherds listed below, which represent a minimum of 23 vessels. It would appear that, while classes 2, 3, and 4

Fig 2,6 Two reconstructed class 3 vessels from SARC XV, F1 (reconstructions and photograph by N Bradford)

were sometimes decorated, classes 1 and 5 were not. However, it has to be remembered that much smaller quantities of these latter classes, in comparison to classes 2, 3, and 4, have been found. Two antler stamps have been found. The first was found on HAM site 24 (Addyman and Hill 1969, 72). The more recently discovered stamp came from SARC IV, F 111 (Fig 2,5,8) and was used to make the open circles of decoration 9 (Fig 2,5,7), examples of which were found in nearby pits on the same site. This latter stamp was easily made in, one may suspect, a matter of minutes, and underlines the point that no great technical or artistic ability was necessary to produce decorated wares. Instead it may be that a particular potter's individualism is manifested in these distinctive and sometimes finely finished vessels. Foster (1965, 52; see also Hill 1978), for example, has drawn attention to such occasional individualism amongst peasant potters and the reasons for it.

The simple clover-leaf stamp, 2 below (Fig 2,7) has been found on class 4 sherds with identically abraded inner surfaces at Portchester (Cunliffe 1974, fig 2,8) and in early 9th century contexts in the Cathedral Green excavations at Winchester (Winchester Research Unit: CG 1968, TXXIX, 1830, grave 476, etc.). The abraded inner surface is also a characteristic of three other decorated vessels, two of which are stamped (1,2,3) and one (11) which is incised. It may be that one exceptional potter employed several decorations on his pots. Certainly, the distribution of the 'number 2' stamped sherds is the clearest indication available of the trading of pots in southern Hampshire (see Chapter 6.3).

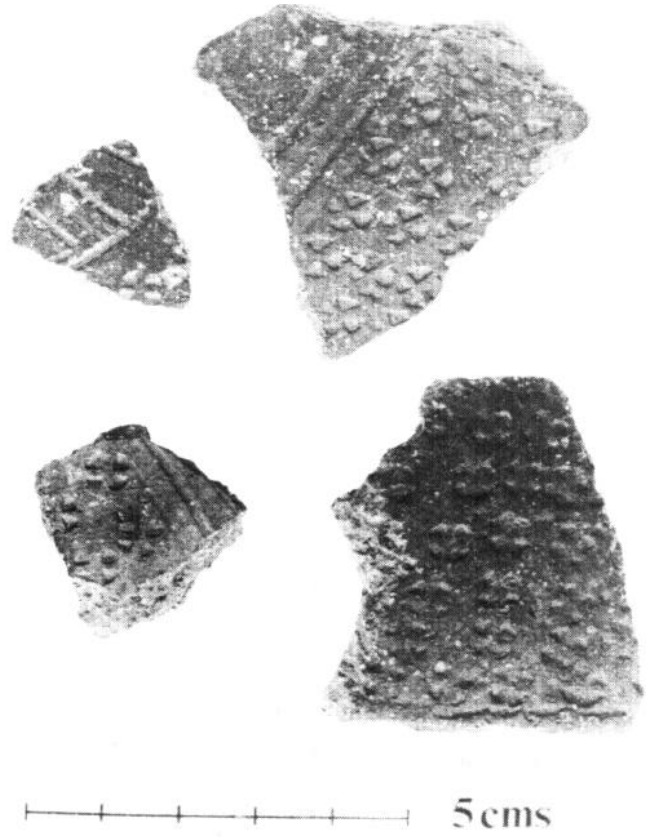


Fig 2,7 Local ware decoration 2 (photograph by C Tilley)

Catalogue of decorated sherds

Decoration no	Fig	Class		No of vessels
1	1a/b	4	Diamonds; imitation roller stamp? SARC XV, F52, P3029 XV, F52, P3535 XV, F52, P3795 XV, F52, P3525 XV, F52, P3775 XV, F52, P3800 XV, F52 P3787 XV, F52, P3807 XV, F52, P3770 XV, F52, P3867 XV, F52, P3362 XV, F52, P3361	1
2	2a/b	4	Clover-leaf stamp KLB, F29, layer 1; 536 KLB, F29, layer 1; 539 KLB, F30, layer 8; 611 HAM, F22/28	1
3	3a/b	4	<-part stamp SARC XV, F56, P1862 XV, F66, P2642	1
4	4a	4	Circle and central dot in lozenges CLS B, F66A, layer 6; 772 SARC XI, F46, P435 XI, F47, P775	1/2
5			Half-circle stamp	
		4	SM 69.10.8d.80	1
		2	KL'C', unstrat	1
6	4c	3	Pinprick decoration SARC XV, F52, P3133	1
7	S		Stamped crescents	
	S	4	SM.69.10.8d.80	1
		2	GS'C, instrat., 694	1
8	6a	3	Sharp clover-leaf/ hollow circles SARC XIV, F29, P1724	1
9			Circle-stamps/pinpricks in lozenges	4/5
	7a	3	SARC IV, F2150, P21	
	7b	3	SARC V, F17, P536	
	7c	3	SARC V, F17, P535	
	7d	3	HAM 69/559, 74	
	7e	3	SARC IV, F17, P564	
	7f	3	SARC V, F19, P840	
	7g	3	SARC V, F17, P536	
		3	KLB, F31, unstrat. 728	
		3	KLC, F2, layer 6	
		3	HAM 69, 76	
		3	SARC IV, E1-3, P314	
		3	SARC VI, F33, P286	
		2	SARC I. F6. P524	1
		4	SARC I, F19, P1	1
10	9a	2	Pin-pricks in incised lozenges CLS B F69A, 780	1
11	9b	4	Incised vertical lines KL B, F29. layer 5, 540	1
12	9c	2	Incised thick criss-cross lines KLB, F3, layer 6.730	1
13	9d	4	Incised leaf-vein pattern KLC, F22, layer 1,638	1
14	9e	3	Lightly incised lozenge SARC VI, F36, P205	1
15	9f	4	Incised ladder pattern SARC VI, F16, P749	1
16		4	Incised ladder pattern horizontal bands KL C, F18, layer 1,725	1

It is possible that these stamped decorations were the antecedents of some Late Saxon stamped wares of southern England (see Chapter 6.6). Similarly, the simple incisions used to decorate some Hamwih vessels were a decorative form which was occasionally employed in the Southampton region until, perhaps, as late as' the 12th century (Platt and Coleman-Smith 1975, 2, fig 140, 157).

Summary

The hand-made wares have been classified by their macroscopic characteristics which has assisted with their sorting, and has proved useful for the seriation discussed in Chapter 5. Classes 1,2,3, and 5 are accurately defined, while class 4 is a miscellany and some of its variants may have been also produced by the makers of class 2 (the chalk-tempered wares) in particular. The forms of these classes are, for the most part, very similar; only those of class I and class 5 show the sort of individualism which may be a corollary of domestic potting. This individualism may, however, be exaggerated by the small numbers of these wares so far found in comparison to the other classes. This may also be the case with regard to decoration, since classes 2, 3, and 4 were occasionally decorated while no decorated examples of classes 1 and 5 have been found.

Further analyses are necessary before the sources of these classes may be distinguished. However, it is tentatively suggested that class 3 was made in the settlement, while class 2 was probably made near the Downs, at least 15 miles (25km) away. The localized trading of class 4 in Hampshire is indicated by the incidence of one particular stamp (decoration 2), which has been found at Port-Chester and Winchester as well as Hamwih.

This pottery in most aspects continues the traditions of southern English Pagan Saxon potting and some forms as well as decorative motifs continued to be made and used in the Saxo-Norman period on the Southampton peninsula.

3 A classification of the imported wares

'It is undoubtedly only a matter of time before a north French context is found for most of the mysterious wares from Hamwih' (Addyman 1973, 227).

The object of this chapter is to classify the imported pottery from Hamwih. As with the hand-made pottery, a simple classification has been devised for easy use. Study of the assemblages began by dividing it into macroscopically similar classes and then, when it seemed necessary, thin sections were made. Thin sections in certain cases necessitated the creation of new classes, or even the sub-division of classes into groups. Several points need to be made about this classification.

First, each class does not necessarily equate to a distinct source. Some classes in thin section look very similar and may well have emanated from the same source, but it will be difficult to prove this satisfactorily until more kilns and their products have been found and characterized in France and/or Belgium.

Secondly, the two major traditions of this period—the Black wares (class 14) and the Grey wares (class 15)—have proved to be very difficult to subdivide without petrological analysis. Thin sections demonstrate each of these classes to comprise groups of which some have markedly differing origins. Further work may enable macroscopic distinction to be easily undertaken, though this may depend on the detailed analysis of larger

TABLE 3,1 Correlation of thin sections of imported classes

A = Abundant
C = Common
S = Scatter
X = A few grains present
Q = Quartz-sand (grain sizes are approximate)

The sherds which have been analysed are listed in Appendix 4 A

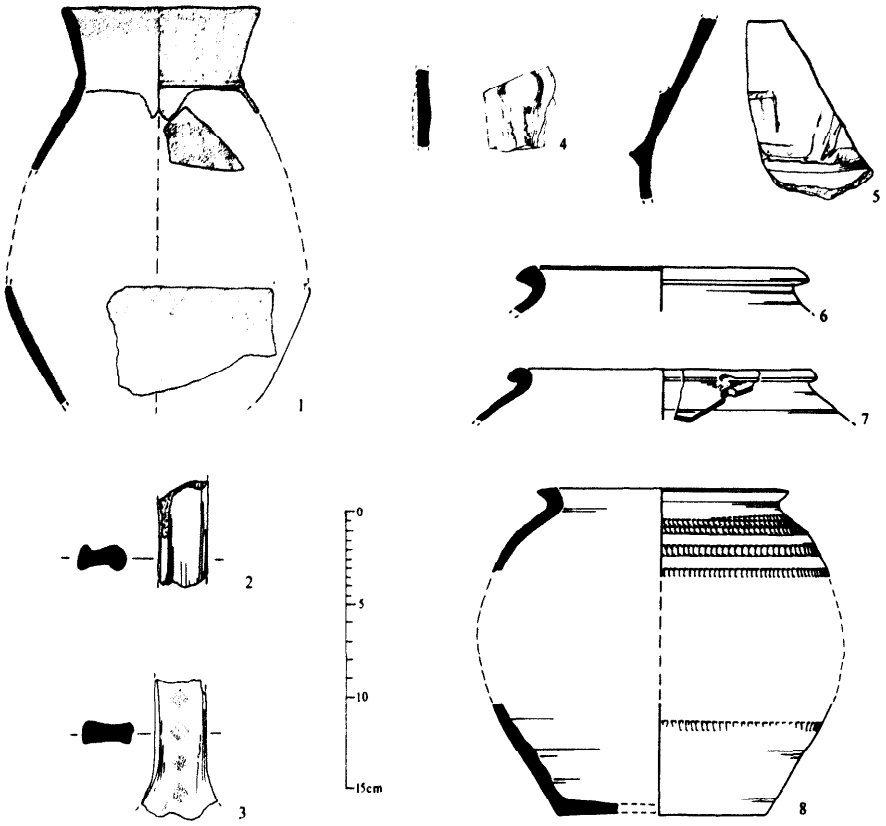
Class	TSP No	Q 0.01-0.03mm	Q 0.1-0.5mm	Q OS-1 .0mm	Quart-zite	Iron ore	Mica	Fels-pars	Lime-stone	Sand-stone	Clay pellets	Flint/ chert
6gr.1	20	S	c			X	X	X		X	X	X
6gr.3	165	S	A		S	S						X
6gr.4	8 1		A			X						
7	164	A	A	X			X					
7*	130		S									
8	161	A	A	X			X					
8*	78		S									
9*	69		S			S						
10	1 2 7	S	S					X		X		X
11	49 etc	A	A		X		X					
12	92 etc	A	A				S		X			
13	5 3		S						X		X	
13	1 4 2	C	S								X	
14gr.1	3 etc	A	A				X					
14gr.2	98 etc	S										
gr.2	174 etc	S	C								X	
14gr.3	46 etc		S					X				
14gr.4	64 etc	A	A		X					X		X
14gr.5	42 etc		S			X	X				X	distinct-ive clay
15gr.1	1	A	A		X		+			C		X
15gr.2(a)	106 etc	A	A		S							
15gr.2(b)	6	A	A		S			X				
15gr.2(c)	173 etc	A	A	X	C			X				
15gr.3	107	A	A	C					X	X		X
15gr.4	103	S										
16	132 etc	A	A		X		X					
17	167	S	S	X		X						X
18gr.1	19	C	C								C	
18gr.2	1 8	C	X		X							
18gr.3	160	C	C				S					
19	146 203		C	C	C	X					X	
20	86 etc	A	A		X				X		X	
	168		A			X	X					
22	162	C									X	
2 3	166		S				X					X
24	24 etc	S	S			X						x
25	157 etc	S	S			X	X					
25	154	X	S			X	X					
27	131	A			X		A					
28	176	A	S							S		
29	149		A	A	X		X	X	C			
30	1287		C		X	C						
31	156		A	A	X					X		
32	123	A	S	S		X				X	X	
3 3	215				X	C	X	X	C	C	X	
34	190.	C	S									
34	158	C	S	S							X	

1 class 6, gr.1. includes trachitic lava, sanidine felspar, mudstone. siltstone, or fine sandstone
2 * indicates thin sections made of sherds from other sites
3 class 10 has a volcanie assemblage of minerals: trachitic lava, brown hornblende, sanidine felspar
4 class 14, gr.4 includes mylonite
5 class 14, gr.5 has a distinctive optically isotropic red clay matrix
6 class 15, gr. 1. includes mylonite
7 class 21 has a distinctive angular quartz-sand temper
8 class 30 includes metamorphized quartz-grains
9 class 32 includes distinctive round quartz-sand
10 class 33 includes a volcanic assemblage like class 10

samples of these wares than those available at the moment.

Thirdly, distinguishing between class 11 and class 12 has proved to be a problem, even under the petrological microscope. Here a further analytical process, heavy mineral analysis, is necessary. But its requirement of about 10-15g of pottery limits its use on this rather exceptional collection of pottery. However, preliminary analyses of this kind confirm a distinction made by eye. The macroscopic distinction between the two classes rests on the narrow range of class 11 forms as opposed to the very diverse range of class 12, and on the coarse texture of class 12, often with mica inclusions. In thin section, class 12 is further distinguished because it occasionally has fine-grained limestone inclusions. Another complication is that class 12 is macroscopically similar to class 16. But class 16 is not a micaceous fabric and, even if it cannot be distinguished by eye, it can be in thin section.

Lastly, some classes reflect the initial, provisional nature of the classification. Thus, for example, class 18 comprises oxidized wares. Oxidized wares were, however, seldom the sole product of a kiln, but instead occur as individual sherds in large kiln loads, for obscure reasons. The same is true of the red-burnished wares, class 21, which were, it seems, specialized products fired with the normal output. It seems better to keep some



1 V, F16, 96/17
2 SM.69.10, 8a, 27
3 *North Elmham Park*, F341, 192
4 XV, F1, 256
5 HAM 68, 8c, 227
6 KL 'C', F11
7 KL 'C', F18
8 KL 'C', F48/49

Fig 3,1 Imported wares: Tating wares, Badorf wares, Mayen ware, and an Alsatian ware (class 23) (scale 1:4)

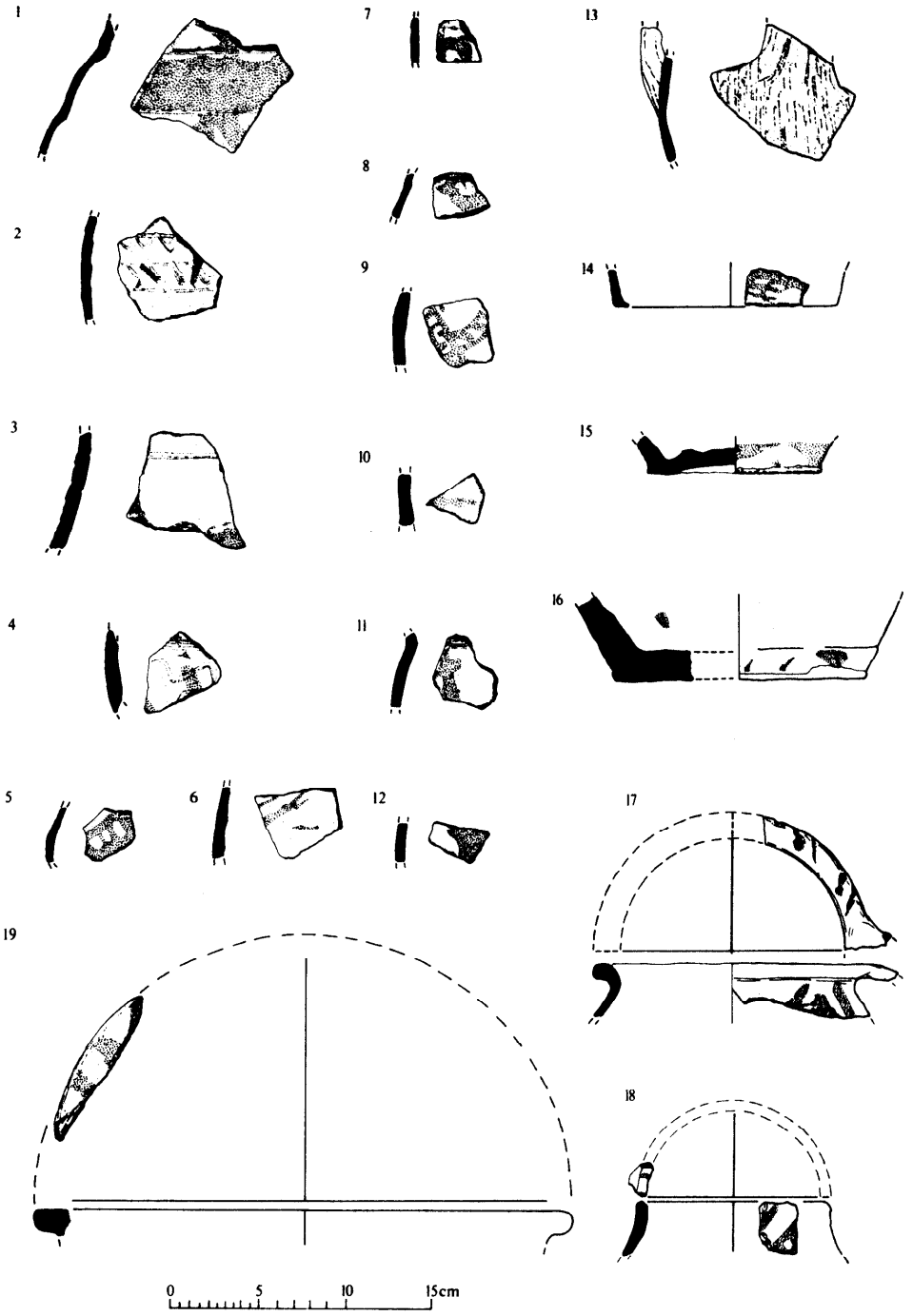
provisional classes, for the moment, than to assign new classes to anomalous individual sherds. In the distant future it should be possible, by extending the serial numbers, to discard the provisional classification, and relate each class to a kiln source, subdividing it for kiln fabrics.

A primary aim of this research was a preliminary definition of many of the regional sources, at least, and localized sources, at best, of the imported wares found in Hamwih, This has been partially achieved, although many small classes remain undefined because they are unparalleled and have no distinctive inclusions, while most of the larger classes are inferentially provenanced.

In many cases, a primary criterion for distinguishing the regional source is the base typology, because the Middle Rhineland production centres adopted the sagging base during the 8th century. In Belgium, France, and the upper Rhineland this transformation did not occur until the 10th-12th centuries (Chapelot 1970a, 70). Since flat bases were also being made in smaller quantities in the Middle Rhineland during the 8th and 9th centuries, this framework has to be used judiciously. Many of the remaining problems in the Hamwih imported assemblage will only be clarified by the discovery of many more kilns and other sites on the Continent. Indeed, at the moment there are still archaeologists in France uncertain whether pottery was made the in the Carolingian period. The Hamwih collection not only answers this question but also establishes the importance and range of French Carolingian pottery, as well as providing a considerable contribution to the study of Dark Age trade.

A summary of imported classes

6 Tating ware
7 Badorf-type ware
8 Relief-band amphora
9 Beauvaisis red-painted ware
10 Mayen ware
11 Seine valley ware: white to grey, 6-13th century
12 Trier ware(?): white, micaceous fabric
13 An eastern Belgian ware: hard grey fabric with red core and limestone inclusions
14 Black wares: 5 groups
15 Grey wares: 4 groups
16 Loire valley ware (?): fine white fabric
17 Normandy ware (?): quartz-tempered white fabric
18 Miscellaneous oxidized groups
19 Metamorphic rock origin: soapy grey-brown, quartz-tempered fabric
20 Loire valley or Paris Basin ware: sandy brown with light red core
21 Red-burnished wares
22 Northern French ware (?): sandy light red fabric with prominent iron-ore inclusions
23 Alsatian ware: sandy light red fabric
24 Northern French ware: coarse sandy fabric, dark grey
25 Seine Valley ware: pink to reddish-yellow fabric, abundantly quartz-tempered
26 Pale brown fabric with yellow core and chalk inclusions
27 Loire valley ware (?): light red to grey fabric with common iron-ore inclusions



1 HAM 792
2 HAM 1952, unstrat S of P24
3 KL 'C', F16, 556
4 KL 'C', F4, 842
5 I, F4, 405
6 V, F8, 453
7 GS 'C', unstrat, 75
8 KL 'B', F22, 617
9 HAM 69, 563, 84
10 KL 'C', F42, 581
11 KL 'C', F8, 517
12 GS 'A', F60, 1042
13 HAM 69, 366, 38
14 XI, F44, 539
15 KL 'C', F22, 638
16 KL 'C', F28, 57
17 SARC, I, F30
18 SM 69, 86
19 SM 69, 1051, 129

Fig 3,2 Imported wares: red-painted and red-burnished wares: sherds of classes 9, 12, 25, and 35 (kale 1:4)

28 'Sandstone' origin: reddish-yellow to pale brown fabric with light grey core
29 Paris Basin-Argonne ware: coarse reddish-yellow to pinkish white fabric with limestone inclusions
30 Irish Sea Province sherd: grass-marked ware
31 Source unknown: yellowish-brown fabric with light grey core
32 Rhenish source: coarse grey to light brown fabric with prominent sand grains
33 Mayen ware variant (?): reddish-brown to grey with common iron-ore inclusions
34 Normandy or western French source: sandy dark grey outer surface and white or purplish inner surface
35 Bouxwiller-type red-painted ware
Unclassified sherds

Class 6: Tating ware

Tating ware is discussed in Chapter 7.3, where it is classified into petrological groupings. There are at least three Tating ware vessels from Hamwih—that is, sherds of vessels which can be recognized because of the vestiges of the tinfoil decoration.

1 The most notable vessel from Hamwih was found in SARC V, F 16 (Fig 3,1,1). These are sherds of a fine carinated pitcher with elaborate decoration involving 1. vertical incising of the collar rim, 2. blackening of the body, 3. the application of the tinfoil. As it survives, the tinfoil consists of a Maltese cross on the body below the carination, a horizontal band, and a row of diamonds; the upper half of the body is lost. Vertical strips of tinfoil overlappins into the mouth decorate the rim. The core of the pot is red (10R 4/8). The fabric is very hard and smooth. In thin section the fabric has a red, optically isotropic clay matrix with inclusions of sub-angular quartz-sand ranging from *c* 0.03 to 0.4mm; felspar, which includes sanidine, brown hornblende, rounded mudstone, bits of siltstone or fine sandstone, and fragments of black iron or lava.
The inclusions suggest that this vessel belongs to the group 1 Tating ware derived from the Eifel Mountains (Chapter 7.3). The incised decoration on this vessel makes it an extremely uncommon type, which has one parallel at Dorestad (pers comm, Professor W A van Es) and another at Haithabu.

2 Sherds of the second vessel were originally published by Addyman and Hill (1969, pl X): SM 69.10.8a; A94.65 24; SM 69.0.8a. There was a typical Tating ware handle from these excavations which was probably a part of this vessel and which has been thin-sectioned (Fig 3,1,2). In thin section (T-SP 165) it has an optically anisotropic light brown clay matrix with abundant inclusions of sub-angular quartz-sand ranging from *c* 0.03 to 0.50mm across, as well as a few grains of quartzite *c* 0.40-0.80mm across, and a few iron-ore grains *c* 0.20-0.40mm.
This handle belongs to petrological group 3, which is very similar to the class 14, Black wares group 2.

3 One body sherd from DMW 613 KL'C' F 18 layer 7B. In thin section (T-SP 81) it has an optically anisotropic dark brown clay matrix with abundant inclusions of sub-angular quartz-sand ranging from *c* 0.20 to *c* 0.50mm across, as well as a few iron-ore grains of the same size.

It is possible that there are undecorated sherds which have not been identified, and which have been included as particularly fine class 14 wares; for example, SARC VIII, F82, P.100, is a very similar fabric. Indeed, it is suggested in the discussion of Tating wares in Chapter 7 that some types were made as special pots by some class 14 potters. It is a suggestion that seems to be supported by typological and petrological evidence. Therefore, as is concluded in the section on Tating ware in Chapter 7, this ware must be carefully defined. It is a ware (in reality a tradition of potting: see Chapter 7.17) emanating from several kiln centres in northern Europe which has tinfoil decoration, or has the distinctive biconical form, the wire-cut spout as opposed to the beak spout, and the distinctive narrow strap handle as opposed to the more usual broad strap handle.

Class 7: Badorf ware

Badorf ware and relief-band amphorae (class 8) are discussed in Chapter 7. There is a surprisingly small collection of these classes from Hamwih; excavations by SARC have, for example, produced sherds which represent a minimum of only four vessels (see Chapter 4).

No roller-stamped pitchers of the sort found, for example, at Canterbury (Dunning 1959, fig 26, 6-7), or Sedgeford (Norfolk) (Fig 3,1,9) have been found. Instead, only body sherds, one rim (Fig 3,1,6), and one wire-cut base HAM 69, P.487 (223) have been identified.

Frechen (1944-50, 79; 1950, 219-20) has published descriptions of thin sections of several Badorf vessels as well as other Rhenish wares, and little can be added as a result of the analysis of this small Hamwih assemblage. The only significant points that need to be made are that thin sections of Hamwih and Dorestad Badorf wares and relief-band amphorae emphasize, first, the slightly varied nature of the clays exploited by the Middle Rhenish potters, and, secondly, that both types were probably being made by the same potters, a fact borne out by the recent excavations at Brtihl-Eckdorf discussed in Chapter 7. Indeed, the thin section of the Hamwih Badorf ware base (T-SP 164) is texturally very similar to a Dorestad relief-band amphora sherd (T-SP 78), whereas a relief-band amphora sherd from Hamwih (Fig 3.1.5; T-SP 161) is texturally similar to a Badorf ware rim from Dorestad (T-SP 130). The first 'group' in thin section has an anisotropic brown clay matrix with prolific inclusions of sub-angular quartz-sand ranging from *c* 0.01 to 0.40mm across as well as occasional grains of quartz-sand, *c* 1.00mm across, and muscovite. The second 'group' is texturally quite different having a clean optically anisotropic brown clay matrix with a scatter of subangular quartz-sand *c* 0.1-0.2mm across. This 'group' is also very similar to a thin section (T-SP 58) of one of the (later) Pingsdorf vessels from Dowgate, London, dated by Dunning to the 12th century (1959, 73-7).

Finally, it seems likely that the flat base and undecorated rim are 8th century products of the Badorf ware centres in the Vorgebirge, and are examples therefore of those forms included in Tischler's group 1 in his typological essay on this ware (1952, Abb 2).

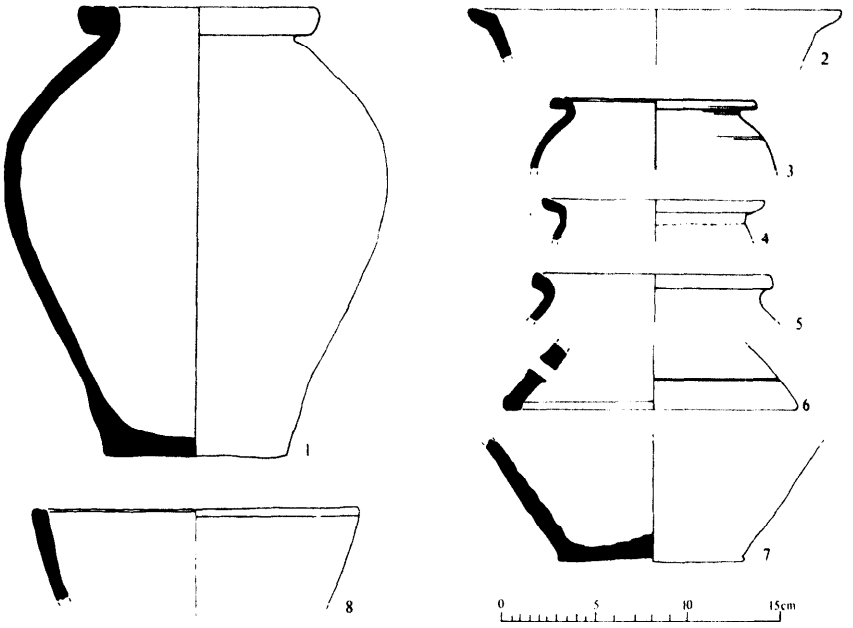
Class 8: Relief-band amphorae

Three sherds of relief-band amphorae have been recognized: HAM 68,4, GC, P227 (Fig 3,1,5), SARC XV, F1 (Fig 3,1,4), and on SARC XVIII. All have relief decoration which is unparalleled in the archaeological literature, and is rather different from the relief-band amphorae found in large quantities at, for example, Dorestad and Haithabu, and occasionally in England (eg Dunning 1956, pl XXXIV). A thin section of the first sherd (T-SP 161) has been discussed in the preceding section, and, as was noted there, it was texturally different from a sample relief-band amphora sherd from Dorestad, although very similar to a sample Badorf ware rim sherd from there.

Class 9: Beauvaisis ware

Very few vessels of the well known red-painted type of this ware have been found in Hamwih. The fabric of this ware is usually very pale brown (10YR 8/3), very hard and smooth with no prominent inclusions. An 11th century example from Beauvais itself was thin-sectioned (T-SP 69) and had a clean optically anisotropic brown clay matrix with a scatter of rounded quartt-sand *c* 0.2-*c* 0.6mm across; in the clay were a few grains of iron ore, *c* 0.01mm across. The rounded auartz-sand makes this type particularly distinctive, but it was a large industry practised in several villages of the Beauvaisis and there are likely, therefore, to be variants.

There now seems a good basis for suggesting that the production of painted pottery had begun in the Beauvaisis by the early 9th century since one sherd, HAM 69, 563 (84), was found associated with a coin of King Ceonwulf in Hamwih (Addyman and Hill 1969, 92). Recently, a red-painted pitcher of this ware with a



1 **Southampton: God's House Tower** (Platt & Coleman-Smith 1975, **2**, 858)
2 **XI, F45, 258**
3 **KL 'C', F8**
4 **XI, F62, 818**
5 **IV, F65, E3-17**
6 **IV, F3522, 931**
7 **KL 'C', 516-61, 818**
8 **VII, F52, 107**

Fig 3,3 Imported wares: class II from Hamwih and Saxo-Norman Southampton (scale 1:4)

characteristic arc-and-ladder pattern was found associated with Ipswich ware at Wicken Bonhunt (Essex) (see Chapter 4.3). Another probable vessel was found some years ago in King's Street, Ipswich, which can be dated typologically to the 9th or 10th centuries, and which is not a Limburg ware as Dunning suggested (1959, fig 29,5). This ware is discussed in more detail in Chapter 7.

Class 10: Mayen ware

A pierced Mayen ware rim was found in KL 'B', F 18 (640) (Fig 3,1,7), and more recently a tiny fragment was found in SARC XX, F 123 (P212). Mayen ware is further discussed in Chapter 7, as it has received considerable attention from archaeologists and petrologists (eg Frechen 1948, 297), because it is a very hard proto-stoneware, often though not always tempered with distinctive volcanic minerals found only in the Mayen region in the Eifel mountains (cf Fulford and Bird 1975).

The pierced rim-sherd has dark reddish-grey (10R 4/l) outer surfaces, and a weak red (10R 4/3) inner core. There are a few large quartz inclusions prominent in the surfaces as well as a limestone grain *c* 1.00mm across. In thin section (T-SP 127) it has an optically isotropic brown clay matrix with a scatter of subangular inclusions up to *c* 0.4mm across amongst finer subangular quartz-sand grains, up to *c* 0.03mm across. The larger inclusions consist predominantly of subangular quartz-sand, a scatter of trachytic lava fragments, one grain of sanidine felspar, and a few grains of fine as well as coarse sandstone. This pierced rim sherd is paralleled exactly by a late 7th-early 8th century sherd from excavations of a village site near Mayen (Ament 1974, Abb 8, 4).

Class 11: Seine Valley ware

This is an important Hamwih class, and has been found on most excavations within the settlement. It is usually used for cooking pots, the two exceptions being the pierced lid SARC IV, F 3522, P 931 (Fig 3,3,6) and an upright bowl from SARC VII, F 55, P 82 (Fig 3,3,8). The wire-cutting of the flat bases is always very prominent. The rim profile varies from a simple flattened rim (Fig 3,3,2) to an elaborately squared rim (Fig 3,3,5). The colour of the surfaces varies from a pure white (5Y 8/1) to grey (10YR 6/1). Many of the sherds have been burnt black, and some have charred remains inside. Some sherds have rounded quartz sand inclusions *c* 1-3mm across, but most have no prominent inclusions. Thin-section analysis (T-SP 49, 87, 88, 89, 102, 128, 147, 158, 163, 187) reveals a light olive-brown optically anisotropic clay matrix with prolific inclusions of subangular quartz-sand ranging from *c* 0.01 to 0.60mm as well as inclusions of quartzite and mica.

The thin sections provide no indications as to the source of this ware. Macroscopically similar fabrics have been found at Tours (Indre-et-Loire), Troyes (Aube), and Lorquin (Moselle) (Chapter 7.16). However, several Merovingian vessels with macroscopically similar fabrics from cemeteries between the rivers Eure and Seine have been identified in Evreux Museum (Fig 7,6,8,10,11). A Normandy source has also been suggested for a complete vessel of this fabric found in Southampton in a 10th century context north of the Bargate (Platt and Coleman-Smith 1975, **2,** fig 175,858) (Fig 3,3,1). A sherd found on this same site was thin-sectioned (T-SP 185) and was petrologically identical to class 11. Furthermore, sherds of this class have been found in 12th-13th century contexts at Château des Marais, Guernsey, and their similarity to class 11 has been established by thin-section analysis (T-SP 181). Similar sherds have also now been recognized in the Carolingian levels at Fécamp, in northernmost Normandy (see Chapter 7.9). Ail the evidence suggests that this ware was made from at least the 6th until the 13th century at an unlocated centre in eastern Normandy south of the Seine near Rouen. In fact, it may have been at this same centre that the well known type of Normandy gritty ware was made from the late 11th to early 13th centuries (Hodges 1977b, 249-51).

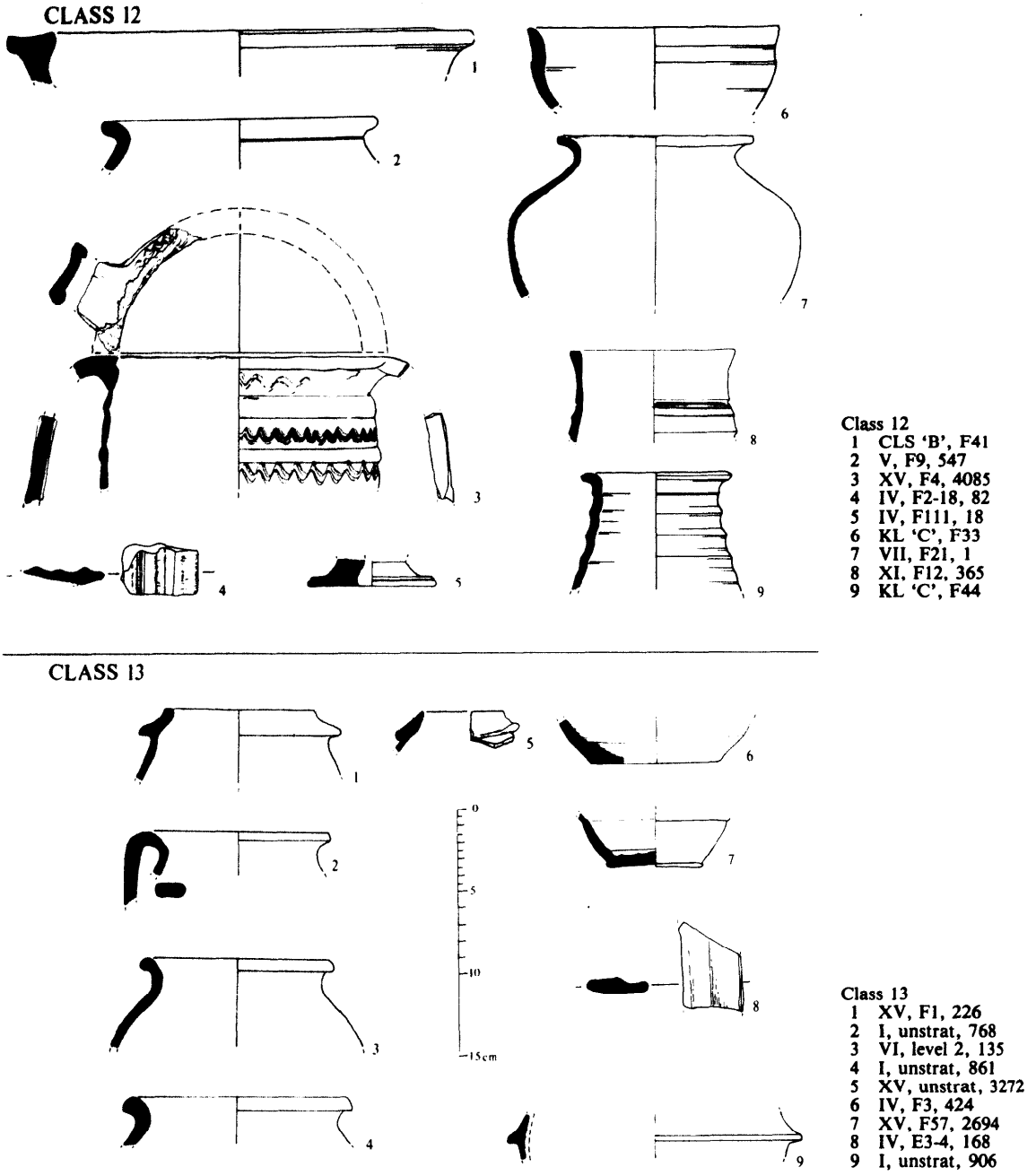


Fig 3,4 Imported wares: classes 12 and 13 (scale 1:4)

The only parallel for class 11 in England outside Southampton is a sherd from the Graveney boat (Evans and Fenwick 1971, fig 3).

One of the exceptions to the consistent form is the pierced lid. Ceramic lids are uncommon in the medieval period. Two 7th century imported Class E ware lids are known from Dalkey Island, Co Dublin, Ireland (Thomas 1959, 98). There are also several pierced lids from the Carolingian kiln at Meudon (Morbihan) (Fig 7,6,13) (Chapter 7.9), and several fine roller-stamped lids from Strasbourg, Hagenau, and Sarrebourg in Alsace (Lobbedey 1968, Taf 33, 2). It may have been more usual to use cloth, leather, wood, or even a flat stone to cover vessels. One notable exception is an unprovenanced Merovingian whalebone lid in St Omer Museum (Nord) (Hodges 1975b).

Class 12: Trier ware (?)

This is another important Hamwih ware which is found on every excavation within the settlement. It occurs in a great many forms, and is occasionally red-painted. Flanged bowls (Fig 3,4,1), flat-rimmed and roll-rimmed cooking-pots (Fig 3,4,2,7), all with flat bases (eg Fig 3,4,16), pitchers sometimes with incised wavy line decoration (Fig 3,4,3), a lamp (Fig 3,4,5), jars in the so-called Beerlegam form (Fig 3,4,8,9), and roller-stamped mortars (Fig 3,9,1). Besides roller-stamping and incised wavy line decoration, a few sherds have splashed light red (2.5YR 6/8) or black paint (Fig 3,2,2,3,4,7,8,10,11,12, 16). The surfaces vary from white (2.5YN 8/0) to light grey (2.5YN 7/0). Many of the sherds have been secondarily burnt black. Some sherds have rounded quartz-

sand inclusions up to *c* 1 mm across. The fabric is characteristically micaceous, which distinguishes it from class 11 and class 16. It is hard and the texture is unusually coarse, although a few vessels are burnished and are consequently smooth. Thin-section analysis (T-SP 22, 34, 92, 93, 94, 141, 143, 152, 155) reveals an olive, optically anisotropic clay matrix with abundant inclusions of sub-angular quartz-sand ranging from *c* 0.01 to 0.60mm across, as well as mica, quartzite, and in the case of T-SP 92, fine-grained limestone. In most of the thin sections class 12 appears very similar to class 11, except when considerable quantities of mica and grains of limestone are present in class 12. Class 12, however, is very different from class 16 in thin section.

The thin sections do not provide any precise indication of the source of this class. However, there is a large, mostly unpublished, collection of very similar wares from St Irminen, Trier (Hussong 1936). The wide range of forms in this Hamwih class is paralleled in the Trier collection (Hussong and Cuppers 1972, 95-118), and the few red-painted sherds from Hamwih have parallels in this same ware, although principally only from the village site of Oberbillig, Kreis Trier *(Trierer Zeitschrift,* 14 (1939), Abb 54), a late 10th century site (see Ch 7.2). Thin sections of five sherds from St Irminen, including a sample from the Altbachtal kiln (T-SP 222-225; 242), have revealed significant textural differences between the two fabrics. The Trier sherds have a cleaner clay matrix with a similar range of quartz-sand to the class 12 examples, but in strikingly less abundance. Moreover, in the Trier sample sherds there is a distinctive paucity of muscovite. The Trier sherds, however, may be earlier in date, and this might be the reason for such a difference, although it is a point which should not, under these circumstances, be stressed as yet.

A Trier origin must remain in doubt for the moment, but three points need to be emphasized. First, there is evidence of Trier wares being traded down the Moselle and up the Rhine in the 7th and 8th centuries. Vessels almost certainly of this fabric have been found near Metz (see Chapter 7.12) and in the Rhenen cemetery in the Netherlands (ROB depot, Amersfoort: 306, Al 1). Secondly, the range of forms that typify this class seem to be absent from northern France, and are certainly absent from Dorestad. Thirdly, the pale pink splashed paint sometimes found on this ware is rather alien to the ornate brushwork of the Beauvaisis and Baralle potters, and very similar to that on the Oberbillig sherds.

Class 13: An eastern Belgian ware

This is a major Hamwih ware found on most sites in the settlement. As with class 12, the Hamwih excavations have shown this class to have been produced in a variety of forms. Represented in the collection are several flanged-rim vessels (Fig 3,4, class 13, 1, 5), several everted-rim cooking pots (Fig 3,4, class 13, 3, 4), flat-based bowls, including one with a flanged base from SARC XIV, F 34, a pitcher strap handle (Fig 3,4, class 13,8), a flanged bowl (Fig 3,4, class 13,9), and perhaps a jug or pitcher which has an unusually narrow, but thick, handle (Fig 3,4,2), a form only paralleled at Brebières (Pas-de-Calais) (Demolon 1972, fig 42, 54, 245, no 28).

The surfaces of the fabric are usually dark grey (2.5YR N/O) and are often lustrous. The core is red (2.5YR 4/6). Very often there is a sandwich effect, presumably caused by firing in two stages: grey surfaces, red inside the surfaces with a grey core. There is, however, a variant which has (oxidized) burnished red (2.5YR 5/8) surfaces and grey cores (eg Fig 3,4, class 13, 3, 5). Grains of limestone up to *c* 4mm across arc occasionally prominent in a few sherds of this ware. Thin section reveals two fabrics. The first has a red optically isotropic clay matrix with a scatter of well sorted subangular quartz-sand and occasional inclusions of limestone averaging 0.30mm across. The second fabric included a smaller grade of subangular quartz-sand in the clay matrix, averaging *c* 0.0l-0.05mm across. In both fabrics there are occasional inclusions of clay pellets. The utilization of slightly different clay sources may account for this variation. However, it is interesting that examples of this ware from an 11th-12th century context at Valkenburg Castle in Limburg, in thin section, are all of the second type with two grades of quartz-sand (Hodges in Janssen, forthcoming).

A source in eastern Belgium seems most feasible for this ware, though an origin to the west of Aachen may also be possible. The earliest parallel is a trefoil-shaped beaked pitcher from a Merovingian sunken hut at La Fonderie de Canons, Douai (see Chapter 7.7). Other vessels have been found at St Peter's Abbey, Ghent (Fig 7,5), Lampernisse (see Chapter 7.7), and Canterbury (see Chapter 4.3), all in 8th-9th century contexts. Later sherds have also been found at Middleburg (pers comm, F Verhaeghe) and in Lime Street, London (Guildhall Museum) (T-SP 56), as well as at Valkenburg Castle in Limburg.

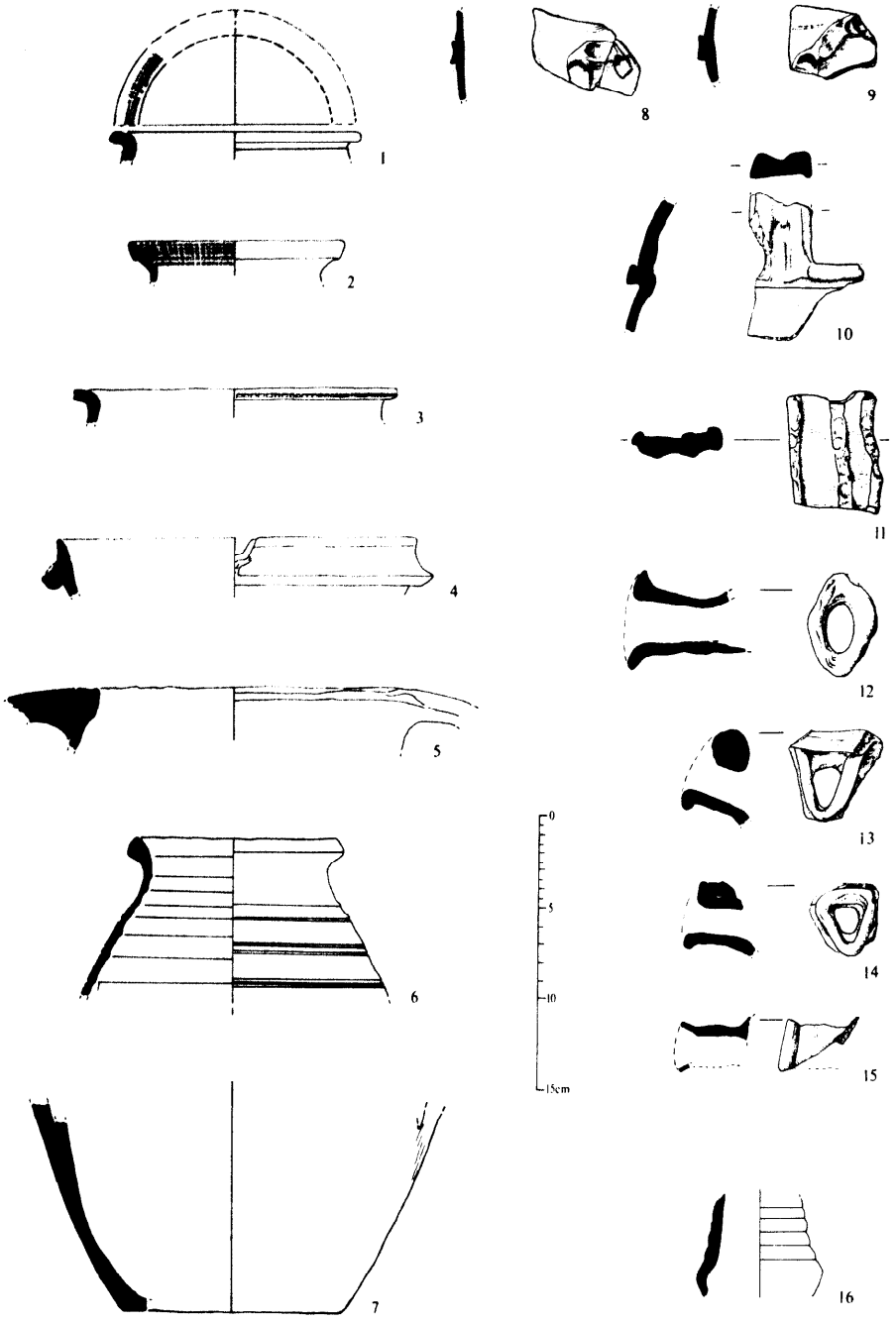
It is interesting to note that this distinctive fabric has yet to be found at Dorestad, although Janssen believes it to have been found at Medemblik and Kootwyk in the Netherlands (Janssen, forthcoming). Its distribution would seem to lie outside the Rhineland. Two aspects, however, must be borne in mind. Firstly, the fabric is very similar to the later medieval oxidized wares of parts of Belgium briefly reviewed by Barton (1977), including Aardenburg ware. Secondly, the Valkenburg sherds include a thumb-impressed foot-ring characteristic of Pingsdorf-type wares as well as Limburg wares, but alien to the Meuse valley wares such as Andenne and Huy, which have three thumb-impressed feet as a rule. These features suggest an origin to the east of the Meuse, either in Limburg or even near Aachen. The recent discovery of a Pingsdorf-type kiln at Jungersdorf near Langewehe reveals the early origins of this important later medieval centre, and rules out an origin for the class 13 to the east of Aachen.

Class 14: Black wares

The Black wares are one of the commonest wares found in Hamwih, as well as being technically the finest finished and decorated, with the exception of the rarer Tating ware. The principal form is the flat-based pitcher, but there is great variety within this form which presents illustrative problems. Similarly, there is typological variety within the bowl forms, and even with the less common (?)cooking pots and (?)jars in this class. There is also one storage vessel from SARC VI, F 30 (382-5; 170; 401). Indeed, it is an (untested) impression that virtually every vessel is typologically different. Furthermore, except with group 5, thin-section analysis does not highlight any typological characteristic common only to one petrological group. Consequently, these wares can only be defined by thin section, and the vessels illustrated in Fig 3,5 and 3,6, many of which have not been thin-sectioned, serve only to demonstrate the wide range of this very important class of pottery, largely unknown before this study. These forms are outlined in more detail at the end of this section.

Group 1

Pitchers with wire-cut bases, and flanged bowls (eg Fig 3,5,4) usually with black (10YR 2/1) surfaces and



1 IV, E3-4, 335
2 XIV, P450/P1359
3 XI, F66, 700
4 XI, unstrat, 920
5 VII, level 2, 7
6 XV, F31, 2409
7 XI, P883
8 CLS 'B', 1081
9 KL 'C', P6, 69
10 VII, F53, 146
11 I, unstrat, 721
12 KL 'C', F36, 830
13 KL 'C', F22, 824
14 KL 'C', F8, 823
15 XI, unstrat, 240
16 VII, F52, 34

Fig 3,5 Imported wares: class 14 (scale 1:4)

light grey (10YR 7/1) cores. There are, however, examples with fine dark grey (2.5YR N4/0) surfaces and light grey cores (eg T-SP 41), and with lustrous dark grey surfaces (eg T-SP 3). Some of the sherds with black exterior surfaces have grey inner surfaces. With only two exceptions, all the sherds belonging to this group have no prominent inclusions and are very smooth and hard. The exceptions are T-SP 101, a base with large prominent angular quartz-sand inclusions up to *c* 2mm across, and T-SP 100, a sherd which has fine micaceous inclusions.

Thin section reveals an optically anisotropic light brown clay matrix packed with unsorted inclusions of subangular quartz-sand ranging from *c* 0.01 to 0.05mm, as well as a few grains of muscovite.

Group 2

Impossible to differentiate macroscopically from group 1, it includes a similar range of wares, including the type with fine dark grey surfaces and a light grey core: T-SP 98 (illustrated in Hodges 1980). This group also includes the unusual upright bucket handle from SARC VII, F53, P146 (T-SP 174) (Fig 3,5, 10), discussed below. Thin section reveals an optically anisotropic clean brown matrix, only occasionally with grains of sub-angular quartz-sand averaging *c* 0.01-0.03mm in the matrix, although T-SP 45 and T-SP 174 also include sub-angular quartz-sand *c* 0.1-0.5mm, and a few clay pellets of the same size.

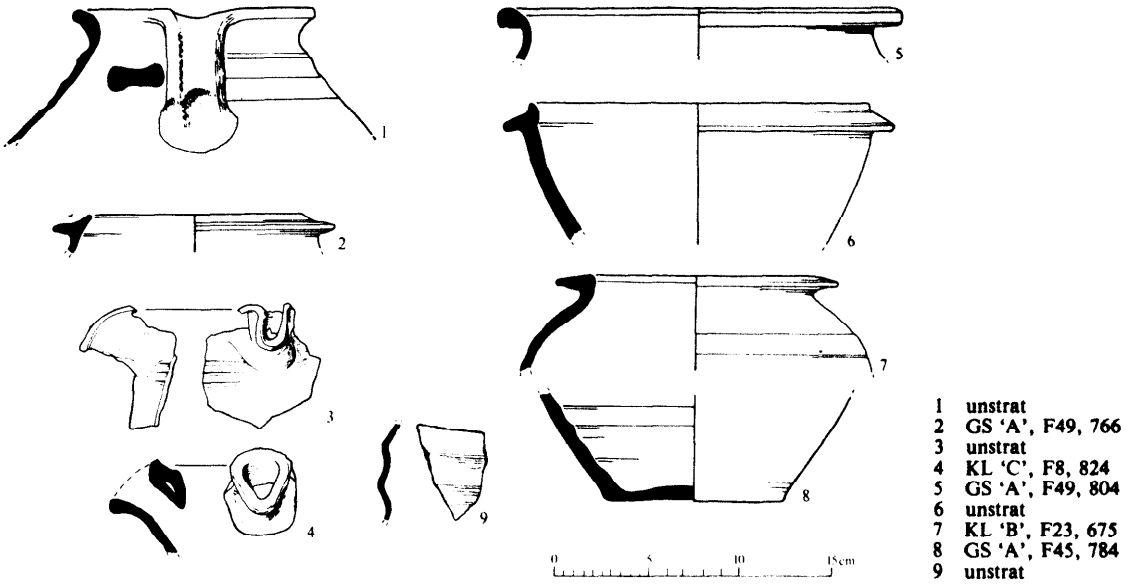


Fig 3,6 Imported wares: class 14, a selection of undecorated sherds (scale 1:4)

Group 3

Macroscopically indistinguishable from the above groups, it includes the black surface and the dark grey surface types: pitchers (eg DMW, F16, 4 (Appendix 2, Fig A2,l); F16,2; T-SP 43), and a storage jar sherd, SARC I, F35, P785 (T-SP 26). There are no prominent inclusions, although two sherds in this group, SARC I, F26, P27 (T-SP 54) and SARC IV, E1-2, P48 (T-SP 59), have large sand grains in the surfaces which give them a granular appearance. In thin section it has an optically anisotropic, very clean, light brown clay matrix with added subangular quartz-sand ranging from *c* 0.3 to 0.5mm across, as well as a few grains of felspar.

Group 4

Three sherds, probably of two vessels, are SARC V, F16, P763 (T-SP 64), and SARC V, F16, P669 (T-SP 96), a corrugated sherd and a pitcher handle (illustrated: Hodges 1980). These have black surfaces and a grey core; a few inclusions of (?)limestone less than 1mm across are prominent in T-SP 96. The fabric is very hard, and has a coarse texture. In thin section this fabric has a light olive brown optically anisotropic clay matrix with abundant inclusions of subangular quartz-sand ranging from *c* 0.03 to 0.60mm across, with large grains of microcrystalline, showing effects of shearing, possibly mylonite, *c* 0.6-1.5mm across, as well as grains of siltstone (cf class 15, group 1 below). Secondly, SARC 1, F7, P532 (T-SP 97), a sherd with black surfaces and a dark grey core quite indistinguishable from groups 1-3. In thin section it has an optically anisotropic light brown clay matrix with a large number of quartz-mica grains up to *c* 0.5mm across indicative of a metamorphic region, as well as some sub-angular quartz-sand up to *c* 0.3mm, plagioclase felspar, and a fired clay pellet.

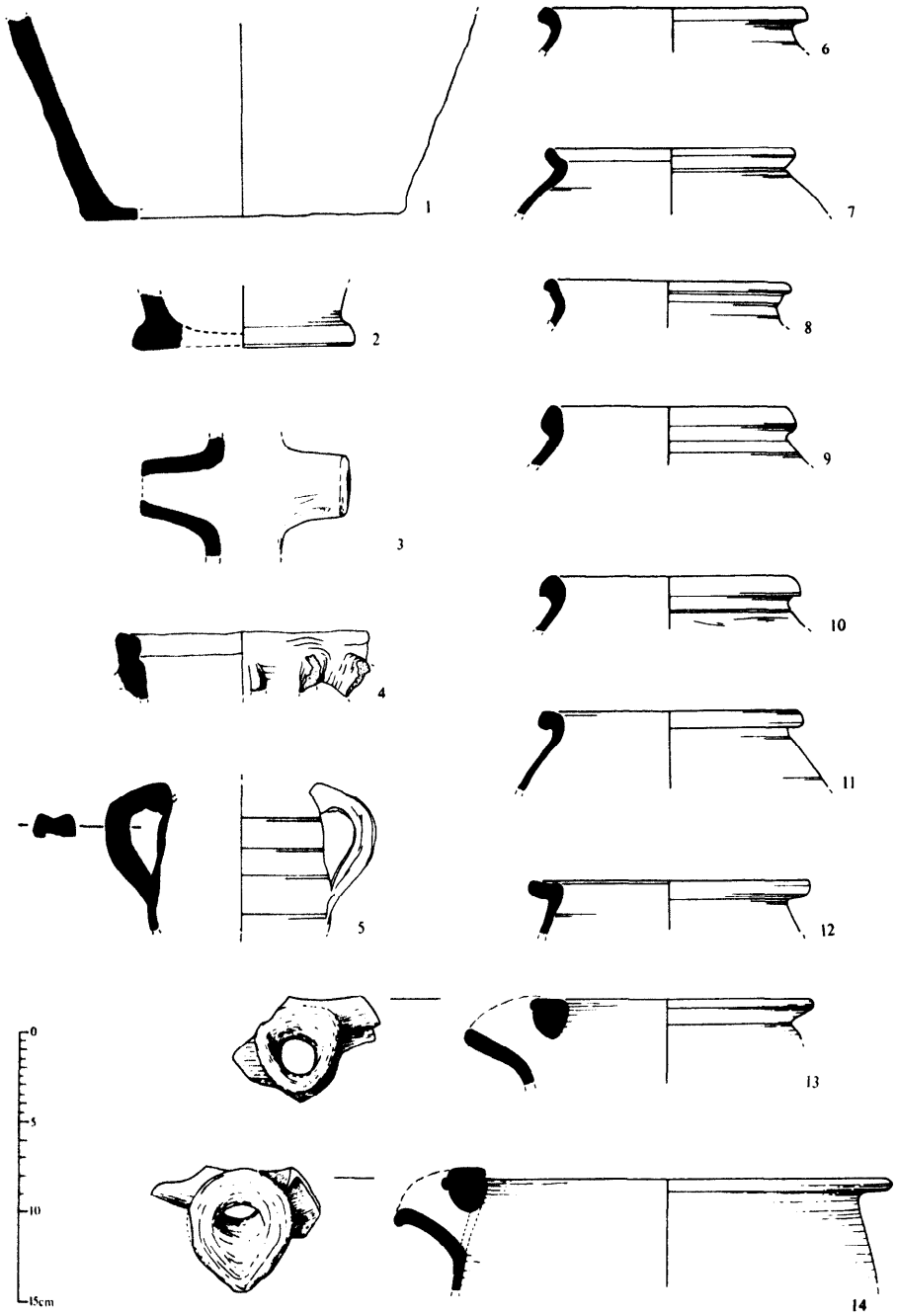
Group 5

This is a distinctive fabric with black surfaces and a dark red core (2.5YR 3/6), very hard with a smooth texture. A spout (Fig 3,5,15) is possibly in this fabric, though only two sherds have been thin-sectioned: SARC XIV, F24, P645 (T-SP 42) and SARC V, F14, P209 (T-SP 62). Thin-section analysis reveals an optically isotropic red clay with a scatter of subangular quartz-sand averaging c 0.4mm, as well as a few grains of muscovite, iron ore, and fired clay pellets, all of which were probably added as temper.

Discussion

The Black wares are discussed in Chapter 7.4, in their context as a major tradition of potting in the early medieval period. A number of examples are also included in the catalogue of imports in Chapter 4, since they were traded to southern and eastern England in the 8th and 9th centuries. Here it is necessary to emphasize that Black wares emanating from two entirely different regions have been found in the Hamwih collection, and Black wares made of five different clays have been identified. Groups 1-3 may emanate from a single source and group 4 from an entirely different one, while group 5, being technically different from groups 1-3, was probably made at another centre. The majority of the wares, groups 1-3 and perhaps group 5, are probably derived from one region, either in northern France or perhaps the Meuse valley. Group 4 is petrologically similar to class 15, group 1, whose suggested origin is in a region of metamorphic rocks. Several sources have to be considered: western Normandy, the Massif Central, and the northern fringe of the Alps. However, the recent publication of some 11th century Grey wares from St Just (Rhônes-Alps), near Lyon (Reynaud *et al* 1975) suggests that one likely source for class 15, group 1, may be in this region. It has yet to be shown that there are Black wares in this area, although it remains distinctly possible that class 14, group 4, may derive from a centre in the environs of Lyons. Black wares are not known from western Normandy or from Alsace and the region adjacent across the Rhine (cf Chapter 7.9 and 7.15). Similarly, little is known of the early medieval pottery of the Massif Central. (A kiln has recently been found at Lezoux, but no information has been published on its wares.)

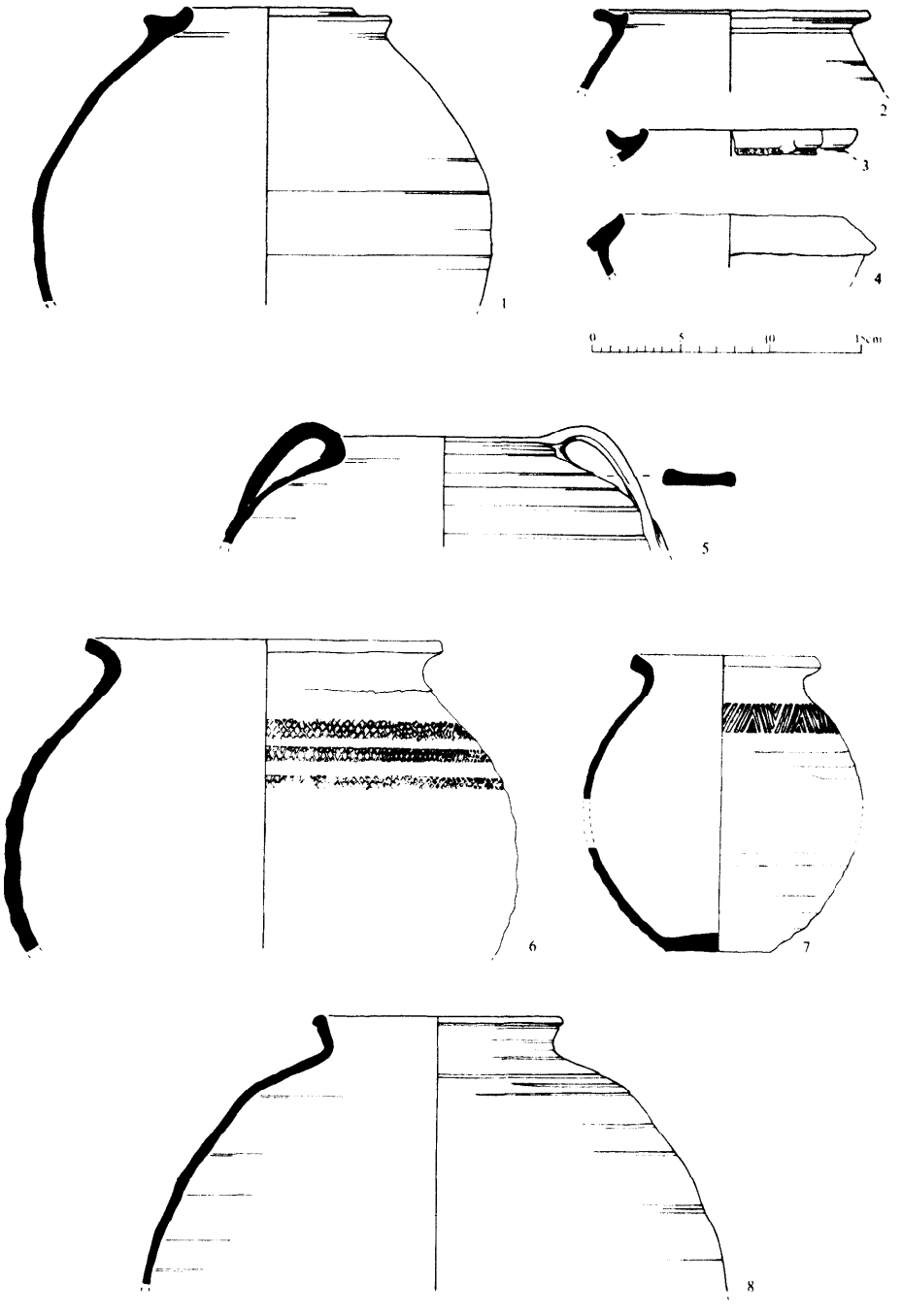
There is a great range of forms in the Hamwih collection of class 14, Black wares. The spouts vary considerably (eg Fig 3,5,12,13,14,15; Fig 3,6,3,4). However, the



1 XI, F46, 403
2 CLS 'B', F68, 1066
3 HAM E
4 XV, F1, 698
5 VII, F52, 109
6 GS 'A', F48, 818
7 unstrat, (F5)
8 GL 'A', F52, 799
9 GS 'A', F66A, 816
10 KL 'C', F5, 826
11 unstrat, (F12)
12 KL 'C', F29, (F3)
13 KL 'C', F10, 829
14 V, F16, 680

Fig 3,7 Imported wares: class 15 (scale 1:4)

'French roll' strap-handle is the only handle type which was employed. There is one unusual variation of the strap handle, and that is a bucket handle from SARC VII, F53 (Fig 3.3.10). This tends to undermine the known typological developments of pottery in medieval Europe by several centuries. There is, however, another example of a bucket-handled vessel from the Kentish Early Saxon cemetery at St Peter's (gr. 309) (Evison 1979, fig 13c). These occasional vessels may be copies of leather-handled vessels or, less likely, Arabic pots. The thumb-impressed strips on one handle of this class (Fig 3,5,11) suggests that metal objects may also have been imitated. (This should not seem too improbable, since there is a Merovingian Black ware copy of a glass bell-beaker in Amiens Museum (unpublished).) Similarly, impressed strips were occasionally added to decorate the bodies of pitchers (Fig 3,5,8,9), as were bosses (Fig A1,1,F15,1). Bowl forms also vary, many of them being flanged with pouring lips (Fig 3,5,4). From SM.69. 10.50 (P.158) (T-SP 191) (Fig 3,6,9) there is a body sherd of what was either a vessel of the so-called Beerlegem type (van Bostraeten 1967) or a double-carinated vessel of the type occasionally found in Merovingian cemeteries across northern Europe. There is a class 12 vessel of this Beerlegem form from Hamwih (Fig 3,4, class 12, 9), but the rilling on this vessel, as on most of those discussed by van Bostraeten (1967), is not as sharp as on the class 14 body-sherds. By contrast, the double-carinated vessels have not been much discussed in the archaeological literature and consequently there is no close dating of them. In



1 KL 'C', F8, 828
2 CLS 'B', F71, 845
3 KL 'C', F21, 715
4 HAM E, 149
5 KL 'C', F6, 68
6 XIV, F27, 150
7 HAM E, God's House Tower, F64
8 GS 'A', F52, 810

Fig 3,8 Imported wares: class 15 (scale 1:4)

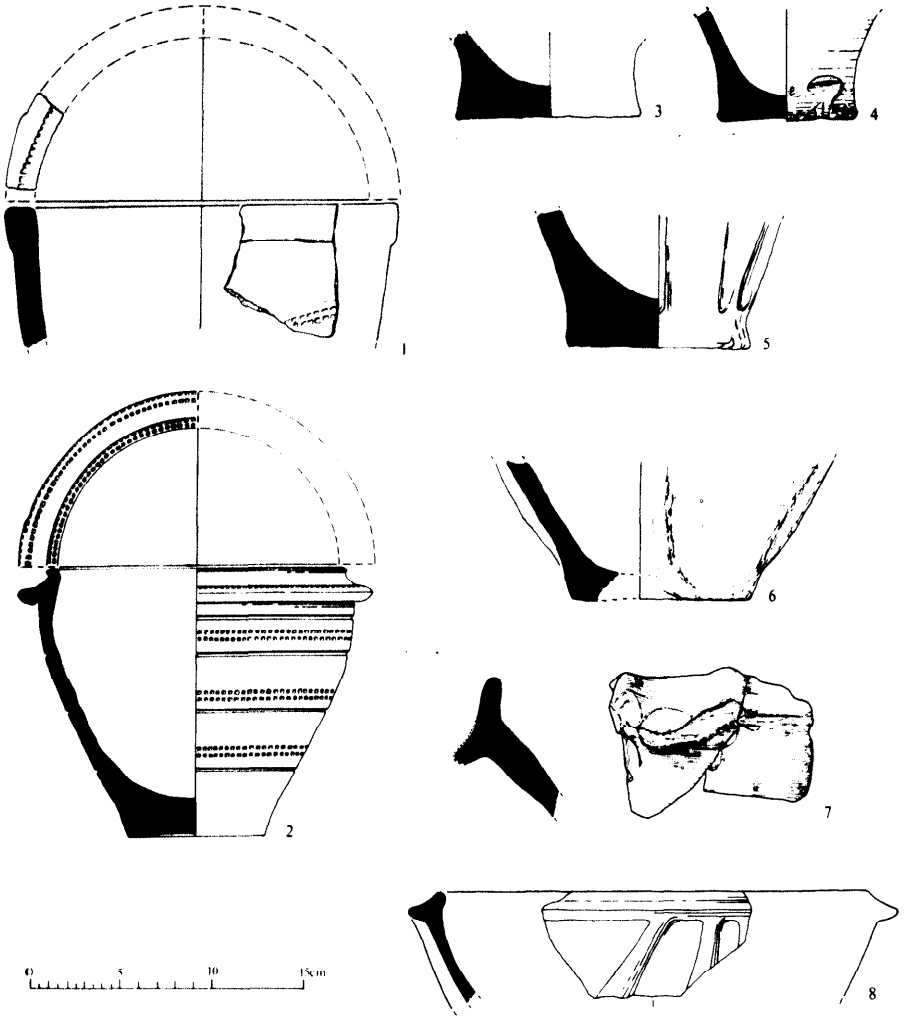
fact, this would be the first example to have been recognized in a post-7th century context. In any case, the sharp carination would suggest it to be one of the earliest Hamwih imports.

Class 15: Grey wares

The Grey wares are the commonest wares in Hamwih. Their primary characteristic is that they are uniformly reduced grey (2.5YR N6/0), as distinct from the dark grey surfaces of some of the class 14 wares, which have light grey cores. A further, though largely subjective, distinction is that the class 14 sherds with dark grey surfaces, unlike the Grey wares, have a fine slurry finish. This class comprises mostly beak-spouted, flat-based pitchers, some storage vessels, cooking pots, and some pottery mortars, besides some unusual forms: SARC VII, F52, P109 (Fig 3,7,5) and a skillet, HAME, unstrat. (Fig 3,7,3). Like the Black wares, they are typologically very varied, and there are also the same macroscopic difficulties in grouping them, with the exceptions of groups 2c and 3. Therefore, as with class 14 wares, this class can only be defined by thin section, and the illustrated vessels, many of which have not been thin-sectioned, serve to demonstrate the wide range of this very important class.

Group 1

This group includes a beaked vessel (Fig 3,7,14) (T-SP 1), and a large roller-stamped storage vessel (Fig 3,8,7)



1 HAM 68/9, 209
2 Rouen, rue de la Vicomté
3 HAM 69, 336, 210
4 KL 'C', 750
5 V, F27, 209
6 KL 'C', 761
7 I, F28, 761
8 GS 'A', F41, 822

Fig 3,9 Imported wares: pottery mortars of various classes (scale 1:4)

(T-SP 177). One sherd, SARC V, F14, P545 (T-SP 51) has a lustrous external surface; SARC XI, F46, P578 (T-SP 4) has prominent mica inclusions; SARC XI, F66, P698 (T-SP 7) has organic inclusions prominent in the broken edges of the sherd. Thin section reveals an optically anisotropic grey to light brown clay matrix with large grains of microcrystalline showing the effects of shearing, possibly mylonite, up to *c* 1.5mm across; there is also quartz-sand ranging from *c* 0.03 to 0.5mm across, quartzite, and several fine- to medium-grained sandstone inclusions.

The shearing effect prominent in the microcrystalline inclusions is indicative of rocks which have undergone strain, usually associated with the faulting in the metamorphic areas on the periphery of granitic regions such as, in this case, western Normandy, the fringe of the Alps, or the Massif Central.

Group 2

This is a provisional group of several fabrics which have petrological similarities. It comprises three subgroups:

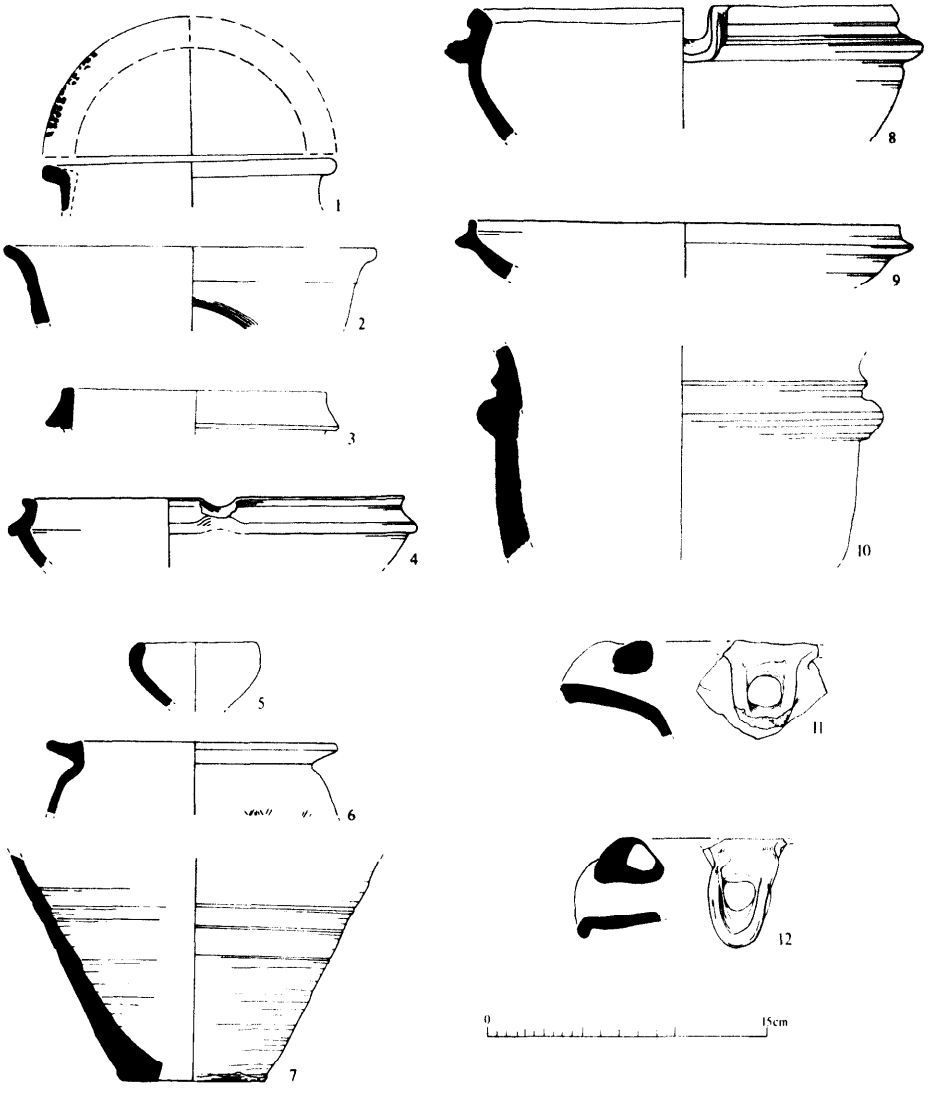
a The first sub-group includes a mortar base (Fig 3,9,4) (T-SP 145), a cooking-pot: SARC IV, F2351, P848 (T-SP 108) (illustrated: Hodges 1980), and a large flanged rim, SARC IV, F51, P676 (T-SP 106) (illustrated: Hodges 1980). In thin section it has an optically anisotropic grey matrix with prolific unsorted subangular quartz grains ranging from *c* 0.03 to 1.00mm across, as well as some quartzite.

b A flanged rim, SARC V, F21, P854 (T-SP 6) (illustrated: Hodges 1980), which is similar in thin section to subgroup (a), but also includes a number of plagioclase felspar grains averaging *c* 0.4mm across.

c A group distinctive because it has prominent inclusions of quartz-sand, *c* 1.00mm across, in the fabric. It includes the storage vessel (Fig 3,8,1) (T-SP 173) and a very hard fired flanged rim (Fig 3,8,4). In thin section, it differs from the other two sub-groups above by having a large amount of quartzite inclusions.

Group 3

This is a distinctive fabric because it has prominent inclusions of limestone, *c* 1-2mm across. Only one cooking-pot rim has so far been identified: SARC V, F11, P1087 (T-SP 107) (illustrated: Hodges, 1980). Thin-section reveals prolific sub-angular inclusions ranging from *c* 0.03-1.0mm across, as well as a few very fine-grained limestone inclusions, grains of chert or flint



1 I, F10, 589
2 HAM 68, unstrat, 232
3 XI, F45, 745
4 KL 'C', F1, unstrat
5 XIV, F26, 1999
6 IV, E3-23, 66
7 KL 'C', F2, 1949
8 GS 'A', F63, 790
9 KL 'C', F5, 89
10 XIV, F27, 1532
11 HAM 69, 569
12 SM.69, 10.51, 128

Fig 3,10 Imported wares: classes 16 and 17 (scale 1:4)

and sandstone varying from *c* 0.8-2.00mm across.

A highly fired sherd from SARC I, F33, P213, perhaps a badly fired pot (of which there are, incidentally, several Rhenish examples from Dorestad), probably belongs to this group.

Group 4

Only one very hard fired sherd, SARC VI, F39, P419 (T-SP 103), with granular surfaces, has been found. In thin-section it has a distinctive optically anisotropic clean brown clay matrix with some added sub-rounded quartz-sand averaging 0.03mm in size.

Discussion

Like the class 14 Black wares, the class 15 wares are discussed in Chapter 7.5 since they represent an important tradition of Carolingian pottery. However, some remarks are apposite here. First, group 1 originates from a zone of metamorphic rocks or outcrops. As with class 14, group 4, there are several possible sources, although typologically two regions, the upper Rhine and western Normandy, seem improbable. The recent publication of 11th century grey wares from St Just (Rhône-Alpes), near Lyon (Reynaud *et al* 1975), suggests that there was a tradition of Grey ware production on the metamorphic regions to the north-west of the Alps from which these 8th-9th century vessels may originate. A likely source for the other petrologically indistinctive groups 2a, 2b, and 4 may be in the environs of Quentovic in the Pas-de-Calais, where there was a tradition of reduced grey wares from the Roman period until the Late Middle Ages. Group 2a is texturally very similar to the Grey wares from the recently discovered kiln at Baralle (Nord) (Jacques 1976), discussed in Chapter 7.7. However, sub-group 2c may be Normandy ware, for the 9th century sherd from Île Agois, Jersey, included in the catalogue in Chapter 4, is petrologically similar (T-SP 47), and so are some 12th-13th century sherds from recent excavations at Château des Marais, Guernsey (T-SP 196). Finally, group 3 obviously emanates from a limestone region, probably in the hinterland of Quentovic, although petrologically it is very different from class 29, another limestone-tempered ware.

Mortars

One interesting group of Grey wares is the mortars, some of which have ribbing (Fig 3,9). Only one has been thin-sectioned and this was found to belong to petrological

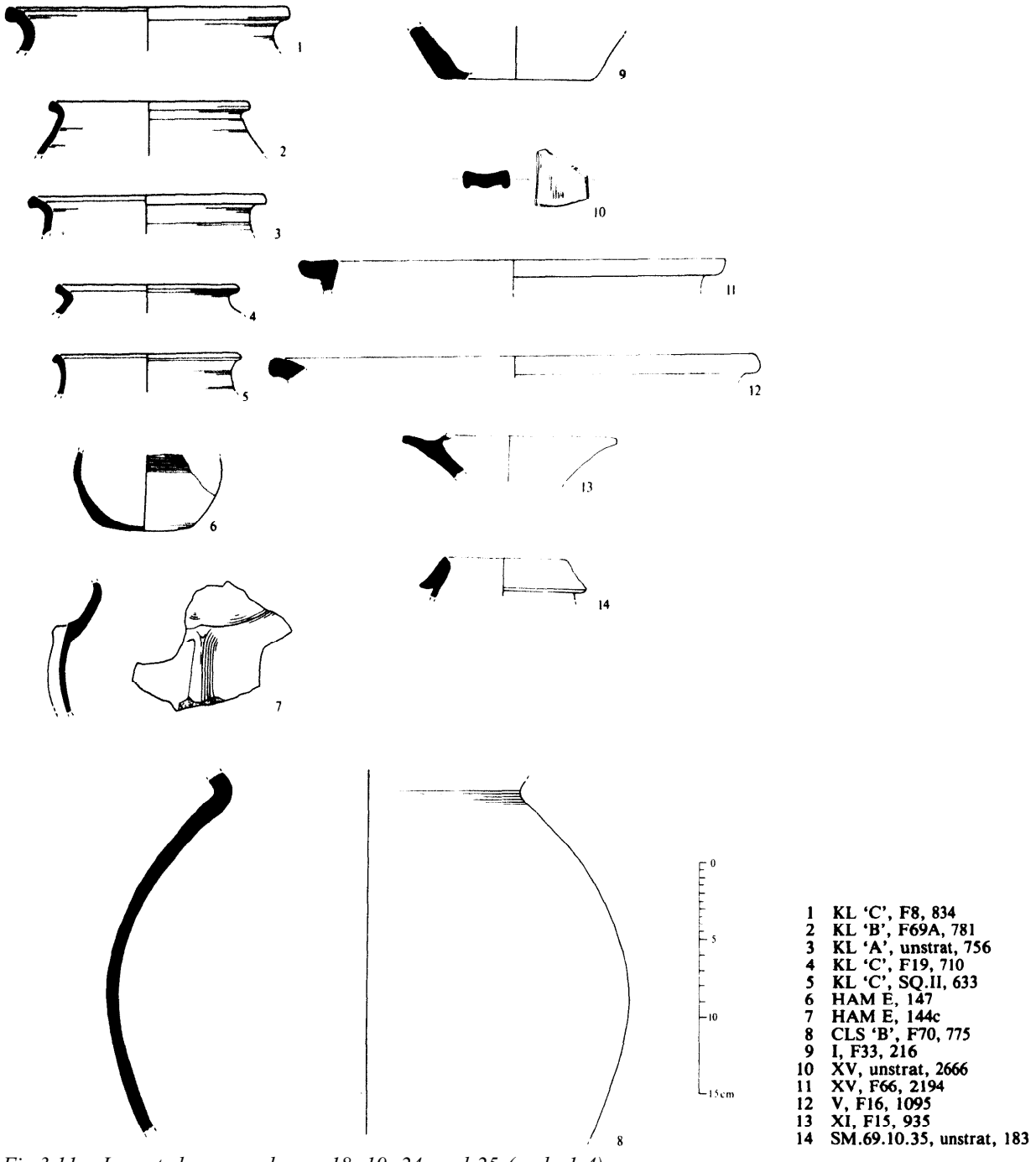


Fig 3,11 Imported wares: classes 18, 19, 24, and 25 (scale 1:4)

group 2a. A number of stone mortars are now known from Dorestad (eg van Es 1969a, fig 15), while at least one has been found in Middle Saxon contexts at Jarrow. The Dorestad mortars are mostly thought to be products of an industry centred in the Moselle valley. The production of what are, in effect, ceramic imitations, suggests that the stone mortars were only traded very locally in northern France.

Class 16: Fine white wares

There is only a small collection of fine white wares. These may be either specialized products of a large industry or the primary product of an industry exploiting estuarine clays. In this fabric there are cooking-pot forms (which have not been burnt) (Fig 3,10,7), pitchers with roller-stamped decoration (Fig 3,10,1,6), and large and small bowls (Fig 3,10,2,3,4,5). One of these pitchers from a late 8th to early 9th century pit on Hamwih site 24 can be reconstructed: it has a beak spout (Fig 3,10,12), a flat and squared rim, and a strap handle and the body is decorated with deeply incised wavy lines set within horizontal bands. They have no prominent inclusions, and any that are micaceous are likely to be variants of class 12: eg the mortar, HAM 69, 229 (T-SP 141) (Fig 3,9,1). Class 16 wares are usually hard-fired and so have flaked, and have fine smooth textures.

Two sherds have been thin-sectioned: SARC V,

F14/15, P531 (T-SP 132) and SARC XI, F45, P745 (T-SP 159). Both have an optically anisotropic brown matrix with prolific inclusions of subangular quartz-sand *c* 0.01-0.05mm across, a few large grains of quartzite up to c 1.5mm across, and a little muscovite.

There are a few examples of the use of iron-free estuarine clays during the Carolingian period. There is a roller-stamped pitcher from Corbeilles (Loiret) (Fig 7,8,2), a small collection of 10th century white wares from Calinie's recent excavations at Tours (lndre-et-Loire), and a burnished white-ware beak-spout found in excavations at Orléans (Loiret) (Orleans depot). This slight evidence suggests a source for this class in the Loire valley.

Class 17: Quartz-tempered white wares

This class is characteristically a white ware with prominent rounded quartz-sand inclusions *c* 1 2mm across, but no mica. There are beak spouts, presumably of pitchers (Fig 3,10,11), large and small flanged bowls (Fig 3,10,8,9), a storage vessel (Fig 3,10,10), and mortars, including one with undecorated ribbing (Fig 3,9,5), in this class.

In thin section, DMW 89, KL 'C', F5, layer 3 (T-SP 167) (Fig 3,10,9) has an optically anisotropic brown clay matrix with a scatter of subangular and rounded quartz-sand ranging from *c* 0.30 to 0.80mm across, as well as some finer grains *c* 0.01mm in the matrix, one grain of rounded flint, and one of iron ore.

The late Dr G C Dunning drew the author's attention to a roller-stamped mortar, probably of this class, which was found in Rue de la Vicomté, Rouen (Fig 3,9,2). This is the only parallel, and in view of the technical resemblance between this class and the later 11th to early 13th century Normandy gritty ware, a Normandy origin seems likely, However, a Loire origin similar to the preceding class must not be ruled out.

Class 18: Miscellaneous oxidized wares

This is a provisional classification of those oxidized wares which cannot be included in other classes. Oxidized vessels are rare in 8th and 9th century contexts. There are only two large bodies of oxidized vessels from the Altbachtal kiln at Trier (Hussong 1936) and of the Bouxwiller (Hamwih class 23) type from Alsace. In Janssen's excavations at Brühl-Eckdorf there was one rnicaceous oxidized bowl amongst an enormous collection of more typical Middle Rhenish wares. It is likely, therefore, that some of the oxidized wares will be integrated into the other classes once a larger sample or parallels are available. For the moment only those sherds of particular interest are noted, since otherwise this class would comprise a series of single sherds and their corresponding sub-groups.

Group 1

DMW 1090, KL 'C' F15, unstratified: a rilled sherd with oxidized red (2.5YR 5/8) surfaces and core; no prominent inclusions. In thin section it has an optically isotropic red clay matrix with two grades of angular quartz-sand: *c* 0.02mm grade in the clay, and the *c* 0.4-0.5mm grade with a large number of clay pellets of the same size which make it very distinctive, and which were probably added as temper.

This may be an amphora sherd tempered with grog. One parallel for a rilled oxidized vessel oft his kind found at Asturias, in north-west Spain, is on display in Santander Museum (Garcia Guinea *et al* 1963, pl X).

Group 2

DMW 1050, CL. S'A', F64: a bodysherd with oxidized, light red (2.5YR 6/8) surfaces. In thin section (T-SP 18) it has an optically anisotropic light brown clay matrix with subangular quartz-sand ranging from *c* 0.01 to 0.50mm across, though mostly c0.0l-0.05mm across, as well as a few grains of quartzite.

This sherd is likely to be an 'oddity' of another class. The fabric bears some similarities to the 11th to 12th century Normandy 'gritty ware'.

Group 3

SARC VI, F30, Pl21 and DMW 834, KL'C', F8, layer 8: a bowl and cooking pot respectively (Fig 3,11,1), uniformly light red (l0R/6) in colour, prominent large sand grains in the surfaces as well as a few large quartz grains up to c 1.0mm across, and micaceous. The fabric is hard and smooth. In thin section, the former sherd (T-SP 160) has an optically isotropic red clay matrix with a range of angular c 0.0l -0.60mm in size, as well as muscovite.

This fabric, in the hand and in thin section, is similar to one of the fabrics found in the Altbachtal kiln at Trier, though different to the class 12 found in Hamwih.

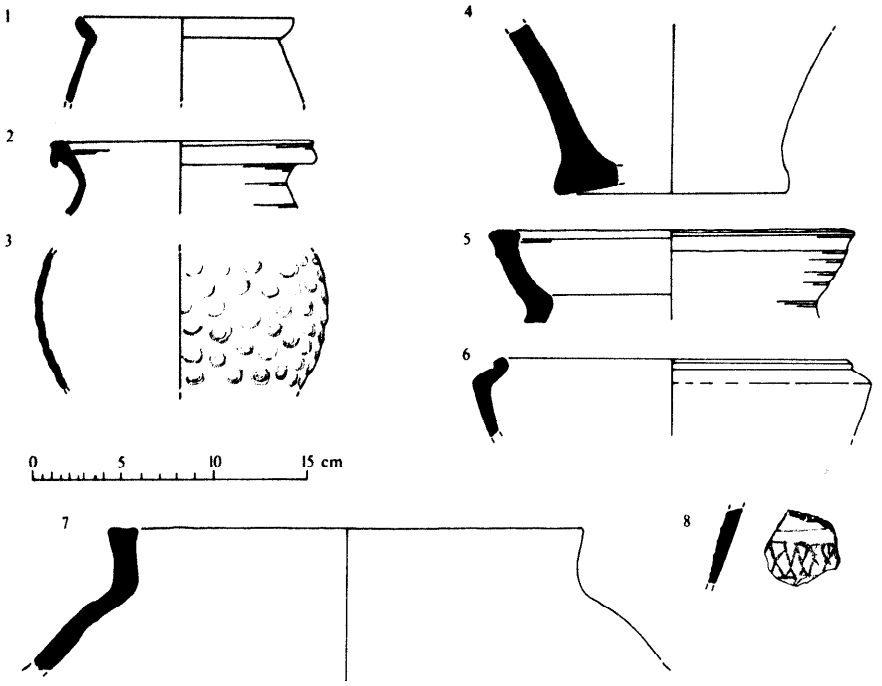
Class 19

This is an uncommon class in the Hamwih assemblage: a few cooking-pot rims, a small incise-decorated pot (Fig 3,11,6), and a relief-banded vessel (Fig 3,11,8) from Waterman's and Maitland-Muller's excavations, as well as a wire-cut base from SARC IV, F3501 (P852) have been found (Hodges 1980). The fabric is greyish brown (10YR 5/2) and often has a slurry finish that conceals any prominent inclusions. However, quartz-sand up to c 1.0mm across is visible in the surfaces of the base from SARC IV, which has no slurry finish. It is a comparatively soft ware for wheel-thrown pottery of this period, and usually has a soapy texture. Thin section (T-SP 146, 203) reveals a brown, optically anisotropic clay matrix with subangular to angular quartz-sand ranging from *c* 0.1 to about 1.0mm across; there are also a grains of quartzite ranging from *c* 0.3 to 1.0mm across. In T-SP 203 a few grains of iron ore and fired clay pellets are also present.

The thin sections suggest that this class might be derived from a source in a metamorphic rock region, probably in France. Brittany, the Alps, or the Massif Central are all, of course, possibilities, though too strong an emphasis cannot be placed on this conclusion.

Class 20

This is a rare class which comprises a large cooking-pot rim, SARC 1, F5, P408, and some body sherds from SARC IV (Hodges 1980). There are two variants: the first is oxidized light red (2.5YR 6/8) but has brown, often blackened, outer surfaces; the second has an oxidized light red core, and light brownish grey (10YR 6/2) to grey (2.5YR N5/) surface. Occasional grains of quartz-sand up to c 2mm across, iron ore, and chalk or limestone are visible in the surfaces. There are also a few grains of mica. The surfaces are sandy to the touch, and the fabric is hard-fired and tends to flake. Thin sections (T-SP 86, 109) reveal an optically anisotropic brown clay matrix with prolific inclusions of subangular quartz-sand ranging from *c* 0.01 to 0.5mm across, a few grains of quartzite, chalk, or fine-grained limestone, and in T-SP 109 a fired clay pellet about 1.0mm across.



1 SM.69.10.8, A243.69 (unclassified)
2 GS, 8a (class 33)
3 HAM E, F158, 72 (class 24)
4 V, F34, 510 (class 29)
5 KL 'B', F41, 762 (unclassified)
6 XIII, F84, 100 (class 31)
7 XI, F46, 402 (class 32)
8 SM.68.8.50, 85 (unclassified)

Fig 3,12 Imported wares: classes 24, 29, 31, 32, 33, and unclassified (scale 1:4)

It seems likely that this is a French ware, and the fabric and form are reminiscent of Saran products (see Chapter 7.10). However, Chapelot did not consider it to be a Saran ware, so an alternative source, perhaps elsewhere in the Loire valley or in the Paris basin, located near chalk or limestone, must be considered.

Class 21: Red-burnished wares

Red-burnished wares are a specialized product discussed further in chapter 7, section 6. There are seven examples from Hamwih, all of which were probably flat-based, strap-handled pitchers, one with a rilled body. The vessels are as follows:

1 KL 'B', P22, 1: 3 sherds 616, 617, 618
KL 'B', P29, 2: 4 joining sherds: rilled body, 792 (Fig 3,2,1)
2 KL 'C', P39, 2: wire-cut base, 688 (Fig 3,2,15)
3 SARC VI, F30, P254, and F33, P234: 2 body-sherds
4 SARC XI, F44, P530: base (?) (Fig 3,2,14)
5 SARC VI, F130, P59: sherd
6 HAM 69, 306, 38: strap-handle (Fig 3,2,13)
7 SM 69, 10 8a x 2

These wares have a red-burnished outer surface (2.5YR 5/8) with light red (2.5YR 6/6) inner surfaces. They are very hard, fine, and smooth to touch. Thin section (T-SP 168) of a sherd from KL'B', P22, 1 reveals a very distinctive fabric with an optically anisotropic brown clay matrix packed with angular quartz-sand of uniform size, *c* 0.1-0.3mm across, as well as occasional grains of iron ore and muscovite. This fabric, in thin section, is unparalleled in the Hamwih assemblage.

Class 22

This class comprises a single storage vessel, of which only sherds have been found. It is (oxidized) light red (2.5YR 6/8) with large sand grains and occasional inclusions of iron ore *c* 1.0mm across prominent in the surfaces. Internally it is rilled and fragments tend to flake from the surface. It is hard-fired and smooth to touch. In thin section (T-SP 162) it has a brown optically anisotropic matrix with subangular quartz-sand c 0.01mm across, to which rounded and subangular quartz-sand *c* 0.3-0.6mm across has been added; there is also one clay pellet grain *c* 0.4mm across.

It is likely that this is a type emanating from a kiln centre producing one or more of the other Hamwih classes. The sherds are superficially similar to undecorated sherds of class 23, while in thin section it is texturally similar to several classes, notably Beauvaisis ware and class 24.

Class 23

This is a rare class in the Hamwih assemblage: only one almost complete cooking pot with roller-stamped decoration (Fig 3,1,8) and a few sherds have been found. The fabric is light red (10R 6/8), and it has no prominent inclusions, although it is characterized by large sand grains. It is very hard with a smooth texture. In thin section (T-SP 166) it has a red optically isotropic clay matrix with well sorted subangular quartz-sand of c 0.30-0.50mm across, as well as a little quartz-sand c 0.03-0.10mm across and a few grains of flint and mica. Thin-section analysis does not in this case help to identify this ware. However, the deep roller-stamping and the sharpened rim are characteristic of a Strasbourg type (Fig 7,11,17,18) and a ware found in the kiln debris from Bouxwiller, also in Alsace (Rexer 1963, 3, nos 1, 2, 3, 5 and 6). This ware is discussed in Chapter 7.15. An origin on the western side of the upper Rhine therefore seems certain.

Class 24

The fabric is very dark grey (10YR 3/1) to dark brown (7.5YR 4/2). Sometimes the exterior surface is burnished. It is characterized by the large sand-grain

inclusions which make it appear granular and very coarse to the touch. There are also a few iron-ore inclusions up to *c* 1.00mm across, It is very hard. In thin section it has a black to red optically anisotropic clay matrix with only a few well sorted inclusions of subangular quartz-sand of two grades, *c* 0.0l-0.03mm and *c* 0.1-0.5mm across, abundant iron-ore inclusions up to *c* 1.00mm, flint or chert, and occasional clay pellets.

This class usually occurs in cooking-pot forms, although only one wire-cut base has been found: SARC 1, F33, P216. There are, however, other forms: a large storage vessel CL 'B' P70, 775 (Fig 3,11,8), a pitcher handle from SARC XV, F75, P2666 (Fig 3,ll,10), and a flanged bowl from SM 69.10.354 (183) (Fig 3,11,14). A curious sherd with a barbotine-like surface has also been found in this class from HAM E, 158, layer 9,72 (T-SP 216) (Fig 3,12,3). The inner surface shows the signs of fingernail impressions to create the unusual decoration.

A flanged bowl in a similar fabric has been found at Wicken Bonhunt, Essex (Fig 4,2,1), while sherds of a similar fabric have been found at Ipswich and North Elmham Park (see Chapter 4.3). The only other parallel from England is a 7th century jug from the cemetery at Aylesford-Preston Hall (Kent), now in Maidstone Museum (AS 193) (Evison 1979, fig 11d).

A similar fabric has now been recognized at Douai in northern France, and proves to be a much closer parallel than that from Ukkle in Belgium suggested in a previous paper (Hodges 1980). This pottery, however. is from the 10th century levels at La Fonderie de Canons, Douai (Nord), and it remains to be seen whether this fabric has earlier Carolingian antecedents on this important site (see Chapter 7.7).

Class 25

This is a very distinctive fabric which ranges only slightly in colour from pink (5YR 7/4) to reddish yellow (5YR 7/6) (there is also one example of a reduced black vessel from SARC IV, F3, P419). There are two types: the first and more common has prolific inclusions of quartz-sand up to *c* 1.00mm across, and the second has finer, though prolific and prominent, quartz-sand inclusions. Both types have iron-ore inclusions; both are hard-fired, but the surfaces of the first type sometimes flake. Both have distinctive, coarse pimply textures.

Thin section of the first type reveals a light brown optically anisotropic clay matrix with well sorted rounded inclusions of quartz-sand of two grades. some iron ore, and muscovite (T-SP 157, T-SP 186). The clay matrix of the second type in thin section is cleaner, with fewer inclusions of the smaller grade of quartz-sand c0.01-0.03mm across than was apparent in the first type (T-SP 154).

Several forms of the first type have been found: a large bowl rim from SARC V, Fl6 (Fig 3.11,11; cf 12), a wire-cut base from SARC V, F24, P996, as well as a red-painted bowl rim from SM 69.10.51 (129) (Fig 3,2,19), which was associated in a pit on site 24 with a coin of Offa (cf Addyman and Hill, 1969, 92) (cf Chapter 7.8). In the finer, second, fabric only a flanged bowl has been identified: SARC XI, F15, P935 (Fig 3,11,13).

Vessels in this fabric are well known from Mcrovingian cemeteries in the upper Seine (Wailes discussed some of them in his thesis (1963)). A sherd of this date has now been found at Chalton in Hampshire, while some distinctive quartz-tempered wares, including an unusual handle (Fig 4,1,3), have been found in Ipswich. These Ipswich vessels must date to the 7th century, and may derive from the same Seine valley source. It should be noted, however, that a very similar fabric has been recognized in Merovingian cemeteries in Holland, so more than one source for this kind of ware may be possible. (These are also discussed by Wailes in his thesis, but unfortunately he was confusing a number of fabrics, including these, with E wares.)

There are, however, some 8th-9th century vessels of this kind from Paris. A group of pitcher spouts and flanged bowls was found during 19th century excavations near St Germain-des-Prés (Fig 3,8,4,6,7), and more recently a complete red-painted pitcher in this fabric with a dark green surface sheen was found in excavations in front of Nôtre-Dame. De Bouärd and Guibert (in Hurst 1969, 113) have referred to this enigmatic vessel, and clearly the Hamwih finds elucidate a little about it, although its curious surface colouring remains a mystery.

Class 26

SARC IV, F2351, P846: A very tiny yet distinctive sherd with a corrugated surface, very pale brown exterior (10YR 7/4) and yellow (10YR 7/6) interior. Inclusions of (?)chalk up to *c* 1mm across, Very hard with a smooth surface.

This sherd has no parallel in the Hamwih collection or elsewhere. As it is so small it is impossible to suggest the original form.

Class 27

This class has been found on two sites in Melbourne Street. An abraded flat base was found unstratified from SARC 1, P767 and several rilled sherds were found from SARC V, F32. This fabric varies in colour from light red (2.5YR 6/8) to grey (7.5YR N6/0). The fabric has abundant inclusions of iron up to *c* 1mm across, and is hard with a smooth texture.

In thin section (T-SP 131) this fabric has an optically anisotropic light brown clay matrix with unsorted angular quartz-sand *c* 0.01-0.10mm across, a few grains of quartzite and muscovite, as well as a large number of iron-ore grains.

The fabric is similar to certain Loire valley oxidized fabrics from Tavers, near Beaugency, and also from Vezelay (Yonne) (see Chapter 7.10). However, a profile will be required before any realistic judgement can be made.

Class 28

This is rare in SARC excavations; it includes a base of a pottery mortar: HAM 69/366,210 (T-SP 176) (Fig 3,9,3) and a flat-base sherd from SARC IV, F111, P787 (T-SP 184). The surfaces of the mortar are reddish-yellow (5YR 6/6) to pale brown (10YR 6/3), and it has a light grey core (10YR 6/1). It has no prominent inclusions and is hard, and sandy to the touch. The base sherd has abraded surfaces. Thin section reveals an optically anisotropic clay matrix with prolific subangular quartz-sand *c* 0.01-0.03mm across, as well as a scatter of subangular quartz-sand *c* 0.l-0.4mm across, and fine- and medium-grained sandstone.

This is only a distinctive fabric in thin section. It seems likely that it originated from a centre located near or on a sandstone band, probably in France.

Class 29

Three thick jar bases have been found in this fabric: SARC V, F34, P510 (Fig 3,12.4); SARC XV, F28, P841;

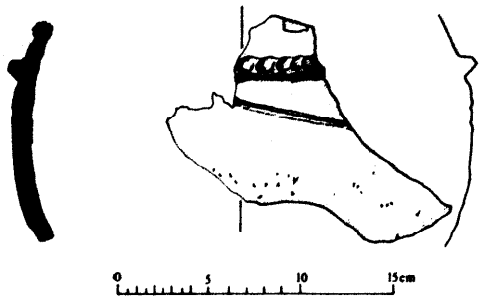


Fig 3,13 Imported ware: class 30 (scale 1:4)

and SM 69, 100. The fabric is reddish-yellow (5YR 7/6) to pinkish-white (5YR 8/2). It has prolific inclusions of quartz-sand, iron ore, and flint up to *c* 1mm across. In the SARC V vessel there is a large angular inclusion of flint *c* 5.0mm across. It is hard, and has a very coarse texture, largely because it seems to flake very readily.

Thin section (T-SP 149) reveals a clean anisotropic dark brown clay matrix packed with angular quartz-sand ranging from *c* 0.3 to 0.8mm in size, felspars and rounded fine-grain limestone *c* 0.3mm across, as well as a few grains of quartzite and muscovite.

This fabric is at present unique in the Hamwih assemblage. The flat base suggests that the source of this ware lies in France, possibly on one of the ridges of the Paris basin, or in Belgium, although exactly where remains uncertain. It may be noted, however, that the finer of the two wares found at the 11th century site of Dieue-sur-Meuse, near Verdun, in the Argonne has similar quantities of fine-grained limestone in thin section (T-SP 179) (Chapter 7.12).

Class 30: Irish Sea Province ware(?)

A rim sherd with a thumb-impressed cordon around the belly from HAM 69, F485 (Fig 3,13). It has a smooth, grass-marked outer surface which is reddish-yellow (7.5YR 6/6). The inner surface is also reddish-yellow, except where it has been burnt black; however, it has rilling, which suggests that the vessel was made on a turntable of some kind. The core is grey (7.5YR N6/). There are many large inclusions of quartz-sand up to *c* 1.5mm across and rounded iron ore up to *c* 1.0mm across prominent in the inner surface and in the sections of the sherd. Thin section (by Dr D P S Peacock) confirmed that the sherd includes a large number of grains of siliceous and argillaceous quartz-sand showing a high degree of regional metamorphism.

The form and the thin section have led to the conclusion that it is a Souterrain ware sherd (cf Ryan 1973), of the oxidized type sometimes found in northern Antrim, a type rather different from those more commonly known from sites around Belfast such as the big collection from Lissue rath now in the Ulster Museum, Belfast. There are, however, clearly problems with this. First, the form is not a common one for Souterrain ware. Secondly, the applied cordon decoration has been considered a feature late in the sequence of this Early Christian ware; an 8th-9th century date would be something of a revelation to Irish archaeologists (Ryan 1973,627). Thirdly, the vessel is proficiently made and finished in contrast to most Souterrain vessels. Fourthly, there has previously been only one tentative identification of Souterrain ware outside Ireland and that was from Chun Castle in Cornwall, a site that is strictly in the Irish Sea Province (Thomas 1973; 1968, fig 72,1). It would be an example of contact at a time when Hiberno-Saxon intercourse was moderate (cf Hughes 1971, 67, n 1, however, and Garmonsway 1953, 82; Hodges 1975a). These arguments against it being Souterrain ware following its initial identification have been presented by students of Irish archaeology (in letters from A Lane and R Warner). It remains, therefore, to establish what this vessel might be. The thin section points to a Breton, Cornish, or Antrim source; the form would tend to confirm this. For the moment we must await further research on the still little known pottery of the Irish Sea Province in the Early Christian period.

Class 31

A single bead-rim bowl: SARC XIII, F84, P100 (Fig 3,12,7). It has yellowish-brown surfaces (10YR 5/4) and a light grey core (10YR 7/1). There are prominent large sand grains, and quartz-sand as large as 1mm across in the surfaces, which are in fact smooth. It has a very hard fabric, similar to some of the Rhenish wares.

In thin section (T-SP 156) it has an optically anisotropic brown clay matrix with unsorted subangular and rounded quartz-sand ranging from *c* 0.1 to 0.8mm across, quartzite, and two grains of sandstone.

This is an unusual form, the origins of which are uncertain. There are a few bead-rim bowls in the La Saulsotte kilns' assemblage (Chapter 7.11), but it is unlikely that this very hard ware emanated from there or that region, and a Mayen source should equally be considered.

Class 32

One large jar sherd from SARC XI, F46, P402 (Fig 3,12,8). It is an upright rim squared at the top. It has a grey (10YR 5/1) outer surface and core, and a light reddish brown (5YR 6/4) inner surface. Prominent in the surfaces are prolific inclusions of quartz-sand up to *c* 3.0mm across. It is very hard, and has a rough texture due to the inclusions. Thin section (T-SP 23) reveals an optically anisotropic brown clay matrix with prolific inclusions of quartz-sand *c* 0.01-0.03mm across, as well as a scatter of distinctive rounded quartz-sand ('millet seed' sand-grains) ranging from *c* 0.04 to *c* 1.0mm across. There are also fired clay pellets, iron-ore grains, and one grain of fine- to medium-grained sandstone. The rounded quartz-sand makes this a distinctive class in thin section.

The rounded quartz-sand is indicative of a wind-blown deposit, possibly from a desert. A more detailed analysis of the quartz grains is necessary before this may accurately be distinguished. However, since a desert origin is likely, a source perhaps in Spain or North Africa must be considered, although it is possible that Rhenish pottery may have exploited the deposits of the Triassic period deserts to make this class. In these circumstances, a Rhenish origin seems more acceptable.

Class 33: A Mayen ware variant

Only two sherds of this class have been recognized from recent SARC excavations: IV, F50, P644 (T-SP 215) and VI, F1, P15 (T-SP 126). Both are featureless sherds. There is, however, an unusual early example of a collared rim from GS.C, F28 (Fig 3,12,2) and a thick bodysherd with an applied strip from HAM 69/301, 1, 228. With the exception of VI, F1, P15, which has fine pink (7.5YR 7/4) to pinkish-white (7.5YR 8/2) surfaces, these sherds are reddish-brown (5YR 5/4) to grey (5YR 5/1)

and are characterized by prominent iron-ore grains on the surfaces, often up to *c* 2mm across, and by their hardness. They are very smooth. In thin section, T-SP 215 has a dark brown optically anisotropic clay matrix with quartz-sand ranging from *c* 0.03 to 0.lmm across, sanidine felspar, potash felspar, siltstone, mudstone, coarse-grained sandstone, brown hornblende, and mica, besides a scatter of black iron ore or lava. It is an assemblage characteristic of the Mayen region in the Rhineland. T-SP 126 has no grains of sanidine felspar or brown hornblende.

It seems likely that this is a variant of Mayen ware, although macroscopically it is different. Thin section suggests that there is also a subgroup, as Frechen (1948, 297) has pointed out, which does not include some of the minerals typical of a volcanic assemblage. The collar rim from GS.C, F28 is the only one of its kind from Hamwih, and it may be wondered whether this important 10th-15th century feature on French vessels also originated, like the sagging base and globular form, in the Rhineland.

Class 34

Initially these vessels were thought to be class 11 sherds, but closer examination including thin-section analysis shows them to be a distinct class. Only three sherds have been identified: a small flat base, DMW, 1101, KLB, F29, layer 3, a sherd from SARC V, F14, P252, and another from SARC XIV, F30, P1221. All three have a dark grey (10YR 4/l) outer surface; while the first two sherds have white inner surfaces (2.5Y/8/2), the third has weak red (purplish) surfaces (10R 5/2). They all have large sand grains prominent in both the inner and outer surfaces, but no other inclusions. They are all very hard, harder than class 11 sherds, and have a smooth texture.

The first two sherds were thin-sectioned, and are respectively T-SP 190 and T-SP 158. They have optically anisotropic light brown clay matrices and two grades of subangular quartz-sand: the *c* 0.01mm grade was probably present in the clay, while the c 0.4-c 0.6mm grade was probably added. In T-SP 158 there is a slightly greater range of the second grade, a few grains being as large as *c* 0.9mm, as well as a few clay pellets.

A likely parallel for this class is the vessel from Teeshon crannog, Co Antrim (see Chapter 4.3). which has a purplish inner surface. If this identification is correct, the limited distribution of this ware as well as its form suggests that it was made either in Normandy or western France. It is perhaps a variant of Beauvaisis ware, or perhaps one of the wares mistaken by Wailes (I 963) for E ware, which is rather similar.

Class 35

SM 69, site 23, Pit 3, 86: a red-painted beaker sherd associated in a pit with a coin of Ceonwulf (Fig 3,2,18). This sherd has an extremely fine white (10YR 8/1) fabric, which has been red-painted (2.5YR 4/6) then burnished. The paint has been applied with a brush or similar instrument. It is a very distinctive class and is, without doubt, a sherd of the kind which was found in the Bouxwiller kiln debris (Rexer 1963). and in Strasbourg (both in Alsace). This red-painted wareisdiscussed in Chapter 7.

Unclassified

A number of small abraded sherds has been left unclassified, but there seems little merit in cataloguing these here. There is a small collection of Roman wares from all the Hamwih sites, which include several samian ware bases and a few sherds of New Forest type. One small urn, probably of the Late Bronze or Early Iron Age, was recently found on SARC XX.

Several bodysherds from SARC sites do not fit into the classification. There are undistinctive sherds which, for the moment, are no more than listed here. Their descriptions might only cause confusion with some of the above classes.

1 SARC V, K2-20, P62
2 SARC V, F16, P75l
3 SARC Xl, F46, P128
SARC XX, F123, P124

Several sherds from earlier excavations are also considered unclassified. These include:

4 SM 69.10.8, A243, a small everted rim cooking-pot (Fig 3,12,1) (with pale brown surfaces (10YR 8/3) partially burnt black; and no prominent inclusions)

Summary

Imported classes from several Continental regions are represented in the pottery assemblage from Hamwih. Classes 9, 11, and 25 probably came from the lower Seine valley. Classes 16 and 17 possibly emanated from the Loire valley, as perhaps did class 27. Class 13 stems from the Low Countries, in all probability from a centre somewhere in the Meuse valley or in Limburg that was operative until the 11th century. Class 24 seems to originate from the region of Douai in northern France. The class 14 Black wares originated from several petrologically distinct areas, although the majority of them probably came from either just to the north or to the south of the Ardennes. The class 15 Grey wares include some vessels which have been brought from as far south as Lyons, although the majority were probably made in the Pas-de-Calais, in the region of Quentovic. There are smaller classes such as 29, which originate from a centre probably located on a limestone band of the Paris basin. The large class 12 was probably made at Trier, while Rhenish Tating ware (class 6), Badorf ware (class 7), Relief-band amphorae (class 8), Mayen ware (class IO), and class 33 are other German wares found in small quantities. Class 23 and class 35, comprising very few vessels, were made in Alsace, possibly in the Bouxwiller kilns (Rexer 1963).

There are, however, outstanding problems which will be resolved when further analyses have been made of the Hamwih assemblage, and when a body of comparative classes has been found on the Continent. Very few sherds indeed have been omitted from the classification. But it is necessary to emphasize again that class 18, in particular, is a miscellany which warrants further study when a larger number of sherds is available. A second stage of study using heavy-mineral, chemical, or neutron-activation analysis might indicate whether some petrologically similar classes in fact emanated from the same source.

4 An analysis of the imported wares from SARC sites and a catalogue of imports from the British Isles

The scale and extent of 8th and 9th century trade may be partly inferred by the distribution of the Hamwih imported classes both within the settlement itself and

elsewhere in the British Isles. This chapter is concerned with the distributional data, but the discussion of it is left to the last chapter. In the first section the incidence of imported vessels in the features from selected SARC sites is noted. In the second section, a minimum number of imported vessels from the same features and sites is calculated. In the third section there is a catalogue of imported 8th and 9th century ceramics in the British Isles.

4.1 Incidence of imported vessels

This section is composed of the correlation tables (Tables 4,1-4,10) which register the incidence of imported classes in features from selected SARC sites. Several features have been used in the seriation of selected pits outlined in Chapter 5, and are regarded as approximately dated. Asterisks have been put beside these pits to denote this fact, for purposes of cross-reference. There are, of course, further possibilities of statistically analysing the incidence of particular classes within these dated pits to see if any pattern or, indeed, seriation of these might be deduced. However, the vagaries inherent in the importation of theseclasses, discussed in Chapter 8, suggest that these data are not entirely suitable unless they are associated in such an analysis with the presence/absence of other artifacts such as, for example, combs, glass, and worked stone.

Sherd counts have been used in the tables since weighing these classes would result in very disproportionate quantities (see below). These sherds are assessed in terms of vessel numbers in the following section.

Finally, the sample analysed here was that available for study from 1973- 1975 and is that included in an earlier analysis (Hodges 1977a). Although excavated material from excavations predating SARC has been considered in this volume (see Appendix 2), as well as pottery from excavations in 1976-1977, these have not been catalogued in this chapter. Instead studies on these will appear in future monographs on the Hamwih excavations.

4.2 Calculation of minimum numbers of imported vessels

Orton (1975, 31) has recently written that estimating the minimum number of pots is a contentious form of quantification which has little to recommend it statistically. However, where there is, as in this case, a large variety of fabrics each with comparatively few sherds, sometimes only with single sherds, the accuracy of this method is less open to challenge. Only with the class 14 and class 15 sherds, which occur in large numbers on every site, are the statistical problems recognized by Orton encountered. Yet, as has been pointed out, virtually every vessel in these classes is different so an underestimation can easily be calculated by distinguishing the different vessels. Estimating the number of vessel forms is even more contentious, since bodysherds of many storage jars resemble body sherds of cooking pots or pitchers. An alternative and more accurate comparison might be an assessment of the rims, handles, spouts, and bases, but this would exclude from the analysis many minor wares occurring only as sherds. The final estimation, therefore, was based on no more than a critical knowledge of the typology of these classes, with the incidence of jar rims and bases on a site acting as parameters. If the *absolute* accuracy is in doubt, the general result should not be.

4.3 Catalogue of 8th and 9th century imported wares

The catalogue of 8th and 9th century imported wares was made possible by the kind assistance of Mr J G Hurst, who, with Barton and Dunning (1968), catalogued all medieval imported wares in Britain, excluding Ireland. In most cases the author has seen the sherds in this catalogue, and in certain cases subjected them to thin-section analysis. Those which have not been seen are distinguished from the former in the catalogue, since a degree of uniformity in identifying objects makes those identifications, and the conclusions which are drawn from them, that much stronger.

It is interesting to note the number of Middle Saxon imports now known, which compare strikingly with the paucity of imports from Late Saxon contexts (Fig 4,3). This comparison is discussed in Chapter 8. By contrast, Carolingian-period imports are virtually unknown in Ireland, with the single find from rescue excavations at Teeshon crannog, Co Antrim, being the first to be recognized (see below). Here there is a marked comparison with the numerous sub-Roman and Merovingian wares (the A, B, D, and E wares) found in 5th 8th century contexts on many Early Christian sites,

TABLE 4, 1 Correlation of imported classes from SARC 1 features

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
1											3			2																						
4									1						1		1																			
5															1					1																
6														2																						
7														1																						
9												1	1	5																						
10																	2																			
14															1																					
25												1	1	3																						
26														2																						
27														1																						
28												1		1			4																			
29																			1																	
30									1																											
32																	1																			
33															1									1												
35														2																						
36																			1																	

TABLE 4,2 Correlation of imported classes from SARC IV features

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
2													6	1																						
3													1	2											1											
13											1	1			2																					
15												1		1	1	1									1											
16												1		1																						
17															1		1																			
5														1	1	1																	1			
5 1																																				
55												1	1																							
5 9														1																						
111												2		1														1								
150											2																									
171													1																							
2150															1																					
2351																										1										
2377																									1											
3501															1				1																	
3512														2																						
3514															1									1												
3518														1																						
3520														1										1												
3521											2																									
3522											1				1																					
3523														1																						

TABLE 4.3 Correlation of imported classes from SARC V features

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
9												6		1																						
10												13			2																					
11												1		2																						
12												1																								
13												1		2																						
*14												1		2	6																					
15																								2												
*16						3					6	6		11	1										1											
17											1				2																					
18												1		1	1																					
19												1		1																						
*21											4				1																					
*22															2																					
24											1	1			3										1											
*27											1						2																			
32											1	1		4	1												1									
*34												1		1															1							

TABLE 4,4 Correlation of imported classes from SARC VI features

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
1 evel 2											1		1		1																					
1											1	1		4	1																		1			
7															1		1																			
8															1																					
9											1	1	1																							
30											1	5	3	14	10			1			1															
33												2		6	2						1															
36											2				1																					
37											1			1																						
39												3		1	2																					
49														4																						

TABLE 4,5 Correlation of imported classes from SARC VII features

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
20													1	2	5	1																				
21												4																1								
52											2	2	1	14	12			1	2																	
53														2	2																					
55											3		1	5	7								1													

TABLE 4,6 Correlation of imported classes from SARC XI features

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
* 8												1		1	5	2																				
12											1	1			1																					
15														4	2										1				1							
24											1			1										1												
25														1																						
44											2	2			1																					
*45											2	2	1	5	1	1		1						1	1											
*46														18	3								1	2								2				1
47														2																						
*48												1		3	1		1																			
49												3													2		1									
54														4								2														
56												3		2																						
60														1																						
61							1																													
62											2			2	4									1												
64														1																						
*66												2		6																						
72														3																						
77												1																								
78															1																					
87												1	1	1																						
90												1		1																						

TABLE 4,7 Correlation of imported classes from SARC XIII features

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
5														1	2																					
37														1																						
42															1																					
56															1																					
84																															1					

TABLE 4,8 Correlation of imported classes from SARC XIV features

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
4																								1												
6						1																														
14															1																					
*24											1			1																						
26												1		2	3	3								1					1							
*27											3	8	1	34	73	2	2	1	3					4	1											
*28												8	3	3	8			1		1				1					1							
*30												2	2	12	3																			1		
34												2	11	4	4	1																				
81													1																							
*82												2	1	1	1	1																				
94												1	4	1	4			1																		

TABLE 4,9 Correlation of imported classes from SARC XV features

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
1								3			5	25	11	28	16	1	1	5						1					1							
2											4	6		5	7	6																				
9															1																					
22											3			9	5	14																				
23															1																					
25															1																					
27												4	1	2	10	2		1											1							
30												1	1	2	8		1																			
31											1			14	3																					
35														1	1																					
36																								1												
44														3	6																					
45												6		12																						
*49											2	14		9	25	12		1		1															
50												3	1	12	4	1																				
51											1	4	11	3	4			1						1												
52											1	2		32	2	3																				
53												1		5	3		1																			
54											1	1	2	16	5	1	18								1				1							
56														7	4																					
57												1	8	17	11									1												
66							1					2		55	4	1		1							3			1								
69														1																						
75											3	1	1	6	9									1												
76														2		3																				
77														1	2																					
81														4		6																				

Winchester

Very few Middle Saxon imports have been found in the Research Unit's extensive excavations over the last decade. Earlier occupation and intensive medieval disturbance have made the task of distinguishing some of the Hamwih classes impossible, while the contexts for a number of the sherds listed here are in fact late medieval, the sherds presumably being residual.

1 Badorf and relief-band amphorae. A number of sherds of these types have been found. Two sherds of 'classic' Badorf ware have been found at BS 1971, T III, 2727. Relief-band amphorae sherds have been found at ACN63, D5 18, 168; CACP 61, XV, 11 32; and ACN63 B3, 39, 157, one of which Dunning published (1962). Dunning (1959, fig 27, no 3) has also published an unprovenanced earlier find of relief-band amphora.

2 Two probable, though undecorated, sherds of Tating ware have been found, both in later contexts. A small finely burnished black sherd from ACN63, T.D2, 333 (T-SP 214) belongs to Tating ware, group 16. The second, BS 71, T III, 1815, 3516, has lustrous grey surfaces and a white core (T-SP 206) and also belongs to Tating ware group lb.

3 A class 14 sherd from ACN63, T D5, 23, 317 with a deeply impressed lozenge roller-stamp decoration. It has finely burnished black surfaces, a red-to-grey core, and grains of hematite are prominent in the broken edges.

4 From BS 71, T II and T III are several sherds of an oxidized orange bottle with deeply impressed roller-stamp decoration. One sherd is associated with a 7th century grave (T II, 940, 3864) (cf Biddle 1973, 242), so it seems very likely that this is a bottle of the type Evison (1974) has recently discussed.

Portchester

From excavations by Professor B W Cunliffe within the Saxon Shore fort (1976):

1 PC 71/102, 33, S305 (Cunliffe 1970, fig 6, no 15; 1976, fig 113, 182), a Grey ware pitcher with a beaded rim and two strap handles. The surfaces are partially burnished; the fabric is light grey with a pink-to-grey core and has some large quartz-sand inclusions up to *c* 1.00mm across; it is smooth and very hard. Thin section (T-SP 121) reveals this vessel to have a few metamorphic rock inclusions

TABLE 4,10 Correlation of imported classes from SARC XX features

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
70											1			3	5		1																			
114																		1																		
116														4																						
123										1	1			1	6									1												1
128															1																					
130												3	5	10		1					1															
131									6				1	1	4																					

TABLE 4,11 Estimate of the classes and imported vessels from SARC sites

Site	I	IV	V	VI	VII	XI	XIV	XV	XX	Total
Tating			1							1
Badorf		1					1	1	1	4
Beauvaisis	1	1							1	3
Mayen									2	2
11	1	1*		1	3	1	1	3	1	12
12	2	4*	5	4	2	3	4	8	1	33
13	3	3	1	2	2	1	3	2	2	19
14	6	7	7	3	6	6	6	11	3	55
15	3	5	6	4	6	7	3	16	4	54
16	1	4			1	2	2	4	1	15
17	1	1	1				1	2	1	9
18		1		1	1	1	2	5	1	12
19	1				1		1			3
20	?1	1					1	1		4
21				1		1			1	3
22						1				1
23		1			1	1				3
24		1		1		2	1	2	1	8
25		3	1			1	1	2		8
26		1								1
27			1			1				2
28		1			1			1		3
29			1			1	1	1		4
30										
31			1							1
32						1				1
33		1		1						2
34			1				1			2
35										
X			2			1			1	4
Total	20	37	28	18	24	31	30	60	21	269

*lid not included •lamp not included

similar, though not identical, to class 15 petrological group 1.

2 Trench 104 (Pit 207) layer 8, a class 14 Black ware beaker pitcher, slightly carinated in form and with a flat base. Cunliffe (1976, 136, fig 110,125) reports it to have grey burnished surfaces (cf Chapter 3, class 14 introduction). Other Black ware sherds were also found, probably from different vessels.

3 PC 69/87, 5, a finely burnished class 14 Black ware sherd with a grey core and a black rilled interior. The fabric is fine with few prominent quartz-sand inclusions; very hard and smooth to the touch.

4 PC 72/108, 60 (Pit 220), class 14 sherd with burnished black exterior surface with a light grey core and coarse black interior surface. A fine fabric with some fine mica inclusions; hard and smooth to the touch.

5 PC 66/60 550; PC 66/63 layer 4 (two sherds), thick brown sherds with prominent inclusions of mica. Number 550 also has blank stamp decoration. Thin section reveals quartz-sand, potash and some plagioclase felspars and mica: the typical constituents of a granitic zone (Hodges in Cunliffe 1976, 192-4). Cunliffe has assigned these sherds an 8th century date (1976, 182); their fabric and decoration, therefore, cannot be Saxon. One likely parallel is from Trerohan, Cuisseny, in Brittany, a sherd which has a similar blank stamp decoration (Giot 1973, fig 6, no 9; 124-6).

Chichester

A class 14 pitcher rim and handle from Chapel Street (1971), pit L8(c), excavations by Mr A Down (Fig 4,1,1): Rim and handle of class 14 pitcher with very dark grey (Munsell 2.5Y N3/) surfaces, with grey (2.5Y N5/) core. Traces of single lines of burnishing. Large sand-grain inclusions prominent in the surfaces; in thin section (T-SP 202) it appears similar to class 14 petrological group 3. However, its surface texture as well as the thin section also suggests affinities with class 25. Very hard and coarse to the touch (Hodges in Down 1978, fig 11.5, 90; 353).

Sandtun (Kent)

A midden site sealing two occupation floors excavated by Mr J Birchell and Mr G Ward in 1950 (cf Hurst 1959.21); the finds are now in the British Museum:

TABLE 4,12 Estimate of the functions of imported vessels from SARC sites

Site	I	IV	V	VI	VII	XI	XIV	XV	XX	Total	%
Pitcher/ Cooking posts/bowls	19	36	24	15	22	23	25	53	16	233	86
Jars/storage vessels		1	3	3	2	8	4	7	5	33	12
Mortars	1		1				1			3	1
Lids		1								1	0.5
Lamps		1								1	0.5

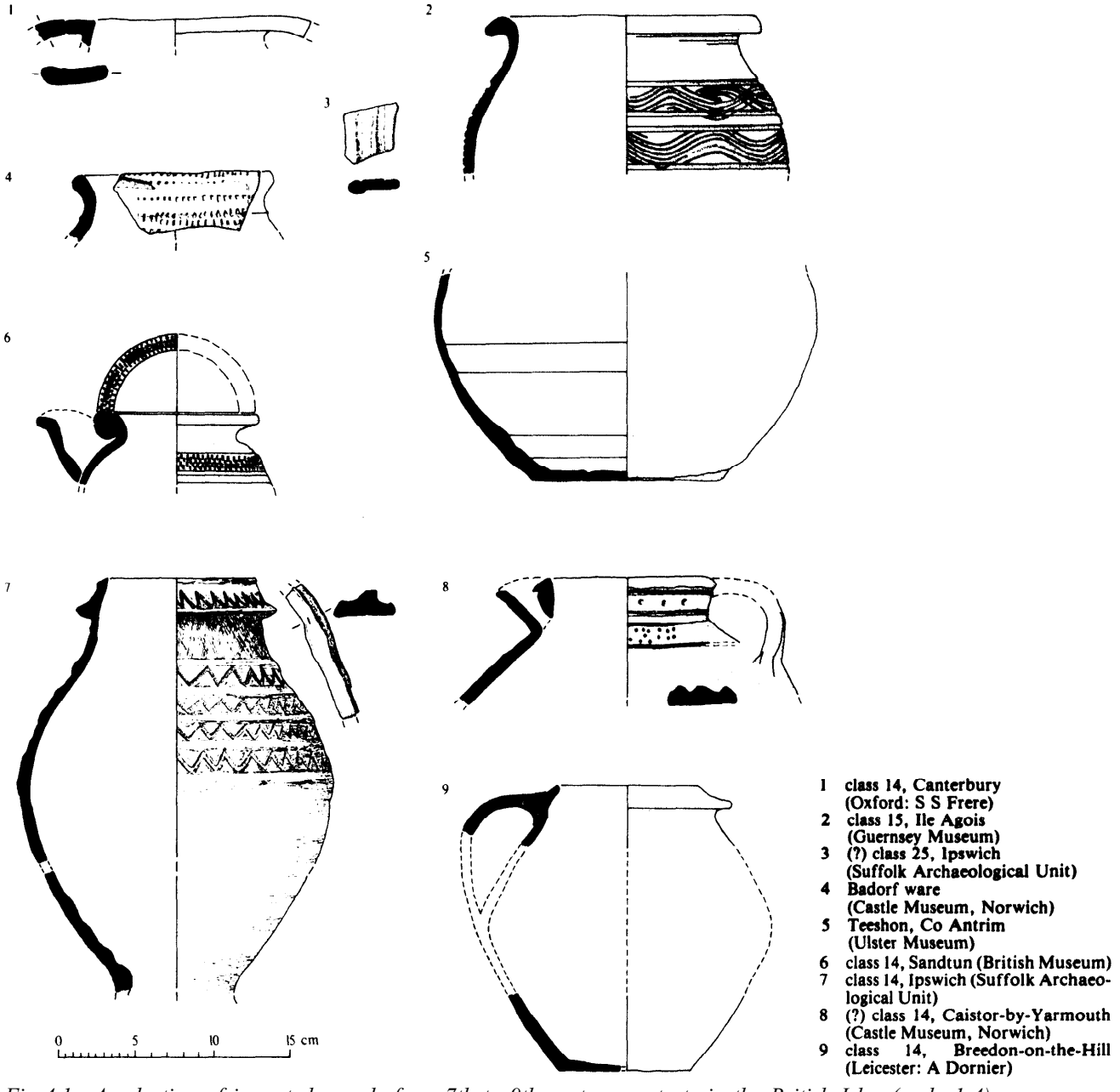


Fig 4,1 A selection of imported vessels from 7th to 9th century contexts in the British Isles (scale 1:4)

1 10.2.2, Lower Floor, class 14 Black ware pitcher spout and bodysherd with fine black surfaces, partially burnished and decorated along the top of the rim and around the body with roller-stamping. The sherd has a pink core with occasional large rounded quartz-sand inclusions *c* 1.00mm across; it is very hard and fine (Fig 4,1,6).

2 From the Upper Floor is a roller-stamp-decorated Grey ware sherd, part of a globular vessel, likely to be of 10th-12th century date (cf Hodges 1976, 70).

Canterbury

There is a small and important collection of imported wares, mostly from excavations by Professor S S Frere. Most of the pottery is currently with the excavator at Oxford: this is indicated by 'Oxford' below:

Rhenish wares (Badorf ware)

1 small storage vessel of classic roller-stamped type (Dunning 1959, fig 26, no 6) (Canterbury Museum). pitcher *(ibid* fig 26, no 7) (Oxford: CXX CI e 8 (28).

2 undecorated sherds ('Oxford': CXXIII CI (2) x 2; CXXI CI (8)).

Frankish wares

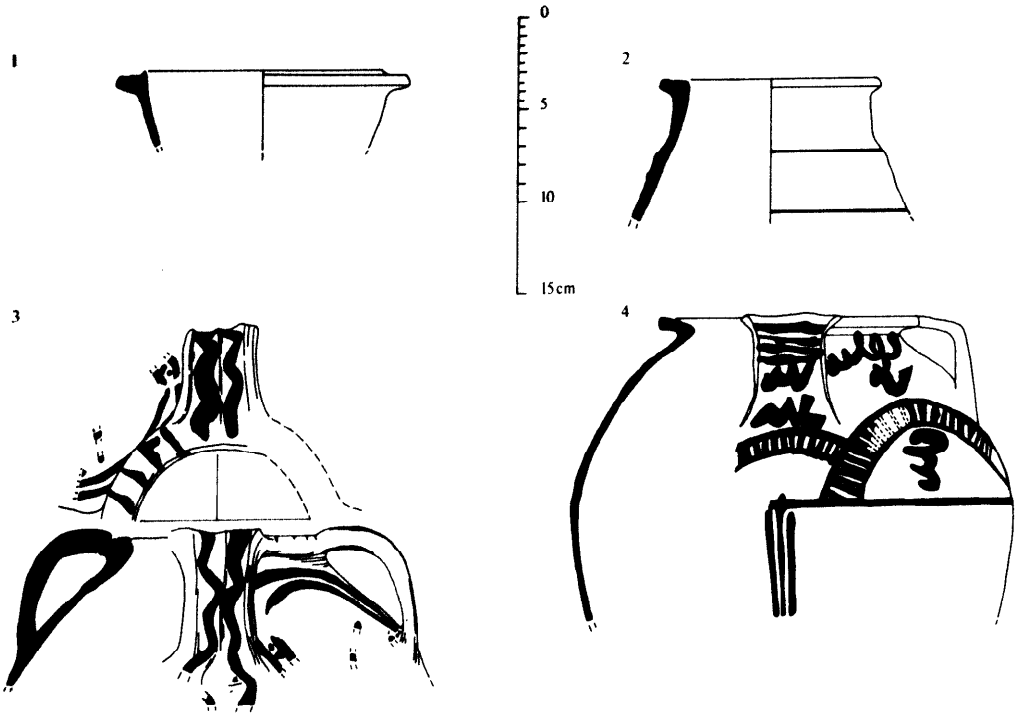
4 class 13 (?) cooking-pot rim ('Oxford': CXXIII CV A (4)).

5 class 14 strap-handle ('Oxford': CX X CI (8)).

6 class 14 squared rim and strap-handle ('Oxford': CXX CI (8)).

7 class 15 wire-cut base ('Oxford': CX CII Pit 2).

The Badorf ware sherds are of the classic cream smooth type. No 4, the class 13 sherd, is a very hard grey everted rim distinguished by the characteristic difference



1 BNT 73 1679: class 24 import
2 BNT 71 F5: class 14 import
3 BNT 72 1127: class 9, Beauvaisis red-painted pitcher
4 unpublished Beauvaisis ware of 10th–12th century date from Beauvais (Musée national des arts et traditions populaires, Paris)

Fig 4,2 Three imported vessels from a Middle Saxon context at Wicken Bonhunt (Essex). No 4 is a Beauvaisis vessel from Beauvais for comparison

in colour between the surfaces and, in this case, the pinkish core. No 5 is a Black ware strap-handle with large sand-grain inclusions, while the class 14 rim and strap-handle has a fine white core with no prominent inclusions. The class 15 base was fettled; the fabric has fine sand-grain inclusions as well as some mica and is coarse to the touch.

Graveney Boat

One vessel, probably a cooking-pot of the Hamwih class 11, was found in the Graveney boat (Evans and Fenwick 1971, fig 3). The pot comprises eight sherds: a rim and part of the shoulder and globular body (Hurst 1978).

London

The scale of current rescue excavations in London makes it impossible to keep an accurate register from there. It should be noted, however, that there are reports of class 14 wares from Battersea (pers comm, S McCracken), and from the New Fresh Wharf in the City (pers comm, J G Hurst; see also Haslam 1975). Previous finds are as follows:

1 Relief-band amphora sherd (Dunning 1959, fig 27, no 2); this, of course, might be 10th or 11th century in date (see Chapter 7.14) (Guildhall Museum).
2 Tating ware sherd from Mr H M Green's excavations of a farmstead at the Treasury, Whitehall.
3 Two class 14 Black ware sherds of the petrological group 1 (T-SP 45) also from the Treasury, Whitehall site (25), 2.

Old Windsor (Berks)

Two imported vessels were found at Old Windsor in the excavations by Dr B Hope-Taylor (Wilson and Hurst 1958, 183-5):

1 Dunning (1959, fig 24) published the Tating ware vessel, which in form resembles a class 14 Black ware pitcher. Besides those sherds published there is a rod handle in a later context (Area 1D/Y/57-8; Pit 1). This handle has a partly burnished upper surface and a coarse black surface underneath; the core is white and there are no prominent inclusions. The pitcher is a curious hybrid, for the most part Frankish in form except for the handle, which is of the more typical Tating ware type (cf fig 9, no 2).
2 The second vessel is represented by one very fine class 14 Black ware sherd which has smooth burnished surfaces and a buff core; the fabric includes a few grains of mica. (Alternatively, this might, of course, be a second Tating ware vessel.)

Wicken Bonhunt, Essex

A number of imports has now been recognized from these extensive excavations of a Middle Saxon and later settlement in Essex. These are briefly reviewed here and considered in greater detail in Wade's forthcoming report:

1 *Beauvaisis ware:* BNT, 72, 1127 (Fig 4,2,3): a red-painted, three-handled pitcher which probably had a beak spout. The fabric varies from pinkish-grey to light grey in the core, and has large sand-grain inclusions. There are two red-painted wavy lines down each handle, strokes of red paint over the rim down to the inner ridge of the rim, and two parallel arcs of red paint decorating the top of the vessel in between the handles. A separate bodysherd has criss-cross decoration on it.

This is a distinctive Beauvaisis ware decoration, the arcs and the criss-cross motifs being commonly employed by these potters. It is an interesting piece because its association with Ipswich ware makes it one of the earliest examples yet known. In partitular, the arcs are not hatched as is typical of the better known 10th-12th century vessels of this type. The rim is also thicker than the later vessels (cf Fig 4,2,4, a vessel from Beauvais for comparison).

2 *?Tating ware:* BNT, 71, F105: a small sherd in a black sandy fabric with prominent mica may well be a Tating ware sherd of a kind described in Chapter 7.3. There is, unfortunately, no tinfoil residue to substantiate this tentative identification, but the profile of the sherd is very steep-sided and rather uncharacteristic of the more globular Black wares, which must remain an alternative.

3 *Red-burnished ware:* BNT, 73, F160E; BNT, 71, F12: two small sherds with prominent sand-grains similar to the Hamwih example that has been thin-sectioned (see Chapter 3.21). The surfaces have been well burnished, rather more finely, in fact, than those recently found at Ipswich (see below).

4 *Black ware:* BNT, 71, F5: (Fig 4,2,2): a rim and six body sherds of a pitcher. The vessel has fine black surfaces with a reddish brown core. Thin section reveals it to belong to the petrological group 2 (T-SP 140).

5 BNT, 73, 1679(a): flanged bowl in a fabric very similar to the Hamwih class 24, an identification tentatively confirmed by thin-section analysis (T-SP 138) (Fig 4,2, 1). Other vessels have been identified at Ipswich (see below).

6 BNT, 73, F605(4): two body sherds and an everted rim with springing probably for a spout. This vessel has red surfaces and a grey core; it is very hard and has a sandy texture. In thin section (T-SP 192) it has a red optically isotropic clay matrix with prolific inclusions of angular quartz-sand *c* 0.01 mm across, as well as mica and a few (probably added) grains of rounded quartz-sand, ranging from *c* 0.5 to 2.00mm across.

The thin section shows it to be very similar, texturally, to a vessel from Ipswich (see below, A4; for further details: Hodges in Wade 1980). It seems likely that this ware originates somewhere in Belgium, and in several respects is similar to the Hamwih class 13.

7 BNT, 73, F605(4): Three body sherds in an undecorated pinkish-grey colour with prominent large sand grains and a few iron-ore inclusions. The sherds are very hard and smooth to the touch. Thin section (T-SP 193) reveals it to have a light brown optically anisotropic clay matrix packed with angular quartz-sand ranging from *c* 0.01 to *c* 0.5mm across; limonite, iron-ore grains, clay pellets, and a large grain of sandstone are also present.

Thin section shows it to be very similar to a sherd from Ipswich (see below, B2; for further details see Hodges in Wade 1980). The Ipswich vessel is an oxidized ware with imprecise roller-stamping and was found in a Late Saxon context, where it may have been a residual. A French Carolingian source is likely, though an alternative source in the Upper Rhineland, south of Frankfurt cannot be ruled out (see Chapter 7.15).

8 BNT, 72(2), F605(45): a collection of Black ware sherds including a simple strap-handle with a central spine. The sherds are all in a very friable condition. The remaining surfaces arc very fine, smooth, and hard. The cores are red. There are few prominent inclusions, just occasional grains of iron ore up to 2.00mm across; the fabric, however, is sandy to the touch. This would seem to be an imitation Black ware, of a type found also at Ipswich, Caistor-on-Sea, and Castor. It is discussed further in the section on the Caistor-on-Sea sherd below.

Waltham Abbey (Essex)

Mr P J Huggins reports the discovery of sherds of relief-band amphorae associated with Ipswich-type ware vessels (Huggins 1976, 103). These imported sherds were associated with the pre-11th century phase. It is possible that certain of them, however, were 11th century imports.

Ipswich

The Ipswich assemblage of imported pottery grows richer with each excavation, and is now second only in quantity to that from Hamwih. The assemblage is of such a considerable size that a full statement is not possible here. (For a detailed account of the pottery from the excavations of 1974-1977 see Hodges in Wade 1980.) Moreover, besides the Carolingian wares, there is an increasing number of 7th century vessels which may date to as early as *c* AD 627, the proposed date of the Sutton Hoo ship burial located only a few kilometres away. A check-list of these and earlier finds are discussed in the first Ipswich report. A fuller discussion of this assemblage is anticipated in the future, when it is hoped that the analyses can draw together all the imported classes from Ipswich, Hamwih, and the Early Saxon grave finds recently published by Professor Evison (1979).

Finally, it should be pointed out that the Ipswich collection, including more than 30 classes, ranges from class 14 wares such as have been found in Hamwih to Flemish types unknown in Hamwih, and also includes Rhenish types as yet only known from the Suffolk Unit's excavations and those by ROB at Dorestad.

Caisto-on-Sea

The Caistor-on-Sea sherd was found in a 7th century context by the late Mr C Green. For some years it was lost, and it was believed to be a Black ware similar to the Hamwih examples (Fig 4,1,8) (now in Norwich Castle Museum). However, there is no parallel for this form of decorated Black ware either from Hamwih or the Continent, and its fabric suggests that it may be a Middle Saxon imitation.

The vessel has black burnished surfaces, a red core that is micaceous, and there are prominent iron-ore inclusions. It appears to be hand-finished if not hand-made, and it has a series of deep stab decorations only slightly resembling a roller-stamp decoration. The handle is of a simple strap type with a central spine.

It would seem that this vessel is unquestionably an imitation of a Black ware, presumably by Ipswich ware potters. This, however, raises the question of the other vessels similar to this from Wicken Bonhunt, Ipswich, and Castor (all found, it should be noted, with Ipswich ware). Of these, it is only possible to be certain about the Ipswich vessel (A2) (Fig 4.1.7). which is wheel-made and elaborately decorated. The Wicken Bonhunt vessel is very friable and probably a copy; the Castor handle and sherds were problematical, as is the vessel A3 from Ipswich itself.

It seems, then, that the Ipswich potters copied a rare form during the 7th century and, of more significance. a production technique to make black-surfaced pitchers.

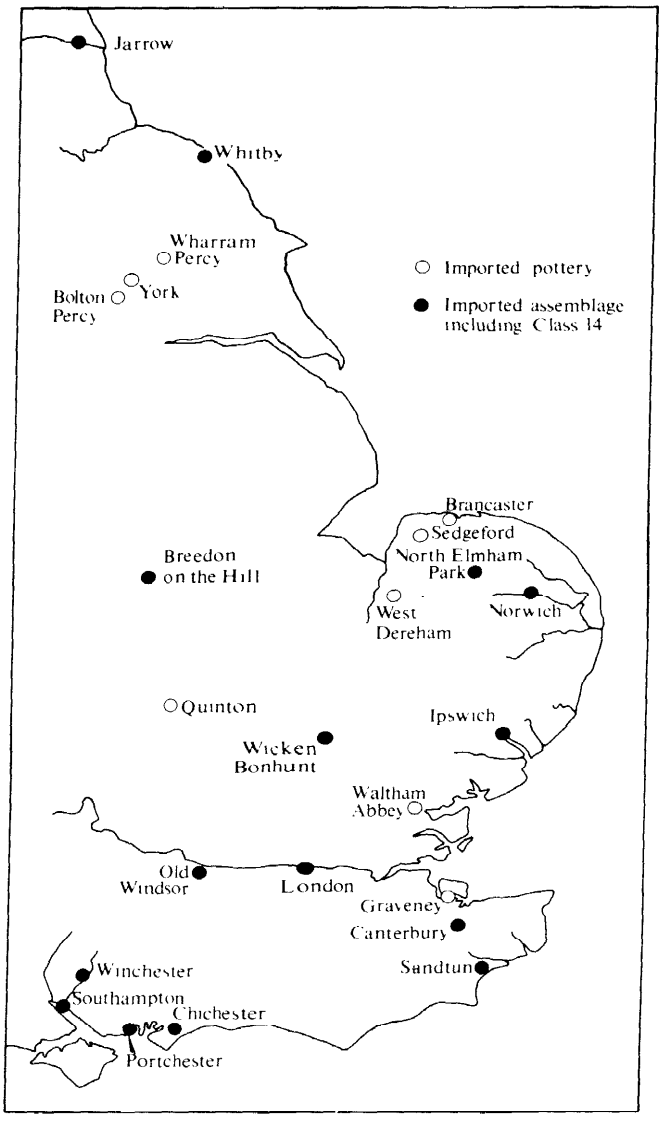


Fig 4,3 Distribution map of imported pottery from Middle Saxon con texts

The result seems to be a hybrid of two cultures paralleled by a few other Ipswich ware vessels (cf Hurst 1976, fig 7.7,4; Evison 1974, fig 2d).

Norwich

Despite extensive excavations, many of which have been directed to locating a Middle Saxon trading settlement (Carter 1978), few imported sherds have been found, This contrasts with the large number of 12th century imports from the Norwich Survey's recent excavations.

1 About six or seven classic Badorf ware sherds have been found to date by the Norwich Survey.

2 About ten relief-band amphora sherds, including a very broad handle, have been found in Norwich Survey excavations, while one sherd from rescue excavations at Calthorpe's House, in 1963, is in the Castle Museum. It must be remembered, however, that these vessels could well be 10th or 11th century in date (see Chapter 7.14).

3 150 N, 50: a residual in the King's Ditch was identified as a very fine class 14 sherd. It has a burnished black outer surface with a fine pink core; a grain of iron ore *c* 0.5mm across as well as some mica were prominent inclusions in the fabric.

North Elmham Park (Norfolk)

There is a small but significant assemblage from these extensive excavations. The report on the imports was written before the latest excavations at Ipswich revealed many new wares, but it is believed that the initial identifications are still sound (see Hodges in Wade-Martins 1980, 424-6). It has to be borne in mind, however, that a number of Roman sherds from the site made certain identifications difficult.

750: a light red diamond roller-stamped sherd. It has a fine sand-grained fabric with a few inclusions of mica; very hard and smooth. It is possible that this vessel is of an unrecognized French type or a rare ware from the middle Rhenish production centres. A Rhenish or Belgian source seems more probable than a French source if it is a 7th or 8th century vessel.

2 82: a pinkish grey handle with three ridges. A large sand-grained fabric; very hard, with a coarse texture. There is a parallel for this from Hamwih (SARC IV 72, F2-18, P82) in the class 12 fabric. There are Merovingian parallels for this form from the cemeteries of Junkersdorf and Krefeld-Gellep. However, the most common example of this type of handle is on the relief-band amphorae. This form, therefore, can only be dated c 600-1100.

3 At least two class 14 vessels are represented. All the sherds have dark grey rilled surfaces with a red core. In thin-section 780 (T-SP 136) is quite different to 601 (T-SP 134). The surface of 780 has been abraded in patches, a characteristic paralleled on Black ware sherds from the Treasury, London, and Hamwih: SARC VIII, P110. Thin section (T-SP 134 and 136) shows these sherds to be similar and to belong to petrological groups I and 2 respectively.

4 301: a grey rilled body sherd. The fabric has large sand grains with no other prominent inclusions; it is very hard, and coarse to the touch. It could date to the 8th or 9th centuries, although it could be a late Saxo-Norman import.

5 601b: a reddish brown, hard-fired body sherd. The fabric has large sand-grain inclusions which make it coarse to the touch.
It should be borne in mind that this fabric is very similar to several wares commonly found on Roman and later medieval sites. However, the class 24 fabric from Hamwih is a close parallel.

6 The Tating ware strap-handle has a grey-to-black surface, with a light grey core (Fig 3,1.3). The surfaces are smooth and the handle is very hard. The tinfoil comprises diamonds set at intervals down the centre of the handle. Thin section suggests it belongs to petrological group 4 (see Chapter 7.3). The strap handle, a contrast to the thicker handle normally associated with Tating ware, makes this an interesting find.

Brancaster (Norfolk)

A possible Tating ware vessel has been found during fieldwalking within the Saxon Shore fort. The sherd is of

a tall-necked pitcher with a bead rim and attached spout. The spout has a narrow hole at its internal junction with the wall of the pot, and a beading around the top. The vessel has black burnished surfaces and shows signs of finishing. It has a grey core with some quartz-sand grains up to c 0.5mm across as well as some limestone inclusions up to 0.5mm across. The thin section is reported in Chapter 7.3, where a discussion of this vessel is also to be found.

Sedgeford (Norfolk)

A Badorf roller-stamped pitcher rim of classis type was recognized by Mr K Wade in a collection from field-walking a Middle Saxon village site at Sedgeford. Now in Norwich Museum (Fig 4,1,9).

West Dereham (Norfolk)

A Tating ware rim sherd was found by Dr P Wade-Martins while fieldwalking. The sherd has coarse micaceous surfaces and a light grey-buff core. Now in Norwich Museum.

Quinton (Northants)

A Badorf ware sherd of classic type was found in post-Conquest contexts on a moated site (pers comm, M McCarthy).

Northampton

Two possible imported sherds were found in Middle Saxon contexts in the St Peter's Street site recently excavated by the Northampton Unit (Williams 1979).

1 A possible class 15 wire-cut base, 1629, W73, M.H.S. A, 714, with prominent large sand-grain inclusions.

2 A possible class 15 bodysherd which thin-section (T-SP 204) suggests is a member of the provisional petrological group 2 as it contains inclusions of sub-angular quartz-sand ranging from 0.03 to 0.6Omm across as well as some iron ore.

Castor (Northants)

Eight class 14 Black ware sherds with fine black surfaces and a dark red core were found associated with Ipswich ware in a large pit during recent excavations (CASP 71 XLV, layer 9). It is likely that a strap handle with a central ribbing, similar to one from Ipswich, is part of the same vessel. Thin section of the handle (T-SP 217) shows it to have an optically anisotropic brown clay matrix with a scatter of subangular to subrounded quartz-sand ranging from 0.03 to 2.00mm across; there are also several grains of quartzite, muscovite, and iron ore, and single grains of flint or churt as well as fine-grained limestone.

It must, for the moment, remain uncertain whether this, like the similar vessels from Wicken Bonhunt, lpswich, and Caistor-on-Sea, is an import or a copy, probably of 7th century date, by Ipswich ware potters.

Breedon-on-the-Hill (Leics)

A class 14 Black ware pitcher with a flanged rim and wire-cut base was found in recent excavations around the minster by Dornier (1977, 164-66). The vessel is re-constructed in Fig 4,1,9; it has fine dark grey surfaces and a pink core. Thin section showed it to belong to the class 14 petrological group 2 (T-SP 195).

York

Two sherds of Tating ware belonging to petrological group 3 (see Chapter 7.3) were found in recent excavations at Skeldergate by the York Archaeological Trust: 1974-14 2310. The sherds have fine black surfaces and grey cores; there are no prominent inclusions (T-SP 85).

Bolton Percy (Yorks)

This Badorf-type cooking pot was found associated with a hoard over over 1700 coins dating to *c* 866 in a field near the river Wharfe (Pagan 1973). This small vessel has a characteristic Badorf-type fabric but it is typologically unusual. First it is very small (100mm high, 75mm across the top, 65mm across the base) and is a form more often associated with Pingsdorf types. Secondly, the base has been made on a flat surface and is wheel-thrown, being pinched up at the centre of the base inside. The junction between the base and the body has been trimmed and then the body of the pot has been built up, leaving rilling as if it were constructed of coils. This feature is unusual on Badorf-type wares and commonly found on Pings-dorf types. This vessel (Fig 4,4), therefore, may be a well dated point in the obscure transition from Badorf-type to Pingsdorf-type wares (see Chapter 7.14).

Wharram Percy (Yorks)

A single sherd of Tating ware, with residues of tinfoil decoration, was found in a trial excavation in 1975 some distance from the deserted medieval village. The sherd is in a crumbly state and could only be examined under a x20 binocular microscope; it only includes subangular quartz-sand up to about 1mm across, suggesting it to be either group 3 or group 4 Tating ware (see Chapter 7.3) (Hurst and Hodges 1977).

Whitby (Yorks)

One of the vessels from the celebrated excavations of Sir Charles Peers is a class 14 Black ware (Dunning 1943a, fig 26, no 32). The others which Dunning considers to be imports remain a problem, to which, in the case of one decorated sherd *(ibid,* fig 26, no 26), thin-section analysis has added little (Fulford and Bird 1975, 174-5).

Jarrow (Durham)

From recent excavations at the monastery by Professor Rosemary Cramp (1969) there are at least three imported pots of this period. All of these have been described by Hurst in the interim report on the excavations:

1 A class 14 Black ware strap handle (Cramp 1969, fig 25, no 21).

2 A sherd, probably of a Badorf ware costrel (cf Chapter 7.2) (Cramp 1969. fig 25, no 24).

3 Two glazed bowls of enigmatic origin (White-house in Cramp 1969, 64-8, fig 25). The core of one of these sherds is a fine deep red similar, in fact, to Mayen ware and the Tating ware of the petrological group la. It is possible that these are unusual products of one Rhenish ceramic centre (cf Janssen 1970b. 280-2, Abb 14, Taf 25).

Chester

A number of sub-Roman imports, probably from western France, are now known from Chester. Two sherds of red-burnished ware, from the same vessel, are the first probable Carolingian imports. These were found

Fig 4,4 The Bolton Percy coin-hoard pot: a Badorf-type ware (by courtesy of the Yorkshire Museum, York)

at Lower Bridge Street (74, II, 144), in a post-sub-Roman and pre-Saxo-Norman context. These have large quartz-sand tempering, with prominent iron-ore inclusions c 1.00mm across and a few grains of limestone.

Tamworth

Some possible Carolingian imported sherds have been found in the excavation of the Middle Saxon watermill at Tamworth (pers comm, M Carver).

Jersey, Ile Agois

Dunning (1959, 54 and fig 26, 8) reported a vessel from Ile Agois which was associated with coins of Charles the Bald (840-77). At that time he believed it to be Badorf ware. However, more recently Lobbedey (1968, 73) refuted that identification, In fact, the vessel belongs to the class 15, petrological group 2c (T-SP 47), and may have been made at a Normandy centre (cf Chapter 3.15).

Ireland: Teeshon, Co Antrim

The only likely import to Ireland of this period was found in rescue excavations at the crannog, near Teeshon by Mr R Warner. The wire-cut base is probably of a jar or cooking-pot similar to those of the Hamwih class 11 (Fig 4,1,5). It has a blackened buff exterior and a purplish interior. The outer half of the core is black while the inner half is white. The fabric has prolific inclusions of quartz-sand c 0.5mm across with a few inclusions of iron ore c 0.5-0.3mm across. This vessel is similar to if not in fact, the Hamwih class 34. It is now kept in the Ulster Museum, Belfast.

5 On dating Hamwih

The chronology of Hamwih and of its associated pottery is important for early medieval studies. First, it enables the Saxon and continental artefacts to be dated Secondly, it allows the quantified artefacts to be put within temporal dimensions, thus making it possible to observe the size of the settlement, and, in particular to quantify the scale of economic activity. Thirdly' it facilitates a view of the development of this settlement type within an historic framework. This chapter is a review of the dating evidence, with particular emphasis being given to the use of the Hamwih ceramics for this purpose. It contains, as an integral section, a computer study by J F Cherry of selected pit groups from the settlement. The seriation has important implications for the chronology of Hamwih.

Two types of evidence are reviewed here. First there is the historical evidence, which is very limited. Secondly there is the artefactual evidence, which includes (a) the numismatic evidence, (b) the ceramic evidence, and (c) a seriation study of the relative proportions of local ceramic classes in selected pits. There are also other techniques which have been employed as dating media in particular radiocarbon dating and dendrochronoldgy (Schove 1959; 1973; 1974). The full results of these have not yet been made available, so they are not considered here.

The historical evidence

In the past there have been somewhat uncritical assessments of the development of Saxon settlement on the

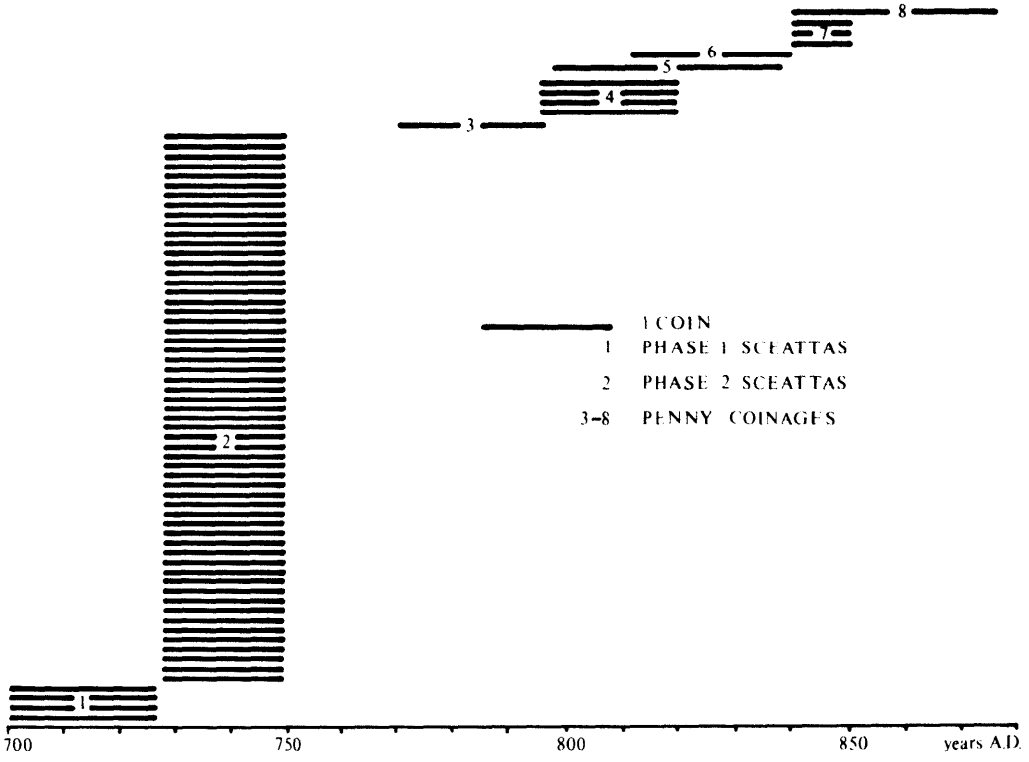


Fig 5,1 Bar-chart of coins from excavations in Hamwih (until 1975)

Southampton peninsula. These views, and an alternative model of the development and pattern of settlement, are discussed in other papers (Hodges 1978b; 1981).

It seems likely that political turmoil in this part of Hampshire prior to the accession of Ine to the throne of Wessex in AD 688 would not have permitted the establishment of an international trading settlement at Hamwih. This evidence, and in particular the evidence of the *sceattas,* outlined below, suggests that Hamwih began life during Ine's reign (688-726), for in the decades which immediately followed his death the settlement was evidently flourishing. Loyn (1962, 138) has already proposed that the foundation of the settlement was probably due to the increased prosperity of Wessex under Ine. To support this, it seems that his reign coincides with the development of the silver *sceatta* coinage mostly deployed in foreign trade (Metcalf 1974, 216), first in Kent, then in southern England more generally. The coinage should be indicative of some economic expansion resulting from the emergence of larger and more stable kingdoms, and the social equilibrium reached in a period of relative peace (cf Hodges 1978b; 1981).

This dating would suggest that Hamwih was established as a settlement in the peaceful, later years of Ine's reign; that is, during the first two decades of the 8th century. It slightly modifies, therefore, the date implied by the coin histogram previously published by Addyman and Hill (1968, fig 28).

The few historical references to Hamwih are of no value for dating any physical aspects of Hamwih itself (reviewed in Addyman and Hill 1968, 61-5; Rumble 1977; 1980). Indeed, it is argued elsewhere (Hodges 1977a) that the often quoted reference of Nithard to the sacking of Hamwih by the Vikings may prove to have been misleading. There is no documentary reference to the end of Hamwih or to the establishment of the new site at Southampton. Previous explanations of these events have been simplistic, to say the least, and have always postulated a 10th century date for both events (Addyman and Hill 1968, 64; Addyman 1973, 22-7). Historically, there is little that may be used to establish the veracity of this chronology for these events. It may be assumed, however, that the well documented collapse of the West Saxon kingdom in 877 also brought about the cessation of trading activity at Hamwih, at least for a short period.

Numismatic evidence

The majority of the coins from Hamwih are *sceattas,* and most of these are of two types, BMC 39 and BMC 49. Both, it is thought, were minted locally (Addyman and Hill 1968, 76-7; Dolley 1970, 57). As Addyman and Hill have shown, a collection of later pennies from the reigns of Offa to Edward the Elder has also been found in the St Mary's area (1968, fig 28 and 85-91; see Kell 1864). However, it should be pointed out that few of these later coins have been found in archaeological excavations, and these give a different impression of the chronology and economic fluctuations of Hamwih to that suggested by Addyman and Hill in their histogram (1968, fig 28). Fig 5,1 is a bar-chart based solely on coins found in excavations up to and including SARC XV, 1975.

The English *sceatta* coinage has received careful and studious scrutiny from a number of numismatists, notably Rigold (1960-61) and Metcalf (1974). As a result of their work, two phases may be identified from the *sceattas* found at Hamwih. The first includes five runic or runic imitation *sceattas* which, it is believed, date to the first quarter of the 8th century (Rigold 1-61, 17-18). The second phase includes the majority of the *sceattas,* and is the phase of *sceatta* minting in southern and eastern England generally, dated *c* 720-50. The BMC 39 and BMC 49 *sceattas* were minted during this phase (Metcalf 1974, 210-11). Up to 1975, 57 *sceattas*

TABLE 5,1 Weights and percentages of local classes from selected pits used in seriation study

SARC V

	F14		F16		F21		F22		F27		F34	
	wt	%	wt	%	wt	%	wt	%	wt	%	et	%
class 1	—	—	—	—	—	—	—	—	—	—	—	—
class2	151	18	413	30	79	6	95	10	497	47	587	39
class3	196	23	124	9	30	2	39	4	472	45	38	3
class 4	502	59	806	57	1273	82	748	80	49	5	815	55
class 5	—	—	69	4	152	10	56	6	38	3	45	3

SARC VI

	F30		F33	
	wt	%	wt	%
class 1	10	1	—	—
class 2	306	25	20	3
class 3	389	57	478	76
class 4	199	17	129	21
class 5	—	—	—	—

SARC XI

	F8		F45		F46		F48		F66			
	wt	%	wt	%	wt	%	wt	%	wt	%	wt	%
class 1	154	10	—	—	—	—	34	1	27	1		
class 2	487	32	209	39	628	38	234	18	142	13		
class 3	583	39	189	35	191	12	530	39	423	36		
class 4	285	19	136	26	871	50	565	42	585	50		
class 5	—	—	—	—	—	—	—	—	—	—		

SARC XIV

	F34		F27		F28		F30		F82	
	wt	%	wt	%	wt	%	wt	%	wt	%
class 1	—	—	10	1	20	1	10	1	—	—
class 2	391	41	482	6	985	17	221	9	—	—
class 3	304	32	6941	85	426	7	1819	73	320	42
class 4	252	27	695	8	4392	75	419	17	260	35
class 5	—	—	—	—	—	—	—	—	—	—

SARC XV

	DMW									
	F49		F15		F16		F18			
	wt	%	wt	%	wt	%	wt	%	wt	%
class 1	—	—	—	—	—	—	—	—		
class 2	165	22	283	17	1391	27	640	24		
class 3	81	11	939	55	816	16	448	17		
class 4	494	67	483	28	2259	44	1385	52		
class 5	—	—	—	—	663	13	192	7		

have been found in archaeological excavations, a marked contrast to the number of coins of the later 8th and 9th centuries. These comprise one imitative penny of Offa (c 770-96); three pennies of Ceonwulf of Mercia (796-821); a penny of Egbert of Wessex (801-39); three pennies of Berhtwulf of Mercia (840-51); a gold solidus of Louis the Pious (8 14-40) (Addyman 1973, 227); a denarius of Charles the Bald (840-77) (which Dolley dated to the sixth decade of the 9th century: Addyman and Hill 1968, 80); and a penny of Alfred (872-99). 10th century coins have not been found in any of the post-war excavations, although several coins of that century were reported during 19th century brick-earth digging in areas Addyman and Hill imply to have been close to their excavations of 1968-69 and close to some recent SARC excavations (Addyman and Hill 1968,67-9,85-90, citing Kell 1864).

The coins from the excavations suggest some occupation of the settlement in the first quarter of the 8th century, although, of course, these runic *sceattas* may have been lost long after they were minted. The bulk of the *sceattas* suggest that Hamwih was an economically flourishing settlement in the middle of the 8th century, and the pennies suggest that it also flourished in the earlier part of the 9th century. There is also the strong possibility that the settlement did not outlive the 9th century. Of course, coins are notoriously dangerous dating evidence. Single *sceattas* in an intensively occupied site could easily be removed from one deposit to a later deposit. Indeed, the seriation presented below demonstrates that this occurred on several occasions. Only where a number of coins has been found associated, notably in the hoard from DMW, KL.B, F15 (Maitland Muller 1950). where twenty BMC 49 and three BMC 39 *sceattas* were found, and in SARC XV, F1, level 4, where two BMC 49 *sceattas* were found, can a firmly dated horizon be accepted.

The ceramic evidence

The ceramic evidence is of three kinds: 1 the incidence of grass-tempered pottery, 2 the incidence of Tating ware, 3 the absence of certain wares.

Grass-tempered pottery

Addyman and Hill (1968, 81) were misleading when they declared that 'not a sherd of that straw-filled hand-made pottery which characterized settlements in the Early Saxon period has been found in recent excavations'. Grass-tempered pottery, class I, has already been defined in Chapter 2. Its occurrence in selected Hamwih pits is noted and emphasized in the next section, on the seriation, and its dating in southern England is discussed in Chapter 6.2, and outlined there in Fig 6,2. It may safely be concluded that production of this ware ceased in southern Hampshire during the first half of the 8th century, and that any sherds found in contexts later than that date are residual. This dating was first recognized by Professor Cunliffe at Portchester (Cunliffe 1970, 72), and has been confirmed at Winchester by Professor M Biddle (pers comm).

Tating ware

Tating ware has long been considered to date to the later 8th and the early part of the 9th centuries. Its early 9th century date has perhaps received more attention because complete vessels have been found associated with Arabic coins minted in the last decade of the 8th century in graves at Birka and other southern Scandinavian sites (see Chapter 7.3). However, this ware might have been produced as early as 760-70, for Winkelmann (1972, 37-47) has shown that it occurred in levels dated on historical grounds to 777 at Paderborn. It may be that some of the typological differences in this ware, which are pointed out in Chapter 7, relate to several production periods. However, it seems unlikely that it will now be possible to identify these if they exist, especially since the petrological analyses presented here show that Tating ware was probably made at several different centres.

Absence of certain wares

The absence of certain ceramics at Hamwih should be considered important information. The absence of Early Saxon forms, for example, implies that the settlement was founded after the mid 7th century. This is confirmed by the absence of sub-Roman Mediterranean wares which were being imported to other trading loci in south-west England until the early 7th century (Rahtz 1974, 99- 103; Thomas 1976). The absence of E ware, which was probably imported into western Britain and Ireland until about 700, is also indicative (cf Thomas 1959, 109; Peacock and Thomas 1967; Hodges 1975a; Hodges 1977b). Finally, and of most significance, the absence of carinated Merovingian wares of the 7th century is very conspicuous.

The absence of wheel-made 10th-11th century Late Saxon wares, particularly Winchester ware (Biddle and Barclay 1974), strongly suggests that the settlement was no longer populous by the 10th century. This impression is emphasized by the small quantity of Beauvaisis red-painted wares found in the excavations, and the absence of glazed wares. There are detailed arguments to substantiate these assertions outlined in Chapter 7. Briefly, it seems probable that the Beauvaisis red-painted pottery was first made in the later 8th century, and the considerable output of this industry during subsequent centuries, and its location near Rouen, a port with which Hamwih probably had strong connections, mean that more than a few vessels of this ware should have been found in Hamwih had the English settlement been in operation. This tenuously suggests that Hamwih's trading activities were in decline as the Beauvaisis industry was growing in size and importance during the 9th century. The absence of glazed wares is an altogether more contentious subject (cf Hurst 1969). However, the fact remains that there are no glazed wares from Hamwih, while all the evidence suggests that, after a hiatus of at least two centuries, significant production of glazed wares was recommenced in several centres in northern Europe in the last quarter of the 9th century and during the 10th, centres with which Hamwih had trade links when the settlement was flourishing.

Computer analyses of Hamwih pit associations

By John F Cherry

Hamwih is a site for which it has been difficult to establish an internal chronology by traditional archaeological methods. There now remains little vertical stratigraphy, and the development of a chronological phasing based on horizontal relationships has been retarded by the relative scarcity of intercutting archaeological features. Moreover, contexts which are artefact-rich, or contain absolute time markers such as coins, are both few and difficult to relate accurately to less productive contexts. The method and results presented in this section represent an attempt to overcome these difficulties by means of computer analysis of pit associations, using twenty of the more productive pits from among the scores of such features excavated over many years at Hamwih. The three aims of the analysis were the following: (a) to determine by multivariate methods whether an acceptable linear scaling of serial ordering of these pits was possible; (b) to suggest a first approximation of a ceramic phasing, testable in future excavations, for the Middle Saxon settlement at Hamwih; (c) to evaluate the suggestion, based on a reconsideration of the numismatic, ceramic, and historical data, that Hamwih's previously accepted chronology be shortened by a century or so (cf Cherry and Hodges 1978). The methods employed are relatively simple and suitable for the evaluation of a wide variety of archaeological data sets, yet still very rarely used; accordingly, this section describes the methodological steps in the analysis, the results of which are discussed below, and in Cherry and Hodges (1978).

Since only a limited proportion of the excavated pits has yielded substantial quantities of material in good contextual association, the twenty pits considered here constitute a small and non-random sample chosen quite deliberately for their relatively abundant pottery. While this may mean that the sample is temporally or contextually biased, there are no *a priori* indications that this is so, and the pits are in fact drawn from excavation areas scattered widely over the settlement. The data for each pit, the weights of each of the five classes of local Middle Saxon pottery, are presented in Table 5,l. These have been defined petrologically in terms of their dominant tempering material: class 1, grass; class 2, chalk; class 3, sand; class 4, miscellaneous, including quartz, flint, gravels and chalk; class 5, shell. Weight is not necessarily the best measure of the relative dominance of a pottery class, since it tends to give biased estimates of the ratio of one class to another, but Orton (1975; 1978) has shown that this is not so when the mean weights of two classes are the same, and that ratio comparisons from two different contexts will in general be unbiased. Given the rather narrow range of formal and functional variability in the assemblage, and the fact that analysis is restricted to differences between contexts, it is unlikely that the use of this measure has introduced much error. Other artefacts found in the pits, it should be noted, were deliberately excluded from consideration at this stage: glass, metalwork, and other items occurred too rarely to be helpful, while coins and imported continental pottery providing chronological fixes of varying reliability were reserved as a rough independent check on the internal logic of the seriation results obtained without their aid. This is an important point, since relatively few Hamwih features contain absolutely datable artefacts-indeed, it was this factor which initially encouraged the exploration of alternative means of establishing a more broadly applicable chronology.

The problem, then, was to undertake a typical chronological seriation: 'given a number of assemblages of pottery sherds each including roughly the same range of types though in different proportions, [to] determine the most likely chronological sequence in which they were deposited' (Doran and Hodson 1975,268). The first step was to arrive at some measure of the similarity between every pair of pits. This was achieved by writing and executing a FORTRAN program designed to calculate the percentage of each pottery type in each pit, and

TABLE 5,2 Results from 24 M-D-SCAL runs using the Hamwih pit data

No of Dimensions	stress after 59 iterations	Randomizer
6	0.041	78945
5	0.045	45836
5	0.045	15378
4	0.051	98001
4	0.050	71230
3	0.058	87235
3	0.058	88404
3	0.845*	63107
2	0.096	29634
2	0.096	87105
2	0.096	13592
2	0.096	25781
2	0.096	35900
2	0.096	34878
2	0.096	96372
2	0.882*	59921
1	0.257	11870
1	0.257	83845
1	0.257	95327
1	0.257	53279
1	0.257	42587
1	0.553*	42278
1	0.553*	00941
1	0.911*	02035

*Degenerate solution representing a configuration which is only locally optimal

transform these into a matrix of Robinson-Brainerd similarity measures. This is a simple similarity coefficient, computed as the absolute differences between the percentages for each class of pottery summed over all classes, and subtracted from 200 (the maximum dissimilarity value possible); it is more appropriate here than standard Euclidean distance, which emphasizes large differences at the expense of small (Doran and Hodson 1975, 139). On the basis of these measures, an attempt can be made to reach an overview of relationships amongst the pits, and in particular to scale them in a positional series, unidimensionally, so that the location of one pit relative to the others is a reflection of its degree of similarity to all other pits taken simultaneously.

In approaching a problem of this kind some caution is necessary, both in detecting pattern and in assigning archaeological meaning to it. We can put much more confidence in the existence of structure within a data set if several different analytical routines converge in yielding closely comparable pictures of that structure, and multiple analyses are normally a prerequisite for reliable interpretation. Archaeological scaling and seriation techniques, in particular, are potentially misleading, since it is often forgotten that they provide merely an ordering of units and not an evaluation of the principal factors which explain the differences in the positions of units within the seriation. Chronology (or, more properly, temporal shifts in the relative dominance of pottery classes) may indeed be the principal underlying variable of interest for these Hamwih data, but this must be demonstrated, rather than assumed in advance (Johnson 1968; Doran and Hodson 1975, 267-84). It may be equally possible, for example, that the seriation techniques are ordering units along an underlying scale of structural and functional distinctions, perhaps corresponding to differentiated activity areas within the settlement itself, a view propounded strongly by opponents of the 'normative' view of culture (cf Sterud 1976). Even more important, however, is consideration of whether an unidimensional ordering of the data is actually possible without doing serious violence to the data. A good seriation method, indeed, is one that will fail to produce an unidimensional ordering, if several dimensions are in fact required to accommodate the variability in the data. In general, as Doran and Hodson (1975, 269-72) note, a linear scaling of units achieved by a series of multivariate reduction steps (eg Kendall 1971) is more reliable and informative than a potentially misleading simple ordination produced in a single step by traditional techniques.

It is for this last reason that the data analysis procedure known as non-metric multidimensional scaling has, in recent years, increasingly been seen as appropriate for archaeological seriation studies, although empirical applications are still relatively limited (eg Hodson et al 1966; Kendall 1971; Cowgill 1972; Drennan 1976). The specific algorithm used in this study, M-D-SCAL (Kruskal and Carmone 1969), is also the one most frequently used in previous work. M-D-SCAL is a method for expressing the relationships among a number of units in the convenient form of a 'map' of low dimensionality; its raw data therefore constitute a matrix of similarity measures for all pairs of units. The computer starts from a randomly chosen configuration in a specified number of dimensions, and iteratively shifts the positions of the units to create a progressively better inverse match between the rank orders of the similarity measures and of the distances in the map. Thus in the final plot any two units with a high similarity measure will appear close together (and vice versa). An important element of the output measures the computer's success in producing an acceptable picture: this is a 'stress' value, which approaches zero when the map is near-perfect. Since the program is occasionally liable to yield a solution representing a local, rather than global, optimum configuration, it is usual to scale a set of data starting from a number of random starting positions, and also in spaces of higher dimensionality than that of the desired terminal configuration. (The algorithm is described by Kruskal (1964), and lucid expositions written specifically for archaeologists are available in Kruskal (1971), Kendall (1975), and Sibson (1977)).

Table 5,2 shows the results of 24 runs with the Hamwih pit data using M-D-SCAL 5M (with primary treatment of ties) on Sheffield University's ICL 1906s computer. For each run is listed the random number sequence used to determine the starting points, the number of dimensions

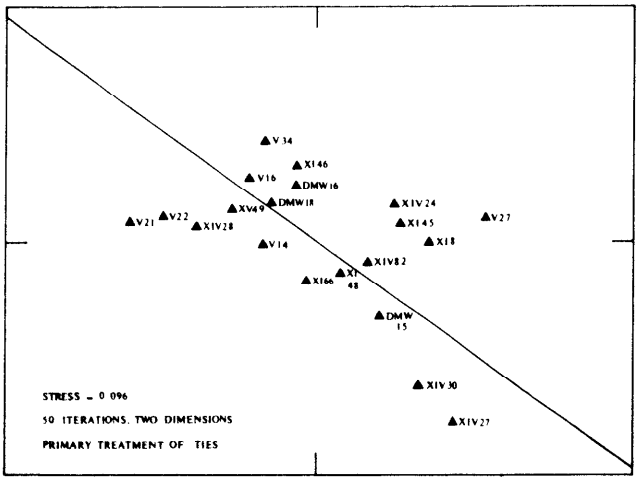


Fig 5,2 The relationship between stress and dimensionality in M-D-SCAL analyses of the Hamwih pit data

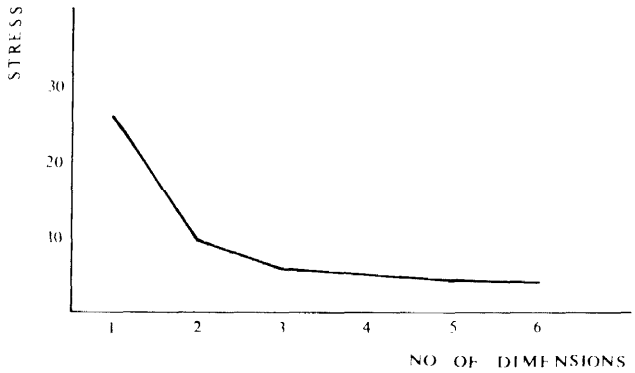


Fig 5,3 Lowest-stress M-D-SCAL plot in two dimensions of the selected 20 pits from Ham wih; the oblique fine through the configuration represents the pooled best-fit regression line, the position of individual pits being read from their orthogonal projections on to this line

of the output, and the lowest stress value. If these optimal stress values from runs are plotted in differing numbers of dimensions (Fig 5.2), it is clear that there is an 'elbow' at the two-dimensional solution; this indicates that the data can be reduced to a two-dimensional scatter plot whilst maintaining a satisfactorily low stress level (0.096), but further reduction to a single dimension is associated with poor stress values. This is not surprising, for as Sibson (1977, 83) has remarked, 'one-dimensional scaling does not really work', largely because of the topological difficulties experienced in making points 'pass through' each other on their way to the final serial positions. It is more useful to work with the good two-dimensional solution as a starting point in looking for signs of an elongated band of points in the 'map', on which to try to improve (Fig 5,3).

Two methods were used on the Hamwih data. An obvious procedure is to compute and draw the best-fit regression lines through the configuration, using both x on *y* and *y* on *x* regressions (since there is no rational choice of dependent and independent variables), and construct a pooled seriation on the basis of the average of the two lines (Fig 5,3); the serial order of the pits is read from their orthogonal projections on to this line, and is in any case closely comparable to that obtained using either regression line individually. Kendall (1971, 233) has suggested a more elegant method involving projection of the best two-dimensional terminal configuration on to its principal component, and use of this one-dimensional plot as the initial configuration for one-dimensional M-D-SCAL analysis with at least SO iterations. This was performed using the principal component analysis available in the program package SPSS (Nie *et al* 1975, 468- 514) in combination with M-D-SCAL, and the final result was identical, except for the order reversal of a pair of pits (XI, 8 and DMW 15) which are in any case very close together.

At this point it becomes appropriate to return to the archaeological data in order to evaluate, and perhaps interpret, this suggested best-fit linear scaling. It is useful to re-examine the original input data--the percentages of each pottery class in the twenty pits-in their new serial order (Fig 5,4). That chronology might be an underlying factor partially controlling the configuration is immediately suggested by the occurrence at one end of the diagram of pits containing grass-tempered (class 1) pottery. The actual quantities involved are very small (1-10%), and in view of Cunliffe's suggestion (1976, 181-3) that this ware fell out of use in the early 8th century at nearby Portchester Castle it is all the more likely that these pits containing class 1 pottery belong to the earlier stages of Hamwih's existence. Pits with class 5 pottery fall at the opposite end of the diagram: indeed, class 1 and class 5 pottery never occur in contextual association, although the low sample sizes may be relevant here. Sand-tempered pottery falls off more or less monotonically from left to right. Classes 2 and 4 individually fluctuate wildly, but together show a very steady proportional increase to a final position of dominance on the right (over 80% of the assemblage). The seriation has thus produced clear patterns whose chronological relevance and direction are confirmed by the numismatic and other evidence (see Appendix to this section). *Sceatta* coinage occurs in pits DMW 15, XI 48, XI 66, and XI 46, while penny coinage of Ceonwulf appears in XV 49. Imported Tating ware sherds (of c AD 800) have good contexts in DMW 18 and V 16. Finally, all forms of imported continental pottery are proportionally very scarce in pits at the right end of the diagram, compared to their abundance in XIV 27 and XIV 30 on the left. It is worth stressing again that none of this information formed part of the data input to the computer for the construction of the seriation itself.

With some justification, then, we may postulate the existence of a temporal cline running from lower right (early) to upper left (late) in Fig 5,2. Along this cline three groups or 'phases' are distinguishable:

1 Pits XIV 27, XIV 30: sand-tempered pottery dominant, grass-tempered pottery present in very small amounts, much continental imported pottery.
2 Pits DMW 15 to XIV 24: grass-tempered pottery present in small amounts, decline in sand-tempered pottery, increase in chalk- and chalk/grit-tempered pottery, *sceatta* coinage present.
3 Pits V 14 to V 21: shell-tempered pottery sometimes present in small amounts, low proportions of sand-tempered pottery, chalk- and chalk/grit-tempered pottery dominant, few continental imports but Tating ware present, penny coinage present.

It is worth noting that this is essentially the pattern detected from an earlier examination of these data (Hodges 1977a, fig 27) with the approximate and less easily evaluated technique of close proximity analysis (Renfrew and Sterud 1969), the main difference being that the earlier study suggested a subdivision of the third group. Some confirmation of the groupings by 'eyeball' methods can now be sought by formal computer clustering routines. The package CLUSTAN 2A (Wishart 1971) was used to perform several hierarchical fusion methods of clustering on the pit similarity measures, including single-link. average-link, and Ward's minimum error sum of squares analyses. All gave closely comparable results: one output appears as Fig 5,5, in which the clusters have been displayed not in the usual form of a dendrogram, but have been contoured on to the optimal two-dimensional M-D-SCAL plot so that those pits fused to form a group at each step in the cluster routine and are contained within a contour boundary. Again, the three groups emerge very clearly. This form of graphical display also emphasizes interesting subdivisions within groups 2 and 3, which apparently reflect the relative dominance of class 2 versus class 4 pottery in the pits. This variability does not seem to be chronologically significant, and is perhaps referable to functional characteristics of the vessels. Alternatively. the distinction between vessels tempered solely with chalk, and

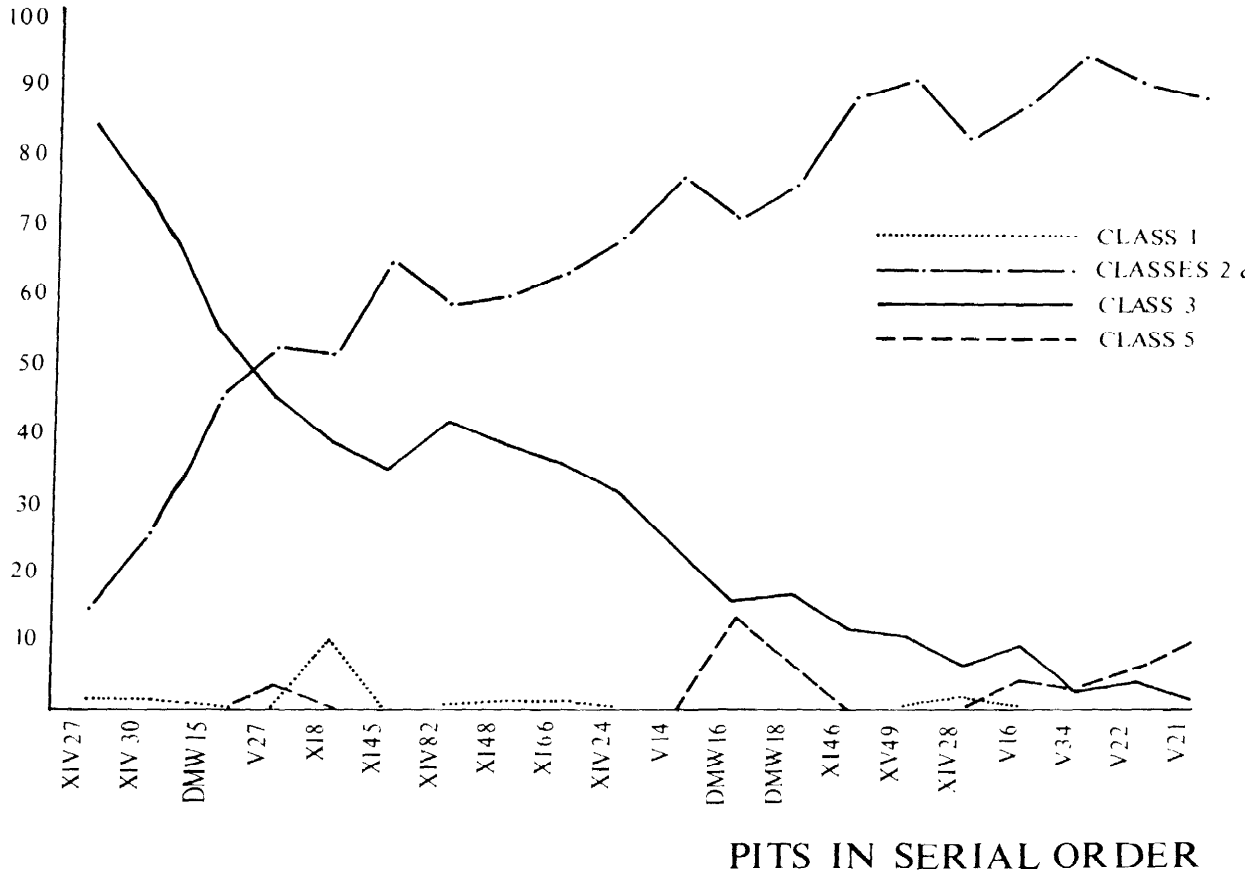


Fig 5,4 Changes in the relative dominance of the five local classes in the selected 20 pits, ordered according to the seriation suggested by multidimensionaL scaling

those tempered both with chalk and miscellaneous gritty materials has been drawn too finely, or operates randomly and is not a particularly useful one. At any rate, there are clearly imperfections in the one-dimensional configuration, probably attributable to non-chronological sources of variation.

Finally, since a linear scaling of a set of units is much more informative than a simple seriation sequence of units (Doran and Hodson 1975, 270), it may be asked to what extent the locations of the pits along the seriation axis (Fig 5,3) may be regarded not merely as in the correct order, but also spread out at the correct intervals. In other words, if two pits lie close together, are they also close in time? This is where the use of M-D-SCAL pays dividends for seriation purposes. The remarkable ability of the algorithm for recovering metric structure underlying a data set, even though only ordinal (ie non-metric) assumptions are made about the data, has been commented on elsewhere with examples (eg Kendall 1975; Cherry 1977). Recent work, notably by Shepard (1966), Sherman and Young (1968), and Young (1970), has shown that for configurations of low dimensionality, more than *c* 15 points, and moderate amounts of error, non-metric multidimensional scaling does yield results possessing considerable metric determinacy. The implication for the present analysis (which satisfies these conditions) must be that the absolute distances between pits in the seriation proposed here are meaningful in terms of some time scale, which would, of course, need to be calibrated with the help of external evidence. Accordingly, since none of the pits in the final phase is *widely* separated from the others in this linear scaling (see Fig 5,3), their absolute dates of deposition are also very likely to be correspondingly close in time. Hodges (1977a, 138) tentatively assigned a late 8th to early 9th century date to the few chronologically diagnostic items in these pits, and it is therefore unlikely that any of the pits considered in this analysis belong very late into the 9th century.

Thus the thrust of the several quantitative methods applied to the Hamwih pits is to suggest that they can be seriated satisfactorily on the basis of their contextual associations, and that a plausible chronological interpretation is permissible. In view of the nature of the sample, this first local ceramic chronology proposed for Hamwih must naturally be regarded as provisional and subject to testing against new materials, but it is also hoped that the fairly simple quantitative techniques described here may be found useful in future analyses of such material.

Appendix: Fixed chronological points for the seriation of selected pits

1 The archaeological dating of class I, grass-tempered sherds to the first half of the 8th century.
2 *The sceatta* hoard in DMW, KLB, F15. *c* 720 50: the secondary phasing of *sceattas.*
3 The penny of Ceonwulf (796 821) in SARC XV, F49, layer 7.
4 The evidence of Tating ware dated to the later 8th and early 9th centuries in SARC V. F16 and DMW, KL B, FIX.

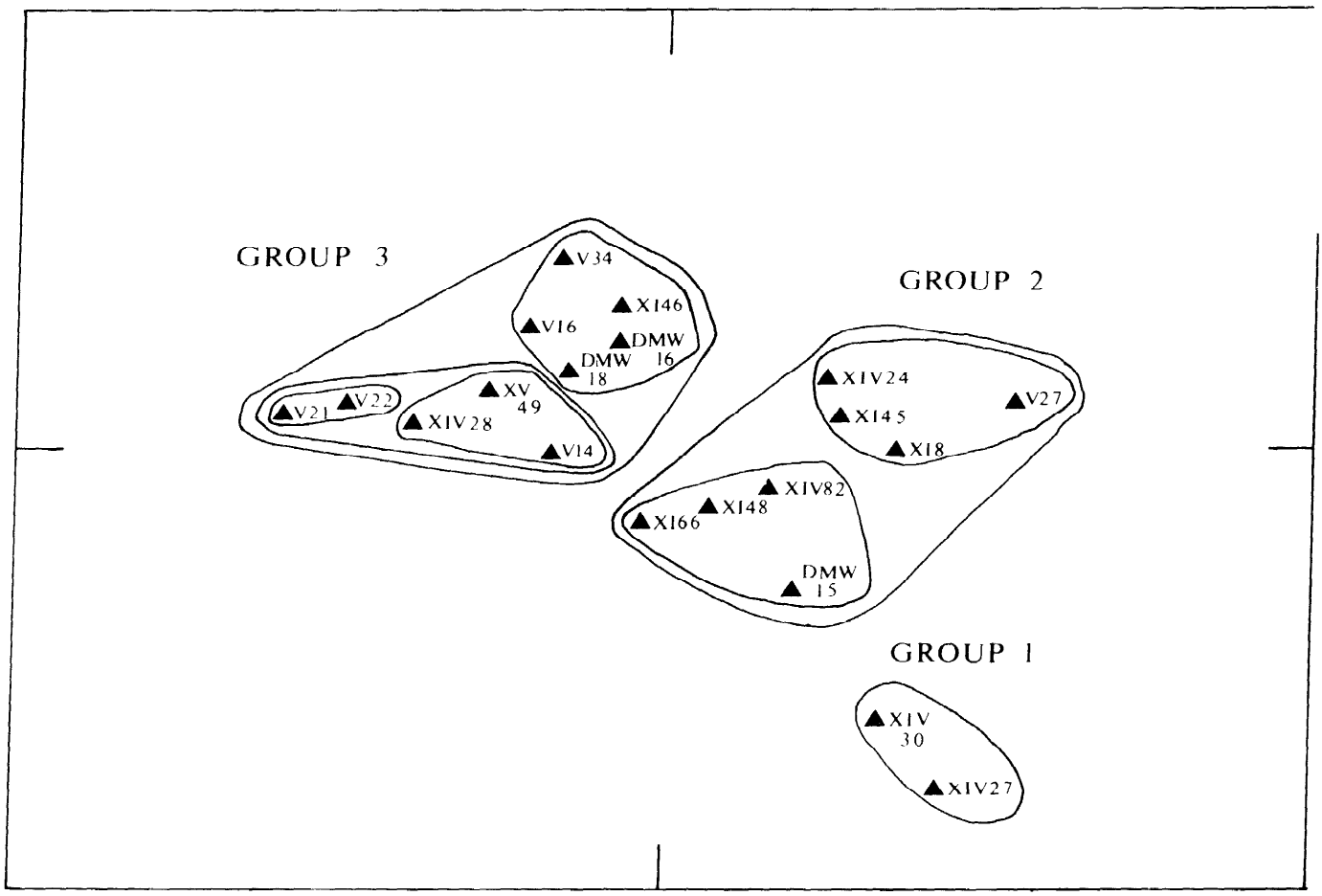


Fig 5,5 Results of an hierarchical cluster analysis (Ward's method, using CLUSTAN 2A) contoured cm to a two-dimensional M-D-SCAL plot of 20 pits, for clarity. The first eight fusion steps have not been displayed

5 The radiocarbon dating of SARC V. F16 to 810 ± 60 ad.
6 The pit DMW, KL B. F16, cut the pit with the *sceatta* hoard, DMW, KL B, F15.
The incidence of a single *sceatta* In several pits (SARC XI, F46. F48, and F66) must also be borne in mind. All these *sceattas* are of the secondary phase of *sceatta* minting.

Discussion of the seriation results

John Cherry's analysis of the Hamwih pits has important implications for the chronology of the settlement. He has reviewed several of the more significant points, while others are considered in Cherry and Hodges (1978). Some further conclusions relevant to this study should also be made.

In particular, the identification of the monotonic fall-off of the class 3 sand-tempered pottery offers a crude means, at the moment, for roughly phasing pits within the settlement. In Cherry's phase 1 the class 3 represents more than 50% of the Middle Saxon ceramic assemblage in each pit; in his phase 2, it is approximately 30-40%; while in phase 3 it is approximately 2-20%. Using this information as a model, a histogram (Fig 5,6) has been prepared and ordered illustrating the quantities of class 3 as well as classes 1 and 5 in a series of larger Hamwih pits drawn from excavations up to 1975, using criteria similar to that used in selecting the pits for Cherry's seriation (see above, section 2c). The percentages alone are given for these pits in Table 5,3.

From all the pits examined it was interesting to note that *sceartas* were found in pits SARC XI, F46 and SARC XV, F51 which fall within the later 8th century to early 9th century phase in the seriation. The suggestion that these *sceattas* were residual is supported by their incidence in both cases in the top layer of the pit. The analysis also shows the remarkable difference between the composition of the ceramic assemblage found in the bottom layers of SARC XV, F1 (layers 4 and 5) and those found in the top layers (layers 1 and 2). The bottom layers contained over 5kg of class 3 including some malformed but almost complete vessels (Fig 5,7), comprising 91% of the local ware assemblage. By contrast, the top layers include only 17% class 3 (Table 5,3). The quantities suggest a considerable time gap between the first and final fillings of this exceptionally large pit. The intervening layer, which may be a silting layer, tends to confirm this interpretation. However, layer 4 contained two *sceattas* of BMC 49 type which suggests that the quantity of class 3 in these bottom two layers is abnormally high; according to the model outlined above, only 30-40% of the ceramic assemblage should be of class 3. One reason for this may be that the pit was backfilled in part with waster sherds of class 3, thus

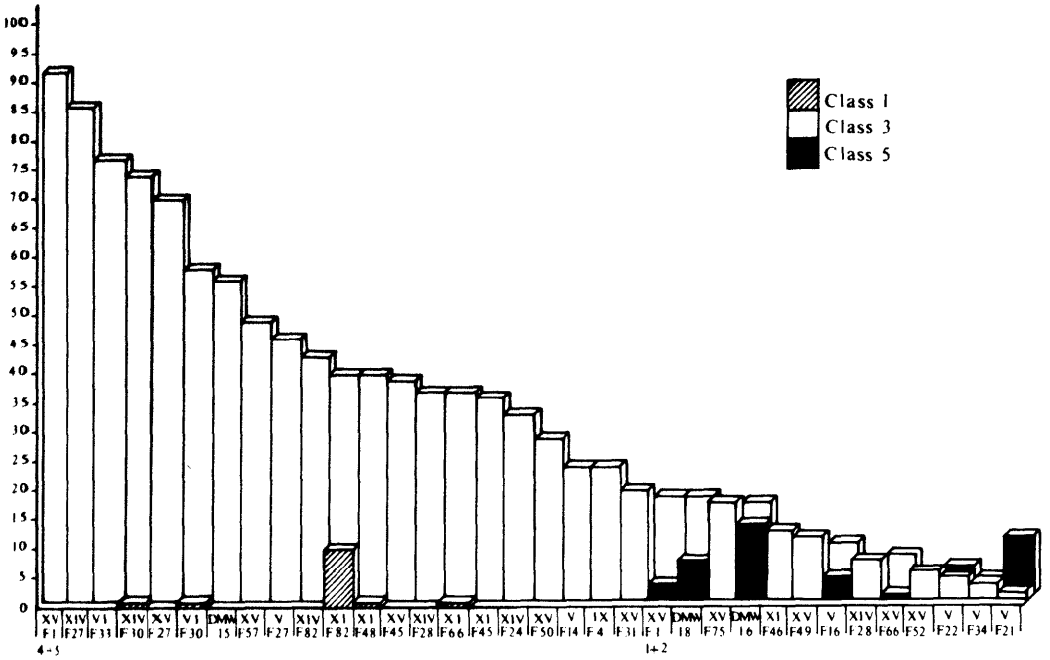


Fig 5,6 Ordered histogram of classes 1, 3, and 5 from selected pits in Hamwih

accounting for the high percentage of this class at this phase (discussed in Chapter 2).

Turning to the broader implications, all the dating evidence suggests that the settlement was established no earlier than the early 8th century. It indicates that it experienced a major economic boom in the second quarter of that century, for which the local *sceatta* types were probably minted. The seriation suggests a second boom in the later 8th or early 9th centuries, after which the settlement declined. The end of the settlement remains contentious, but very little excavated evidence suggests that it continued until the end of the 9th century, and there must have been a cessation of trading activity in the initial years of Alfred's reign when the king was forced to flee Hampshire. There is no excavated evidence of a 10th century settlement, so the theory of the settlement being moved then to the site of Southampton, established in the middle to later part of that century, becomes very questionable. However, a number of early 10th century coins are said to have come from the brick-earth digging in the northern part of Hamwih. These have been discussed above, and seem to suggest some 10th century settlement, though what it consisted of and where it was located has yet to be resolved.

TABLE 5,3 Selected SARC pit groups showing percentages of weighed classes 1, 3, and 5 in each pit

	XV F1, layers 4 & 5	XIV F27	VI F33	XIV F30	XV F27	VI F30
cl 1	—	1	—	1	—	1
cl 3	91	85	76	73	69	57
cl 5	—	—	—	—	—	—
	DMW F15	XV F57	V F27	XIV F82	XI F8	XI F48
cl 1	—	—	—	—	10	1
cl 3	55	48	45	42	39	39
cl 5	—	—	—	—	—	—
	XV F45	XIV F26	XI F66	XI F45	XIV F24	XV F50
cl 1	—	—	1	—	—	—
cl 3	38	36	36	35	32	28
cl 5	—	—	—	—	—	—
	V F14	IX F4	XV F31	XV F1, layers 1 & 2	DMW F18	
cl 1	—	—	—			
cl 3	23	23	19	17	17	
cl 5	—	—	—	—	7	
	XV F75	DMW 16	XI F46	XV F49	V F16	XIV F28
cl 1	—	—	—	—	—	—
cl 3	17	16	12	11	9	7
cl 5	—	13	—	—	4	—
	XV F66	XV F52	V F22	V F34	V F21	
cl 1	—	—	—	—	—	
cl 3	7	5	4	3	2	
cl 5	1	—	6	3	10	

6 Middle Saxon pottery: a review

Introduction

Middle Saxon pottery in the survey which follows is defined as English pottery of the post-pagan cemetery phase, beginning during the 7th century and lasting until the late 9th century. In the later 9th and 10th centuries, new settlements devised for protection caused new concentrations of people which were responsible for the development of industrial techniques including the potter's wheel.

The wares presented here are all domestic wares; the funerary vessels which were included in the graves of Christians during the late 7th and early 8th centuries are not examined except in so far as they are intrinsic to the genesis of Middle Saxon pottery. Dunning (1959) and Hurst (1959; also Hurst and West 1956) have published fundamental studies of Middle Saxon pottery, and their thoroughness, despite an interval of nearly 20 years, is

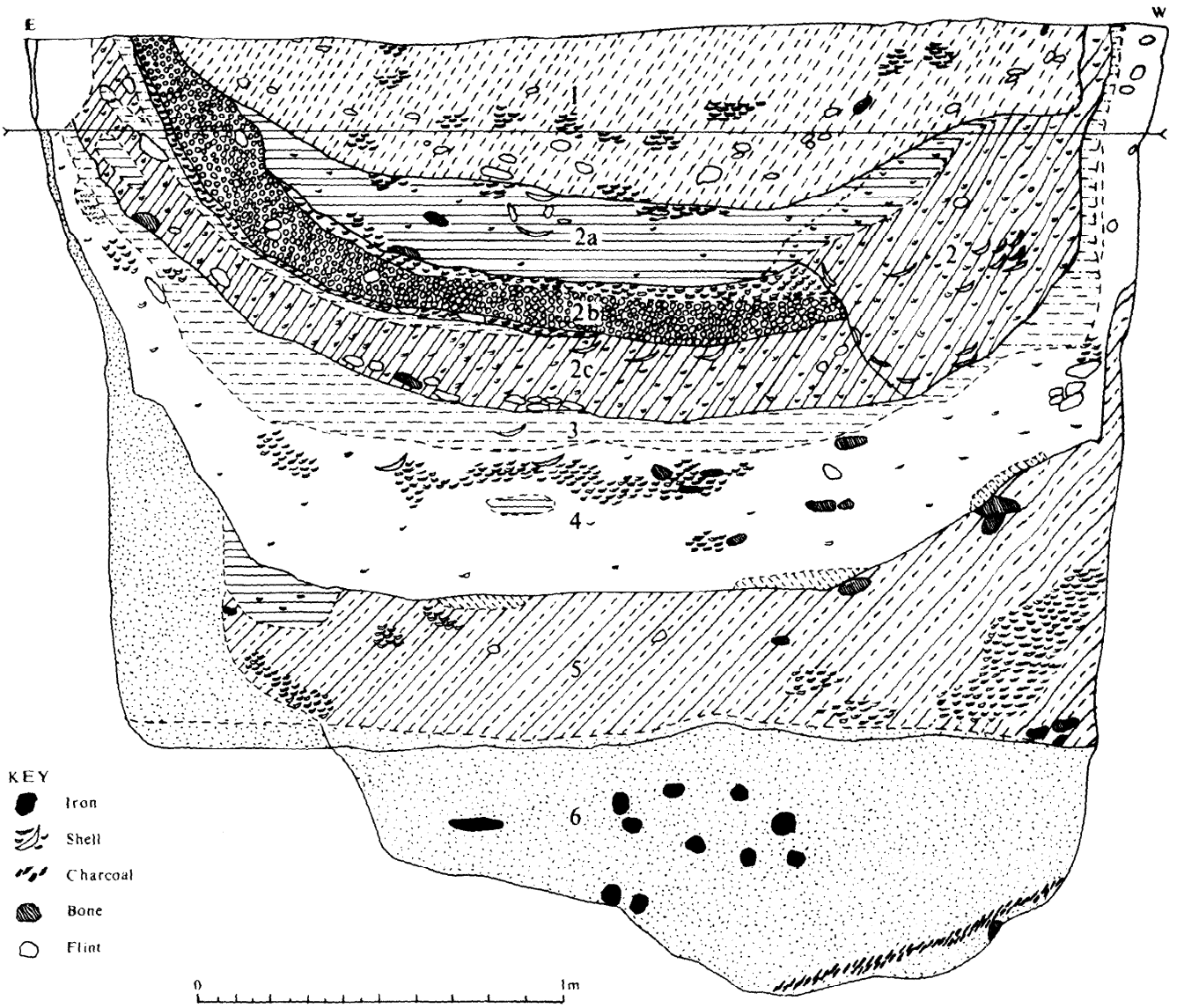


Fig 5,7 Section through SARC XV, F1: a possible waster-pit

apparent throughout the survey which follows. Despite that interval, the amount of Middle Saxon pottery which has been identified is still relatively small. Many areas *seem* to have been aceramic between the end of the cemetery wares' production and the beginning of wheel-thrown pots in the late 9th, 10th, or 11th centuries (Fig 6,1). The survey, however, suggests that most sites of this period have produced some pottery, enough to imply limited localized potting. The exceptions, those sites probably of Middle Saxon date which have been shown to be aceramic, may yet prove to be the consequence of unsatisfactory retrieval methods. It was shown, for example, during recent excavations at Wareham that the earliest Saxon pottery, probably 10th century in date, was so small that it could only usually be recovered by sieving (Hinton and Hodges 1977).

The survey which follows is in several sections: section 6.1, the genesis of Middle Saxon pottery; section 6.2, a brief discussion and survey of the grass-tempered wares; sections 6.3 to 6.6 review Middle Saxon pottery south of the Thames; section 6.7 briefly considers Middle Saxon pottery north of the Thames, and examines in detail some aspects of Ipswich ware that have some bearing on Hamwih and its locally produced pottery. The final section, 6.8, is concerned with some technological, social and economic considerations.

6.1 The genesis of Middle Saxon pottery

The study of Early Saxon pottery has been mostly concerned with the decorated funerary wares (eg Myres 1977), and the plain domestic wares have received scant attention. Typologically the similarities between these domestic wares and all the Middle Saxon wares, including the East Anglian Ipswich ware, is very marked. The tradition of grass-tempering which began again in the Early Saxon period continues spasmodically into the Middle Saxon period and, in some regions, perhaps later (Fig 6,2). There are pagan Saxon examples of the large cooking-pot form found in Hamwih from the Bowcombe Down cemetery (Fig 6,3,2) and from the cemetery at Iford, near Christchurch (Meaney 1964, 94) (Fig 6,3,1). Similarly, the Knockdean jar (Knocker 1958, fig 17, no 1) and the vessels from Portsdown Hill (Bradley and Lewis

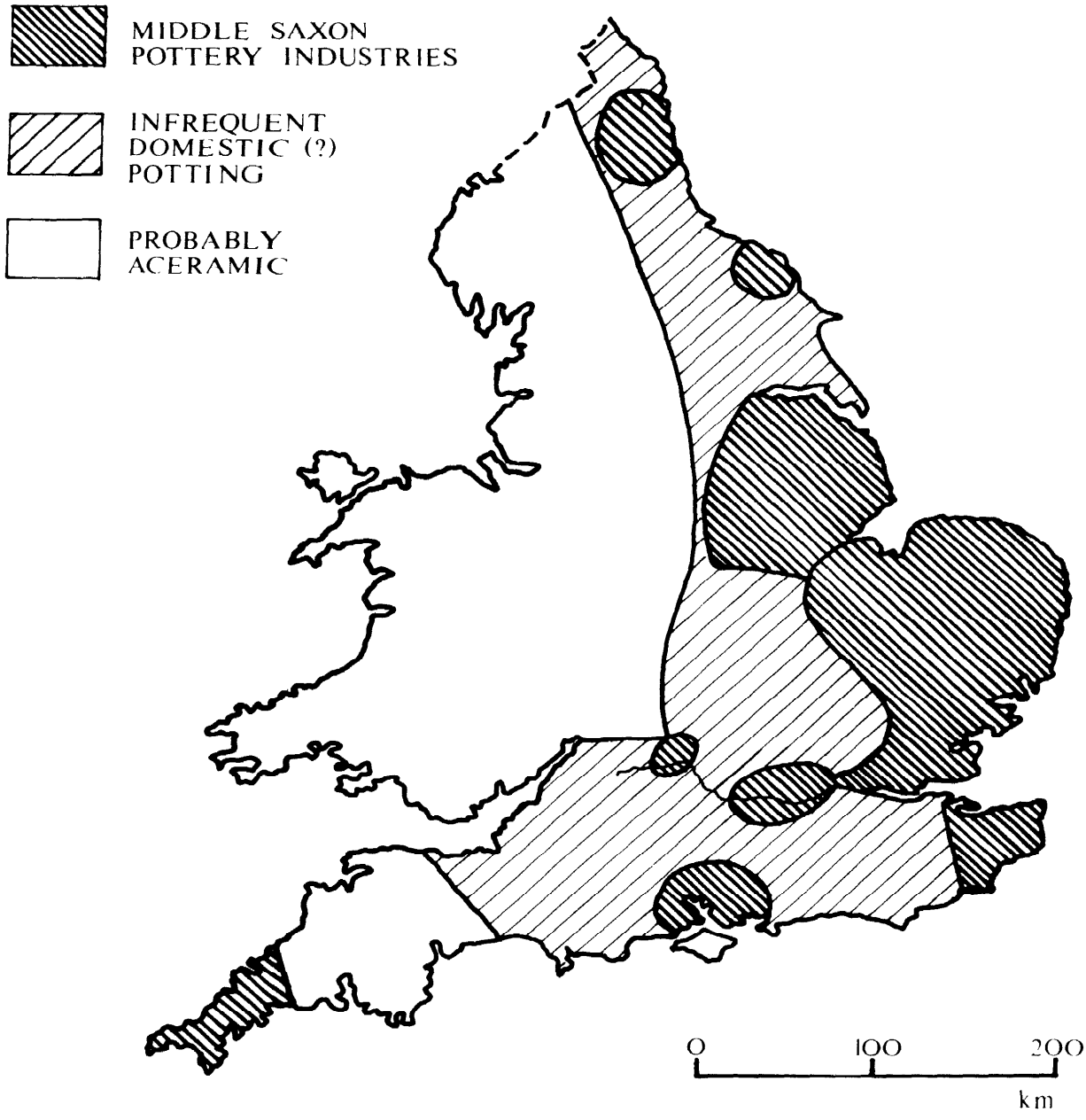


Fig 6, 1 The ceramic-producing and aceramic areas of Middle Saxon England

1968, fig 19) provide good antecedents of Hamwih vessels, while other hand-made 7th century funerary vessles from Kent (Hawkes 1973) are clearly the 'ancestors' of some of the Middle Saxon forms from Canterbury, Dover, and Sandtun. Indeed, it is still impossible to distinguish the Early Saxon Maxey-type wares of Northamptonshire from the Middle Saxon wares of this kind (Addyman 1964, 47-50; pers comm, M McCarthy). The case for continuity, with just a few frequently illustrated and over-emphasized exceptions, can also be made for the East Anglian Ipswich wares. There was already a well established Early Saxon ceramic industry, with some wares, like those made by the celebrated Illington-Lackford potter (Myres 1969, 132-6), being distributed over an extensive area. There were also villages like West Stow where potting appears to have been a communal activity (West 1969a, 11). The transference of part of this industry to Ipswich, a trading settlement, may reflect a royal interest in the output of these proficient craftsmen (cf Chapter 6.8 below).

In conclusion, Middle Saxon forms and production, with very few exceptions, reflect the continuity of Early Saxon domestic potting. Outside influences play a very small part in the development of pottery at this time, and virtually no part in the production of the Hamwih local classes.

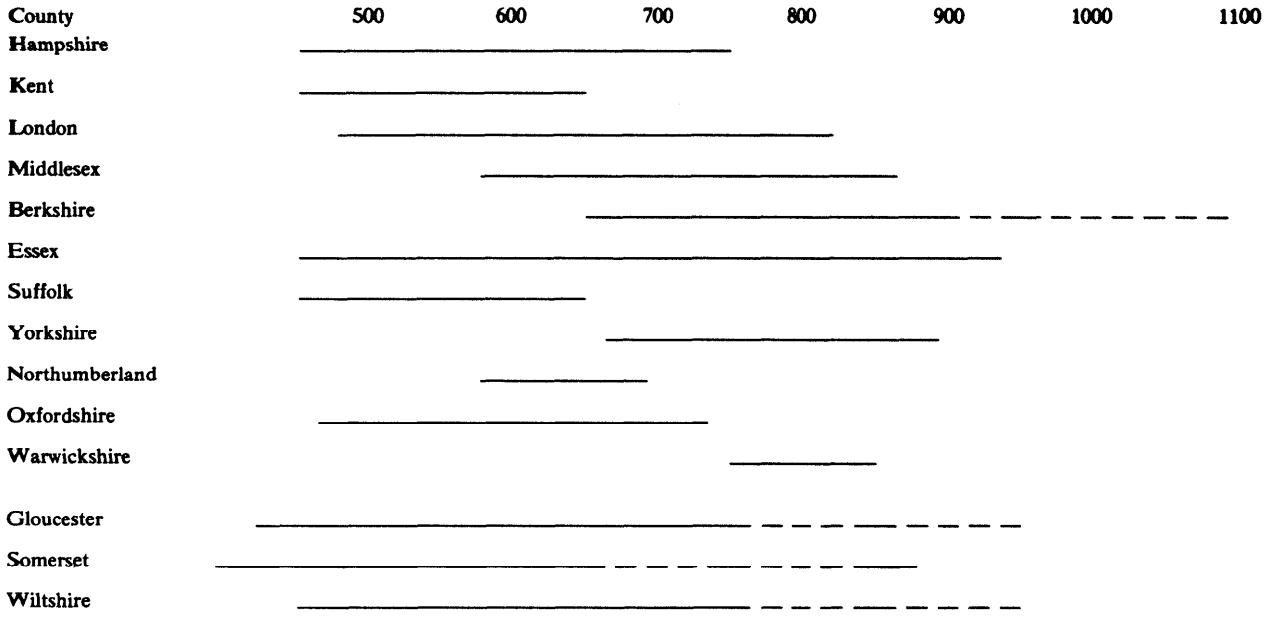
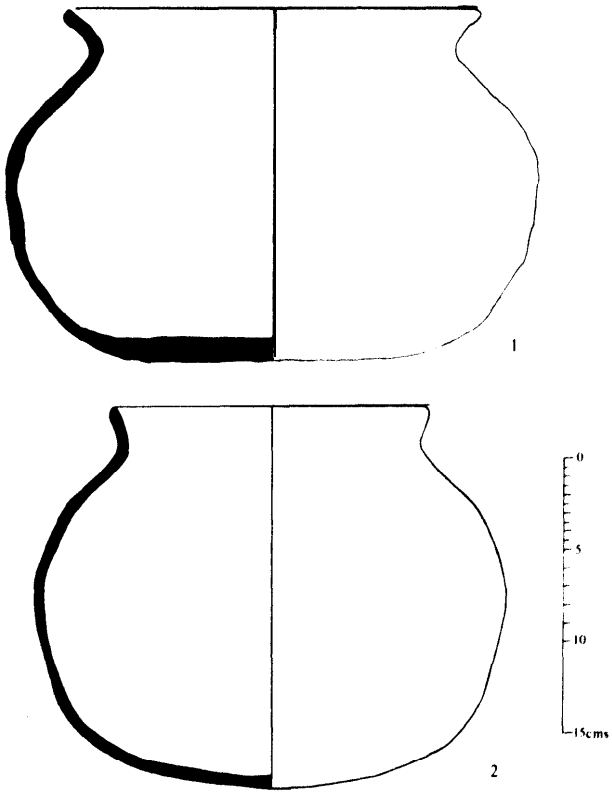


Fig 6,2 The incidence of grass-tempered pottery in Anglo-Saxon England

6.2 Grass-tempered pottery

Grass-, straw-, or chaff-tempered pottery, as it is variously termed, has proved to be a complex and rapidly changing subject. On the one hand it has been suggested that it was a sub-Roman invention adopted by the Saxons (Brown in Avery and Brown 1972), while on the other, some scholars believe it to have been introduced by the Saxons (Brown 1974, 18). Its main interest lies in the fact that it is the most common and widely distributed pottery in early medieval England (Fig 6,2). This alone suggests that there may not be a monocausal explanation for its invention and production.

The Somersetshire evidence clearly indicates that grass-tempered pottery was being manufactured in sub-Roman settlements (Fowler 1970, 51; Rahtz 1974). However, the Gloucestershire and Wiltshire evidence is mixed. The sherds discussed by Fowler (1970) from Frocester had no stratigraphic context: they might be sub-Roman, Middle, or Late Saxon in date. By contrast, the forms of some of the Westbury sherds (Fowler 1966), the Petersfinger pot (Moore and Algar 1968), and a sherd from Avebury (Devizes Museum, unpublished) clearly suggest them to be 6th century Saxon wares. Indeed, the Petersfinger vessel is paralleled exactly with an Abingdon vessel discussed by Brown (Avery and Brown 1972, fig 7, no 20): both have pedestal feet and small pinched lugs. These Wiltshire pots were possibly made by West Saxon settlers moving northwards from Southampton Water. In the environs of Southampton Water, grass-tempered pottery has been identified in 5th century contexts at Portchester (Cunliffe 1970) and in cemeteries at Bowcombe Down (Isle of Wight) (Fig 6,3,2), Portsdown Hill (Bradley and Lewis 1968, Kingsworthy (Winchester Museum), and two sites near Andover (pers comm, M Dacre and S Davies). Grass-tempered pots have also been found in 5th-7th century domestic sites in Canterbury (Frere 1954, 124), in 5th century contexts at Mucking (Essex) (Jones 1969), and at West Stow



1 Iford Bridge (British Museum, 1939, 5-7.1)

2 Bowcombe Down (Carisbrooke Castle Museum)

Fig 6,3 Early Saxon funerary wares from Iford and Bowcombe Down (scale 1:4)

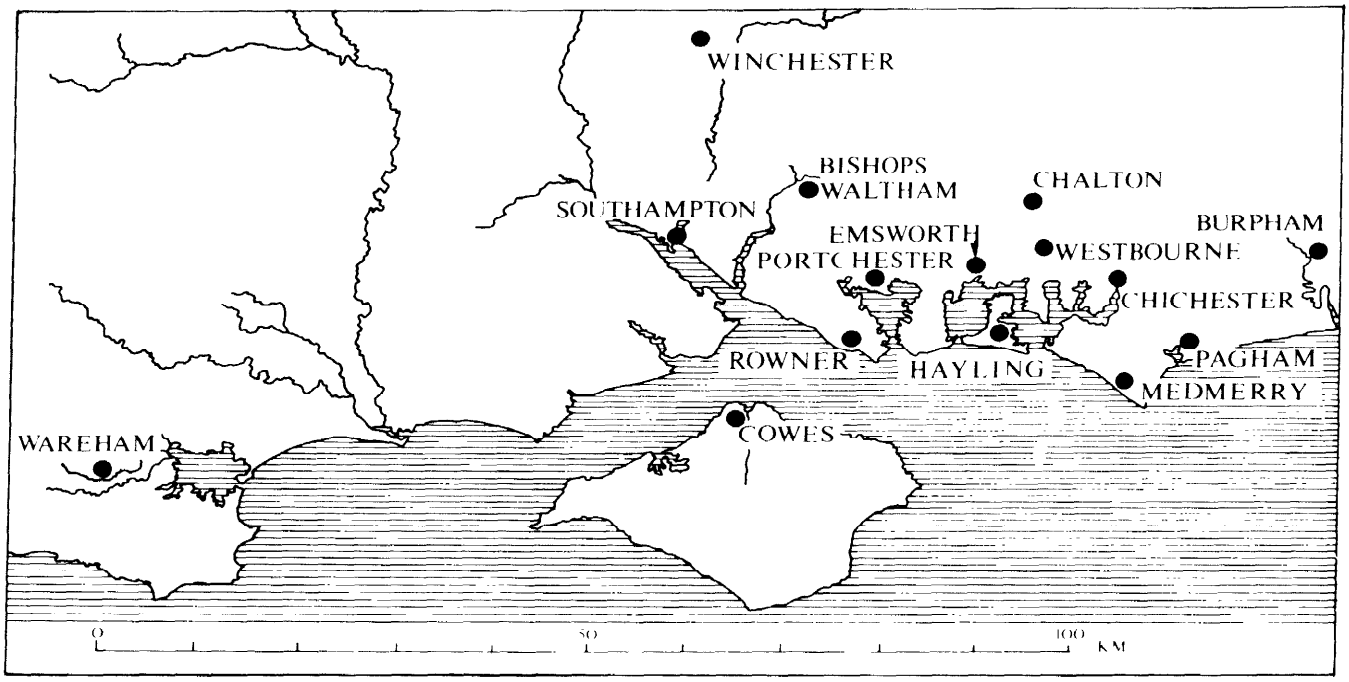


Fig 6, 4 Distribution map of Middle Saxon wares from southern Hampshire and Sussex

(Suffolk) (West 1969b). The evidence for the manufacture of grass-tempered wares in the Frisian Islands (van Es 1969b) suggests that it was a technique introduced into some areas of southern England from the North Sea littoral homelands of the migrating tribes. The possibility of the independent manufacture of grass-tempered pottery on some western islands of Scotland (Reece 1973, 38-9) emphasizes the fact that the technique might have been invented by sub-Roman communities in south-western England, independent of the Saxons. It was, after all, a simple technique sometimes employed by pre-Roman Iron Age potters in southern England.

There are decorated urns with grass-tempered fabrics (Cunliffe 1970, fig 3: 9-17), urns with pedestal feet (Moore and Algar 1968), pierced-lugged cooking-pots (unpublished: Canterbury), and a spouted pitcher from a 9th century context at Wicken Bonhunt (Essex). But these are exceptions, often made by the talented funerary urn potters. Most grass-tempered vessels from sub-Roman, Early Saxon, and Middle Saxon contexts are crudely formed vessels that are often, typologically, quite individual. The range of crude forms in Hampshire, for example, suggests that they were occasional products, domestically produced when they were required (cf Cunliffe 1970, 70). At Hamwih and elsewhere in Hampshire, grass-tempered wares were abandoned in favour of the consistent forms of the 8th and 9th century wares probably made by 'part-time' craftsmen.

The evidence strongly suggests that grass-tempered pottery was the simplest pottery to make (cf Brown 1974, 18). Analysis of the Cassington sherds indicated that local vegetation might have been used (Arthur and Jope 1962-3, 10); while analysis of a sherd from Canterbury, CXXXI, pit 4 (Arthur, unpublished) indicates that spelt wheat was the principal tempering material. With such easily acquired tempering materials, most clay could be fired in bonfire or single-flue kilns. This hypothesis is supported by the sparse incidence of grass-tempered wares in otherwise aceramic regions such as Wiltshire or Gloucestershire, The one exception is the vast quantity of grass-tempered pottery from Old Windsor, which suggests that it might have been made by 'part-time' potters, rather than domestically produced. Why grass-tempered wares were used at Old Windsor in preference(?) to other wares which would have been less porous, remains uncertain. Only more data will permit a closer examination of the mechanisms inherent in the complex traditions of grass-tempered pottery.

6.3 Middle Saxon pottery in Hampshire and West Sussex

To the east of Southampton Water as far as Chichester in Sussex, a number of Middle Saxon sites have been found, all of which have pottery. To the west only one site, Milton, near Christchurch, has been excavated (Hurst and Hurst 1967) and no pottery was found. The Hamwih local classes are typologically representative of the wares from Winchester (Winchester Research Unit), Chalton Manor Farm (Hughes, forthcoming), Portchester (Cunliffe 1970), Gosport (Lewis and Martin 1973), Hayling Island (Cunliffe 1974), Emsworth (Bradley 1973), Pagham (Cunliffe 1974: Gregory 1975; 1976). Medmerry Farm, Selsey (White 1934), and Chichester (Down 1978). Although no pottery has been found from west Hampshire, one sherd has been identified from Gunard, near Cowes on the Isle of Wight (Carisbrook Museum) (Fig 6,4).

The principal fabric in this region in the Middle Saxon period is the flint and quartz-tempered ware, the Hamwih class 4. As with the Hamwih class 4, many of the sites have produced a range of fabrics with varying quantities of flint and quartz being used to temper the

matrix (cf Lewis and Martin 1973). This fabric was in existence at Hamwih and Portchester by the early 8th century, although it was not the major Hamwih local class until the later 8th or early 9th centuries. Its manufacture and growing importance coincides,. it seems, with the demise of the grass-tempering tradition in this region. This class is known at Winchester, where stamped decorated sherds in this fabric, identical to some from Hamwih (Fig 2,5,1) and Portchester (Cunliffe 1974, fig 2, no 8) have been found in early 9th century contexts. This class is one of those found in the excavations at Chalton Manor Farm, at Westbourne, during field-walking by Mr J Budden (Hughes, forthcoming), and is the only Middle Saxon type known from west Sussex sites. Despite the crudity of the tempering, the production of this ware continued in the Southampton region until the 12th century, where it is the principal Saxo-Norman ware (Platt and Coleman-Smith 1975, 2, fig 135, 1- 18). It is also an important Saxo-Norman ware at Winchester (Hurst 1964), in the east Hampshire valleys (Moorhouse 1971), and at Chichester where a clamp kiln has been found (Down 1978, 158; 341-5), in spite of prolifically produced Winchester ware (Biddle and Barclay 1974), Portchester ware (Cunliffe 1970), and oxidized stamped wares which were available in these areas. Wheel-thrown pottery was only slowly accepted in southern England, and in these areas in particular, which is surprising since Winchester was a cosmopolitan centre (cf Moorhouse 1971, 47).

The 'Hamwih' stamped sherds in this fabric, recognized at Winchester and closely paralleled at Portchester, suggest that much of the pottery discussed here was being traded either from one centre or by an itinerant potter, and was not a tradition sustained at a number of settlements as was the case in the 7th century, when grass-tempering was the principal pottery tradition.

The same is true of the less common chalk- and chalk-and-flint-tempered wares. These Hamwih classes 2 and 4, respectively, must have been made near or on the Downs, at least 15 miles (25km) from Hamwih. This ware has been found at Chalton Manor Farm, Port-Chester, and Gosport, as well as at Gunard, near Cowes on the Isle of Wight. It is possible that the shell-tempered, class 5, late 8th to early 9th century ware was also made at a single centre in small quantities and then traded along the coast, and thus has been found appropriately at a midden site near Gosport (Lewis and Martin 1973). However, it seems more likely that this was a tradition adopted by coastal settlers who utilized readily available temper, since the fabric is paralleled at Sandtun (Kent), as well as all along the Frisian and Flemish coastline at this time, though never inland.

The only ware exclusive to Hamwih is the 8th century class 3, the product of the most proficient of Saxon potters in southern England at this time. The peak of its production coincides with the establishment of the settlement at Hamwih, and thereafter production falls off. These potters may have been the last familiar with the production of funerary wares, which in many instances were sand-tempered products of considerable craftsmanship.

6.4 Middle Saxon pottery in Kent

Despite Kent's proximity to the Continent, its 8th and 9th century pottery is very much in the English tradition. None of the wares were thrown on a wheel, although the Richborough pitcher was probably made on a turntable in the Ipswich-type ware tradition, and is, perhaps, the finest remaining Kentish vessel of this period (Hurst 1959, fig 4, no 1). A few of the Middle Saxon vessels from Professor Frere's excavations at Canterbury Lane, Canterbury, were stamp-decorated (cf Frere 1954, 124-5; see also Hurst 1959, fig 4, no 5). Similarly, some decorated sherds were found in excavations at Dover (Threipland 1957, 36-7).

The finest vessel in the assemblage from the midden site at Sandtun is a vertically incised pot from the Early Saxon period, probably late 6th or 7th century in date. Its globular form is quite different from the Sandtun cooking pots of the 8th-9th centuries. The cooking pots are in three fabrics. The first, and commonest, is a reduced, poorly fired ware with chalk inclusions up to c 4mm across, and a slurry finish. There are 15 cooking pots in this ware with high everted rims, as well as a shallow jar and a bowl. The second ware has shell tempering; there are three rims in this fabric, typologically similar to the chalk-tempered ware. The last ware has chalk and coarse(?) gravel inclusions; although it is the hardest ware, there is only one rim in the collection.

The Canterbury Middle Saxon wares evolve from the grass-tempered wares and local sand-tempered wares of the Early Saxon period. The grass-tempered wares were made in several forms, including pierced lugged vessels, and had sagging bases. The principal Middle Saxon ware is reduced, hard, and possibly made on a turn-table. The fabric has large sand-grain inclusions. Rims in this fabric are either squared off or pinched outwards, being prototypes of the 10th and 1lth century wheel-thrown wares (Frere 1954, 125 and fig 15). Glazed sherds in this fabric were found on a habitation site in Canterbury Lane, associated with a coin of Alfred and Rhenish and French Carolingian imports. The glaze is olive-green in colour but badly spread, which suggests that this was an unsuccessful attempt at glazing by local potters. The brief appearance of glazed wares at this time also endorses the view that the potters found it difficult to make glazed pots. It is probable that the Canterbury potters, like several other potting communities in northern Europe at this time, fell in with this fashion. However, unlike the Stamford ware and Winchester ware potters (Biddle and Barclay 1974), these potters were simply adding glaze to forms and fabrics they had been making for many generations-a reason, probably, for their lack of success.

Further excavations in Kent (eg at Stone-by-Faversham: Fletcher and Meates 1977, 69-70), and at Canterbury, Reculver, Dover, Sandwich, and Richborough, in particular, should bring to light still more Middle Saxon wares. It remains to establish the extent of Continental influences, apparent in the solitary sagging base Richborough pitcher, on the potting in this kingdom where cross-Channel contacts from the 7th century onwards are so obvious in other artefacts (eg coins).

6.5 Middle Saxon pottery in the Thames valley

There is still very little Middle Saxon pottery from the Thames valley. However, recent excavations in London, especially those at New Fresh Wharf (Hobley *et al* 1977; Miller 1977), have evidently discovered an important assemblage. Other groups from London comprise mostly Ipswich ware which tends to occur with a variety of locally made fabrics at the Strand (Haslam 1975,221-2); Whitehall (pers comm, H M Green), and the Savoy Palace (Wheeler 1935, 139-41; Hurst 1959, 23). Clearly, the London archaeological units should transform this picture in coming years.

Hurst has considered the major group from Middlesex from his excavations at Northolt Manor, where he records the presence of four fabrics (Hurst 1961,255-6).

These are '(a) grass-tempered; (b) sandy; (c) rough gritty with large protruding grits; and (d) shelly' (Hurst 1976, 309). All appeared to be cooking-pots (Hurst 1961, fig 66, nos 1-3, 5).

A further find from Mortlake in Middlesex was recorded by Sir Mortimer Wheeler (1935, fig 32,1). This is a shouldered grass-tempered vessel which is typical of the shouldered vessels of this period from several parts of England (eg Hamwih (Fig 2,1); Whitby: Hurst 1976, 7.11,4; Old Windsor: below).

The assemblage from Old Windsor is the principal collection from Berkshire. The excavator, Dr B Hope-Taylor (in Wilson and Hurst 1958, 183-5) has only published a brief note on this large collection. In the Middle Saxon period, with the exception of one Ipswich ware vessel, it comprises only grass-tempered ware, which was evidently made on a large scale. Cooking pots, jars, bowls, and four skillets were the principal forms. The cooking-pots have carefully trimmed rims, and some have pronounced shoulders like the vessel already mentioned from nearby Mortlake. The bases are thick and flat, and some have been fettled rather as the continental pots were at this time. It seems probable that the pinched handles, which Hope-Taylor refers to in his note, were skillet handles.

It would appear that the grass-tempered wares were replaced once locally produced wheel-thrown wares were available in the 10th or 1lth centuries. The scale of the Middle Saxon production of grass-tempered pottery, however, probably led to a large amount of residual pottery in the Saxo-Norman features.

Despite large numbers of Early Saxon wares from the upper Thames valley, Middle Saxon pottery is scarce. Middle Saxon pottery has been found at St Aldate's, Oxford (Hassall 1972, 145-7); Dorchester-on-Thames (Frere 1962, fig 21, 19-22), and Shakenoak Farm, where there is one vessel (Brodribb *et al* 1972, no 423). In complex features at St Aldate's, Oxford, several hand-made sherds were found in various forms and in several quite different fabrics. One of these, a finely finished, black-burnished, everted-rim cooking pot (414) was thin-sectioned (T-SP 169), and proved to have inclusions of fine-grained limestone, which indicate that it was probably not manufactured in the immediate environs of the site. One of the published vessels from Professor Frere's excavations at Dorchester has a macroscopically similar shell, or more probably, limestone tempered fabric to another of the St Aldate's wares (Frere 1962, fig 21, 19). A few of the Dorchester rim sherds have been trimmed, either by a wooden pallet or a knife, and are hand-made. However, two vessels he published have a reduced, hard fabric and are sand-tempered; their thickened and crudely trimmed rims may be attempts to imitate imported wheel-thrown wares (Frere 1962, fig 21,21,22).

6.6 Middle Saxon pottery in Somerset and Wiltshire

There are very few sherds from these two counties. Rahtz (1974) has recently reviewed Saxon pottery in Somerset, whilst Fowler (1966) has listed most of the Early and Middle Saxon pottery from Wiltshire.

The complex historical background to the Saxon settlement of these two shires makes the unprovenanced finds of the 7th-10th centuries difficult to interpret. The large quantities of sub-Roman Mediterranean imports in Somerset are indicative of a distinct culture there. There is one pot of particular interest which may be a hybrid of the Saxon and sub-Roman cultures, a grass-marked, lugged vessel from South Cadbury (Rahtz 1974, fig 2,10). Professor A C Thomas (pers comm) has suggested that this might be related to the grass-marked wares of the Cornish tradition. The discovery of a Cornish grass-marked vessel in a late 7th or early 8th century context at Cannington (Rahtz 1974, 99) certainly supports this suggestion. However, the form is quite unlike any Cornish wares and it is, therefore, more likely that it is a 7th century Saxon vessel, as Rahtz speculates, although its resemblance to the Petersfinger bowl, which Rahtz cites as a parallel, is slight.

The hand-made bowl from Congresbury (Rahtz 1974, fig 3.29), the two sherds from Beckery (Rahtz 1974, 113), the Icelandic Spar-tempered sherd, and the grass-tempered sherds from the pre-930 contexts at Cheddar (Rahtz 1974, 116) are the total assemblage of identified Middle Saxon wares. This is perhaps surprising in view of the number of sites that have been examined, and is possibly a consequence of a very limited ceramic production in the sub-Roman and pagan Saxon periods.

Very few Saxon sites have been excavated in Wiltshire, and on those sites which have possible Middle Saxon levels only grass-tempered pottery has been found. This was the case at Cricklade (Radford 1972, 90). and, more recently, at the 9th century iron-working site at Ramsbury, excavated by J Haslam (pers comm). However, there is one rim sherd from unpublished excavations at Enford (in 1967) that is probably Middle Saxon in date, and has chalk and flint inclusions (Devizes Muscum, no 1580). It has reduced grey surfaces and is hard, with a soapy texture. The everted rim profile suggests that it may be Middle rather than Early Saxon in date.

Surprisingly, there are no known antecedents for the oxidized Saxo-Norman stamped wares, probably made in large numbers near Crockerton and Potterne, to the north of the chalk Downs. This suggests that the idea for these wares (eg Bruce-Mitford and Jope 1939-40, fig 8,2,4; Radford 1972, fig 11,8) originated from southern Hampshire or west Sussex, where the stamped Pagham, Hayling Island, and Hamwih 8th and 9th century wares were, perhaps, the inspiration for the Saxo-Norman stamped wares of west Sussex (Dunning and Wilson 1953, fig 11, 1-6; Barton 1972; Down 1978, 347-9) and Hampshire (Riddle and Barclay 1974, 141; Addyman *et al 1972).*

6.7 Middle Saxon pottery in eastern, central, and northern England

General

The pattern of Middle Saxon pottery production in East Anglia, Mercia, and Northumbria is beginning to be clear (Hurst 1976, 299 311; Hodges 1977a, ch 6). These comprise three groups. The first, and the largest, industry is that of the Ipswich ware potters of Eart Anglia (see below, pp 59-60). The second group consist\ oft hose wares which were regionally traded, such as the shelly limestone-tempered wares of Northamptonshire and southern Lincolnshire (Addyman 1964, 47-58, 71 72; Addyman and Whitwell 1970; McCarthy 1979), the Whitby wares from north-east Yorkshire, and the allied wares of Co Durham from the important excavations at Jarrow, Wearmouth, and Escomb (Hurst 1976, 305, 309-11). The third group consists of those wares which appear to be very limited in their distribution and may have been produced in domestic circumstances. These include the Whittington Court group in Gloucestershire (Dunning 1952, 60, fig 5, no 9, 10); the sherds from Fladbury, Worcestershire (Hodges 1977a, 166 and fig 21,1); the Hatton Rock group from Warwickshire (Hirst and Rahtz 1973, 171-4, fig 7); some Lincoln wares

Fig 6,5 Three Ipswich-type ware pots (by courtesy of Suffolk County Council)

(Coppack 1973, 89); some from Low Caythorpe (Coppack 1974) and Wharram Percy (Hurst 1980, 77-9) in Yorkshire, as well as the isolated pots from Heworth and Kirkoswald (now lost) in Northumberland and Cumberland respectively, which both held coin-hoards (Thompson 1956, no 187: pl IIIa; and no 225 respectively).

Ipswich ware has already received a great deal of attention (cf Hurst 1976, 299-303, for the most recent account), but it seems apposite to remark on a few aspects of this Middle Saxon pottery in the context of the Hamwih assemblage.

The dating of Ipswich ware seems to be fixed as finely as perhaps it ever can be. Its origins would appear to lie in the first or second quarters of the 7th century, while it seems to be superseded by Thetford ware around the end of the 9th century or possibly in the early 10th century (Hurst 1976, 301-3). Its production in and around Ipswich itself is fairly well attested (cf Wade 1980: Dunmore *et al* 1975, fig 32), though the discovery of further production centres should not be ruled out In effect, what remains to be explained is the scale' of Ipswich ware production, its extensive distribution and the range of forms made by these East Anglian poiters.

The origins of this industry seem to lie in the Early Saxon potting traditions of Suffolk, where cremation in elegantly decorated pots was the conventional funerary rite. This specialist background in the 5th and 6th centuries would seem to invalidate the early theory that the Ipswich ware potters were immigrants. It now seems more acceptable to suppose that these 7th-9th century potters were, instead, influenced by certain continental forms. This influence, as we shall see, has Early Saxon origins (cf Hurst 1976, 303).

Hurst in his recent study has abandoned his early point about the immigrant potters, and left this matter unresolved. The quantitative insignificance of these bottle and sagging-base pitcher forms in relation to the entire assemblage of Ipswich ware might, to a certain extent, justify this. However, an alternative model can be proposed.

It may be argued that an awareness of the continental forms was first evident at the patronage or clientele level rather than at the potters' level. The Early Saxon copies of bottles discussed by Evison (1974), in particular those from Eynesbury and Nacton, suggest that these vessels were very much in demand. It might be further inferred that these early copies were made when the wheel-made imported versions were unobtainable. (It seems very probable that the Caistor-on-Sea pitcher, previously considered an early example of a class 14 import (Hodges 1977a, 112-3), is an Ipswich ware copy (Fig 4 1,8; see Chapter 4.3).) Such vessels, it may be suggested, had a prestige value, perhaps by their association with a trade in wine (cf Hodges 1977b, 241-2), or possibly as primitive valuables in their own right (cf Dalton 1977). There is plenty of evidence to suggest that Saxon potters like potters throughout time, were very conservative and loth to deviate from the wares that were their staple. Such Early Saxon imitations, therefore, may well have been 'commissioned'. The apparent centralization of the East Anglian pottery industry in and around Ipswich during the 7th century at a time when the pagan funerary rite was dying out suggests the action of either the East Anglian king or possibly an ecclesiastic. The discovery of the sherd of Ipswich ware from Ipswich itself with a mask similar to that on the Sutton Hoo 'sceptre' (Smedley and Owles 1967) lends further weight to the proposition that there was some patronage of the industry. This would explain the singular imitations of certain Continental forms (eg Hurst 1976, fig 7.7, 3 and 4), as well as the incidence of pitchers with sagging bases, possibly copied from continental wares, in an Anglian medium The industry may well have developed to a stage where the assimilation of certain Rhenish and Anglian ideas was complete by the early 9th century, and very much the staple produce of these potters. This is apparent, for

TABLE 6,1 Presence/absence survey of the manufacture, forms, and decoration of Middle Saxon pottery

County	Hand-made	Turn-table	Wheel-thrown	Bowls	Cooking pots	Pitchers	Decora-	Comments
Hampshire	X	X		X	X	X	X	Two ? pitcher handles from Hamwih
Sussex	X	X		X	X		X	
Kent	X	X		X	X	X	X	
London	X	X		?	X	X	X	
Middlesex	X	X			X			Northolt Manor: grass-tempered sherds
Berkshire	X	X		X	X	X	?X	Old Windsor
East Anglia	X	X		X	X	X	X	Ipswich WARE
Nortamtonshire	X	X		X	X		?X	Only Ipwich ware pitchers
Lincolsnshire	X	X		X	X		X	Only Ipswich ware pitchers
Yorkshire	X	X		X	X		X	Only Ipswich ware pitchers
Durham	X	X		?	X		X	
Northumberland	X				X			7th century wares: Yeavering
Cumberland	?	?			?			One vessel from Krikoswald
Oxfordshire	X	X		X	X			
Warwickshire	X			X	X			Hatton rock
Worcestershire	X			X				One vessel: Fladbury
Gloucestershire	X			X	X			Two vessels: Whittington
Somerset	X			X	X			
Wiltshire	X				X			

example, in the assemblage published by West (1963) from Ipswich, though occasionally oddities, indicating other influences, still pervade this large collection (eg West 1963, fig 46,45).

The scale of the industry as well as the range of forms clearly differentiates it from the Hampshire wares associated with Hamwih, as it differentiates it from all the other groups of Middle Saxon pottery reviewed here. There is, at present, a strong case for proposing a centrally organized industry. When the extensive distribution of the ware is considered (Dunmore *et al* 1975, fig 33), this hypothesis is reinforced, although its largely riverine and coastal distribution might conceivably be seen as some indication of traders operating from Ipswich- However, there is also a little information to suggest a directional element to this distribution. The occurrence of several Ipswich ware pitchers at York (Stead 1958, 426; Richardson 1959, 76; Wenham 1971, 167, fig 2), as well as the concentrations of this ware at Wicken Bonhunt (Essex), Sedgeford (Norfolk), Waltham (Essex), and London which are atypical of other assemblages in these areas, far-distant from Ipswich, must be considered. At present the analytical work to substantiate these points has not been undertaken, but it could infer a central place of redistribution from Ipswich to specific centres in East Anglia and beyond (cf Renfrew 1975, 48; Wade, forthcoming).

Altogether, Ipswich ware provides a remarkable insight into the regional economy based on Ipswich, and possibly at its earliest stage connected with the kind of kingship witnessed at Sutton Hoo.

6.8 Some technological, social, and economic considerations

Technology

With the exception of the sagging-based Ipswich-ware lugged pitchers, nearly all the pottery of Middle Saxon England continued to be made in forms used in the previous centuries. The wares were made by hand or on a turntable. Very few were decorated, and the motifs which survive are clearly in the Saxon tradition. They were probably made with a range of wooden, bone, or antler tools. The simple circular stamp found in recent excavations at Hamwih is of polished antler (Fig 2,5,8).

Many of the Middle Saxon wares were made on a flattish surface, and then probably built upwards. Addyman showed that the Maxey wares were built up in coils (1964, 50-2), the group III, bucket-like wares having been started on a flat stone. Similarly, it has been suggested that the grass-marked Cornish wares were made on a flat stone or slate (Thomas 1968, 322-3), thus producing a sharpened basal angle similar to the Maxey group III wares. The Ipswich wares were made on a turntable. Some of the wares, probably early in the series, have flat bases (Hurst 1959, fig 2,7,8,9), but most have thick sagging bases which were presumably luted on after the body of the vessel had been made. The Ipswich wares, unlike most other Middle Saxon wares, have been trimmed with a wooden tool, or knife, and have distinctive marks from this finishing operation. However, most attention on Middle Saxon pottery was given to the finishing of the rim. Some of the Hamwih wares have carefully trimmed rims; this is also true of the Dorchester rim-sherds (Frere 1962, fig 21, nos 21, 22), whilst some of the Ipswich-ware vessels have squared rims.

Two kiln-sites have been found which date to this period: at Cassington, Oxfordshire (Arthur and Jope 1962-3) and at Cox and Carr Lanes in Ipswich (Smedley and Owles 1963). To these may be added the clamp from Chichester dating to the end of this period (Down 1978, 158). All the kilns were very vestigial, so interpretation of them has been contentious. However, it is interesting that the two Cassington kilns and the one partially excavated lpswich kiln (see Musty 1974, fig 1) are single-flue kilns rather than simple pits or slight hollows. There is no evidence for bonfire kilns although they have been successfully used in ethnographic (eg Sydow 1967, 17: south-west Africa) and experimental (Appendix 1) circumstances. The only possible waster-pit so far recognized is SARC XV, F1, discussed in the context of class 3 in Chapter 2.

The production of pottery at the Cassington kilns was on what seems to have been a domestic level, with simple grass-tempered and 'gritted' forms being made. However, the stokeholes for these kilns indicate that the potters understood the importance of controlling the temperature inside the kiln. Our experiments with bonfire and pit-kilns have shown that it is easy to create a reducing atmosphere hot enough to fire the pots, but there are problems with cooling the kiln unless it can be left for a long time (Appendix I). The discovery of a flue-kiln at Ballintoy, Co Antrim (Jackson 1934) used for firing Souterrain ware suggests that the single-flue firing technique was widely comprehended in the early medieval period. These kilns suggest a competent basis for the much larger later medieval production of pottery.

Some social and economic considerations

The survey of Middle Saxon wares suggests that in most areas where potting existed it was a domestic craft, the wares being made within the settlement with local resources in traditional forms (cf Nicklin 1971-2, 13). There is no evidence to suggest that it was women's work as has sometimes been speculated. There are, however, exceptions that broadly comprise two groups. First, the Hampshire-West Sussex wares, the Maxey wares, possibly the Jarrow and Wearmouth wares, the Cornish wares, and possibly the Kentish wares: in these areas potters were probably 'part-time' craftsmen (cf Nicklin 1971-2, 13), for whom production of pottery was a secondary and perhaps a seasonal activity. The consistent forms and motifs found in small quantities regionally distributed are evidence of this. This consistency in form is characteristic of modern potting communities which Foster (1965, 49) explains as due to the economic security inherent in duplicating to the best of the potter's ability the materials and processes he knows from experience to be least likely to lead to failure. The almost total absence of imitations of imported wares in the Hamwih collection and in the Kentish wares sustains this conservative interpretation. The exceptions are the very few stamped wares which for this group of potters could simply represent the products of more talented individuals whose work was valued. There are ethnographic analogies for this kind of individualism (Foster 1965, 52; Hill 1978).

The second group is the Ipswich ware potters, who produced pottery on a larger scale than any of the first group, and who were possibly full-time craft specialists, that is, it was their primary occupation. (However, it should be noted that the vagaries of the English climate probably made potting, until quite recently, a summer activity, although the wares could have been prepared during the winter (Musty *et al* 1969, 88-9; cf Cretan potters: Voyatzoglou 1973, 13). Summer potting is certainly indicated by the organic temper of the grass-tempered pottery analysed to date.) The scale of their output, the extensive distribution of their wares, and their receptiveness to several influences, including continental ones, are perhaps evidence of their specialization. The pottery-making area at West Stow (West 1969a, 11), and the distribution of the Lackford-Illington potter's stamped wares provide an early indication of potting communities in East Anglia (cf Vierck 1976, esp 54). There is every reason to suppose that the East Anglian potters played an important part in the economy of Early and Middle Saxon East Anglia, as has been discussed above, and their awareness of continental forms is possibly one manifestation of this. The continuity of pottery production on the same locations in Ipswich until the 11th or 12th centuries (Smedley and Owles 1963) is surely evidence of its important industrial and economic place within the early town.

In early medieval society there is no reason to believe that the absence of pottery reflects anything socially or economically backward, for metal, leather, and wooden vessels were available, though it is not known in what quantity. The use of pottery in the first group of regions may be a cultural characteristic. However, in the Hampshire-West Sussex region, for example, it is a characteristic which may have been sustained by as few as a dozen or so potters in the course of two hundred years. The use of pottery in East Anglia may also have been sustained for cultural reasons, though there the scale of its production must have been governed by economic mechanisms, also discussed in part above as well as in the final chapter.

7 Carolingian pottery: a review

'Assurément la céramique mediévale été en France, jusqu'a une date récente, fort negligee. Elle a cependant fait l'objet au XIXe siècle surtout, de quelques études dignes de consideration, mais qui, publiées dans des revues locales, demeurent trop souvent ignorées' (de Boüard 1968,446).

7.1 Introduction

Pottery of the 8th and 9th centuries is rarer in France than, for example, Neolithic pottery. However, this situation is changing, particularly as a result of the recent work of Chapelot (1972; 1973) and his colleagues. In Belgium, there are similar circumstances, with few post-Merovingian sites having been excavated. By contrast, there is a wealth of evidence from many excavations of early medieval sites in the Netherlands and in Western Germany. This has, of course, meant that the study of 8th and 9th century pottery in western Europe has concentrated on the ceramics produced in the Rhineland and traded to northern Germany and the Netherlands. One objective of the Hamwih ceramic research project was to present a more balanced picture of pottery production in northern Europe at this time, in the light of the imported pottery from Hamwih, most of which was clearly not Rhenish in origin. Since very few relevant sites have been excavated in France and Belgium, this survey was largely concerned with museum collections (see Chapter 1). The recent excavations at Douai and Fécamp in 1977 and 1978, however, have made possible some important last-minute amendments to the conclusions.

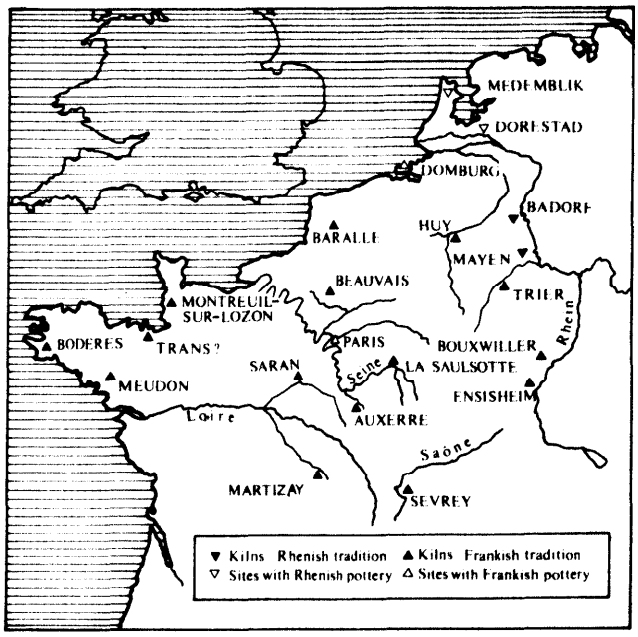


Fig 7,1 The major kilns and places discussed in *Chapter 7*

First, the question of terminology. French and German scholars generally refer to the later 7th and early 8th century wares from Christian cemeteries as late Merovingian. (There was on the Continent the same continuity of pagan burial rite into the 8th century as is found in England.) Afterwards, artefacts were only very occasionally placed in graves (cf Chapelot 1970b; Gagnière 1965). The pottery of the post-cemetery phase, of the 8th and 9th centuries, is usually referred to as Carolingian, though in many cases this is a slightly anachronistic term, for it does not relate exactly to the epoch of the Carolingian emperors. When the term Carolingian pottery is used here, it refers to pottery of this date, so as to be consistent with published Continental studies.

As there are few dated contexts which have produced Carolingian pottery in France, the unprovenanced pottery recorded in the museums has often to be compared typologically with the Merovingian wares (especially Böhner 1958), or with the l0th-I2th century wares which are slightly commoner (cf Hodges 1977b). This is not the case with German pottery, which has received considerable attention, although there are still some typological problems to be resolved. The dating criteria for some of the unprovenanced vessels and badly recorded groups are the distinct typological developments of the base and, to a lesser extent, the form of the body. The sagging base or *Linsenboden* is a Rhenish characteristic of the later 8th and 9th centuries (Janssen 1970b, 265), a form which was not adopted in northern France until the 10th or 1lth centuries (Chapelot 1970a, 70). Thick, flat bases and globular bodies, developing from the carinated forms of the Merovingian period, are characteristics of late 8th, 9th, and sometimes 10th century pottery in most of the areas covered by this survey.

This survey begins with the question of red-painted and glazed pottery since the origins of these techniques have aroused much interest (Hurst 1969). A consequence of this interest is that these are the best documented ceramics of the period. This is followed by a new study using thin-section analysis of Tating ware. Then the Black wares, Grey wares, and red-burnished wares, other major traditions of potting in this period which have been inadequately studied, are reviewed. This is followed by regional surveys, and by some general conclusions on the pottery, potters, and their centres at this time.

7.2 Red-pain ted and glazed pottery

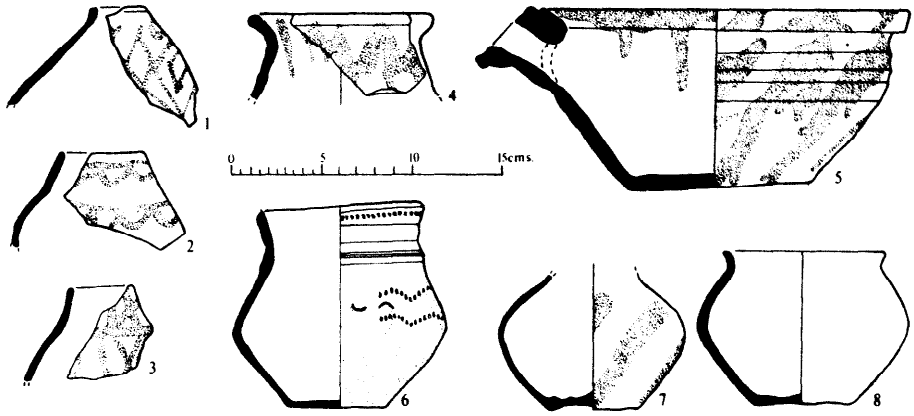
The basic question about the origins of these red-painted and lead-glazed wares in north-west Europe in the 9th century is whether there was continuity from the Roman period or whether both techniques were lost during the Migration period and re-introduced in Carolingian times (Hurst 1969, 93-4). In the celebrated symposium on these subjects, the answer to this basic question was not resolved, While some scholars favoured diffusion, others proposed continuity and some refrained from speculating, It has become a classic debate in medieval archaeology. But after ten years there is more evidence available and, as Hinz has speculated (1965, 286), with some information on French Carolingian pottery an acceptable answer-or, at least, an answer based on the broadest perspective-may be possible.

Red-painted pottery

Tischler considered the origins of red-painted pottery to be in northern Spain. He suggested a diffusion in which the techniques of red-painting may have reached the Rhineland by 'political relations, religious connexions and the lively interchange of ideas between Spain and the Rhineland' (in Hurst 1969, 102). Zozaya commenting on the subject was reserved, but more recently he is of the belief that both the technique of red-painting and glazing were diffused to Spain from the Byzantine Empire, possibly by Arab traders active in the Mediterranean (pers comm 1974). This view was tentatively advanced by Verhaeghe in the symposium (Hurst 1969, 112), though he no longer upholds it (pers comm 1976). Furthermore, it was a view to which Whitehouse's thorough study on the Italian red-painted pottery added much weight (Hurst 1969, 137-43). Yet Whitehouse now considers the origins of the techniques to be in northern Europe, and not south of the Alps (pers comm 1976). This view was advanced by de Boüard and Guibert, and more cautiously by Lobbedey in the symposium.

The excavations at Hamwih have permitted the continuity question to be tested, and have provided some firmly dated contexts for red-painted pottery. First, the evidence strongly suggests that the continuity theory is no longer tenable, while secondly, the red-painted sherds which have been found came from late 8th or early 9th century contexts (Addyman and Hill 1969, 92). There is a similar absence of red-painted pottery from the later 7th and early 8th century levels at Dorestad. This substantial negative evidence (cf van Es and Verwers 1975), with the Hamwih evidence, must close the continuity question. It leaves a hiatus in the production of red-painted wares of at least a century, ie between the later 7th century (cf Ament 1964) and the later 8th century. But it should be emphasized that there is no evidence of any large-scale production of red-painted pottery in the 5th, 6th, and 7th centuries. The few vessels known from Merovingian funerary contexts appear to be isolated examples (see Ament 1964; Lobbedey in Hurst 1969, 121-2).

The Hamwih evidence suggests that centres in northern Alsace (class 35), Trier (class 12) (see also Hussong 1936, 87), and the Beauvaisis began red-painting pots in the later 8th century. There is also the possibility of a Parisian red-painted ware (class 25). Moreover, there is now the well attested remains of a kiln at Baralle (Pas-de-Calais) (see 7.7 below), which would appear to date to the 9th century, although none of its red-painted products have so far been identified at Hamwih. At all these centres the production of red-painted wares was probably on a small scale, a conclusion somewhat strengthened by Jacques's analysis of the recently discovered Baralle kiln (1976). There, only about 80 sherds in an assemblage of more than 3000 were red-painted. In Alsace, kiln debris was discovered at Bouxwiller which included one red-painted vessel and several vessels of another, unpainted, type (see 7.15 below). From Trier there is only the slightest evidence to support the Hamwih conclusions of a red-painted type originating from there in the later 8th and 9th centuries (see Hussong 1936; Hussong 1944, Abb 7, middle row, right, for an anomalous flat-based red-painted sherd that is distinctively fettled, a *Hospitalkeramik* form), It is argued in 7.13 below that the fundamental problem here is Hussong's dating of the *Hospitalkeramik;* it is a matter that will only be resolved with a full analysis of these wares in the light of recent Carolingian studies. However, at Oberbillig, near Trier, red-painted sherds of the Trier (class 12) type were found, but in a late 10th century context *(Trierer Zeitschrift,* 14 (1939), 273-7). Finally, the paucity of Beauvaisis red-painted wares at Hamwih suggests, in view of Hamwih's close contact with this region of France, that the production of this ware was in its early stages while Hamwih was declining.



1–3 class 35: Strasbourg (Musée Notre Dame de l'Oeuvre)
4–5 class 9: Beauvaisis ware (Musée national des arts et traditions populaires, Paris)
6 glazed Merovingian vessel (Reims, Musée municipal)
7 class 35, Sarrebourg (Musée de Sarrebourg)
8 red-burnished funerary vessel from Ennery (Musée de Sarrebourg)

Fig 7,2 Early medieval red-painted, red-burnished, and glazed wares from France (scale 1:4)

The Dorestad evidence tends to suggest that red-painted wares were first made in the Middle Rhineland, probably in the Badorf-Pingsdorf area, towards the end of the 8th or in the early 9th centuries. There are several classes of pottery and, as a recent paper shows, it is an ever more complicated question (van Es and Verwers 1975). First, there are red-painted Badorf wares, probably with several red-painted motifs and in slightly varying fabrics (cf Dunning 1959, 54; van Es and Verwers 1975, 145-9). Most frequently the red paint is applied to pitchers, the potters having used their fingers (van Es and Verwers 1975, 157), but there are a few red-painted sherds at Dorestad that look like fragments of amphorae, and these have a finer decoration, probably applied with a brush (van Es and Verwers 1975, esp fig 7,2,3). In the Dorestad collection the red-painted pitchers differ from the normal Badorf ones because their free-standing spouts are added and moulded on to the vessel (eg van Es and Verwers 1975, fig 5,1). There are also a few with beak spouts rather different from the normal Rhenish typological characteristics (van Es and Verwers 1975, fig 5,2,3).

Secondly, there is Hunneschans ware, another red-painted Badorf type, but one in which the vessel is first decorated with roller-stamping before the paint is applied. There are also a few examples from Haithabu where a stamp, in the Migration period tradition, has been used instead of a roller (unpublished: Schloss Gottorp, Schleswig). Janssen has suggested that this ware was made in a specialist kiln on its own (see section 14) (Janssen and Follman 1972; see also Lung 1955) but there are decorative similarities to the Zelzate costrel type (discussed below) that might suggest that the two were made by the same potters. The finest collection of Hunneschans ware was found during archaeological work on the later 9th century church of St Walburga in Meschede, where about 50 vessels were used as acoustic pots (see Lobbedey 1970, and also van Es and Verwers 1975, n 71 for interim information on this collection). There are now close parallels for this type of decoration from the kiln at Baralle in northern France, dating probably to the 9th century (Jacques 1976, fig 7). The decoration seems also to have been imitated by a centre on or near the Meuse near Huy (Lauwerijs, forthcoming), in the 10th century. It is interesting that while a large number of plain Rhenish red-painted wares have been found at Dorestad there are very few Hunneschans ware vessels (van Es and Verwers 1975, 159). One can only speculate as to whether it was a very specialist and perhaps limited production, or whether the trading settlement was in decline before the ware was produced in quantity. (A few, however, are published from Deventer (Dorgelo 1956, fig 25,16,22.)

The third Rhenish ware of this kind is the Zelzate costrel type. The famous costrel was dated to *c*870 by the hoard which it held and, contrary to previous suggestions, it must be a product of a Middle Rhineland centre (cf van Es and Verwers 1975, 145 for independent confirmation of this). Its fabric is very similar macroscopically to that of relief-band amphorae (cf Böhner 1950, 216-7; Verhaeghe in Hurst 1969, 107-8; van Es and Verwers 1975, 140-5). Several other costrels are now known from Dorestad as well as a vessel from Maurik near Dorestad, and from Haithabu (van Es and Verwers 1965, fig 10). (There is one possible unpainted costrel, in a similar fabric, from Jarrow (Cramp 1969, fig 25,24),) One of the Dorestad vessels is stamped rather like the rare type of Hunneschans ware referred to above (van Es and Verwers 1975, fig 4,1a,9). The costrel is a rare form in Carolingian Europe, though flasks that are typologically similar are often found in Merovingian contexts (see van Es and Verwers 1975, 149-57). It might be suggested that the costrel was a specialized product (cf Stoll 1933), and perhaps as van Es and Verwers suggest (1975, 160), one that played a part in the 'consommation d'une boisson plus noble: les vins des pays rhénans'.

During the 10th century the established industries in Alsace, in the Beauvaisis, and in the Badorf-Pingsdorf areas increased their output of red-painted wares so that it was their primary product. The technique was adopted in many other northern European areas: in Nord (see 7.7 below), in the region of the Upper Seine (7.11 below), and in the middle Loire (7.10 below); and one sherd from Orléans heavily tempered with mica suggests that it was being made in Burgundy (7.16 below). There is evidence to suggest a 10th century centre near Huy, while 11th century red-painted wares were produced in Limburg (Bruijn 1962-3) and perhaps in the Saintonge (section 16). By this date it had become an important vogue, though it was curiously one which appealed little to English potters (only at Stamford has evidence of a kiln so far been found (Kilmurry 1977b)), although it was adopted in Poland during the 12th century (de Boüard 1968, 445).

TABLE 7, l Analysis of red-painted decorations

	(a) Thick lines	(b) Brushed	(c) Splashed
Beauvaisis	X	X	-
Alsace	-	X	-
Baralle	-	X	-
Trier	-	-	X
Badorf red-painted ware		X	-
Hunneschans ware		-	-
Zelzate costrel type	X	X	-
Upper Seine Valley type	-	X	-
Middle Loire type	X	?X	-
Pingsdorf	X	X	-
Douai (Nord) type	-	X	X
Huy	X	X	-
Limburg	X	X	-
Orléans black-painted sherd	-	X	-

Origins

The rapid adoption of the technique by several industries during the 10th century perhaps bears out Foster's point (1965, 51) that changes in ceramic styles usually took place when it had become economically expedient. The technical difference between those potters who used fine lines, thick lines, lines probably made with fingers, and splashes, implies, though does not prove, several influences (Table 7,l). These may be grouped as (a) those that predominantly used their fingers to apply the decoration: the Rhenish, Middle Loire, Limburg, and 'Huy' potters; (b) those that chiefly decorated the pots using a brush as did the Alsace, the Beauvaisis, and the Upper Seine potters. Ferdière has suggested that the Upper Seine potters might have been influenced by Roman red-painted vessels, once produced in that region, which were still lying around (Ferdiére 1974, 25l-2). If the technique of red-painting was re-adopted it is possible that residual Roman pottery was an influence and perhaps accounts, to a certain extent, for the variation in styles. Yet the early technique seems to have been improved upon little in Alsace or the Beauvaisis, where the earliest vessels are as competently decorated as the latest. One possible explanation for this, consistent with the views of a decade ago, is that the northern European potters were influenced by contemporary Italian or even Byzantine pots. Certainly, there are similarities between the pots northern European pilgrims could have brought back from Rome and the Alsace pots. The later 8th century, when the technique seems to recommence, was a period of great internationalism, and Strasbourg, in particular, on the road to Rome was a cosmopolitan settlement. Charlemagne and his court were so influenced by Italian customs that the *Dom* at Aachen was built of marble brought back from Italy. Initially, it may not seem sound to argue that if the Emperor was influenced by Mediterranean styles so too would have been craftsmen who were probably in the lowest stratum of the craft specialists in his Empire. Yet it can be argued that potters were patronized by the aristocracy, the church, and perhaps, in the case of the Badorf-Pingsdorf potters, the Emperor, to produce artefacts primarily for their needs (see Chapter 8). The transmission of the idea in these circumstances does not seem quite so far-fetched (cf Whitehouse 1966, 44). Unlike glazing, red-painting was not a difficult technique to copy, provided that the potters had access to iron-oxide deposits. It is, of course, an answer to Hurst's basic question which will never be proved.

Glazed pottery

The question of glazed pottery is perhaps even more problematical than that of red-painted pottery. In essence, the contributors to the symposium, a decade ago, each proposed similar origins for medieval glaze to those they suggested for the red-painting of pottery. There is, however, less information on this subject, and it must be stressed that several glazed wares are extremely similar and thus difficult to identify. There are three examples of 6th-7th century glazed Merovingian pots (Lobbedey in Hurst 1969, fig 44; Hodges 1975c). and these are most definitely unusual. (de Boüard and Guibert (in Hurst 1969, 115) refer to a lost glazed jug from St Genis-Hiersac (Charente), sketched by Dunning, 'which is to be considered Merovingian in date'. The late Dr Dunning showed the author his sketch, which appears to be of a late medieval vessel. It would certainly be an anomalous form if it were of Merovingian date.) There are no glazed wares from Hamwih, which is sound evidence to suggest that they were not made in the 8th or 9th centuries in northern Europe. There is, however, a vessel in the Upper Rhine tradition (section 15) from an ecclesiastical site at Niedermunster which is partly glazed and which the excavator considers to be 8th or early 9th century in date, although on what grounds remains uncertain (de Boüard 1974, 73; Fèvre 1975). There are also two curious glazed bowls from Jarrow which have a decoration on the inner side, and a fabric which seems macroscopically similar to the group la Tating ware from the Eifel mountains (Cramp 1969, 64--8). These are clearly isolated finds and it is not until the later 9th century that glaze was being produced on a large scale by a large scale by a centre in the Loire Valley (de Boüard 1976) (7.10 below). A few glazed sherds were found in a late 9th or early 10th century context in Canterbury (Chapter 6.4). and it is to this period that the beginnings of the Winchester ware (Biddle and Barclay 1974) and Stamford ware industries are ascribed (Kilmurry 1977a). Still more recently, 10th century glazed sherds probably made in Lincoln have been found there (pers comm, Dr L Adams).

Glazing was a technique adopted by a very few centres in the next two centuries. There was clearly a centre near Angoulême supplying the fortified settlement at Andonne (Debord and Leenhardt 1975), while glazed wares were produced in some quantity either during the 10th or 11th centuries near Huy (Lauwerijs, forthcoming). Odd vessels were also made by Beauvaisis (unpublished pitcher-sherds: Musèe des Traditions et Arts Décoratif, Paris), Limburg (Bruijn 1962-63), and Badorf-Pingsdorf potters (Janssen 1970b, 280.-2).

Origins

It seems unlikely that northern European potters would independently have rediscovered so proficiently the technique of glazing. Doué-la-Fontaine pots, Winchester ware and Stamford ware exceed the standards of potting of their time. This may imply that the idea was re-introduced to northern Europe, although the reason for its adoption at these particular centres remains a mystery. One possible origin may have been the glazed Mediterranean wares traded in southern France (cf Lacam in Hurst 1969, 119 20). The mechanism by which it came northwards was presumably exactly that suggested for the technique of red-painting. However, in this case the complexity of glazing may have been responsible for the curious distribution of the centres first producing it.

7.3 Tating ware

Since Arne (1914 fig 335) published the first examples of Tating ware, this class of pottery has been the subject of

much discussion. Its distinctive tinfoil decoration has made it easy to identify, and thus its distribution from the Baltic to England has been securely established (cf Winkelmann 1972, Abb 2). Similarly its association with Arabic coins in Scandinavian contexts (Selling 1955, 46; Lundstrom 1971, 54), with a coin of Louis the Pious (814-40) at Trier (Hussong 1936, 84), and in historically dated levels at Paderborn (Winkelmann 1972) means that its dating is acceptably limited to the second half of the 8th and the first quarter of the 9th centuries. That is, one, two or at most three generations of potters. This dating is also quite satisfactory for the Hamwih sherds from SARC V, F16, and DMW, KL B, Pit 18.

The function of Tating ware is, of course, a contentious issue. The idea that it was used in the church rites first performed by the earliest missionaries to Scandinavia has a number of advocates (see Lundström 1971; see also Winkelmann 1972 and Selling 1972). But, equally, a number of scholars view it as a particularly fine traded valuable, in anthropological terms a primitive valuable (see Dalton 1977). This has become a very realistic point of view since the excavations at Dorestad, in particular, have produced more than 50 vessels, while it is at trading settlements like Hamwih, Ribe, Haithabu, Kaupang, Birka, and Helgö that this ware is best known.

In her monumental study of early medieval Scandinavian pottery, Selling perceived that there were several types of Tating ware (1955, 4459). She subdivided these into: la, the well known pitcher form; lb, an uncommon beaker form; and lc, a brown fabric variant without the burnishing characteristic of the other two types (Selling 1955, 44-5). Selling was also familiar with the Tating ware vessel from the Barbarathermen at Trier, which has vertically incised zig-zag decoration instead of applied tinfoil, and which she classified in her group la on typological grounds (1955, 51). More recently, other typological variants have been noticed. In particular, there is the fragment of a globular vessel from Old Windsor (Berks) (Dunning 1959, 53, fig 24), and the strap handle, quite unlike the normal Tating handles, from North Elmham Park (Norfolk) (Fig 3,1,3). Moreover, there is the example from Birka grave 457 on which gold- and tinfoil residues have been found. There is the vessel from Hamwih, SARC V, F16, which has vertical incisions made before the vessel was burnished and then decorated with tinfoil. There is also the large group of vessels from Dorestad which are undecorated and have a coarse sandy fabric most unlike the finer pitchers.

Similar variations became apparent when the first petrological examinations of Tating ware were made for Hougen (1969, 101) and Selling (1972, 42-3) on sherds from Kaupang and Swedish sites respectively. Those examined for Selling were of her group la. Both authors suggested a Rhenish origin. However, Hougen postulated a source in the Lower Rhine region north of Duisburg, while Selling, impressed by Lundstrom's (1971) study, suggested that the ware probably originated in the region of the great monastery of Lorsch. These Swedish sherds contained inclusions of trachyte consistent with such a source.

These conflicting results have provided an excellent opportunity for further research, and besides handling a number of Tating ware vessels it has been possible to contribute further to the petrological study of this ware. Tating ware is a much prized find by excavators so I am very grateful to Herr W Winkelmann for a sherd from Paderborn; to Dr B Hougen for samples from Kaupang; to Dr M Bencard for Ribe samples; to Mr P V Addyman for a sherd from York; to Professor M Biddle for a sherd from Winchester; to Mr J Hinchliffe for the Brancaster sherd; and to Dr P Wade-Martins for making available the handle from North Elmham Park. I am particularly indebted to Professor W A van Es for making a number of Dorestad samples available and for some stimulating discussions on this subject, while Mr J G Hurst and Dr A Lundstrom have brought vessels to my attention and have been most encouraging in the pursuit of this research.

At least eight fabrics have been identified in thin section and it appears that these represent five groups. However, it must be stressed that five different production centres are *not* therefore indicated; this is a question that remains unanswered for the moment.

Group 1a

T-SP 20: SARC V, F16 (Fig 3,1,1) described in Chapter 3.

T-SP 65: Sample 9 from Dorestad which has fine unburnished black surfaces and a red core. There is a fragment of a rosette stamp on this sherd. No prominent inclusions.

T-SP 66: Sample 12 from Dorestad which has fine unburnished black surfaces with a red core. There are incised lines that are probably part of a pattern; no prominent inclusions.

In thin section the fabric has a red, optically anisotropic clay matrix with inclusions of subangular quartz-sand ranging from *c* 0.03 to 0.5mm across; plagioclase and sanidine felspars, brown hornblende, iron ore or lava fragments, rounded mudstone, and bits of siltstone or fine sandstone.

Group 1b

T-SP 36: Sample 11 from Dorestad; a typical Tating handle with grey surfaces and a light grey core. The sherd has a coarse sandy texture, but no prominent inclusions.

T-SP 83: Paderborn sherd; dark grey burnished surfaces and a light grey core. No prominent inclusions.

T-SP 206: Winchester BS, 1971, T111, L1815; dark grey surfaces and light grey core with coarse sandy texture. No prominent inclusions.

T-SP 244: Kaupang B62 5a; sherd with fine black burnished surfaces and a red core. No prominent inclusions.

Thin section reveals an optically anisotropic light brown clay matrix with subangular quartz-sand ranging from about 0.03 to O.lmm across, and a distinctive scatter of black iron or lava as well as grains of siltstone, some of which are as large as 0.8mm across. In T-SP 36 there is also a scatter of subangular quartz-sand *c* 0.3-0.7mm across as well as some quartzite.

Group 1c

T-SP 85: York (York Archaeological Trust, 2310): fine burnished black surfaces and a light grey core; very fine and smooth to the touch; no prominent inclusions.

Thin section reveals an optically anisotropic light brown clay matrix with only a scatter of subangular and angular quartz-sand ranging from *c* 0.02 to 0.6mm across. There are also grains of quartzite, potash felspar, angular fine and medium sandstone, and iron ore. There is also a grain of limestone.

The black iron inclusions in groups lb and lc are similar to those present in la. There can be little doubt that 1b is a sub-group best characterized by the petrology of 1a; the question of origin in the case of lc must remain for the moment in the balance.

The volcanic suite of minerals present in group la strongly suggest an origin in the Middle Rhineland, probably the Eifel mountains. This petrology is very similar though *not* the same as Mayen ware vessels that have been analysed for this study and elsewhere (see Chapter 3, class 10; Chapter 7.14 below).

Group 2a

T-SP 35: Sample 10 from Dorestad: a rim with fine black surfaces and a white core; it has a sandy texture.

In thin section it has an optically anisotropic light brown clay matrix which is packed with subangular quartz-sand ranging from 0.02 to 0.5mm across; there is also a scatter of fine-grained limestone averaging *c* 0.5mm across.

Group 2b

T-SP 245: Rim and spout from Brancaster (Norfolk) (see Chapter 4 for full description). In thin section it has a brown anisotropic clay matrix with a scatter of subangular quartz-sand ranging from 0.01 to 0.5mm across; there are prolific inclusions of fine-grained limestone in sizes approximately the same as those of the quartz-sand. Plagioclase felspars and iron ore are also present.

There is a considerable difference between the two thin sections containing limestone in group 2. The few grains in 2a may be river-borne minerals, while those in 2b are sharp and evidently suggest a source near or on a limestone belt such as the Argonne in northern France (cf Chapter 7.12 below). A Rhenish source for the Dorestad sample must be likely, while the unusual pitcher spout of the Brancaster vessel makes a northern French origin seem more probable.

Group 3

T-SP 165: Hamwih, SM 69.10.8a.P27 (Fig 3,1,2), a characteristic Tating-ware handle with burnished black surfaces and a grey core; very smooth to the touch; no prominent inclusions.

T-SP 218: Kaupang, A783. grey micaceous bodysherd with traces of tinfoil; sandy texture and very soft; no prominent inclusions.

T-SP 219: Ribe, D2621, bodysherd with black burnished surfaces; no prominent inclusions.

T-SP 220: Ribe, D2656, handle of typical Tating-ware type with black burnished surfaces, grey core and no prominent inclusions.

T-SP 221: Ribe, D7 190, handle of typical Tating-ware type similar to that above.

T-SP 226: Dorestad, IND 73,403.3.3, undecorated grey sandy type with no prominent inclusions.

T-SP 243: Kaupang, B62 P, undecorated burnished brown outer surface, sandy inner surface; grey core with no prominent inclusions.

Thin section reveals an optically anisotropic light brown clay matrix packed with unsorted, subangular quartz-sand ranging from *c* 0.03 to 0.5mm across. Potash felspars, quartzite, muscovite, biotite, iron ore, and clay pellets tend to be present, but not in any distinctive quantity.

The petrological analyses have failed to determine an origin for this group, though a Rhenish origin must be postulated on other grounds.

Group 4

T-SP 82: North Elmham Park, F34, 192 (Fig 3,1,3), a strap handle unlike the typical Tating-ware types as, for example, analysed from Hamwih, Ribe (group 3), and Dorestad (group lb). Similar in form to class 14 handles from Hamwih. Grey to black smooth surfaces and a light grey core; no prominent inclusions.

Thin section reveals a light brown, optically anisotropic clean clay matrix with a scatter of sorted subangular quartz-sand and iron ore ranging from *c* 0.1 0.5mm across. Occasional clay pellets of the same sizes are also present.

The thin section is of little use in determining the source of this vessel; however, its textural similarity to the class 14, group 5. must be borne in mind. A source therefore in northern France or perhaps the Meuse valley may be postulated.

Group 5

T-SP 81: Hamwih, KL C., F18, layer 7, 613, a small brown sherd with no burnishing and, but for the tinfoil marks, quite unlike Tating ware; no prominent inclusions.

Thin section reveals a distinctive optically anisotropic clean brown clay matrix with a few sorted grains of subangular quartz-sand averaging 0.3mm across. There is no known parallel for this sherd.

To summarize, groups 1, 2, and 3 comprise typical Tating ware vessels, that is of the characteristic form known, for example, from Birka, though group 2b, the Brancaster vessel, is a variant. Groups 4 and 5 are certainly unusual, and but for the tinfoil would not have been recognized as Tating ware. Group 1 seems to comprise only fine black burnished types, while group 3 includes black burnished fabrics as well as brown burnished and undecorated ones. Groups 1 and 3 would appear to be the two major fabrics and suggest two industries since they are texturally different. It is not improbable, however, that they were operating together in the Mayen region as petrological variability has been noticed within the Mayen ware fabrics (see 7.14 below). A detailed typological assessment might now test this, while a careful analysis of their chronological contexts must be made to rule out the possibility that these different fabrics represent successive industries.

These further petrological analyses demonstrate the reason for the difference between Hougen's and Selling's results. Hougen's conclusions suggest that her analyses were of group 3 Tating ware, while Selling's were of group 1 samples.

Clearly, this is only a limited study based on small thin-sections of a relatively small sample of this ware. However, it strongly suggests that Tating ware was not made only at one place, but was being manufactured at several centres. In other words it must be regarded as a tradition of potting that lasted for a brief period only: a tradition probably initiated, and certainly primarily focused on the Rhineland, but apparently adopted infrequently in all likelihood outside of the Rhineland. The evidence for the latter consists of the sherds from Hamwih (group 5), Old Windsor, North Elmham Park, and Brancaster. It is also probable that the sherds from Wharram Percy (Yorks) (Hurst and Hodges 1977) should also be included in this latter group. There are, then, twelve vessels (at least) from England, five of which were probably not made in the Rhineland (Fig 7,3). Further analyses of the Tating ware sherds from London, Wicken Bonhunt, and West Dereham may yet increase this Frankish group.

Technologically the adoption of this technique (though not the very distinctive and atypical Carolingian form) by these different centres operating over a short period is interesting. Previously tinfoil decoration on pottery had been used briefly on two occasions: in Greece during the Mycenean period (Immerwahr 1966) and in Switzerland during the Later Bronze Age (Trachsler 1965). Its usage at several centres in the medieval period may emphasize the ecclesiastical influence prominent in its production, a point which has been made by several scholars (Lundström 1971; Selling 1972; Winkelmann 1972). There were close links between northern European monasteries which could have facilitated the acquisition and movement of the small quantities of tin, a precious metal used also in coinage (Metcalf and Walker 1976). There is an apposite analogy for this in the movement of 1001b of (?)lead from Alcuin, as a gift to Archbishop Eanbald of York (Grierson 1959, 139, n 3). A few members of ecclesiastical communities in northern Europe were probably also familiar with the application of metals to other materials as Lundström has shown (1971, 60-1). And while it cannot at present be argued that other metal-smiths may also have possessed this skill, those pitchers with Maltese crosses tend to endorse the belief that there was a strong religious involvement in the production of at least a proportion of these wares. This, however, should not be surprising. The church played an active role in this pre-market economy, and just as Ennen (1956, 400) has suggested that some Rhenish ceramic centres were patronized by members of the Carolingian nobility, so it might be postulated of certain monasteries on the basis of this Tating ware evidence (see below, 7.17).

In considering this monastic patronage it should be pointed out that there is a petrological similarity between the group la Tating ware and certain Mayen ware fabrics. Is this a basis for suggesting ecclesiastical petronage during the 8th and 9th centuries of this important ceramic production? It requires further consideration at least. So, too, does the possibility that the ubiquitous Rhenish ware was linked with the extensive trading of lava querns from the Mayen quarries.

Any definitive interpretation of Tating ware seems improbable as it appears to have served several functions. Yet it was a specialist ware and clearly not produced in such quantities as, for example, Badorf-type relief-band amphorae, another specialist product of the Middle Rhineland at this time. Its unusual decoration made of a precious metal and imbued with Christian significance strengthens the conviction that it was what Dalton has called a primitive valuable (1977, 197-9): that is, an object 'employed in ceremonial exchange' or as 'non-commercial payment in warfare and peace-making' or in 'petty market-place exchanges' in aboriginal economies in stateless societies and even some traditional peasantries within kingdom-states.

Its production may initially have been for Christian ritual purposes, but unlike many other valuables such as metalwork it was an artefact that was easily replicated either with or without the tinfoil. Certain vessels, therefore, may have been in the baggage of the missions to Scandinavia, though their use of it there must remain in contention. However, its frequent occurrence in Scandinavian grave contexts with pagan objects lends weight to the idea that it was a vessel introduced to these pagans as possessing some spiritual powers. It might be useful to analyse analogous archaeological contexts to shed further light on these Scandinavian finds. The combination of Christian and pagan goods at Sutton Hoo has been interpreted as the grave of or cenotaph to a Christianized pagan, one of the first Anglo-Saxon kinds

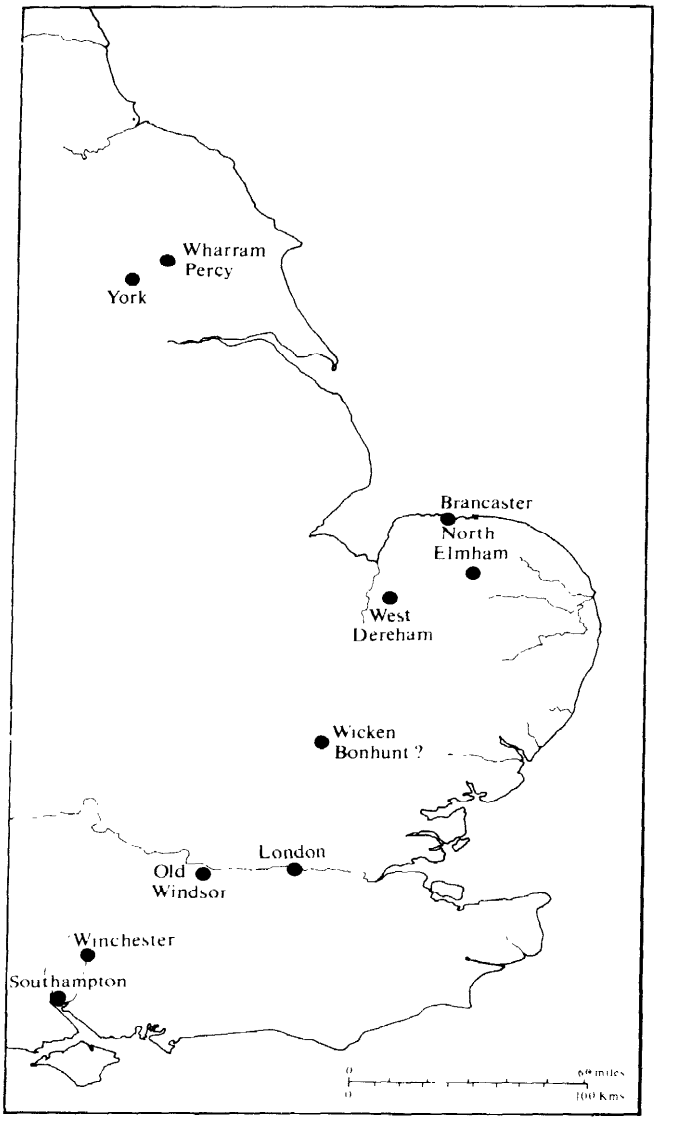


Fig 7,3 Distribution map of Tating ware from England

to consider the adoption of the new religion, though evidently he was not confident enough of it to relinquish his earlier, pagan, beliefs. There are other analogies from England, including the late 7th century inhumations with, amongst other things, gold pendant crosses and gold pins. While in these graves the ritual has been interpreted as primarily pagan, the grave-goods associated with St Cuthbert are those of a great Christian. We must necessarily conclude that, in this age of religious transition, the interred Christian objects must have had some spiritual significance. By analogy the same may be suggested for Scandinavia little more than a century later.

As primitive valuables, it might account for the isolated occurrences of Tating ware on a variety of sites (ecclesiastical, royal, and villages) in Germany and England, exchanged in these instances as gifts in the well

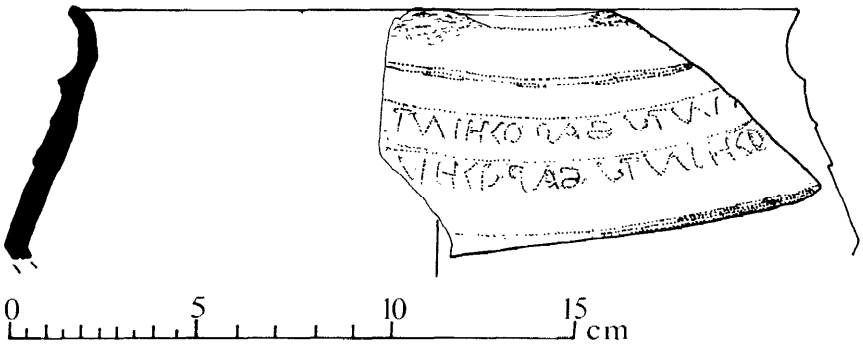


Fig 7,4 Class 14 rim-sherd from Sarry (Aube) with a name stamp (Epernay: Musée municipal) (scale 1:2)

documented fashion. But further to this the prolific incidence of Tating ware on trading sites must be explained. It is simply insufficient to suggest that these were broken *en route,* or that these settlements each had monastic components, or, indeed, that the merchants themselves favoured these unusual pots. An element of reality doubtless pertains to each of these explanations, but a more satisfactory blanket explanation is needed. To this end the association of Mayen lava querns and Tating ware at these settlements must clearly be assessed, particularly at Dorestad and Haithabu, where the querns seemed to have been dressed prior to redistribution. Might not Tating ware have become an accoutrement to this important medieval trade? If this was the case, it might have promoted the production of the plain pitchers. Clearly, a quantitative analysis of the plain and tinfoil decorated vessels from Dorestad is much needed, especially in the context of the recently achieved phasing of this settlement. These plain vessels must represent the popularity with which the first decorated vessels were greeted, and an attempt to 'market' a primitive valuable. As such these vessels would have been one of several precious (prestige and utilitarian) artefacts integral to the complex trading network that was operated by Frisians, in particular, between the Carolingians and the Scandinavians, It is, then, a rare example of an early medieval pottery that was traded in its own right rather than as a by-product of trade.

Its demise after a brief production period in ceramic terms remains a mystery. It must have been the result of a production 'decision', rather than a question of trade or the like. At the moment we can no more than guess about this.

The properties of Tating ware make it one of the most interesting of post-Roman artefacts. Sometimes its study may have seemed inflated uneccessarily, yet it is the analysis of distinctive ceramics of this kind which will be important to the generation of testable models in an historic period.

7.4 Black wares

The Black wares are best known as a Merovingian tradition, but, like other Merovingian wares, may have received little attention. The Merovingian Black wares are found in great numbers in the cemeteries along the Meuse north and south of the Ardennes. They also occur in smaller numbers in cemeteries all across northern France, as well as infrequently in the Loire valley and in western France. It was, moreover, a tradition of potting that stretched over to the Rhineland in the 6th and 7th centuries. Cemeteries from the environs of Mainz and Frankfurt, for example, include a number of vessels of this type from this period. The Merovingian kilns at Huy, dated by excavators to the 7th century, produced some Black wares although no kiln appeared to be specializing in them (Willems 1973, fig 9, no 4; fig 10, no 12; fig 14, nos 4, 6, and 19; fig 15, nos 9, 14).

As early as the 7th century goblets and pitchers in this tradition were imported into Kent and Essex, where examples have been found in the cemeteries at Broadstairs, Breach Down (Akerman 1844, pl X), and Prittlewell (Pollitt 1930, fig 2), besides those from settlement sites listed in Chapter 4 above (see Evison 1979). The earliest phase at Dorestad also has Black wares, though very different from those found at this time in England. The Dorestad type VII Black wares almost certainly derive from the Rhineland centres perhaps near to Mainz, or possibly in the environs of Cologne. It is particularly interesting that this type is neither found in the earlier 7th century cemeteries from the Netherlands, nor in 8th century contexts in the settlement site. This pattern markedly contrasts with the Badorf types that were first traded up the Rhine in the later 6th or early 7th centuries.

The Black wares were perhaps the finest pottery available in northern Europe. The exceptional character of the pots in this tradition is emphasized by two vessels which have stamped inscriptions. The first is from a cemetery at Vron (Somme) and is 6th century in date (Seillier 1972). The second is from an unpublished excavation of a *Grubenhaus* at Sarry (Aube) (Fig 7.4; 7,12). It was associated with a beaked, roller-stamped pitcher likely to be of 7th century date, as well as with a comb (Epernay Museum). The inscription is probably in Latin, and is almost certainly a person's name. The occurrence of such vessels in one of the few settlement contexts of the Migration period in France seems remarkable. No Black wares were found in the extensive excavations at Brebières (Pas-de-Calais) (Demolon 1972), which further emphasizes the unusual character of the Sarry finds. It remains to be seen whether the current excavations at La Fonderie de Canons, Douai, will find any Black wares from the Merovingian settlement level already known to be there.

The Hamwih assemblage of 8th and 9th century Black wares has added a new dimension to the Black ware tradition. It has demonstrated the continuation of this major Merovingian tradition into the Carolingian period, as well as the production of a greater variety of forms than has previously been recognized in the cemeteries. The assemblage also illustrates that, in common with standards of Carolingian potting, there

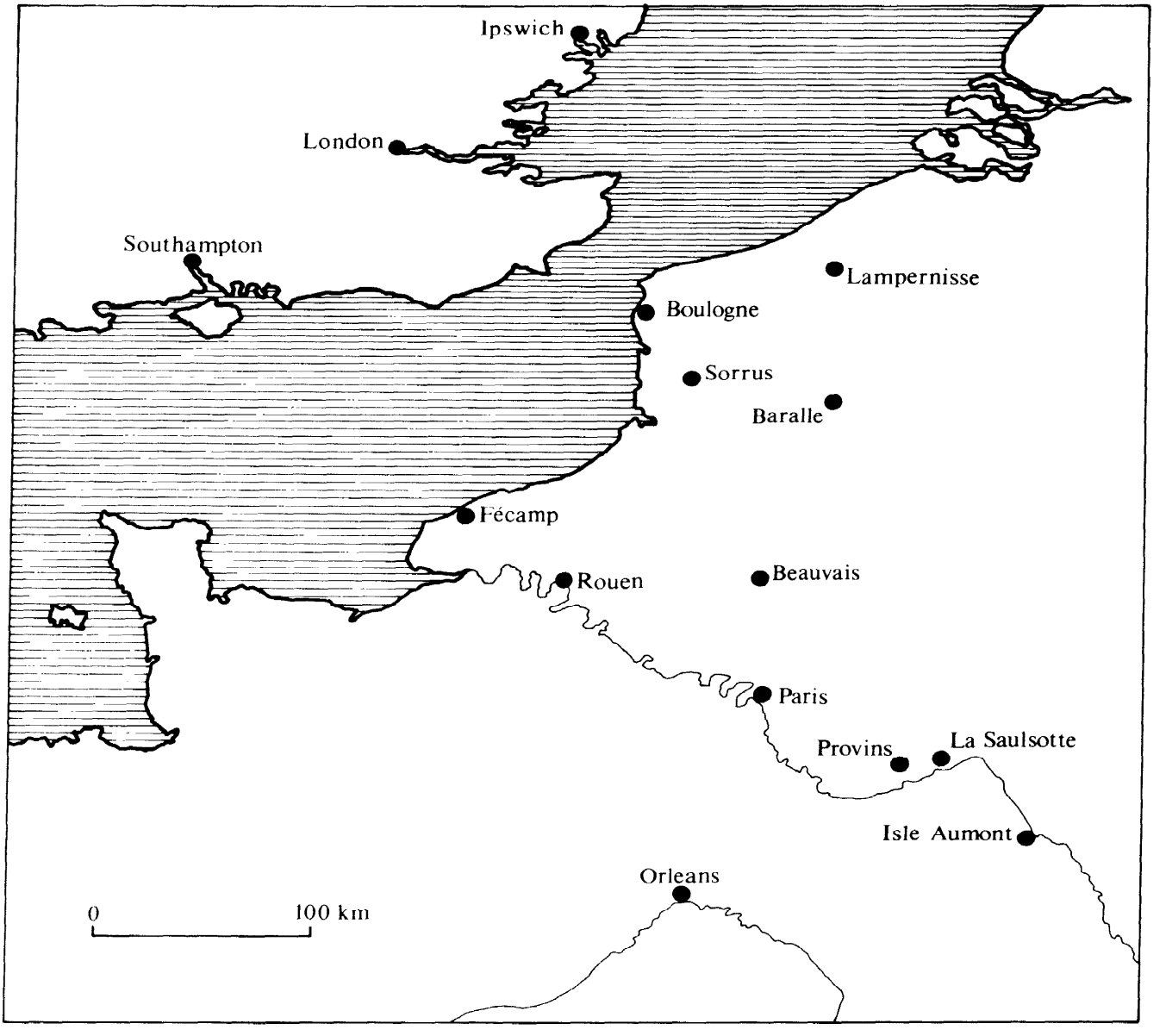
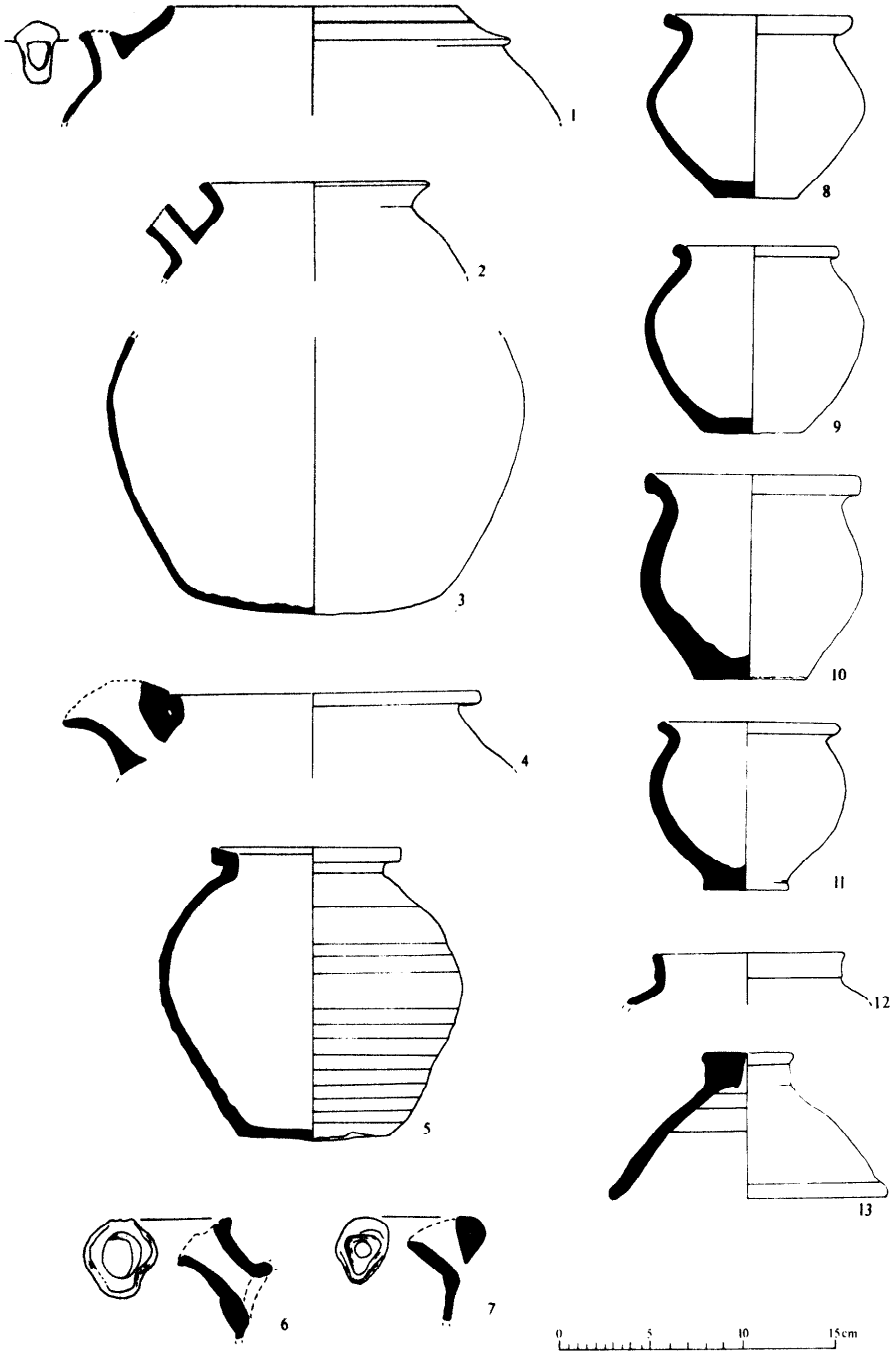


Fig 7,5 Map locating some of the major sites mentioned in Chapter 7

was a decline in the standard of decorating these vessels. Decoration is more frequent on Black wares than on most Carolingian wares, but certainly less frequent than on Merovingian wares and unusually poorly executed. Yet it was the finest of the Frankish wares and probably for this reason it was traded around southern and eastern England, and occasionally as far north as Scandinavia (see Chapter 8). The only post-Merovingian vessels are known from northern France, from recent excavations, besides two sherds from Ruan, near Orleans (see below 7.10), and the later vessels from the Rhône valley (see 7.16). It is now clear, however, that with the decline of the Merovingian burial rite in the Rhineland, new styles of pottery replacing the Black ware tradition were adopted, and no examples of 8th or 9th century Black wares have been found in this region.

Thin sections of the Hamwih class 14 wares suggest that they were produced at possibly five different centres. It also seems likely that they were made at centres by potters whose ancestors had primarily produced this specialized vessel for the funerary rite. During the 8th and 9th centuries the Black wares may have continued to be specialized products, but now possibly for the trading of certain wines. However, there is growing evidence to suggest that in certain parts of France this became the predominant ware much as red-painted pottery developed from being a small part of a kiln's output (cf Baralle: Jacques 1976), to a major part of that output by the later medieval period. At La Fonderie de Canons, Douai, for example, the first signs are that very finely finished Black wares predominate in the pre-10th century levels, while during the 10th century Black wares



1 class 13 pitcher: Ghent, St Peter's Abbey (Excavation Unit, St Peter's Abbey)
2–3 Ukkle, Brussels (Musée royal des arts et histoire)
4 Paris: St Germain-des-Prés (Hôtel Carnavalet, Paris) (class 25?)
5 Beauvaisis (Musée national des arts et traditions populaires, Paris)
6–7 Paris: St Germain-des-Prés (class 25?)
8 class 11, Muids (Evreux, Musée municipal)
9 Arras (Arras: Musée des arts)
10 class 11, Muids
11 class 11, Hauquency (Evreux, Musée Municipal)
12 Ukkle
13 Meudon (Vannes, Musée archéologique)

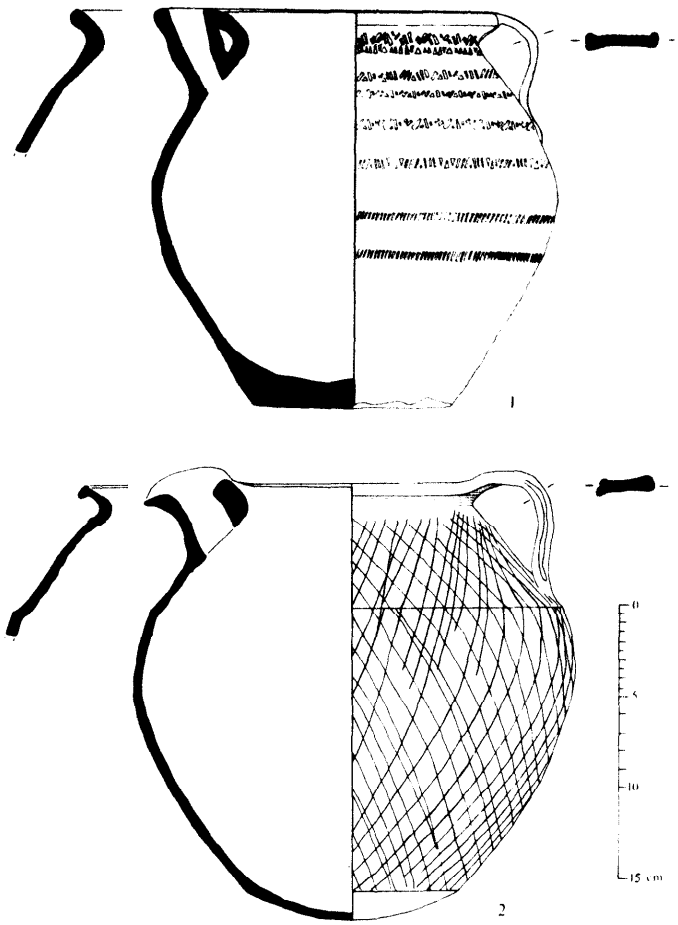
Fig 7,6 Northern French and Belgian early medieval vessels (scale 1:4)

definitely predominate in a local fabric similar to the Hamwih class 24 (see below, 7.7). This blackening of many vessels in the local fabric at Douai illustrates how, perhaps, other classes noted at Hamwih may have been made in the same kilns as Black ware vessels. This, of course, was noted in the Merovingian kilns at Huy.

The end of the tradition north of the Alps and Massif Central seems to lie in the later 10th century or early 11th century; 10th century Black wares, however, seem to be localized, so the demise of the tradition may have begun earlier with the growing vogue of red-painted pots. (For example, Black wares are scarce in the 10th century levels at Fécamp, while they had been a major part of the earlier, Carolingian, assemblage, small though that is (see below, 7.9).) The 10th century Black wares at Douai exhibit the process of change, some being red-painted. One possible explanation for the continuity of Black wares in the Rhône valley may simply be the failure of the technique of red-painting to find favour in that region, either with potters or with an aristocratic clientele.

7.5 The Grey wares

Grey wares were the principal tradition of potting in the Pas de Calais during the Roman period (cf Couppé and Vincent 1973). They are prolific in the Merovingian cemeteries, and they are the major tradition of the later medieval period along this seaboard (Barton 1974). In



1 class 12 (?) from Metz (Musée archéologique)

2 Grey ware from Domburg, Netherlands (Zeeuws Museum, Middelburg)

Fig 7,7 Two early medieval pitchers (no 2 after G C Dunning) (scale 1:4)

the small collection of Carolingian pottery from this part of France, Grey wares comprise a significant proportion, but it remains to postulate that the Roman and Merovingian traditions were upheld into the Carolingian period, and that this region was the source for many of the Grey wares identified at Hamwih.

A large number of grey wares have been found in the 9th century kiln at Baralle, south-west of Douai (Jacques 1976) (see below, 7.7), in a fabric very similar to certain vessels of the Hamwih class 15, petrological groups 2a, 2b, 4, and perhaps 3 (see Chapter 3). Moreover, the discovery of the Grey ware kiln of later 11th or 12th century date at Sorrus above the River Canche (Hodges 1976) has raised hopes of finding an earlier kiln in this part of the Pas-de-Calais, near the lost settlement of Quentovic. Leman and Cousin (1977) have reported Carolingian Grey wares from their survey at Beutin, just over 2km from Sorrus, actually in and by the river Canche. A few other Carolingian Grey wares are known from the current excavations at Douai (see 7.4 and 7.7), although in both the Carolingian and 10th century levels they are significantly outnumbered by the Black wares.

The 12th century extent of the Grey wares in the Pas-de-Calais may reflect their earlier distribution. The southern limit seems to be the northern limits of the Beauvaisis ware. The river Somme approximately marks this division for both wares, though red-painted Beauvaisis wares have been found at Etaples (unpublished, in Etaples Museum), during fieldwalking near Le Touquet (pers comm, P Leman), and at Douai in a 10th century context, as well as on other occupation sites further north (see 7.8 below). (Grey wares, equally, from Normandy or the Pas-de-Calais are know at Fécamp to the south of the Somme.) The earlier Baralle kiln seems to have been on the eastern limit of the tradition, for the 10th and 11th century wares from Bavay represent a different tradition of potting (see below, 7.7). The northern limits are more difficult to define since their medieval distribution along the littoral of Belgium was largely made possible by the 12th and 13th century reclamation of that land from the sea. Half wheel-made, half hand-made Grey ware vessels have been found at Domburg, but some of these have sagging bases and have been clearly influenced by Rhenish forms (Trimpe-Burger 1960-61, Afb 9) (Fig 7,7,2). (It is even possible that they are Rhenish vessels.) Elsewhere in Belgium a few Grey wares of 8th or 9th century date have been found, notably at Ghent and at Lampernisse, but they are significantly absent at Ukkle, a site found earlier this century near Brussels (see below, 7.7), The evidence, slight as it is, suggests that the expansion of the Grey ware tradition to include Belgium occurred in the later medieval period. Before this date pots made in eastern Belgium (eg possibly the Hamwih class 13). the Pas-de-Calais, and elsewhere in northern France and the Rhineland were traded to this area.

The petrological analyses of the Hamwih Grey wares emphasizes the extensive production of this kind of fabric during the 8th and 9th centuries. It is possible that some of these wares were made as far south as Lyons (see below, 7.16) while others may have been made in Normandy, a source suggested by the Ile Agois pot (see Chapter 4) as well as certain Normandy gritty wares from 12th century contexts. A number of Grey ware sherds have been found in the Carolingian level at Fécamp (see below, 7.9). and perhaps indicates a source in the Seine valley. Other Grey wares have been identified in the Meudon kiln (see below, 7.9), amongst the wasters from the kiln at Martizay (see 7.10), at Trier (see 7.13). and from the Palatinate. There are also Grey wares of 11th-12th century date from the river at Epernay (unpublished pitcher, Epernay Museum), Strasbourg (Lobbedey 1968, Taf 17, no 5), the river Charente (Chapelot 1972, fig 47E), and the region of Nancy (unprovenanced pitcher in Musée Lorraine, Nancy: see below, 7.12). Finally, highly fired Grey wares are also sometimes found in the Middle Rhineland (see below, 7.14).

7.6 Red-burnished wares

Red-burnished wares are rare in Merovingian and Carolingian contexts, and unknown after the 9th century. There are a few sherds from the late 7th century kiln at Huy (Willems 1973) which the excavators have suggested might be imitations of sigillata (pers comm, M E Lauwerijs). Scuvée has recently published a vessel from the 6th-7th century cemetery at Réville (Manche) (1973, Pl XIII; 110). There is also a vessel of similar date from a cemetery at Ennery in Alsace (Fig 7,2,8). This vessel is very finely finished, and the burnishing has even concealed the marks of wire-cutting on the base. A red-burnished pitcher of 8th-9th century date was found in the excavations at Saran (see below, 7.10), and a similar vessel was found at nearby Orléans which has prolific quartz-sand inclusions as well as grains of microcline felspar (T-SP 30). There are several red-burnished vessels

from Hamwih (Chapter 3, class 21), one vessel from Chester and at least one from lpswich (see Hodges in Wade 1980). Some oxidized variants of the class 13 might also be in this tradition (Chapter 3, class 13). The class 13 is believed to have been made somewhere in Belgium. It is from southern Belgium that the most extraordinary example of this tradition has been found. This is a sherd from a later 9th century context at Lampernisse which has white painted criss-cross lines over the burnishing.

This small collection of red-burnished wares were probably each made as specialist products, as may be seen at Saran, perhaps for prestige purposes. The red burnishing may be a crude limitation of sigiliata or, alternatively, it could be the revival of a La Téne technique commonly used until the 1st century AD. In either case it was a tradition which survived in several regions in France and Belgium until the 10th century.

7.7 Nord, the Pus-de-Calais, and Belgium

A number of recent excavations between 1975 and 1978 has changed our perspective of early medieval pottery in northern France. Of these, Demolon's excavation at La Fonderie de Canons, Douai (Nord), is the most important and, unfortunately for this study, is currently far from finished. * There is also the recent discovery of a kiln at Baralle (Pas-de-Calais), south-west of Douai (Jacques 1976), which is believed to date to the 9th century. Furthermore, the publication of smaller projects at Beutin (Pas-de-Calais) on the river Canche (Leman and Cousin 1977), Vieil-Hesdin (Pas-de-Calais) (Petit 1977), and Avesnes-sur-Helpe (Nord) (Broez 1976) amplify our sparse knowledge of pottery in this region of northern France. (For summaries and previous surveys see Leman 1970; Hodges 1976.)

Certain of this pottery has already been discussed in the previous sections, so with reference to the publications cited above only a brief survey will be made. (In particular, the Grey wares from the kiln(s) at Sorrus (Pas-de-Calais), located above the Canche valley, have been considered in 7.5.) However, some unpublished pottery is treated in greater detail at the end of this section.

Baralle

Jacques's laconic presentation (1976) of the remains of the kiln at Baralle is nonetheless a very important contribution to the understanding of northern French pottery. He considers the pottery in terms of sherd counts which, even if it is not a wholly acceptable criterion for quantification, provides some basis for a critical evaluation of the kiln and its produce. Unfortunately he gives very little information about the fabrics, though through the generosity of Monsieur Demolon the author has been able to handle a few 'typical' sherds,

Several important points need to be considered. First, the kiln was primarily producing two types of pottery, one reduced and one oxidized, in three forms of cooking pot. (The beaks for only nine pitchers were found.) More than 3000 sherds were recovered, of which only 156 were decorated. Jacques divided the decorations into five groups, and nearly half of these decorated wares (46.2%) were red-painted. Others were decorated by (II) burnishing (34.6%), or (III) with roller-stamping (12.2%), or (IV) with paint and roller-stamping (4.4%), or (V) with grooves and bosses (3%).

The fabric is relatively distinctive. It is a very fine sandy ware with no prominent inclusions. The undecorated sherds (viewed at Douai) were grey, sometimes with white inner surfaces, and identical to certain class 15 sherds found in Hamwih. The bases are not discussed by Jacques, but the one viewed at Douai is flat, wire-cut, and thick.

Jacques found only what appears to be the stoke-hole and the flue of the kiln. (It could conceivably, of course, have had more than one flue, though it is unlikely.) For several reasons he suggests that it was associated with a monastery at Baralle consecrated to St George that was pillaged by the Vikings in the later 9th century. This tenuous link depends on the dating of the kiln.

The dating is obviously going to be slightly cantentious, though it is a matter that is important for any understanding of the Hamwih pottery. A date based on typological and decorative grounds in either the 9th century or the first half of the 10th seems absolutely acceptable. To date it more closely is difficult but must be considered. Jacques proposes a 9th century date, and for several reasons this seems feasible. First, the *majority* of the forms as well as the fabric are consistent with those known from Hamwih. Secondly, the paucity of red-painted sherds suggests that it was operating in the earlier years of this tradition. Thirdly, the presence of painted and roller-stamped wares similar to the Hunneschans ware must be taken into account, although the existence of a decoration of this kind at Huy in the 10th century must also be borne in mind (see 7.1 above). Fourthly, the absence of this fabric at Douai in 10th century levels tends to strengthen the hypothesis. But against these arguments several points have to be considered. First, Jacques's types B and C, an upright rim and an inturned rim respectively, comprising nearly 10% of the kiln's forms, are absent at Hamwih. Secondly, this type of red-painting is also absent at Hamwih. It is too early to assess whether these fabrics have occurred elsewhere in northern France: whether, for example, the red-painted sherds from Vieil-Hesdin associated with rims of 10th or even 11th century date are actually of Baralle type remains to be seen (Petit 1977, fig 11).

Therefore, a date in the 9th century must be considered, but for the moment must equally remain open to question.

Douai

The excavations at La Fonderie de Canons at Douai have cast a great deal of light on the sequence of ceramics from the later Merovingian period onwards. The remarkable stratigraphy composed of preserved timbers beneath an 11th century motte offers the possibility of a tightly dated sequence using dendrochronology.

The new evidence concerned with the Black wares, Grey wares, and red-painted pottery traditions has been discussed in previous sections. The local 10th century fabric, however, has still to be considered. This is a distinctive fabric with large sand-grain inclusions and prominent iron ore up to *c* 1.00mm across. In the 10th century this fabric occurs as a Black ware as well as occasionally in a grey fabric. It is also common in a brown clay matrix. Moreover, sometimes it is red-painted. Virtually all the Douai pottery in the 10th century levels is in this fabric, while the first few sherds from the earlier levels suggest that there it is far from common. This fabric, however, is very similar to the Hamwih class 24, and only further analyses will test this properly. It remains to ascertain its significance in the earlier Carolingian levels where fine Black Wares are seemingly common.

*M Demolon has been very kind in allowing the author to see the finds as they have been excavated

The pottery from the souterrains at Carvin, Somme

A very brief report (Courren 1968) was published on these wares, which have considerable significance, being a rare group of 8th-9th century wares in this part of France. It is, therefore, necessary to classify these wares, although the location of the sherds in the labyrinth of souterrains is not always clear:

(a) Beauvaisis ware: two small abraded red-painted sherds, as well as one small unpainted sherd from souterrain Z28 which may be a Beauvaisis product or a sherd of the Hamwih class 11.

(6) Hand-made wares: cooking pots with upright rims and flat bases that have been knife-burnished and have a fine sand-tempered fabric (eg P IV du 19/6; P V; V-2 (base)). Other knife-trimmed hand-made wares, probably 11th century, have been found at Ghylede (Pas-de-Calais), a village near the Channel, by Leman. These bear considerable resemblance to the contemporary Saxo-Norman wares in Kent and, in view of the recent finds from Beutin (Leman and Cousin 1977), it may be wondered whether these are not examples of 'exported' Anglo-Saxon pottery (see Chapter 8).

(c) Shell-tempered sherd (see below).

(d) Grey *wares:* very hard rim with internal channelling; it has large sand inclusions and possibly chalk inclusions. There are also two sherds of a very hard, fine sand-tempered ware (P).

(e) Coarse large sand-grain black ware which was probably wheel-made and comprises a base (L) and several sherds in this collection. The fabric is very similar to the red-painted sherd from Lille.

Bavai (Nord)

This is an unprovenanced collection in the museum at Bavai which probably dates to the later 9th--12th centuries. The vessels are globular and have squared everted rims. The fabric is black with large sand-grain inclusions and some (?)chalk inclusions up to 2mm across. The texture is coarse, and the fabric has a granular appearance. Besides the cooking pots, which unfortunately lack bases, there are several small stubby handles rather similar to those of the contemporary southern English stamped wares (eg Addyman *et al* 1972, fig 37), sometimes with applied strips down the handle.

Similar vessels, including skillets, bowls, and a lid as well as a pitcher and cooking pots, are reported from a souterrain at Houdain-léz-Bavai (Ozeel 1976). (See also the pottery published in the interim report on the excavation of the donjon at Avesnes-sur-Helpe (Broez 1976, esp fig 3,l and 5).) The brief description in Ozeel's publication of these wares amplifies that given for the unprovenanced vessels in Bavai Museum. Moreover, it also illustrates that these wares possessed sagging bases. The forms are distinctly different, therefore, from the late Carolingian wares of the Meuse valley such as those from Huy and those later from Andenne on the one hand, and those found in the Pas-de-Calais on the other (cf Hodges 1976. fig 2).

Ukkle

The finds from Ukkle near Brussels were found between 1904-5 whilst fieldwalking, and were published by Borremans (1958). Several wares are represented in the collection, which was associated with a coin of Charles the Bald (840 -77). and, since the publication is somewhat obscure, they can usefully be summarized here:

a Badorf ware sherd with roulette decoration, and a relief-band amphora sherd with thumb-impressed strips.

b (?)Beauvaisis or Baralle sherds: three burnt sherds that Borremans did not consider to be Beauvaisis ware. However, they are unlike the Rhenish wares or any red-painted fabrics from Huy on the Meuse.

c Soft, brown-to-grey ware (sometimes with a slurry surface) with fine sand-grain inclusions as well as large hematite inclusions and some mica (Fig 7,6,12).

d A very coarse dull brown fabric, with large sand-grain inclusions which characterizes this ware. This is the commonest fabric in the assemblage, occurring as spouted pitchers (Fig 7,6,2,3) with globular bodies, and sagging bases which were clearly added to the wheel-thrown, thin-walled body. (A fabric very similar to this has been identified in undated contexts at Dorestad.)

Lampernisse and Ghent

The finds from the earliest level of Verhaeghe's excavations (shortly to be published in British Archaeological Reports) at Lampernisse in Flanders, and from St Peter's Abbey, Ghent, are discussed in other sections. They include red-burnished wares, Black wares, Grey wares, shell-tempered wares, and the Hamwih class 13. There is also a sherd of Beauvaisis ware from Lampernisse and a possible sherd from Ghent.

Hamwih class 13

This fabric has been identified at Douai, in Merovingian contexts, at St Peter's Abbey, Ghent, and Lampernisse in 8th-9th century contexts, and from 11th-12th contexts at Middleburg (pers comm, F Verhaeghe); from Valkenburg Castle in Limburg (Hodges in Janssen, forthcoming); from Kootwijk, a deserted medieval village near Utrecht; and possibly from Medemblik, the trading settlement north of Amsterdam (pers comm, H Janssen). This distribution suggests that the class was made somewhere in eastern Belgium, possibly in the Meuse valley. Occasionally the fabric includes grains of limestone which would support a Meuse valley, eastern Belgium origin (see above, p 21, for a fuller account).

Shell-tempered wares

Shell-tempered wares with oxidized fabrics, of 8th-9th century date, very similar to the Hamwih class 5 and other shell-tempered wares from southern England, have been recognized at Lampernisse and St Peter's Abbey, Ghent. A similar ware has also been identified in the Pas-de-Calais in 12th century contexts at Beauville and Nesles motte (Pas-de-Calais) (writer's fieldwalking), as well as a possible Carolingian example from one of the souterrains at Carvin (Somme) (Courren 1968). Verhaeghe considers this to be an ubiquitous medieval type in Flanders, in all probability a Flemish ceramic tradition, perhaps comparable to Grey wares.

Other wares

One small flat-based pot unprovenanced in the Musée des Beaux Arts, Arras, may date to the 8th or 9th centuries (Fig 7,6,9). It has a pink-to-beige fabric with fine sand-grain inclusions. The base has been fettled. The form suggests it to be later than the Merovingian vessels with which it is now associated. However, it is probably a 19th century find and need not derive from northern France, since collectors at that time acquired complete vessels from sites all across northern Europe, seldom noting the sites from which they came (cf Morel Collection, British Museum).

7.8 The Beauvaisis and Paris

The Beauvaisis

Beauvaisis pottery has already been referred to in the section on red-painted pottery. By the 10th century it was an important industry; by the later medieval period it was perhaps the largest ceramic industry in northern France. In the 15th-17th centuries stonewares were made here on a scale to rival the output of the Siegburg and Raeren industries. Today vast waster dumps left by 19th century potters are still prominent in some of these villages. It has only been in the last decade, however, that the size and importance of this industry has become apparent, as a result of the work of Chapelot and Cartier. Furthermore, the evidence of pre-10th century production in these villages to the west of Beauvais is slight. The sherds from 9th century contexts in England indicate that the production of red-painted wares had certainly commenced by the first decade of that century in these villages. The textural similarity of other Hamwih classes in thin section suggests that the industry may have been producing and trading less distinctive wares from the later Merovingian period, or perhaps even earlier. This theory certainly needs to be tested. Chapelot, however, has reported Carolingian sherds from small construction sites in St Germain La Poterie (Oise), one of the more important later medieval and post-medieval potters' villages (pers comm). It is likely that a 10th century centre at Goincourt, another village, may also have been producing red-painted wares a century earlier. Excavations at Goincourt may be undertaken in the near future, for there is the added stimulus of clarifying the location of the first complete Beauvaisis pitcher recognized by the Abbé Cochet, and believed by him to have been a kiln (Cochet 1857, 354; Dunning 1959, fig 38,2). A comparison of a 10th-11th century pitcher (unstratified) from excavations beyond the west end of the cathedral in Beauvais, and the Wicken Bonhunt (Essex) pitcher (Fig 4,2,3,4) reinforces the belief in the early beginnings of this industry. With time the Beauvaisis potter thinned the rim and handles of his vessel, and hatched the arcs decorating the upper half of the body. It was a 9th century decoration, gradually modified, which is well known on vessels from later contexts (eg Chichester: Hodges in Down 1978, 352). The range of 10th-1 lth century wares, many of which were red-painted, is large in comparison, for example, to the range evidently produced by kiln-centres on the Upper Seine, between Provins and Troyes (cf Leman 1972) (Fig 7,2,4,5; Fig 7,6,5). It was perhaps partly because of this that these vessels are widely distributed, and are one of the few wares in northern Europe to be traded far beyond the normal 20-30km radius of the pottery centre. The northern limit of the zone was probably the river Somme, yet sherds have been found in the Pas-de-Calais, and on the two sites of early medieval date excavated in southern Belgium: Lampernisse and (?)Ukkle. There is also a possible sherd from Ghent in a 9th century context. It is, therefore, already necessary to revise Leman's northern limit for this ware, which he considered to be Boulogne-Lille-Tournai (Leman 1972, 199). One problem in substantiating such a distribution is that it is difficult to differentiate between the Pingsdorf types and Beauvaisis types if only a bodysherd is found. This might be resolved if a systematic analysis of the quantity and size of quartz-sand (in thin-section) in each type was undertaken, as Hodder has recently demonstrated for some southern English Roman wares (Hodder 1974).

Paris

From Paris there is a small collection of pitchers and bowls discovered in the 19th century near St Germain-des-Prits, in the Place Gozlin, and now in the Musée Carnavalet (Fig 7,6,4,6,7). There is also a complete pitcher from the Parvis de Notre-Dame discovered during archaeological excavations in 1966 (cf de Boüard and Guibert, in Hurst 1969, 113). All these vessels are, without doubt, the Hamwih class 25, for they have the distinctive prolific quartz tempering and the smooth slurried surfaces. In the case of the pitchers and bowls from the Place Gozlin, the fabric is pink, like most of the class 25 sherds from Hamwih. The pitcher from Notre Dame is not so easy to categorize for it has a globular form, a flat base, and red-painted 'comma' motifs. Moreover, the body is mostly a curious dark green colour which has clearly been burnished, though in small patches it is possible to detect the buff-brown colour characteristic of Beauvaisis wares. The nearest parallel to this is a red-painted sherd from Hamwih, SM.69.10.51 (129) (Fig 3,2,19). There was some doubt in the minds of the excavators at Beauvais as to whether this Hamwih sherd was Beauvaisis ware. But what is clear is that it is definitely of the Hamwih class 25 and, at latest, 9th century in date. It remains, therefore, to be discovered whether the class 25, the only known ware from Paris, is a local ware produced in that settlement, or a traded product from the Beauvaisis. The early trading of this ware has recently been illustrated by the discovery of some sherds from Chalton (Hants), a (later) 6th to 7th century settlement site.

7.9 Normandy and Brittany

There is as yet very little Carolingian pottery from these two regions. Three production centres have to be considered, and then several groups including those from the excavations at Fécamp which are still in progress.

A Merovingian kiln was found during construction work at Montreuil-sur-Lozon which lies on the Cotentin peninsula (Edeine 1955; de Boüard 1967, 372-3). Unfortunately the pottery from this site seems to have been lost and has not been available for study.

Two allegedly Carolingian kilns have been found, one at Trans (Ille-et-Vilaine) in eastern Brittany, and the other at Meudon, near Vannes in south-eastern Brittany. A single-flue kiln was excavated at Trans in 1975 and has recently been published in some detail (Langouet *et al* 1977). The range of oxidized forms from this centre is very limited, and all are in a heavily tempered fabric discussed in detail in the report. The two rim forms that dominate the assemblage are characteristic Normandy types, one being squared, rather like the Hamwih class 11 (discussed below), and the other being a small collar-rim. The occurrence of these collar-rim vessels and the slurry finishing of the pots certainly suggest many similarities to the Normandy gritty wares well known in later 11th and 12th century contexts from southern England (Hodges 1977b, 252). However, Langouët and his colleagues have strongly suggested a mid 10th century date on the basis of archaeomagnetism and thermoluminescence. It is difficult to challenge these analyses, especially as the vessels all have flat bases characteristic of the latest Carolingian period. With obvious reservations in view of the analyses, and bearing in mind the flat-based heavily tempered example of Normandy gritty ware from an 11th century pit at Pevensey (Dunning 1958, fig 2, no 5), a case can still be made for a slightly later date than that proposed in the report. Langouët's important research in the region of Alet should bring to light further evidence

of this potting industry and establish beyond doubt its date.

The series of mounds at Meudon, located on a hill above Vannes, were excavated before World War I and were found to contain waster dumps of highly decorated roller-stamped pottery. The report is not very clear about the excavation, and deals mostly with the pots and their range of decorations (Martinière 1914). Sadly, the collection, which is now kept at the Musée Archéologique at Vannes, is diminished in size and, because of this and the lack of clarity in the original report, a brief classification of the wares is apposite.

There are three fabrics:

1 A reduced grey, hard fabric with abundant angular inclusions *c* 1-2mm across, which probably come from river gravels. These vessels are often slurried on the exterior. Many of these grey wares are wasters.

2 An oxidized orange fabric with mica platelets as well as rounded quartz-sand inclusions, *c* 1-2mm across. Hard, but seldom finished with a slurry, so usually coarse to touch. This is the commonest fabric, and is the one most frequently decorated. There is one beaked pitcher, a large storage jar, two pierced lids (Fig 7,6,13), and a few short stubby handles rather similar to the handles found on some southern English Saxo-Norman stamped wares (Addyman *et al* 1972, fig 37) and at Bavai (Nord) (see above, p 73).

3 A fine sandy fabric, either reduced as 1 or oxidized as 2, with a little mica dusting. These are globular vessels, usually with flattened rims, occasionally squared off. They have wire-cut bases and nearly all the vessels have roller-stamp decoration. There are also examples of roulette decoration, and impressed cord-like decoration. Interestingly, there are no examples of incised wavy-line decoration. An 8th-9th century date seems likely for this kiln, though such abundant decoration is abnormal. It was, at least, distributed along the coast, since examples of this ware have been found at Ile d'Hoëdic (Dunning 1943b, fig 19, no l), and at Dissignac (Loire-Atlantique), near St Nazaire (excavations by Dr L'Helgouach).

A possible third production centre of the Carolingian period may be focused at Bodères in western Britanny. For many years Professor P-R Giot has been studying the *céramique onctueuse* characteristic of medieval and early post-medieval sites in western and southern Britanny. It seems that this distinctive ware was made at some stage, at least, at Bodères (Breton for La Poterie), where wasters have been found by Giot. To date, however, the earliest context for *céramique onctueuse* is the graveyard at St Urnel (Finistere), where it appears in late 10th or early 11th century contexts (Giot & Monnier 1974). This is a very distinctive ware because it has talc inclusions, a soapy texture, and a remarkably soft fabric which Giot considers to be only grade 2 on the Mohs hardness scale (Giot 1971).

It has already been suggested that the Hamwih class 11 was a Normandy ware. Like the Hamwih class 15, group 2c Grey wares, it may have been made somewhere in central Normandy. The principal evidence for ascribing the class 11 to Normandy consists of a group of Merovingian cemetery pots discovered in the 19th century. These come from Muids, Merey, St Pierre du Vouvray, and Haquency (Evre) (now in Evreux museum) (Fig 7,6,8,10,11). These cemeteries lie just to the south of the Seine, a little to the east of Rouen. A further cemetery vessel was recognized in Dieppe museum from the cemetery of Veules-les-Roses (Seine-Maritime) excavated by the Abbe Cachet in 1862. There is now also an unpublished example from Seillier's recent excavations of the Merovingian cemetery at Nouviau-en-Ponthieu (Somme), somewhat to the north of the others listed here. The discovery of a 10th or 11th century vessel from medieval Southampton (Platt & Coleman-Smith 1975, 2, fig 175) (Fig 3,3,1), as well as 10th century examples from Fécamp (see below), points to the continued production of this Merovingian ware. Later examples in 12th and 13th century contexts are now known from Exeter and Château des Marais, Guernsey. The distribution of this class is very reminiscent of the Normandy gritty wares, and it seems possible that the two were made at the same centres from the 11th century onwards, perhaps in the environs of Rouen.

Fécamp

The results of Mme A Renoux's current excavations at Fécamp will prove important in adding to our sparse knowledge of potting from this northernmost part of Normandy. The excavations beneath the 10th century fortification of the Dukes of Normandy has revealed a settlement level believed to be associated with a nunnery in which an 8th century coin was found with a range of pottery. The pottery would seem to include roller-stamp decorated Black wares, Grey wares, and a number of class 11 rims, as well as one vessel that appears very similar to a Hamwih Middle Saxon cooking pot, since it has the characteristically thickened rim (see Chapter 2). There are no red-painted or glazed sherds as yet from this early Carolingian level. However, a probable Beauvaisis pitcher, with painted decoration extending down the lower half of the vessel and to the base itself, and two glazed sherds, were found in the earliest level associated with the fortification of the Dukes of Normandy.*

7.10 The Loire Valley

At the moment 8th and 9th century pottery from the lower Loire valley is very scarce. There is a small cooking pot from Cholet (Maine-et-Loire) in the Musée Lorraine, Nancy (G.1814) which might date to the 9th century, though it could be later (Fig 7,8,9). It has an orange-to-beige fabric with large sand-grain inclusions and a few inclusions of mica platelets. The base is wire-cut and thick, which is a characteristic of 8th-9th century pottery, though not necessarily the rule. As yet there is no early medieval pottery from Angers, while the later 9th century glazed pottery from Doué-la-Fontaine, a fortified site between Angers and Tours, has already received considerable study (de Boüard 1976). There are two groups of glazed wares from this site. One group has copper-green glaze and the other yellow-to-orange glaze. The first fabric has prominent rounded quartz-sand inclusions and the second has quartz-sand and large inclusions of hematite. The forms are well developed with squared rims, and with channelling often inside the rim. The quartz-sand-tempered fabric has also been found at the site of St Pierre-la-Puellier, Tours, which its excavator, Henri Galinié, dates to the 10th or early 11th centuries. Also from St Pierre-la-Puellier there are two other wares which may have been produced in the 9th century. These are the red-painted white wares discussed in 7.2 above and a cooking-pot fabric which appears macroscopically similar to the Hamwih class 11 fabric, and also has the same unsorted range of subangular

*The author is indebted to Mme Renoux for discussing these sherds with him and showing him her thesis (Renoux 1977, III, figs 83-7); however, he has not seen the sherds themselves.

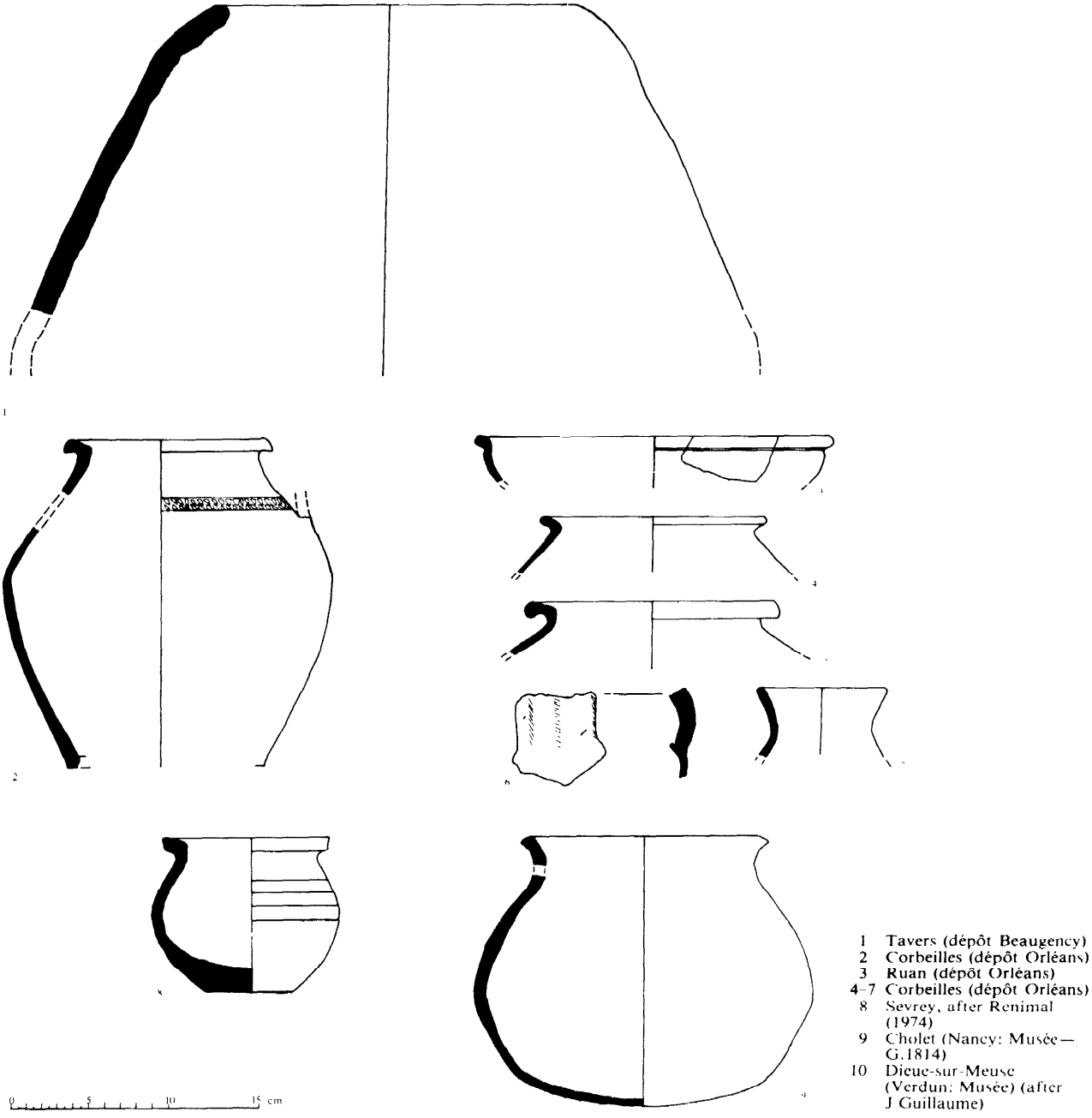


Fig 7,8 Loire valley wares and a cooking pot from Dieue-sur-Meuse (scale 1:4)

quartz-sand inclusions as this Hamwih class in thin section (T-SP 70). This ware was made with the same rim forms as the Doué-la-Fontaine vessels.

On the south side of the Loire valley, near the river Indre, a small collection of Carolingian pottery has been found at Martizay (Chapelot 1969) (Fig 7,1). The publication of the Martizay pottery is concerned with three reconstructable vessels found in 1967. However, more recently a large group of grey wares, believed to be a possible waster dump, has been found during construction work. The three published vessels are globular, with flattened rims. The top half of each pot was wheel-thrown, while the bottom was 'only fashioned by the hand' (Chapelot 1969, 46). The recently discovered grey wares may be slightly earlier than these three globular vessels, and thus provide archaeological evidence of continued settlement at Martizay, since an important Merovingian settlement has been excavated there.

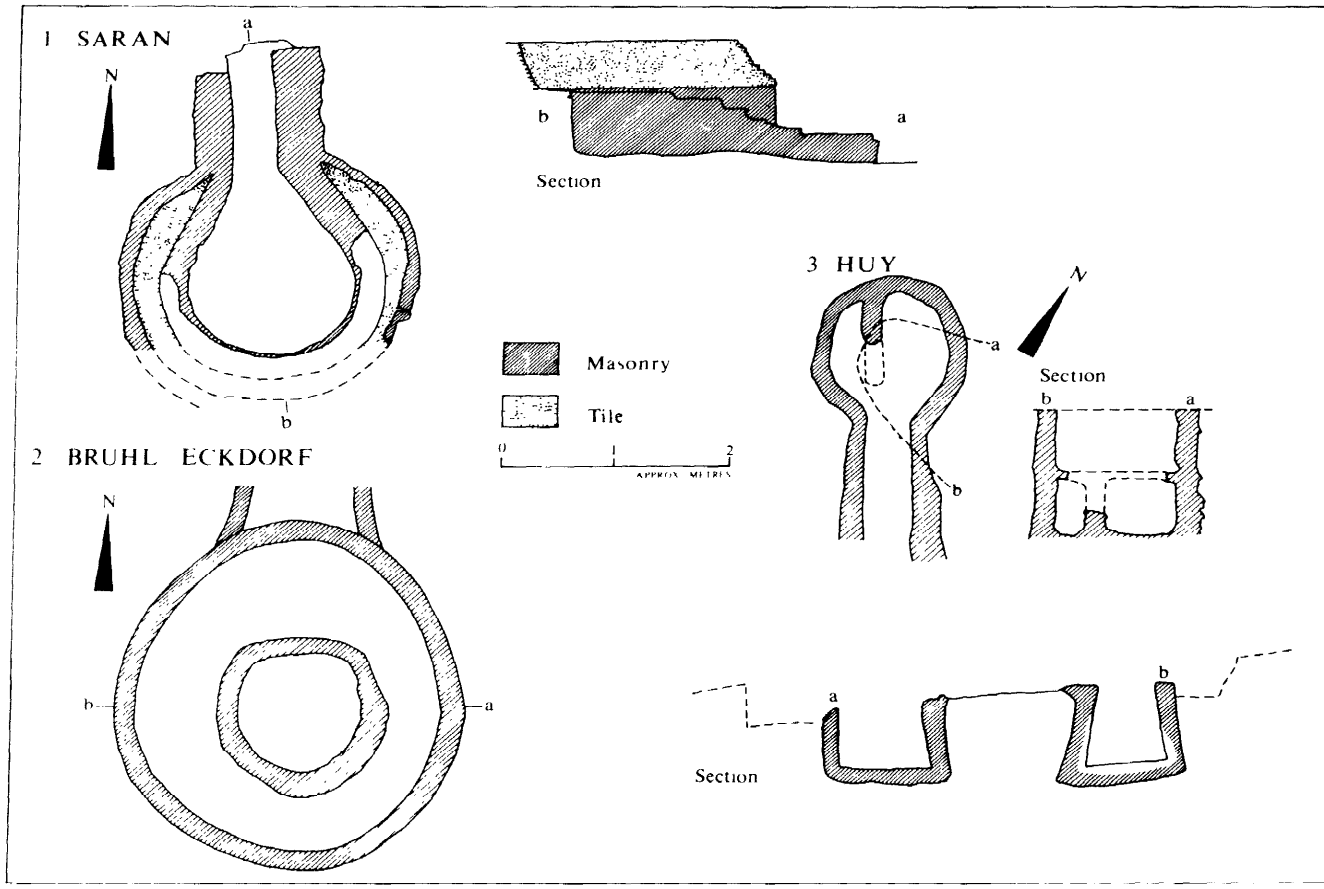


Fig 7, 9 Early medieval kilns from Saran (after J Chapelot), Brühl-Eckdorf (after W Janssen), and Huy (after J Willems)

Farther up the Loire several groups of pottery of 8th-9th century date have been found, and have already received considerable attention. These are several groups from Tavers, near Beaugency (Nouel 1970, 260-3; Puchal-Gellida 1973); from sites in Orleans (Puchal-Gellida 1973); from a small rescue excavation at Ruan, a village to the north of Orleans (Puchal-Gellida 1973); and from the extensive excavations of the kilns at Saran, now a northern suburb of Orleans (Chapelot 1970a; 1972). As these groups have been studied in some depth, in particular by Chapclot, only a brief note on each is warranted in this survey.

From the souterrains at Tavers oxidized pitchers have been found, most of which have broad strap handles and beak-spouts (Nouel 1970, figs 20-22). There are also some cooking pots, in developed Saran forms, and a very large storage vessel from more recent excavations at Tavers (Fig 7,8,1). Nearly all the vessels have flat bases and globular bodies, features which led Puchal-Gellida in his thesis (1973) to suggest that they are 10th century in date. These finds would appear to be the products of several kilns, though this needs to be tested using petrology.

Excavations on several sites in Orleans have produced Saran-type cooking pots as well as a fine red-burnished spouted pitcher which thin section (T-SP 30) suggests is likely to be a local product. There is also a white burnished spout from the excavations in the Rue de la Charpenterie and a micaceous sherd with black-painted decoration. The white burnished spout is the only example of its kind, while mica platelets in the black-painted sherd suggest an origin some distance away-possibly as far as Burgundy, where the Loire rises (cf the Vézelay vessels: 7.11 below). The collection was studied by Puchal-Gellida (1973) who considers it to be a late 9th to early 10th century group on the basis of the globular form of some of the vessels in the assemblage.

The site at Ruan was originally discovered in a pipe trench in 1972. It is believed to be a habitation site, and from it there is a small collection of sherds. There is a small unburnished (class 14) Black ware bowl (Fig 7,8,3) in a very hard fabric with a coarse texture. There are also several oxidized sherds, including a base with a protruding foot, a carinated bowl, and a pierced lug, as well as several vessels which might be beakers. The most interesting sherd is a class 14 Black ware sieve sherd, which presumably divided a beak spout from the body of the vessel. Sieve sherds have been found on Pagan Saxon sites in England (West 1969b, fig 36, no 38) and at La Saulsotte, on the Continent (a sour reflection on the quality of the local beverages (cf Besteman 1974, 87, fig 35,l)). There is also a *vase de réserve,* which Puchal-Gellida (1973) considers to be remarkable. However, similar storage vessels have been found at Tavers (Fig 7,8,l), and Montbarrois (Loiret) (pers comm, Alain Ferdière). On the basis of typology, once again, Puchal-

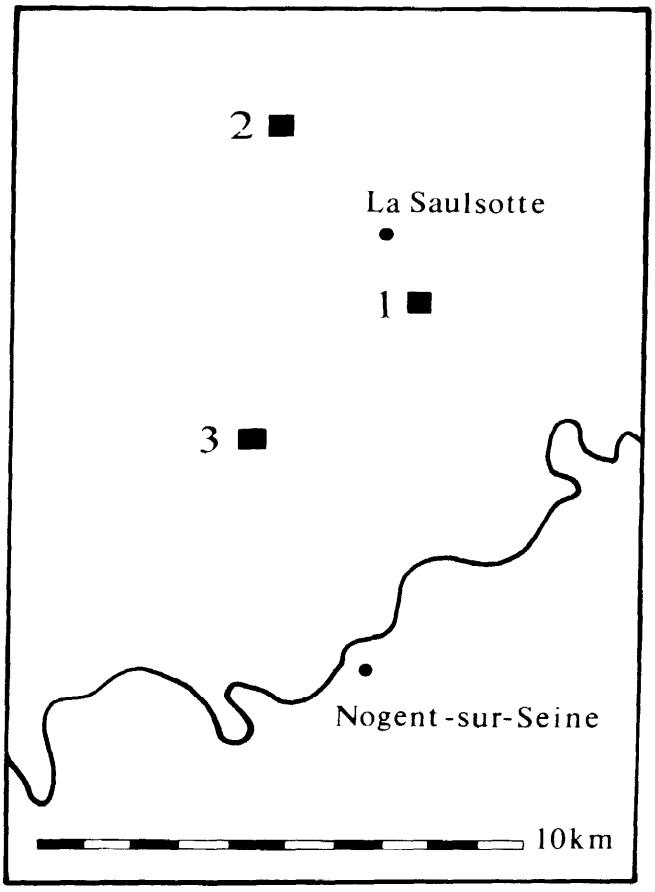


Fig 7,10 Map of kiln sites at La Saulsotte

Gellida considered the site at Ruan to be of the later 8th to mid 9th centuries, and speculated on the possibility that it was destroyed by the Vikings.

Chapelot carried out the most extensive excavations of any Carolingian kiln site at Saran (Fig 7,1), unfortunately mostly as rescue work. Seven kilns were excavated, three of which were 'mutilated', and another nine kilns were located but not excavated (Chapelot 1970a, 59). These were found within an area 2000 m^2, of which 280 square metres was excavated (Chapelot 1970a, 57). In the centre of the site was the base of a *Grubenhaus* which had eight posts, one at each corner and one in the centre of each side (Chapelot 1970a, fig 17). An enormous quantity of flat-based cooking pots with globular bodies was found as well as flanged bowls (Chapelot 1970a, fig 21), and one beaked red-burnished vessels from the outer kiln A. These Chapelot dated to the first half of the 9th century, having compared the forms to the more evolved globular vessels found under the choir at St Benoit-sur-Loire, which must date to the first half of the 10th century (Chapelot 1970a, 70). The potters were also making small numbers of antefixes-fired clay plaques about 100mm square with human effigies on them. On the back of one almost complete antefix is a hollow tile which enabled the plaque to be fitted to a roof. As well as these the potters were producing *modillons* of fired clay, which Chapelot suggests were placed at the top of walls under the eaves. Both fired objects related to funerary customs and continued a Gallo-Roman craft. Chapelot has studied their distribution along the Loire valley which, he concludes, demonstrates the persistence of Gallo-Roman influences in the town in this region (Chapelot 1970a, 63-5). Several of the kilns were also of Gallo-Roman form: kiln B is rectangular and paralleled by the Roman brick-built kilns of this type, while kiln D has a circular chamber similar, in fact, to a Roman kiln excavated at Villeneuve-au-Châtelot (Aube) (Chapelot 1972, 407). This led Chapelot to wonder if the similar forms of potting meant that similar techniques and processes, as documented for the Roman period, were being employed (Chapelot 1972, 432). However, he describes some of the other kilns as more 'rustic' and primitive. They are a little smaller than kiln D, which might have been built to cut down the number of firings (Chapelot 1972, 407) (Fig 7,9).

Saran is clearly a very important site, since the extensive excavations make it possible to view a rural ceramic centre of this period for the first time. It also indicates the persistence of certain Gallo-Roman influences in the Loire valley. And while most of the centre's produce was for localized use, there is evidence of specialist items that were made for wider distribution.

The last collection to be considered in this section is that from the Gallo-Roman villa at Corbeilles, near Montargis (Loiret). The collection comprises cooking pots, small jars, and a roller-stamped pitcher which is kept at the archaeological depot, Orléans (Fig 7,8,2,4,5,6,7). The pitcher is in a cream ware with large inclusions of haematite as well as rounded quartz-sand inclusions. It probably had a flat base (Fig 7,8,2). There are other white wares in the collection, including a cooking pot with a similar rim profile to the pitcher, a small jar with an upright rim, and a bodysherd with the springing for a handle perhaps of a large storage vessel. Several cooking-pots are oxidized (eg Fig 7,8,4) and so are a small jar rim (Fig 7,8,7) and a strap-handle for a pitcher of a type well known at Tavers (Fig 7,8,6) (Nouel 1970, fig 21). All the sherds have prominent temper, probably extracted from alluvial deposits, and it is likely that they all originate from one source. Typologically, they may be dated to the 8th or early 9th centuries, some of the forms being very similar to the Saran wares.

7.11 The upper Seine valley

There are several important collections from the region south of Provins and to the north of Burgundy. In a sense, they document the uninterrupted production of ceramics in this region from the Roman period until the present time. Without doubt the production and distribution of ceramics in this region was facilitated by the network of rivers meeting the Seine, as well as the routeway which from at least the Late Bronze Age connected northern France with the Mediterranean world.

La Saulsotte

La Saulsotte lies in a verdant valley a few kilometres north of Nogent-sur-Seine (Fig 7,5; 7,10). During an examination of Roman sites in this region, Brisson and Loppin excavated two series of kilns at Etang, to the south of La Saulsotte (Fig 7,10, 1), and Resson, just to the north of the village (Fig 7,10,2). Unfortunately, Brisson made only a brief note on the excavations and he deposited the finds and documentation in Epernay museum (Marne). Both finds and documentation are now sadly depleted, and it will require considerable work to distinguish how many kilns there were, and exactly which pots came from each kiln. In Brisson's brief report on the excavations, he speculates a late 5th century date

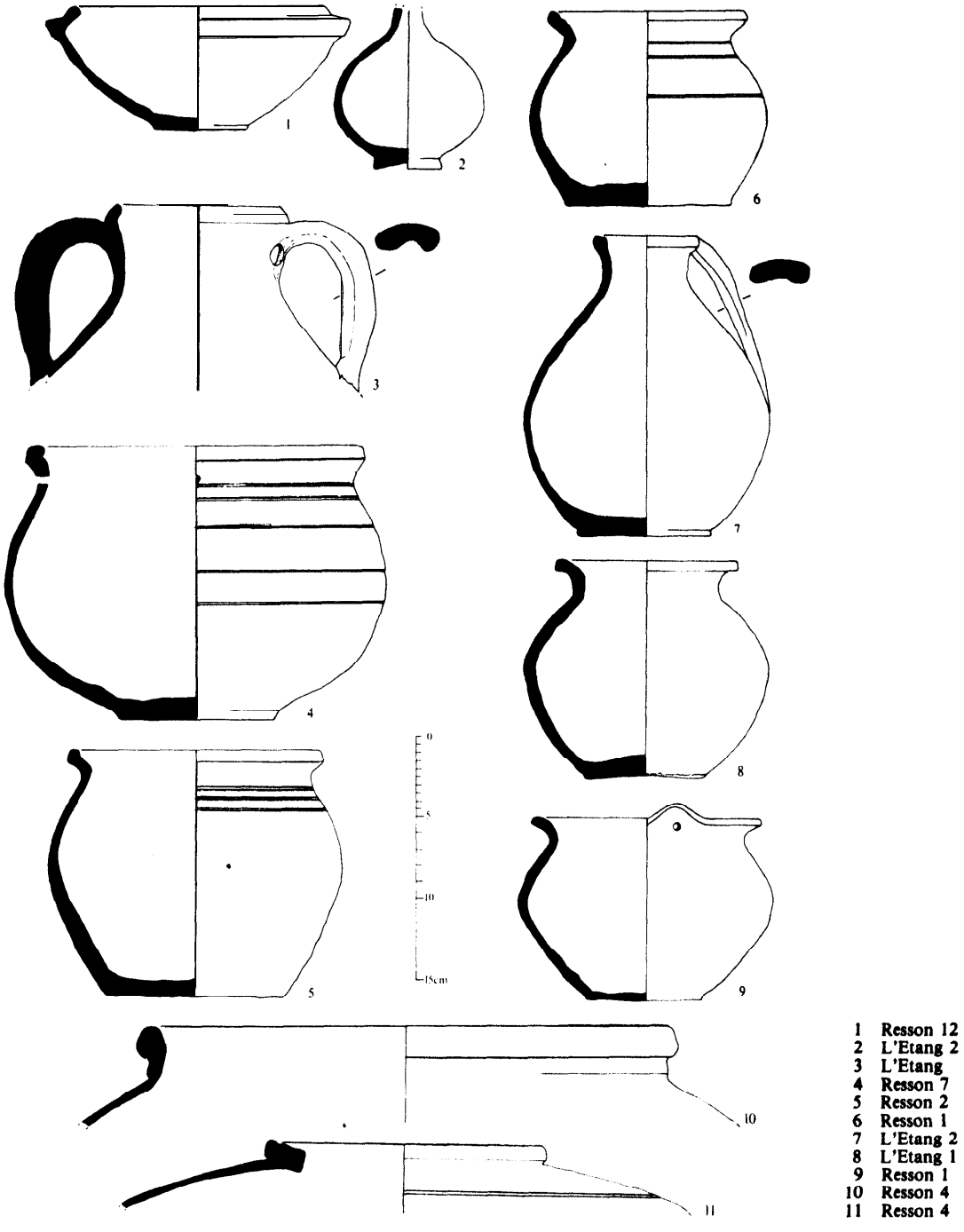


Fig 7, 11 Range of vessels from the kilns at La Saulsotte (scale 1:4)

for the kilns. This dating was based on the limited comparative information available as well as, it may be suspected, on the presence of a sigillata ring-base with roulette decoration which was cemented into the wall of one of the kilns (no B1). This is clearly a late Roman type, although it is uncertain whether it is Argonne ware, which was commonly traded to this region (Hübener 1968). This find might well have been residual, and a date in the 7th or early 8th centuries will be suggested below for these vessels.

The fabric of the La Saulsotte wares is remarkably uniform, being hard, pink-to-off-white in colour with large sand-gram inclusions. Usually the texture is smooth, owing to the application of a slurry on both the inside and the outside surfaces. However, sometimes this slurry finish has been omitted and the texture is coarse and sandy. There are a few reduced grey vessels, and a few vessels with occasional large iron inclusions as much as 5mm across. A wide variety of forms were found, the main examples of which are illustrated and described here.

Cooking-pots The cooking-pot with a globular body and wire-cut flat base is the commonest form (Fig 7, 11, 4, 5, 6, 8; 7, 12). The larger cooking-pots have narrow bases very similar to those Renimel has published from Sevrey, briefly considered below (1974, fig 15), while it

Fig 7,12 A name-stamped class 14 sherd from a Grubenhaus at Sarry (Aube) in Epernay Museum

should be noted that some of the smaller cooking-pots have relatively wide bases (eg Fig 7,ll,6). Both sizes of vessel have three or four pairs of incised horizontal lines. The only other motif used by the La Saulsotte potters is the incised wavy line, which occurs only on jars. There is a number of cooking pots of both sizes with holes pierced below the rim or pierced by lugs, presumably so that the vessel could be held by thongs over a fire (eg Fig 7,11,9; 7,12). A vessel with pierced lugs in a similar fabric, though black in colour, has been found associated with 7th century grave goods at the cemetery of Les Grandes Arbres, Normeé (Marne) (Epernay Museum). Böhner (1958, Abb. 1b: Stufe V) has drawn attention to this type as a characteristic form of the late Merovingian pottery in the Trierer Land, while Chapelot has found examples of this form at Saran (1970a, fig 21,Al).

Bowls The similarity of the La Saulsotte wares to the Trier vessels (Hussong 1936, Beilage l), to the Saran wares (Chapelot 1970a), and to the Sevrey wares (Renimel 1974) is most apparent in the case of the bowls. The typical La Saulsotte bowl rises steeply from a fettled flat base, and then curves inwards at the rim, rather like early Roman examples of this form (Fig 7,11,1).

Jugs The jug is another form well known from Merovingian contexts in the environs of Trier, and occasionally found at La Saulsotte (Fig 7,11,7) (cf Hussong 1936, Beilage 2). The La Saulsotte examples have upright rims rather than the trefoil mouths characteristic of Trier jugs (eg Böhner 1958, Taf 3, 12-14; Taf 4, 1-8). Jugs in a similar form and fabric to the La Saulsotte type have been found in the 6th-7th century cemeteries at Aulnizeux and La Vignette (Aube), now in Epernay Museum. From the 1'Etang kiln (no 2) is a small headless vessel which may be a small jug (Fig 7,11,2). This vessel has a footring, which is uncommon in Merovingian and Carolingian wares though not completely unknown (cf Chapelot 1970a, fig 21E). Alternatively, this might be a small bottle or unguentarium.

Pitchers There are very few beak spouts for pitchers. One beak, however, has a strainer comprising three pierced holes, similar to the sherd from Ruan near Orleans.

Jars There is a number of storage jars from the kilns. These have large thickened rims, and several examples have narrow openings compared to the sizeable widths, which can only be estimated, of the bodies of these vessels (eg Fig 7,11,11). Occasionally the necks of these vessels have incised horizontal lines or incised wavy-line decoration.

Amphorae (?) Perhaps the most perplexing two vessels in the La Saulsotte fabric are what appear to be

amphorae (Fig 7,11,3). Unfortunately, only one handle remains of the two vessels, and so it is quite possible that they are exceptionally large jugs. Yet although the form of the handles is similar to that of jugs from La Saulsotte, the profiles are most definitely not. There is a small storage vessel with handles of similar profile from Minden, near Trier (Böhner 1958, Taf 6, no 18) which might be considered a parallel. It is possible, of course, that these are imitations of a Roman form commonly found on destroyed local Roman sites (cf Ferdière 1974, 251-2).

It is possible that several periods are represented in this large collection of pottery. However, it seems safe to assume that most of it dates to the 7th or early 8th centuries. The evidence of similar vessels in local cemeteries and the parallels at Trier, in particular, support this conclusion. It remains to characterize La Saulsotte ware so that its distribution in the large number of cemeteries of the southern Champagne and the Seine valley can be documented. Furthermore, research on the Carolingian kilns in this area would be of singular interest in completing the picture of ceramic production in this small area from the Roman period to the present.

Isle-Aumont (Aube)

Isle-Aumont lies on the west bank of the Seine, south of Troyes (Fig 7,5). There was an important Halstatt D settlement on this outcrop before the Merovingian period. From the 5th **or** early 6th centuries the site has been more or less permanently occupied. The 8th and 9th century settlement comprised a church and cemetery, while in the 10th century a small fortification was built on the outcrop (Scapula 1975). Scapula in his extensive excavations found no Carolingian pottery in the graves feasibly ascribed to that period. The addition of pottery vessels to the tombs seems to have stopped in the 7th century, although occasional decorated metal objects continued to be buried with the dead (Scapula 1975, fig 87). The next ceramic phase at Isle-Aumont Scapula associates with the 10th century incursions of first the Vikings and then the Hungarians. Clearly such a contention must remain controversial, especially in the light of the excavation procedure. However, red-painted pitchers which might be of any date between the 10th and 12th centuries were associated in closed contexts with 10th century metalwork. It is interesting that only red-painted wares with sagging bases were found (Scapula 1975, figs 98,99). A similar homogeneous collection was found in late 11th century contexts, under the floor of a house, at Provins (Provins Museum). All the evidence suggests that the local potters during the 10th or 11th centuries assimilated the sagging-base style, breaking away from the Merovingian and perhaps Carolingian traditions which, in essence, had evolved from the Roman period.

Sevrey (Saône-et-Loire)

Renimel (1974) has recently published a monograph on **the** results of his field survey at Sevrey, a site south of Châlons-sur-Saône, and like La Saulsotte, located a few kilometres from a major river. Renimel's study includes a full publication of vessels believed to be from the kilns at Sevrey which were found in the river, and which were unprovenanced in the Châlons-sur-Saône Museum. Only a few comments are relevant in this survey, since Renimel's publication is a valuable and thorough study. The fabric of the Sevrey ware is often oxidized and is hard with a sandy texture. The cooking-pot forms are very similar to those from La Saulsotte. However, the Sevrey vessels are lavishly roller-stamped, rather in the manner in which 5th and 6th century cemetery vessels were decorated. This clearly did not continue into the 10th-12th century period, when the style, if not the decoration, adopted in the regions of Provins and Troyes was also adopted by the Sevrey potters. The discovery of many of these late 7th to early 8th century vessels in the Saône at Porte-Guillot provides an interesting insight into the riverine distribution of ceramics in the late Merovingian period (Renimel 1974, 45-6). Similarly, Brisson has suggested that Port-St Nicholas (Fig 7,10,3) was used as a depot for moving the produce of the La Saulsotte kilns down the Seine.

Minor groups

At present there are no clear reports on the alleged discovery of vestiges of Carolingian kilns at Villeneuve-au-Châtelot (Seine-et-Marne), to the south of Provins, and other kilns at Auxerre (Yonne). A kiln at Villeneuve-au-Châtelot would be most interesting since it was an important Roman potting centre.

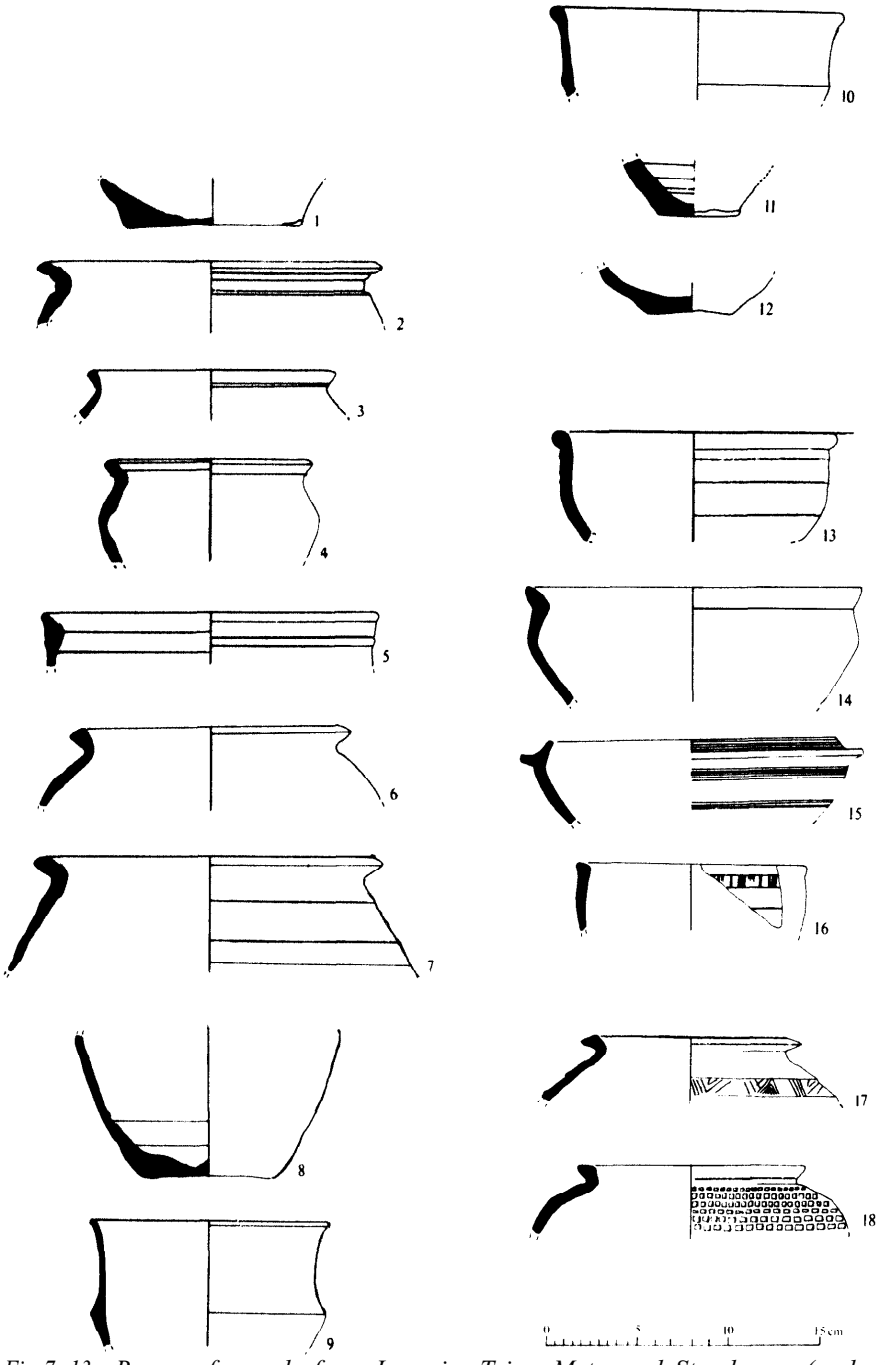
The alleged kiln at St Père-sous-Vézélay (Yonne) on the bank of the Yonne was a confusion by this writer (Hodges 1977a, 227). In fact, the published vessels (Martin 1961-62, fig 59) are from excavations of an earlier church of St Père, and they seem to have been used as a strange form of piping beneath a concrete floor. Mortar is still on the two pitchers, and both have neatly holed bases. A small cooking pot similar in form to those from Sevrey, and a large anomalous vessel, possibly a costrel, may also have served the same function.

The vessels are all in an oxidized red fabric that has prominent and prolific quartz-sand inclusions up to c 1.00rnm across as well as numerous platelets of mica *c* 0.5mm across. The pitchers and cooking pot have a distinctive fettling near their bases. The pitchers have distinctive collars and each has two handles; their beaks are neatly wire-cut in a fashion different from that, for example, found on the vessels from Saran or Tavers further up the Loire. The fragment of a costrel(?) has a broad strap handle, but without any central applied ribbing.

7.12 Central northern France

Apart from the Merovingian cemeteries of the Ardennes, which have been studied by Perin and his colleagues, there have been few excavations of early medieval sites east of Lille and to the west of Alsace. Indeed, these comprise only the excavation of a deserted 11th century village at Dieue-sur-Meuse, near Verdun (Guillaume 1972), and the excavation of an early 10th century site at Blénod, south of Metz (Poirot 1961), as well as the incidental excavations by German teams investigating Roman structures in Metz itself, earlier this century.

The 11th century wares from Dieue-sur-Meuse are worth considering in this survey because they may well be indicative of the earlier, Carolingian, wares of this region. Excavations revealed a series of 1lth century *Grubenhäuser* overlying a 6th to early 7th century cemetery. Guillaume has reported the findings of these excavations in his thesis, the second part of which is devoted to the settlement site (1972). There are two types of pottery: the common cooking-pot type which varies in colour from 'brown-red to brick-red' (Guillaume 1972, 223), and the extremely hard, grey type (Munsell 7.5 YR N5), which is prolifically tempered with fine-grained limestone (T-SP 179) and occurs mostly in the form of trefoil-mouth jugs. The first type is the classic *Kugeltöpfe* ware which was probably common in this region throughout the early medieval period. There are



1–4	Lorquin, group a (Metz: Musée)
5	Lorquin, group b
6–8	Lorquin, group c
9–10	Lorquin, group d
11	Lorquin, group e
12	Lorquin, group f
13–15	Trier (Trier Landesmuseum)
16	Metz (Metz: Musée municipal)
17	Strasbourg, class 23 (Strasbourg: Musée Notre Dame de l'Oeuvre)
18	Strasbourg, class 23

Fig 7, 13 Range of vessels from Lorquin, Trier, Metz, and Strasbourg (scale 1:4)

several examples from various excavations in Metz (Reusch 1943, Taf 19, no 2) (Pig 7, 8, 10), and Lobbedey has drawn attention to a range of examples from Alsace, the Palatinate, and southern Germany (1968, Taf 27, 1-8). These vessels were probably made on a primitive turntable and are clearly related to the pottery of the Migration period, where examples occur in cemeteries associated with large numbers of Merovingian wheel-made wares (eg Rill, near Xanten: Steegar 1948, Abb 10, 4-5. It seems likely that this tradition of potting was maintained by 'part-time' or even 'full-time' craftsmen rather than by 'domestic potting'. It appears to have been a conservative tradition, for only the rim profile differentiates these 11th century vessels from the Migration period examples.

The potters producing the finer ware seem largely to have made jugs, though one beak spout in this fabric was also found. The vessels had plain handles with a deep thumb-impressed mark at the junction of the handle and the body. This mark seems to be a characteristic of this region for an unprovenanced 11th-12th century grey ware spouted pitcher in Nancy museum (Musée Lorrain: 63072) has a similar thumb impression. A few sherds in this ware had roulette stamp decoration. One similar, unprovenanced vessel in the Musée Princerie, Verdun, has a sagging base like the commoner *Kugeltöpfe.*

Resides the *Kugeltöpfe* type in Metz, there are examples of the micaceous Trier ware which, it is believed, is the Hamwih class 12. The first example is a complete flat-based, spouted pitcher with roller-stamp

decoration (Fig 7,7,1). This vessel has the common buff, coarse micaceous fabric. It was discovered at Gorze, a suburb of Metz, in excavations of the Roman spa. The second example is a smaller sherd, probably of a bowl with a single line of roller-stamping just below the rim (Fig 7,13,16). It has an identical fabric to the complete vessel, and was found in 1967 in a trench at the School of Applied Arts. The form of the first vessel suggests that it is 8th century in date, although it is possible that it could be a late 7th century product since the dating of the Trier forms is slightly contentious.

7.13 Trier

Ludwig Hussong in three important studies has published some of the early medieval pottery from Trier (1936; 1944; Hussong and Cüppers 1972). A smaller group has also been published, recently, by Gose (1972, 243-6). Hussong concentrated on the material from the Altbachtal kiln, although he never published the kiln itself, which was found in the St Irminen hospital. This single-flue kiln must date to the 7th century, and so there are problems in relating the Hamwih class 12 to its products.

There seem to be two important Trier fabrics. The first is similar to the Hamwih class 12; it is a coarse micaceous fabric which, unlike class 12, seems often to have been oxidized (Fig 7,13,13-15). Thin sections (T-SP 222-275; 242) of five sherds obtained by Mr J G Hurst showed this ware to have an optically anisotropic clean clay matrix with a scatter of quartz-sand *c*0.01-0.03mm across and a few inclusions *c*0.1-0.4mm across. There are also clay pellets, iron-ore inclusions, plagioclase felspars, siltstones, and muscovite. The finer grade of iron ore, *c* 0.01-0.3mm across, and occasional grains of subangular iron-stained quartz-sand would seem to be a distinctive characteristic of these samples. The second is the oxidized fabric from the Altbachtal kiln itself: it has prolific inclusions of rounded quartz about 1mm across and a coarse sandy texture. As Hussong has shown, the forms of these vessels evolved from the earlier Merovingian forms and from the Roman forms before that. The development, therefore, in many respects is very similar to the development of pottery production over the same period in France, but differs from the development of the Badorf-type wares.

Hussong has classified typologically a great variety of forms found in Trier (Hussong and Cüppers 1972, 95-118). Unfortunately, there has been no correlation of these forms with the two important fabrics. There is also the suggestion that Hussong may have considered that these Merovingian forms continued into the 8th and 9th centuries. He illustrates the flagon or jug, for example, as an 8th and 9th century type developing only slightly from the Merovingian jug common in the Trier region and in northern France (eg Fig 7,11,7) (Hussong 1936, Beilage 2). There are no jugs in the Hamwih class 12 assemblage nor, indeed, in any other Hamwih fabric. There is, consequently, strong evidence to suggest that during the early 8th century the jug form was abandoned in favour of the beak-spouted pitcher. A second problem with Hussong's work is that he did not really consider the red-painted wares from Trier (Hussong 1936, 87). Yet, clearly, the red-painted sherds from Oberbillig *(Trierer Zeitschrift,* **14** (1939), 273-7, Abb 54), a late 10th century village settlement near Trier, are in a fabric very similar, if not identical, to the first fabric defined above, as well as the Hamwih class 12 red-painted wares. However, no earlier red-painted sherds have been found from Trier itself.

All the evidence suggests that the material Hussong studied was no later in date than the early 8th century. Hussong believed jugs to continue, and did not discover any red-painted wares in the assemblage, two points which are at variance with the Hamwih evidence. Hussong's contributions to the study of early medieval pottery in northern Europe have been valued and enormously respected for thirty years or more. There is, however, a strong case for reviewing the chronology of the Trier ceramics and, of course, for publishing the Altbachtal kiln.

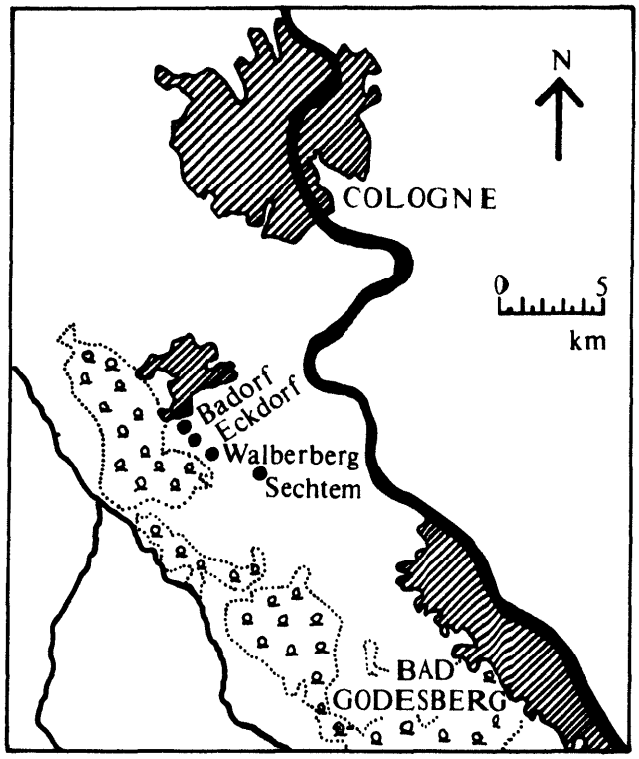


Fig 7,14 The location of the early medieval pottery industry in the Vorgebirge (after W Janssen)

7.14 The middle Rhineland

The middle Rhenish pottery has received mote attention than any other medieval ceramics from northern Europe. In the 8th and 9th centuries there are two groups of pottery which it is relevant to discuss here: Badorf-Pingsdorf wares and Mayen wares (besides Tating ware already discussed above, 7.3). However, as the literature on these two groups is so enormous and as the most useful research on them is still in progress, this survey can do little more than indicate their context and some problems.

Badorf-Pingsdorf wares

These wares of 8th and 9th century date have usually been termed Badorf ware, although paradoxically until recently the largest collection came from Pingsdorf. It only proves that the production of early medieval pottery in this region was centred on a group of villages located a few kilometres to the south-west of Cologne (Fig 7,14). The industry was clearly Roman or Merovingian in origin, but there are at present only obvious Merovingian antecedents of the amphora (eg Ypey 1965-66, Abb 7; Cordfunke 1969, 295). The Merovingian wares have yet

to be satisfactorily studied, though the industry was clearly at this stage already exporting wares to Holland and beyond (Hodges in Wade 1980).

Characterization of these wares was undertaken by Tischler (1944-50; 1952), who defined the earliest groups of Badorf ware, and by Frechen (1950, 219-20), who subjected them to petrological analysis. The chief characteristic is that during the later 8th century there was a change from flat-based to sagging-based vessels. The material from the Walberberg kiln (Böhner 1955) supported Tischler's basic analyses of the wares, although there are reduced grey wares from this kiln as well as considerable textural variation in the fabrics. The simple distinctions made by Tischler were also of considerable value in identifying the enormous collection of these wares at Haithabu (Hübener 1959, 110-38). However, the recent excavations at Dorestad (van Es 1969a; van Es and Verwers 1975) have brought to light a range of less familiar forms which have been assumed to be middle Rhenish wares. These wares are put in firmer perspective since the excavations of several kilns at Brühl-Eckdorf, another village in this area, by Janssen (1970a). These excavations have produced normal Badorf pitchers, associated with relief-band amphorae, large numbers of grey wares fired extremely hard, as well as small numbers of rilled oxidized bowls, oxidized cooking pots, and flat-based bowls in the same kiln.

The Walberberg kilns and Brühl-Eckdorf kilns were producing relief-band amphorae as well as the other more familiar Badorf-type wares. Amphorae do not seem to have been specialist products, whereas it appears that red-painted pots may have been the products of individualistic potters in this area. The uniformity of forms of red-painted Badorf ware, Hunneschans ware (particularly from the church of St Walburga, Meschede (Lobbedey 1970, 330-4). where about 50 vessels have been found), and the Zelzate costrel type (see above. p 63) bears this out to a certain extent.

The Badorf-type cream-coloured pitchers, cooking pots, and jars seem to have been replaced by the typically red-painted so-called Pingsdorf wares during the later 9th or early 10th centuries. This dating, however, remains vague, since the first well-dated Pingsdorf vessel was found with a coin-hoard of AD 960 (Lobbedey in Hurst 1969, 123). Production of relief-band amphorae continued until at least the early 11th century, for several vessels were used to improve the acoustics of churches built in that century (Binding 1971, 103-6). These later amphorae, it seems, may have been more globular than the earlier examples (cf Dunning in West 1963, 286). For a brief period the Limburg kilns also produced amphorae in the 12th century. This continuity seems slightly surprising since the amphorae must have been awkward to handle, as well as fragile.

Mayen wares

Brink (1910) long ago drew attention to the Roman and early medieval pottery kilns at Mayen located on the west side of the Rhine near Coblenz. The late Roman wares were widely distributed (Fulford and Bird 1975), while the Merovingian wares were used in the cemeteries (Steegar 1948, Abb 8) as well as on settlement sites (Ament 1974, 462-7; Ament 1976). Uenze (1938) in a brief but important paper has reviewed the chronology of Mayen ware in the Merovingian and Carolingian periods, and for the moment this remains the standard study. Most of the published vessels are cooking-pots in the characteristically hard-fired fabric, the best-known being the coin-dated Leer vessel of c AD 781-800, from a cemetery excavated in Westfalen in 1938 (Hussong 1944, Abb 5; Lobbedev 1968, 69). The fabric is often very distinctive in thin section since it includes volcanic minerals, notably sanidine felspar and trachitic lava. However. the volcanic assemblage is not always present as Frechen pointed out in connection with some analyses he made of 6th-7th century cemetery vessels (1948, 297) and he drew attention to a sandier, less distinctive variant of Mayen ware. Fulford and Bird (1975, 174) have also noted the difference in the hand specimen and in thin section between the Late Roman and medieval Mayen wares. Trachitic lava grains and fine- to medium-grained sandstone, for example, are two minerals in the volcanic assemblage rarer in the later medieval sherds which Fulford and Bird analysed.

A large number of the cooking pots have been found at Dorestad and Medemblik. as well as further afield: an 8th century carinated vessel from Kaupang was proved by thin section to be Mayen ware (Hougen 1969, 101), others are reputedly known from Haithabu and Birka (Lobbedey 1968, 71). and 10th-12th century examples have been found, at Trier, Tiel, Yarmouth. and, to the south, in the Palatinate.

7.15 The Upper Rhineland including Alsace

South of Frankfurt the middle Rhenish wares diminish in number, and a different ceramic tradition is apparent. Hübener and Lobbedey (I 964) together first defined the late Merovingian vessels of this tradition. Later, Hübener (1969) published a substantial study of the Merovingian wares, whilst Lobbedey (1968) produced his important study of the post-Merovingian pottery of this region. Since the publication of these studies, there have been interim reports on the excavations of' the Carolingian kiln at Oberwal (Steinle and Tauber 1974) near Basle, and the late Mcrovingian to late medieval potters' village of Wülfingen-am-Kocher, near Stuttgart (Fehring 1969). There has also been Kaschau's study of the pottery to the east of the Rhine (1976, esp 42-3).

In this area there is an important ceramic tradition which includes the Strasbourg roller-stamped wares (the Hamwih class 23). discussed below. Generally, the vessels are flat-based, globular, and often well decorated with roller-stamping. There is, for example, a small two-handled Grey ware amphora in this tradition from Heidelburg (Heidelberg Museum: unpublished; cf Hübener 1968, Taf 89, 1), and a large flat-based globular Grey ware vessel with a characteristically sharpened Alsatian rim in Speyer Museum (unpublished). This Speyer vessel has roller-stamping within horizontal lines like the Strasbourg wares. One of the best groups, published in interim form, is from the Carolingian villa at Zullestein (Jorns 1973). Finally, from recent excavations at Niedermunster, to the north of Strasbourg, a glazed vessel in this tradition has been found in an 8th or early 9th century context (Fèvre 1975). Unfortunately, there are no descriptive details accompanying this recent publication, so it is impossible to distinguish whether it might be a Strasbourg/class 23 type.

The collection of 8th century wares from the village settlement at Liebersheim, recently excavated by J and R Schweitzer (1975-6), provides some interesting points of comparison with the 7th century wares from neighbouring cemeteries. The cemetery wares are more proficiently made than the 8th century settlement vessels, though they have macroscopically identical fabrics. The 7th century vessels were made on a turntable of some sort, with added bases which appear to have been wheel-thrown. These bases are much thicker than the hand-made 8th century ones found at Liebersheim. Decoration is only occasionally present on the 8th century vessels,

which contrasts with the well-decorated cemetery vessels. The hand-made wares, with the typical fingering to adhere rim and base to body, are thought by Schweitzer (1975-6) to be a characteristic of potting in southern Alsace and parts of northern Switzerland until the 11th century.

Schweitzer has reported these excavations in considerable detail. Their significance is now even greater since excavation of another Carolingian village a few kilometres to the north at Ensisheim has uncovered a *Grubenhaus* with a potter's kiln inside it. It is one of more than twenty huts excavated to date.*

Northern Alsace

There are three groups of pottery from this region which can be considered here. The first group, of which the Hamwih class 23 is an example, has been recognized at Strasbourg and in the kiln debris from Bouxwiller (Rexer 1963, 1-6). The second group consists of the very few red-painted wares already referred to briefly. These have also been found in the Bouxwiller kiln debris. The third group is a large assemblage of wares, hitherto remained unstudied, from Lorquin (Moselle), near Sarrebourg. This group was placed in the municipal museum at Metz (lot 806) during the last century, but all contextual documentation has been lost.

There are many examples of the first group from excavations in Strasbourg during the 19th and early part of the present century first studied by Flicker (1907). These vessels have sharp rims and are globular, flat-based, and decorated with a variety of roller-stamping often ret with horizontal rilling (Fig 7,13,17,18). There are spouted pitchers as well as cooking pots (Lobbedey 1968, Taf 12, 5; Taf 13, 2 5). There is also one amphora which probably belongs to this group (Lobbedey 1968, Taf 13, 1). The colour of this ware varies considerably from dark red to buff, but they all have characteristic large sand-grain inclusions, a granular appearance, and coarse texture. The fabric is very hard. The production of this ware continued until the 12th century, forms and decorative styles changing to conform with regional developments. Lobbedey has paid considerable attention to these developments (1968, Taf 17, 2, 3, 5).

Rexer (1963) found the probable remains of a potter's kiln at Bouxwiller which included examples of the first group, just described, as well as a red-painted vessel which has been published by Lobbedey (1968, Taf 14.5). Similar red-painted sherds have been found in Strasbourg at Kalsgasse (Lobbedey 1968, Taf 12, 5) (Fig 7,2,1 3). These are without doubt parallels for the Hamwih class 35. They are very fine, hard white wares which have been carefully painted with thick red paint and then burnished. All the examples from Kalbsgasse are in small bowl forms like the Bouxwiller vessel. There is an identical vessel from recent excavations at Dorestad. There is a slightly different example of this ware from Sarrebourg (Fig 7,2,7), which has splash red-painted decoration and has not been burnished. Two more vessels have been found at the village of Ensisheim, near Mulhouse, in 9th century contexts (see above).

In the group of pottery from Lorquin at least six distinct fabrics are represented, as well as a miscellany of other fabrics which are less distinctive.

a 7 rims, 3 bases, 3 rilled sherds. This fabric is similar to the Hamwih class 11, the 11th century ware in the Tours (Indre-et-Loire) region, and the local ware at Isle-Aumont (Aube). All the vessels are burnt black on the outside. The inside surfaces and cores are buff with rounded quartz inclusions up to lmm across and some iron inclusions, also up to 1mm across. Nearly all the sherds have a few mica inclusions, and some have occasional mica platelets. The texture is usually coarse to sandy. The rims are regularly sharp and the body often rilled. One vessel (Fig 7,13,4) is carinated. The bases are flat and wire-cut (Fig 7,13,1-see also Fig 7,13,2,3).

There are possible parallels for this fabric from cabane no 2, Liebersheim, the 8th century village in the southern Alsace, discussed above. One of the Liebersheim sherds is roller-stamp decorated.

b Micaceous Black wares. The fabric is similar to the Hamwih class 12, which, it is believed, originated from Trier. However, no Trier black wares are known and this may be a type in the Black ware tradition. Since there are Black wares (class 14) in this collection *(d),* and differentiating this ware from *d* is difficult, no sherd counts are given. Two forms were distinctive: a bowl form rather similar to Trier forms (eg Fig 7,13,14) and a bowl or jar with a thickened rim (Fig 7,13,5).

c 3 rims, 15 base sherds, 10 bodysherds (Fig 7,13,6-8). A cream ware with large sand-grain inclusions up to *c* 0.05mm across. The outside surfaces are smooth, and the ware is very hard. The sharpened rim, which is characteristic of early medieval Alsatian wares, and the flat bases suggest that this is an Alsatian ware. The fabric, however, is very similar to Badorf ware, and the flat base might imply that this was a vessel in Tischler's group 1 (1952, Abb 2), like the Hamwih examples of Badorf ware. As there are no parallels for this ware from Strasbourg, it seems more probable that this is Badorf ware. Again, it emphasizes that the typological problems with Badorf ware are as yet unresolved.

d Black wares in the class 14 tradition. The carinated forms of two vessels (Fig 7,13,9,10) suggest, at latest, a 7th century date. Both have fine burnished black surfaces and red cores. There is also a flat base in this fabric with a slightly protruding foot which is micaceous; it has no wire-marks and a small patch of burnishing implies that it was once burnished all over. Its core is grey, and it has a very fine sandy texture.

It is not always possible to distinguish this fabric from *b,* but it does include two unburnished rims, three bases with fine red cores, as well as two abraded sherds. one of which has a roulette decoration.

e 4 rims, 12 flat bases (Fig 7,13,11), 1 bodysherd. A very hard grey ware with a beige-coloured core, and with large sand-grain inclusions. The rims are of the typically sharpened type. The bases vary from those of a small jar or cooking pot to larger vessels, probably pitchers.

f 2 bases, of which the illustrated example (Fig 7,13,12) is the smaller. Both bases have been trimmed; they are in a hard ware with grey-to-brown surfaces and a red core. The fabric has large sand-grain inclusions, Although these are wheel-made vessels, they are not well finished. There are certainly some similarities with the finer jug-type from the 11th century site of Dieue-sur-Meuse (see above, p 81).

g Finally, a group of miscellaneous hand-made and

* This is illustrated in a catalogue for the exhibition *L'habitat rural au Haut Moyen Age,* Musée Historique, Mulhouse, 1978, 37; the curator, M Schwentzer, has been most kind in keeping the author informed of these two important excavations.

wheel-thrown wares. These wares are all brown; one rim has limestone or chalk inclusions and has incised decoration. This group includes a lamp with a neatly trimmed base, a flanged rim, and three bases, one of which has a protruding flange. There is probably a range of locally made wares, some of which were probably globular like the *Kugeltöpfe* type discussed above. There are also a few abraded Roman sherds in this assemblage.

The collection is interesting because several otherwise unknown wares are represented. It is difficult to date accurately since the group *d* Black wares are probably of the 7th century, while the other groups are typologically 8th century in date. This dating is reinforced by the absence of Bouxwiller-type red-painted sherds, which, it is argued above, were first made towards the end of the 8th century or even early in the 9th. Clearly, more research is required to establish the exact source of this remarkable collection.

7.16 The Saintonge, northern Spain, the Rhône valley, Burgundy: notes on peripheral areas

In the course of the survey, designed primarily to establish the sources of the pottery imported to Hamwih from the Continent, groups of pottery to the south of those already discussed were considered, though not to the same extent. In view of the possible sub-Roman trade in E ware to western Britain, several museums in the Saintonge were visited in order to collect data on 8th and 9th century ceramics. Despite the important sub-Roman and later medieval industries of this region, no pottery of the intervening period survives. Chapelot has wondered if there was a shift in the location of the kilns during this period, for E wares which probably derived from this region were not discovered in his extensive survey of the 12th-20th century ceramic centres (Chapelot 1972, 75; Peacock and Thomas 1967; Hodges 1977b). A medieval type with large sand-grain tempering which Peacock used as comparanda in his heavy mineral analyses of E ware seems to have been made as early as perhaps the 10th century in view of the discovery of a complete example from Pépiron (Gabet 1969, fig 10, no 3). It may well be a red-painted variant of this ware which Maurin found in the course of his excavations of the Merovingian cemetery of Neuvicq-Montguyon (Charente-Maritime), near Saintes (Maurin 1971, 163, pl 8). The Arab invasions of western France in the early 8th century (Boissonade 1917, 198-9), the civil war there, and the disruption caused by the Vikings may have caused the abandonment of potting during the 8th and 9th centuries. However, if this was so, it is rather unusual for Gaul, where the ceramic industries seem to have persisted despite the turmoils of the Migration, Viking, and civil war periods. Further research on this Pépiron type, petrologically similar to E ware, is necessary for it may link the sub-Roman and later medieval industries.

More is known about pottery of this period from the northern coast of Spain, the territory which the Arabs left to the Christians. Zozaya has reviewed the red-painted pottery (in Hurst 1969, 133-6), while small collections published from sites in Palencia indicate some of the forms produced at this time. Besides cooking pots and pitchers, there is a possible amphora from El Castellar (Garcia Guinea *et al* 1963, pl X) in an oxidized fabric. However, it is striking that there are no typical Arab ceramic forms from these sites-no lamps, for example, so common at this date in the Arabic centres such as Toledo. Zozaya has described these sites as poor and in keeping with the historical perspective of the Christians in a sense exiled to the wet, northern heights of Spain (in Hurst 1969, 136). He has suggested that, consistent with their restricted economy, the inhabitants of these small fortified *campi* produced their own pottery. This does not seem so acceptable in view of the relatively fine wheel-thrown wares made in all probability by processes not far removed from those employed in the Roman period (cf 7.17 below). As a region it may be considered an adjunct to Gaul, and because of its border with Arabic territory it is especially interesting.

The impact of the Arabic culture on early medieval ceramics in southern France is as yet imperfectly documented. In the Rhône valley, Gagnière has demonstrated the evolution of the pitcher from the Migration period until the 13th century, during which time the tubular beak spout was abandoned in favour of the parrot beak (1965,96-7). (It is interesting to note that in this region the Black ware tradition extends until the 12th or 13th century, and vessels of this kind, with the distinctive parrot beaks, are frequently found in graves.) It may well be that the Saintonge parrot beak went through similar phases of evolution. Another important study is that by seven collaborators on the pottery from Saint-Just, Chararines (Isère), a site to the east of Lyons (Reynaud *et al* 1975). It is the marks on the sagging bases of these 11th century vessels which are the subject of this study. It may be that these same grey wares have antecedents which are similar to, if not the same as, the Hamwih class 15 group, Grey wares, that should derive from a source in a region of metamorphic rocks such as this.

7.17 Some conclusions

There were great changes in the production of ceramics in western Europe once the pagan burial customs were abandoned. There was no longer the stimulus to produce highly decorated vessels, for example, and in the 8th and 9th centuries roller-stamp decoration becomes rarer. The carination of the vessels, which evolved from the late Roman forms, had disappeared by the 8th century in the centralized middle Rhineland potting centres, though the adoption of the globular form instead of carination only evolved slowly in Gaul during the 8th century. (It should be noted, however, that not only many of the rim forms, but the tradition of blackening some wares (cf terra nigra) have parallels, perhaps origins, in the early Roman period.) It took longer for the sagging base style to diffuse westwards. This style was first adopted during the later 8th century in the middle Rhineland, but was not adopted in many French regions until the later 10th century, and may not have reached western Normandy until the 12th century.

Two Roman forms common in Merovingian cemeteries were scarcely ever made after the 7th century. These were the jug and bottle (cf Evison 1974, for the latter), although the jug reappeared in an entirely different form in some regions during the 11th century. The flanged bowl, another Roman form, persisted until the late 9th century, when it was abandoned (Chapelot 1970a, 68). The beaked pitcher is the classic form of the 8th and 9th centuries outside the Rhineland, although it was a form sometimes made in the Merovingian period, which persisted in some regions until the 12th century. In the Rhineland the tubular-spouted pitcher was the classic post-Merovingian form which was made there until the later medieval period. The Hamwih evidence shows another form which may have had Roman ancestry, the ceramic mortar (Fig 3,9). This contrasts with the Dorestad collection, where stone mortars from the

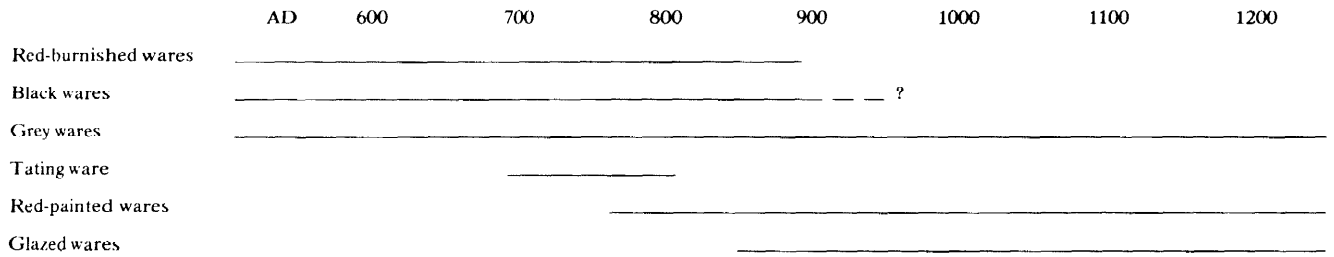


Fig 7,15 Some early medieval traditions of potting

Moselle region have now been found in some numbers, pre-dating those already discussed for the later medieval period by Dunning (1965-6). For the moment it must suggest that the pottery mortars were more (culturally) acceptable in north-east Gaul, while stone mortars held an appeal for Frisians amongst others (there are also examples from Jarrow). It is obviously an interesting and intriguing insight into the regional cultures and economies of western Europe at this time.

Unfortunately, to understand these changes more clearly more settlements must be found and excavated. A comparison of Merovingian funerary vessels and Carolingian domestic vessels may not be entirely apposite. Certainly the domestic vessels from the 8th century settlement at Liebersheim, in southern Alsace, differ markedly from the 7th century funerary wares, which are more proficiently made, in neighbouring cemeteries (Schweitzer 1975-6).

The kilns that have been excavated demonstrate, in certain cases, the continuity of Roman firing techniques: internal walls were used in the kilns at Huy (Willems 1973) and Saran (Chapelot 1970a), while a central pedestal was used in the Brühl-Eckdorf kilns (Janssen 1970a), and perhaps at I,a Saulsotte (pers comm, J Chapelot) (Fig 7,9). The particularly well-built kilns D and B at Saran (Chapelot 1970a, fig 18) are considered by Chapelot to be evidence to support his conclusion that Roman processes were employed in the preparation and making of pots (1972, 432). It was with the re-adoption of the red-painting and glazing techniques, as well as the general western European adoption of the globular, sagging forms, that the Roman influence ends. In the middle Rhineland it was a transformation which took place in the immediate post-Merovingian phase, while in Gaul this was a transformation of the 9th to 11th centuries.

The traditions (Fig 7.15)

North of the Alps and the Massif Central, the traditions of red-burnishing and blackening pots, which probably originated in the Roman or pre-Roman periods, continued until the 10th century, while the traditions of glazing and red-painting pottery were abandoned by the Migration period potters of western Europe and not readopted until the 9th century. It was perhaps these last two traditions which replaced the first two, when the Roman forms were finally forgotten. The tradition of reduced Grey ware, perhaps because it was one of the easiest types of pottery to make, continued in certain areas unabated from the early Roman to the post-medieval periods. However, the Tating ware tradition-the most specialized of traditions-lasted for perhaps no more than two generations of potters in a few centres. The extensive distribution of Tating ware implied its popularity, and makes the brief period of its production appear rather curious, the more so when compared to the relatively long periods of other early medieval ceramic traditions.

A change in the organization of ceramic production may have been partly responsible for the major regional difference between the middle Rhineland and the other areas considered in this survey, There were many Merovingian kiln centres across France and Germany (Koch 1973, esp Abb 19) producing similar wares. A number of these centres west of the Rhine continued throughout the medieval period. In the Rhineland, however, there was a centralizing of ceramic production in the Badorf-Pingsdorf area and the abandonment of the smaller kiln centres, which coincides with the inception of new styles there, breaking away from those of the Merovingian period.

Kiln centres

Most of the 8th and 9th century kiln centres were located in regions where there had been Roman potting or where post-Carolingian potting was carried on (Fig 7,l). Obviously, like the Roman and later medieval potters, those of the Carolingian period required the basic materials: clays and tempering materials as well as wood and water. The centres also needed to be near markets, as well as to have access to a communications network. These are the characteristics of the potting centres which expanded during the medieval period. Small centres like Martizay (Chapelot 1969) and Meudon (Morbihan) failed perhaps because of the absence of an adequate market in the case of Martizay and the inconvenient position of Meudon in relation to communications. On the Continent most of the major medieval potteries were located in the countryside relatively near large settlements. The Badorf-Pingsdorf kilns in the Vorgebirge near Cologne and Bonn (Fig 7,14), and not very far from Aachen, are a classic example of this. So, too, is the Beauvaisis industry located in hilly country at most 10km from Beauvais. It is a pattern that continued throughout the medieval period, the Siegburg potteries continuing the Badorf-Pingsdorf pattern, and the Saintonge potteries being a classic late medieval and post-medieval example in France (Chapelot 1972). Small kilns were constructed and functioned briefly in some towns: notably, Galinié has discovered a 14th-15th century example in Tours (Galinié & Schwarz 1974), while examples are known from Bruges also of this date (pers comm, F Verhaeghe). This pattern may be compared with England, where many of the Saxo-Norman wares were made within the emerging towns such as Stamford, Norwich, Ipswich, Gloucester, and Exeter. And it was only during and after the 12th century that the potters moved out into nearby villages to practise their craft. Several of the Saxo-Norman kilns located in rural districts seem to have operated for only a short time: eg Michelmersh (Addyman *et al* 1972), Langhale (Wade 1976).

Fig 8,1 The major early medieval settlements of north- western Europe

Potters

Little is known about the potters. As they lived in their own settlements they may have been regarded as set apart from the rest of the medieval community. Yet the active trading of their wares and their separate settlements suggests that in the Carolingian proto-market society they were patronized craft-specialists of perhaps the lowest stratum (cf Ennen 1956, 400). The question of their patrons is discussed further in the final chapter. What may be presumed to be their houses— *Gruben*-h&user-at Saran (Chapelot 1970a, fig 17; 57), at Wülfingen-am-Kocher (Fehring 1969), and Liebersheim throw no light on their social status. In all probability these houses were temporary structures, and it should be assumed that the potters lived in more substantial timber, or possibly even stone, structures. The rubbish debris from pits at Huy (Willems 1973) implies that some of the potters were not as impoverished as they have often been presumed to be, for a range of combs as well as a few pieces of decorated metalwork were found.

Trade

The trading of Carolingian pottery is discussed in the final chapter and in other papers (Hodges 1981). A few points, however, can be usefully made to preface those. First, it needs to be emphasized that the production of ceramics in the 8th and 9th centuries was on a considerable scale, and the Hamwih evidence suggests an important trade of these wares to merchants visiting the settlement as well as, perhaps, a less significant trading in these wares by merchants distributing wine in England. Secondly, the evidence for a market economy in Carolingia is still very much based on the documentary sources. Archaeology has only produced negative evidence to infer the absence of town-based markets at this time. The ceramics, however, must suggest the existence of some markets, presumably based on the few major loci in a region (see above, p 87). The regional patterns of kiln products, as far as can be ascertained from such limited data, are little different from the later medieval patterns, Moreover, there is also an apparent hierarchy of centres, with perhaps Beauvaisis specialist wares and Saran *modillons* 'transgressing' the standard regional catchment areas of c 20-30km radius around the kiln centre by being found much farther afield. The evidence for this is still slight, and might seem speculative. There is no doubt that it requires testing.

8 Pottery, trade, and economics in the 8th and 9th centuries

The Hamwih pottery is a remarkable collection. Its richness should shed some light on this obscure period of north-west European economies. Moreover, it demonstrates the wealth of archaeological evidence which is yet to be realized for this historic period. Some of the general conclusions implicit in the previous chapters merit further summary and discussion.

The local classes

Three substantial classes of local pottery exist, involving two different pottery types: the sand-tempered wares (class 3), and the chalk-, and chalk-and-flint-tempered wares (classes 2 and 4 respectively). Two minor classes are also known, but these seem to relate to the very earliest phase (class 1, grass-tempered ware), and the very latest phase (class 5, shell-tempered ware). As a result of a large number of major excavations in this part of England it is possible to sketch the regional character of these major classes.

The class 2 and 4 wares seem to predominate in the latter half of the 8th century at Hamwih (see Chapter 5.2), and are clearly the antecedents of the 'gritty' wares which are so important in southern Hampshire and western Sussex in the Saxo-Norman period (see Chapter 6.1). The tradition must originate in the Early Saxon period in this region. Vessels of these classes are certainly present in small numbers in the earliest Hamwih phase and dominate the Middle Saxon phase at Portchester Castle. Indeed, in most parts of this region, with the possible exception of Hamwih, the tradition appears to succeed that of grass-tempered pottery. Recent excavations at Burpham (Sutermeister 1976) suggest that by the early 10th century it was a tradition being adopted to the east of Chichester. It remains to trace its northern and western confines.

Its scale of production suggests that this tradition was the work of various specialists who either lived near the chalk downland or initiated their operations from the downland and were, perhaps for part of the year, itinerant. This might, for example, explain the recently discovered clamp kiln in Chichester (Down 1978, 158).

The limited forms show considerable overlap with Early Saxon forms like those from the cemeteries of, for example, Bowcombe Down, Iford, and Knockdean. Yet these forms are wholly consistent with many other groups of Middle Saxon pottery from southern, central, and northern England. The virtual absence of pitchers and the rarity of bowls throughout this region illustrates the conservative nature of this potting tradition.

The general adoption of the class 2 and 4 wares from the later 8th century onwards seems slightly curious. For, by contrast with these gritty and often badly finished vessels, the class 3 sandy wares that dominate the earlier phases of Hamwih are well finished and occasionally decorated most proficiently. The production of this ware has affinities with the finest funerary vessels from Early Saxon England, and, therefore, its origins, its apparent localization and then its sudden demise are problematical. (It remains to be seen whether this class was a refined product made by those potters who had produced the particularly sandy variant of grass-tempered pottery (class 1) which is found at Hamwih in small quantities.)

The petrological evidence suggests that clays from the environs of Hamwih were being used by the class 3 potters, while the possible waster-pit from SARC XV, F1, suggests that the ware was being fired within the settlement. As only one example of this ware has been found outside Hamwih, at Wareham (Dorset) (Hinton and Hodges 1977), it suggests that the potters were based in Hamwih. This pattern obviously contrasts markedly with the contemporary classes 2/4cotting tradition in the region. It also contrasts, of course, with the distribution of lpswich ware, which was made within a similar extensive trading settlement of this period (see Chapter 6.9). indeed, class 3 seems even more anomalous when the extensive regional and interregional character of artefacts traded either to or from such extensive mercantile settlements in north-western Europe at this time are considered (cf Hodges 1981).

The class 3 pottery may represent no more than one or two generations of potters -who upheld certain of the finer arts practised by their pagan forebears. It remains on the one hand to explain the almost total confinement of this class to Hamwih, and on the other to suggest why, unlike the Ipswich potters, these potters failed to imitate the wide range of Carolingian wares that would have been familiar to them.

'Exported' pottery

Alleged Middle Saxon pottery has been found recently in two contexts in northern France. The rim sherd from an 8th or 9th century level at Fécamp (Seine-Maritime) is very probably a Hamwih class 2, 3, or 4 vessel because it has the thickened neck characteristic of these wares (see Chapter 2) (Renoux 1977, fig 83, F75 233). It is more difficult to be certain from Leman and Cousin's publication (1977) whether the group of Middle Saxon wares from Beutin near Montreuil-sur-Mer (Pas-de-Calais) is from Hampshire/west Sussex or from Kent. Leman and Cousin (1977,49; fig 5) suggest the former, partly in the hope of finding some archaeological expression of the contact that must have existed between Quentovic, which lay somewhere nearby, and Hamwih. The possibility, however, that these are local wares made in the Pas-de-Calais cannot be yet ruled out. The shell-tempered wares discussed in Chapter 7.7 are very crudely made, and typologically similar to the Middle Saxon vessels in this fabric from southern England (notably those from London on the Whitehall site). There was also, of course, a small Anglo-Saxon settlement in this area, and that these migrants may have made these wares must be considered.

The imported classes

At the moment it appears that native and imported wares are generally found in association. Imported wares are fewer in number than native ones, though it is difficult (as stated in Chapter 4) to make any meaningful comparison. This is also the case at Ipswich, but not at Dorestad, where the excavators suggest that as little as 20% of the ceramic assemblage is locally made (van Es and Verwers 1975, 137). The remainder of the Dorestad assemblage is predominantly Rhenish in origin.

The implications of the Hamwih assemblage for the study of French Carolingian pottery are enormous. The range and variability of these wares permit some insight into Carolingian pottery production across northern France, and perhaps as far north as the river Scheldt. Moreover, fresh viewpoints on the controversial issues of red-painted pottery and Tating ware are now possible, though the debate itself is, of course, not fully resolved. The recognition of any major ceramic traditions must also be considered an important result of this study. In particular, the seemingly extensive production of Black wares and Grey wares in northern France has been tentatively characterized. In the case of the Black wares, this tradition can be dated quite closely. At this stage, however, the paucity of comparanda still poses many problems, and it is fair to point out that many of these classes from Hamwih have yet to be satisfactorily identified. The research will inevitably continue for some years, and much will depend on further excavations of Carolingian period sites in the Pas-de-Calais. (The importance of the first large excavation in this region, in progress at Douai, will be more than evident from this volume.)

Date

The date of these Continental wares is obviously of considerable interest. This was discussed briefly in Chapter 5, where a new chronology for Middle Saxon Southampton was proposed. This chronology depends principally on the excavated coins and, independently, on the seriation of the selected pit groups from various sites within Hamwih. Only with the accumulation and scientific analysis of more data will it be possible to test the broad conclusions of this study.

There will probably be some contention about the validity of the terminal dates considered in Chapter 5, but it is unlikely that any revision can satisfactorily be made to the initial dates of the settlement. An early 8th century date seems most likely. This has interesting implications for any student of 'Carolingian' pottery, as it appears that the earliest imported wares arc not very different, typologically, from the latest ones. Virtually all the imported wares have globular forms and wire-cut flat bases that are unquestionably a chronological and typological development from the biconical vessels, of the Merovingian period. The early incidence of globular forms at Hamwih and also at Dorestad (in the earliest Rhenish wares there) tends to suggest either that the chronologies for Merovingian pottery presented by Böhner (1958) and Hübener (1969) are unnecessarily long (ending in the 8th century) or that these studies have a regional value only. There is still much to be learnt about Merovingian pottery: in particular, the relationship of the industry to the demands of a pagan funerary rite has yet to be clarified.

The phasing of Hamwih presents new opportunities to understand its growth and, it may be hoped, its changing topographic character. The phases themselves es represent periods scarcely longer than an expected generation at that time. It will, however, be the implications, of an early 9th century desertion or semi-desertion that will be vigorously debated. It is argued elsewhere that this has considerable significance for our understanding of urban origins and state formation in England (Hodges 1981). To a lesser extent, this new chronology should cast some light on the pattern of European trade in the 9th century when the dating of Dorestad and the Scandinavian settlements are also considered (Hodges 1981).

Function

We must attempt to interpret the function of the imported wares and their implication for Hamwih

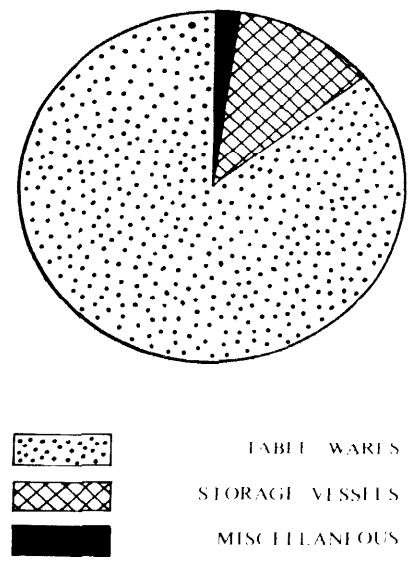


Fig 8,2 Pie-chart illustrating the relative functions of the imported Ham wih pottery

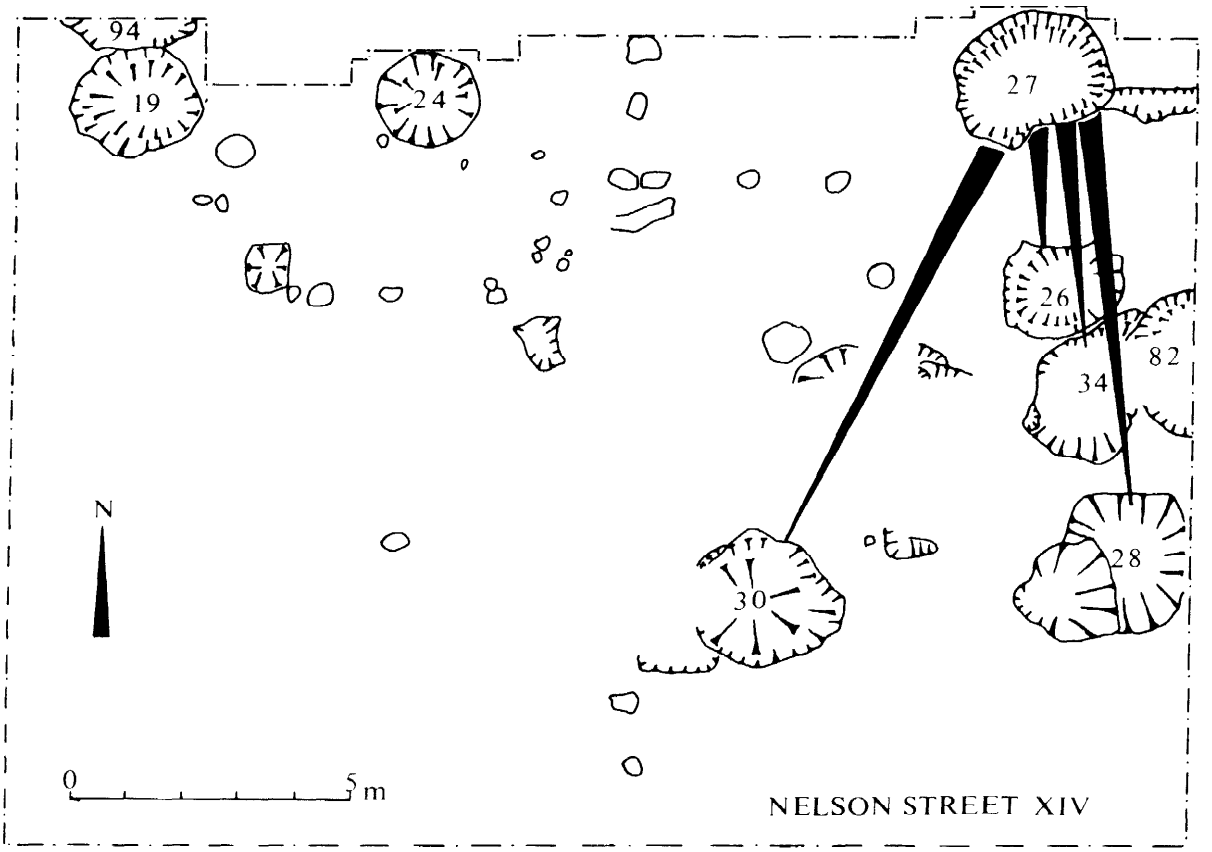


Fig 8,3 The distribution of a class 15 vessel (Fig 3,8,6) across SARC XIV from F25 (phase 1) to F30 (phase 1/2) to F26, F34 (phase 2?) to F28 (phase 3)

generally. Inevitably this remains controversial, yet archaeology has proven its worth by its belief in constructing models which may be tested. The variability within the imported ceramic assemblage, the preponderance of classes found only in Hamwih in England, the high percentage of tableware vessels (Fig 8,2), and the extensive distribution of imported wares across Hamwih are points to be critically considered.

The variability within the assemblage is readily apparent. The number of imported classes, as well as the variety of forms where hardly one is repeated in the entire assemblage, is the basis of this important interpretation. Some variability is to be expected in all domestic debris across a large site which was in existence for possibly a century or more. Indeed, the kind of variability that might be predicted is conveniently seen in the assemblage of native wares. It is a short step to suggest that this variability within the imported pottery assemblage has some connection with the range of sites in northern France and beyond, from which traders travelled to Hamwih.

Further to this, it is also readily apparent that with few exceptions only the class 14 wares are found on other sites around England. The majority of these imports are known only from Hamwih. It must suggest that, with the exception of class 14, these wares are connected with traders rather than with trade itself. (Elsewhere it has been argued that the class 14 wares were primarily accoutrements to the wine trade (Hodges 1977b). Their presence in Hamwih may represent debris from such a trade or, more probably, these, being the finest wares available at the time, were perhaps the better pottery in the possession of the traders themselves.) This conclusion is reinforced by the high percentage of 'tablewares', including cooking pots, and the relative scarcity of storage vessels. It should be noted, however, that with few exceptions, barrels and caskets were preferred to amphorae, in early medieval France, but this consideration should not invalidate the interpretation of the assemblage presented here.

This hypothesis was first proposed by Hougen (1969) for the small collection of imported pottery at Kaupang. It has possibly a similar validity for Ipswich, where a surprising range of Middle Rhenish fabrics has been found in recent excavations (Wade 1980). By contrast the enormous imported assemblage from Dorestad is primarily composed of pottery from the Middle Rhineland, mostly from the Badorf-Pingsdorf centres in the Vorgebirge, and from the Mayen region. There are a great number of 'tableware' vessels, but there are also many amphorae. Only the quantification of this assemblage will enable us to comment on what appears to be a rather important and special collection. There is no doubt, however, that considerable consistency in the fabrics and forms of the vessels from the Middle Rhineland centres are features of the Dorestad assemblage. It certainly suggests that Dorestad was served directly from centralized pottery industries in the Rhineland, whilst the pottery from Hamwih, for example, suggests the diffused origins of the traders coming there.

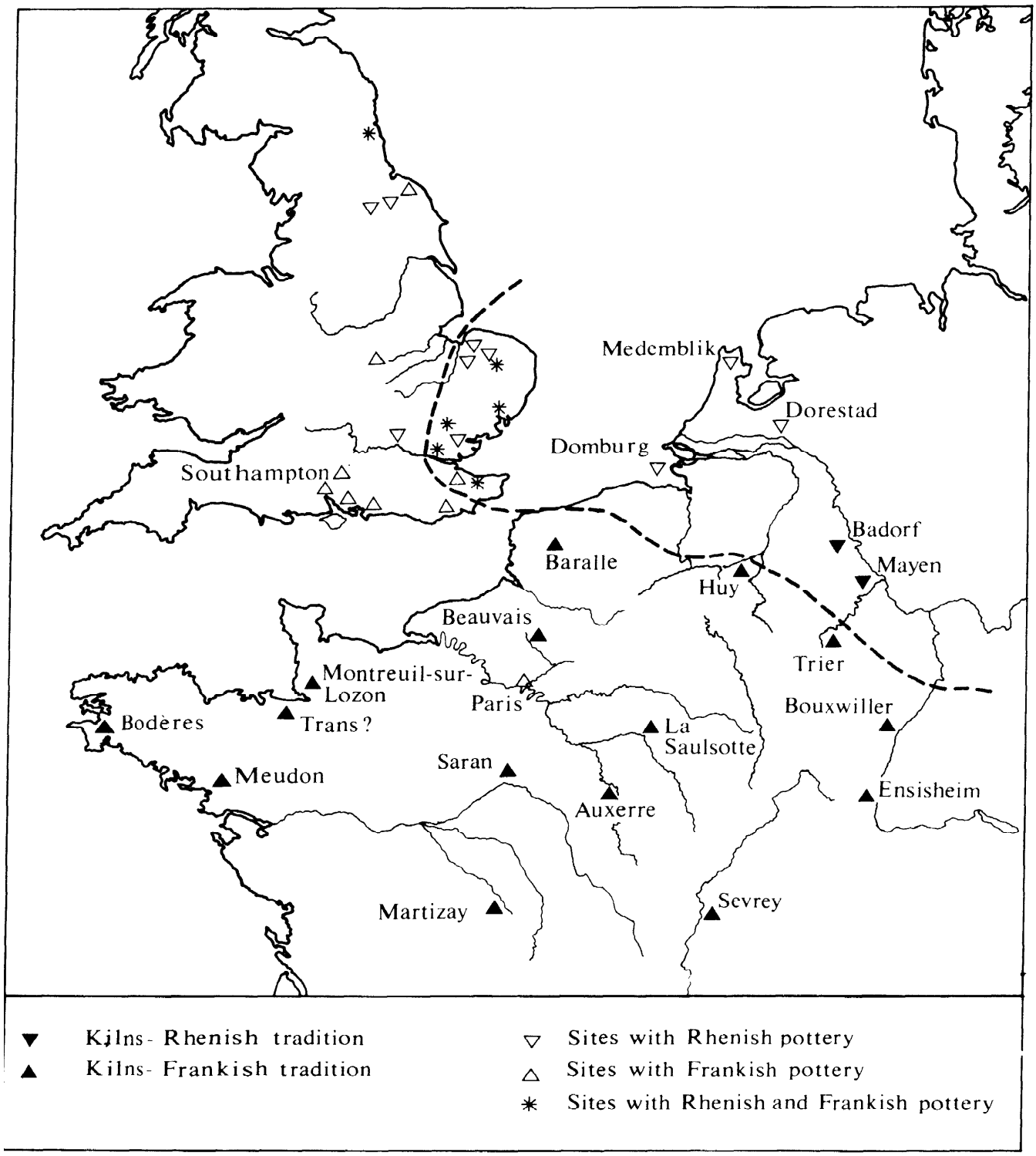


Fig 8,4 Map of Carolingian kilns and their distributed wares illustrating the trade competition between 'Franks and Frisians'

This significant difference in the composition of the imported pottery assemblages at Hamwih and Dorestad must relate in some way to the functions of the respective settlements (cf Hodges 1978a). The recent publication of the pottery from the trading site of Medemblik on the Frisian coast (Besteman 1974) underlines the unusual character of the Dorestad assemblage once again. At Medemblik, Besteman (1974, 91) reports only one amphora, while a variety of tableware from Rhenish sources is published. This is a pattern similar to that emerging at Ipswich.

Finally, the extensive distribution of imported pottery across the Middle Saxon settlement at Hamwih, and the occurrence of such wares in each phase, tend to support the argument that Hamwih was a trading enclave. That is, that its *raison d'être* was long-distance and, perhaps to a lesser extent, regional trade. It was not, therefore, a town or port like medieval Southampton (Hodges 1978b, fig 1). Of course, it can be shown that imported pottery sherds clearly 'moved' within Hamwih, as is illustrated in Fig 8,3, just as Weidemann has shown for the trading settlement at Haithabu (Weidemann 1970). Unfortunately, the extent and scale of such movements are impossible to determine accurately at the moment as only relatively small sites, by comparison with Haithabu or Dorestad, have been examined.

In conclusion, it may be suggested that the imported pottery indicates the presence of traders from various areas and centres in northern France who, it would seem, found the native pottery to be culturally unacceptable. Even with our own cosmopolitan society this kind of behaviour is very familiar. These traders obviously used the local wares also, for the two types of pottery always occur in association. No demands, however, seem to have been made on the Saxon potters to produce pitchers or bowls, unlike their counterparts in Ipswich, who must have been greatly influenced by the utensils in the baggage of the aliens. The overall impression is that Hamwih existed primarily as a trading enclave, if the pottery from the Continent is accepted as an index of aliens residing there.

Traders and trade patterns in England

The variety of classes, as has already been stated, illuminates though cannot be equated with the variety of centres from which traders were setting out for Hamwih. Certain classes, like perhaps some of the class IS petrological groups, may relate to the pottery available in the ports of disembarkation, such as the lost settlement of Quentovic in the Pas-de-Calais. The preponderance of Frankish pottery and the incidence of less than ten vessels from the Rhineland in a sample numbering 270 imported vessels or more (see Chapter 4.1 2) is indicative of the Frankish presence in the settlement.

Furthermore, this classification has led to an objective analysis of the other imported pots from Middle Saxon contexts (see Chapter 4.3). Here the frequent occurrence of class 14 Black wares has proved a surprise. The initial importation of Black ware goblets alongside bottles (Evison 1974) in the 7th century continued into the 8th and 9th centuries (Hodges 1977b, 241-2). (We must seriously wonder whether this is an index of other imports which might be obscured to the archaeologist with the end of the pagan burial rite.)

Whether these vessels were traded through centralized loci or by itinerant merchants remains a contentious question. The large number from Hamwih, as well as the incidence of Mercian coins there, favours the former (Metcalf 1972). Moreover, the dissuasive clauses in the laws of both Ine and Alfred seem to have been formulated with the intention of restricting the activities of aliens in the Saxon countryside (eg Whitelock 1955, 366-7). Indeed, as Humphreys has pointed out in her discussion of archaic economies (1969, 195), centralized exchange loci overcame the formidable difficulties the trader would have experienced had he dealt with the producer directly.

The pattern of imported pottery finds is a remarkable one. Like the earlier Saxon distributions of imported objects, there are certain concentrations, but these are by no means entirely coastal or fluvial in their patterning. The Early Saxon imports have an apparent relationship with the funerary rite, as can be superficially discerned from examining a range of settlement sites and a similar range of cemeteries from this period. The 6th and 7th century imports were clearly the result of pre-market exchange mechanisms. All the evidence, both archaeological and historical, suggests the continuity of these mechanisms throughout the Middle Saxon period. The extensive distribution of imported pottery in southern and eastern England at this time would seem to relate to a complex redistributive system of a kind characterized by many anthropologists (see, in particular, Dalton 1975; 1977). This is tenuously substantiated in the case of the imported pottery by the markedly different pattern of imports which occurs in the market economy of the Saxo-Norman and later medieval periods. In this system imports have a much more restricted distribution that is primarily coastal in its character.

The differences between the pre-market system of the Early and Middle Saxon periods and the early market system established in the later 9th and early 10th centuries are most eloquently expressed when the imported pottery from Hamwih and from Late Saxon Southampton are compared (Hodges 1977a, fig 52). The range and number of imports from Late Saxon Southampton are remarkably slight, especially when it is remembered that Winchester, for which it must have been an outport, was briefly the principal royal city in England and unquestionably a flourishing and densely occupied settlement.

Trade and trade patterns on the Continent

The production and the trading of this wheel-made pottery to Hamwih and elsewhere in Middle Saxon England give some fresh insight into the economics of the Continent. There are two principal concerns here: first, the production of the Hamwih imported pottery as well as the related pottery discussed in Chapter 7, and secondly, the trading of these wares.

There is little doubt now that the Roman urban system collapsed on the Continent north of the Alps much as it did in southern England. What remains unclear is whether there was a similar collapse of the local market as would appear to have happened in southern England. The available documentary evidence suggests the existence of a restricted marketing system that was based on the large villas, certain Imperial and monastic communities, as well as, perhaps, large trading settlements like Quentovic (Latouche 1967, 158-60). The archaeological evidence that has been previously presented is largely of a negative kind: a hiatus between the latest Roman and the 10th century levels. Until a villa of the Carolingian period has been excavated and fully published (cf Jorns 1973) it is unwise to lay too much emphasis on the above interpretation. However, there can be little doubt from the evidence of the pottery, already considered, that there was a flourishing ceramic industry. This industry undoubtedly has all the characteristics of the later medieval one in France. The catch-

ment areas of the kilns differ little from the Merovingian period until the mass-production of the post-medieval period. There are, of course, the finer products that were traded over greater distances than the confines of a regional market. The distribution of red-painted Beauvaisis pottery and the *modillons* from Saran would seem to fall into this category. Moreover, the unchanged locus of many pottery centres strengthens this hypothesis.

It is difficult to generalize confidently with such poor data, yet from the available evidence it might be predicted that a primary marketing system was in existence. How it operated in conjunction with neighbouring territories governed by pre-market modes of exchange remains to be evaluated. There is no doubt that this Carolingian system differs considerably from the production of Middle Saxon wares which are, with the prominent exception of Ipswich ware, made and traded within areas that are not at all reminiscent of Saxo-Norman and later medieval patterns.

Ennen has postulated that the great potteries of the Middle Rhineland were attached to one or more seigneurial estates at this time (Ennen 1956, 400). In view of the size and the apparent centralization oft his industry in the 8th century, it seems more probable that the potters were in fact bound to the Imperial estate. The Mayen industry, by contrast, if it was responsible for producing certain types of Tating ware and if the ecclesiastical overtones of this ware are acceptable, may well have been in the possession of a major monastic community. The smaller and widely scattered potteries in France which evidently continued from the Merovingian period to the later medieval in many areas might have been in the possession of equally small secular and monastic estates concerned with supplying their individual communities with acceptable artifacts. (The minting and control of coinage at this time might shed further light on this hypothesis.) However, the possibility that there were itinerant potters who operated on the 'fringe' of the system, as occurred in the later medieval world, should not be ignored.

The question of patronage and the role of potters in Carolingian society is a largely enigmatic one. De Boüard (1976, 249), for example, sees no reason to suppose that potters were dependents of the *palatium* since they are not mentioned in the contemporary documentation concerned with these settlements. Some research may be hoped for in the future into this matter and into the question of later medieval potters who, in many instances, operated from the same locations. As Le Patourel has shown for the English medieval potters, there is much to shed light on the archaeology of this craft surviving in the documentation (Le Patourel 1968).

What remains rather inexplicable is the remarkable competition that appears to exist between the Frankish merchants of Gaul and those issuing from the Rhineland and Frisia (cf Hodges 1977b). If the ceramics are an acceptable index of the traders from the respective area, with the Badorf-Pingsdorf wares indicating the presence of Frisians in eastern England, Frisia, Jutland, and, to a lesser extent, possibly Norway and Sweden, then we have remarkable insight into their activities. The surprise, however, is that the Frankish class 14 wares frequently occur in eastern England. while one vessel from Birka in Sweden (Arbman 1940, Taf 222, la, lb), two unpublished vessels from Kaupang in Norway and two vessels, at least, from Ribe (D6640 and D4387), illustrate the wide-ranging extent of certain Frankish traders. (However, the re-exchanging of pottery must not be ruled out.) Of course, following Bradley's discussion of trade competition, 'every trader need not have taken the most efficient course to achieve a full market' (Bradley 1970-1, 351) The references to Frisian traders at St Denys and the Rhenish pots from Hamwih further emphasize this point, as well as illuminate how, perhaps, it is strangers who are observed and recorded for posterity, giving a largely false impression of the trade-patterns of the time (Fig 8,1) (Jellema 1955, reviews the documentary evidence for the Frisians).

However, there is much that can still be undertaken to tighten our chronology for Middle Saxon and Carolingian trade (cf Cherry and Hodges 1978). Ultimately, this may well shed further light on the activities of the middlemen, and court *negociatores* (Ganshof 1957) who were involved. In particular, the very different patterns of growth and recession at Hamwih and dorestad from The 8th to the early 9th centuries suggests that we still have much to learn about Dark Age economics.

This preliminary study, it is hoped, has shed some light on those 'mysteries'—Carolingian pottery from the Continent-which for several decades remained classic evidence of a Dark Age. Shadowy though the new light is, it begins to illuminate an archaeological perspective of an historical period that has been the subject of many debates by scholars in allied disciplines. The medieval archaeologist must be more than content with the knowledge that the data for the economic patterns considered here can be rested and re-evaluated as more excavations in northern France, in particular, clarify the origins of this remarkable Hamwih ceramic assemblage. It is perhaps fair to conclude that whereas no comprehensive view is available yet, the cumulative in pact of so much data must be significant.

Sommaire

Ce rapport, qui s'intéresse á la céramique Middle Saxon et carolingienne trouvée dans les fouilles se base sur une etude approfondie de la céramique de Hamwih (Hodges 1977a). La céramique est repartie en groupes principalement selon la composition de la terre. Les groupes 1 á 5 concernent les piéces du Middle Saxon, fabriquées soit sur la site même soit dans le Hampshire du sud. Ceux de 6 á 35 comprennent les piéces de type carolingian qui proviennent de sources diverses dans la France du nord auusi bien que dans l'Allemagne de l'ouest. On s'intéressera particuliérement á la provenance de cette céramique aussi qu aux piéces de même type trouvées en Europe. En conclusion, on parlera de la nature des relations commerciales dont témoigne cette collection importante.

Zusammenfassung

Dieser Bericht handelt von mittelsächsischen und carolingischen Tonwaren, die bei Ausgrabunpen in Hamwih gefunden worden sind, und ist auf die Doktorarbeit des Autoren (Hodges 1977a) gegründet. Die Tonwaren sind nach ihrer Beschaffenheit in Gruppen eingeteilt. Gruppen 1 bis 5 sind entweder am Ort selbst hergestellt worden oder anderswo in Süd-Hampshire. Gruppen 6 bis 35 sind Scherben des carolingischen Typs, die aus verschiedenen Stellen in Nordfrankreich und Westdeutschland eingeführt worden rind. Die Herkunft der Tonwaren und aus Europa stammende vergleichbare Beispiele werden hier ausführlich zur Diskussion gestellt. Zum Schluss werden die Handelsverbindungen dieser wichtigen Sammlung erwägt.

Appendix 1

Observations on some clamp and bonfire kiln firings

[This brief study was undertaken in 1975 with the assistance of Greta Berlin and Michael Monk]

There are few data, as yet, retrieved by excavation on the manufacture of pottery in the Early and Middle Saxon periods prior to the re-adoption of the potter's wheel into England (cf Chapter 6.8). As much for public interest as for research purposes, three simple kilns were prepared and fired during the University of Southampton Open Day, May 1975, on the University campus. The purpose of the firings was to see if reduced pottery could be made in two simple types of kiln, and to record the traces left after the firings which might be indicative for future excavations in Hamwih. The two types of kilns were a clamp kiln (two of these were fired) and a bonfire kiln. Each clamp kiln was a circular pit about 1.5m in diameter and about 0.5m deep, into which was placed a frame of green wood. The pots were placed inside this frame and the area around them was packed with wood-shavings. Finally, twigs and a capping of turf were piled over the top. The bonfire kiln was constructed in almost the same way except that it was above-ground, and a thicker sealing, slow-burning material was required as the under-capping beneath the turf. Horse-dung was chosen for this purpose as there are many ethnographic parallels for the use of dung in this and similar circumstances, notably in southern Africa (Sydow 1967, 30), in Turkey (Weinstein 1973, 273), and in southern India (pers comm C J Balkwill). However, it was impossible to dry the dung in May except by artificial mean\ unavailable to Saxon potters, so fine sawdust was used instead and proved to be satisfactory. Eighteen pots were made by hand, designed from hypothetical reconstructions of the Hamwih local pottery. Petrological analyses of the Hamwih local wares had not been completed at this time, so local brick-earth was used together with clay from the Sherborne beds, a clay which Greta Berlin uses for commercial potting.

Both types of kiln were fired successfully. In order to prevent any oxidation of the pots taking place, a continual watch had to be kept on the kilns so that holes that burnt through the turf could bequickly blocked. The bonfire kiln required far more turf than the clamp kilns.

The first clamp kiln was opened after only two days and was extremely hot, too hot to extract the pots which cracked probably because of the sudden change in temperature, The second clamp kiln and the bonfire kiln were opened after five days with great care. Although both kilns had stopped smoking after the third day, the interiors holding the pots seemed as hot as that opened after only two days. Probably owing to the change in atmosphere as well as in the clay matrix, the pots cracked, but the results to our primary questions were pleasing. First, all the pots were satisfactorily reduced in the same manner as the Hamwih pottery and fired possibly even harder. Secondly, the bonfire kiln produced pottery as well fired as the clamp kilns. Thirdly, the remains of the activity were remarkably slight. As only a small number of pots were used (six in each kiln) there were very few waster sherds and so the back-filled pits contained few or no sherds of pottery. Except for the ash content, the pits appeared very similar to many pits found in Hamwih. If, as is most likely. the ash in the Saxon period was used for other purposes, the back-filled clamp-kiln pits would be indistinguishable from many other pits used for rubbish disposal and storage, The remains of the bonfire kiln comprised simply ash and burnt earth from the turf piled by the site of the fire, following the removal of the pots. However, the patch burnt by the bonfire failed to support grass during the remainder of the summer and this mark was still distinct a year later, whereas the back-filled pits had grassed over and disappeared.

The results of these very simple firings bear out the difficulties of interpretation of simple kiln types such as those found at Cassington (Arthur and Jope 1962), Ballintoy (Jackson 1934), and at Chichester (Down 1978, 158). The preparation of the kilns was a remarkably simply procedure. Firing eighteen pots in three kilns required *approximately* 2 man-hours' wood chopping, 10 man-hours' collecting turf, 2 man-hours' collecting tinder, and 3 man-hours' building the kilns. Clamp kilns and bonfire kilns will fire to a high temperature if the heat is contained efficiently by the turf, as has recently been demonstrated by the discovery of a late 15th century clamp kiln at Potovens (Yorkshire), producing glazed Cistercian ware types (Bartlett 1971, 13-14).

Appendix 2

Some dated groups

Site 24, 1969 70

Addyman and Hill (1969, 92-3) have already discussed the contents of Site 24, pit 8 (excavations by R Thomson in 1969-70). Several other pits were completely excavated at this time and together the imports constitute a small but valuable group. Pit 8, as Addyman and Hill have pointed out, contained three sherds and a bar-handle (Fig 3,1,2) of Tating ware. There were also two sherds of red burnished pottery, class 21, as well as a large group of local wares, a selection of which has been published (Addyman and Hill 1969, fig 35). This pit may be presumed to be late 8th to early 9th century in date. It is a dating emphasized by sherds of a class 16 pitcher, finely decorated with deeply incised wavy lines, that were found in it, as well as in Pit 50 which contained a penny of King Offa. Sherds of this vessel were also found in pits 51, 53, and 54. A rim of a red-painted class 25 vessel (Fig 3,1,19) was also found in Pit 50, a vessel which has been

TABLE A,2,1 Estimate of the imported classes and vessels from Site 24, 1969-70

Class	Cooking pots/ bowls pitchers	Storage vessels/ jars	Total
6	1		1
11	3		3
12	3		3
13	1		1
14	8		8
15	4		6
16	1		1
17		1	1
21	1		1
24	1		1
25	1		1
+	1		1
	25	3	28

TABLE A,2,2 Correlation of imported classes from Site 24, 1969-70

	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
8a/8d	4						2		2	4	2					2															
9										1																					
13								1	2	1																					
28						1			1																						
35																															
50						1	2		4		4									1											
51							1				1																				
53										1	1																				
54						1	1		1		4																				
55										1																					
56									1																						
59									1	1																					
64									1																						
67												1																			
70						1																									

TABLE A,2,3 Correlation of imported classes from DMW 15, 16, and 18, Site 11, 1947

Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	X
15												3		4						1																
16												2		4				1																		
18						1				1	2				4				1		2		4													

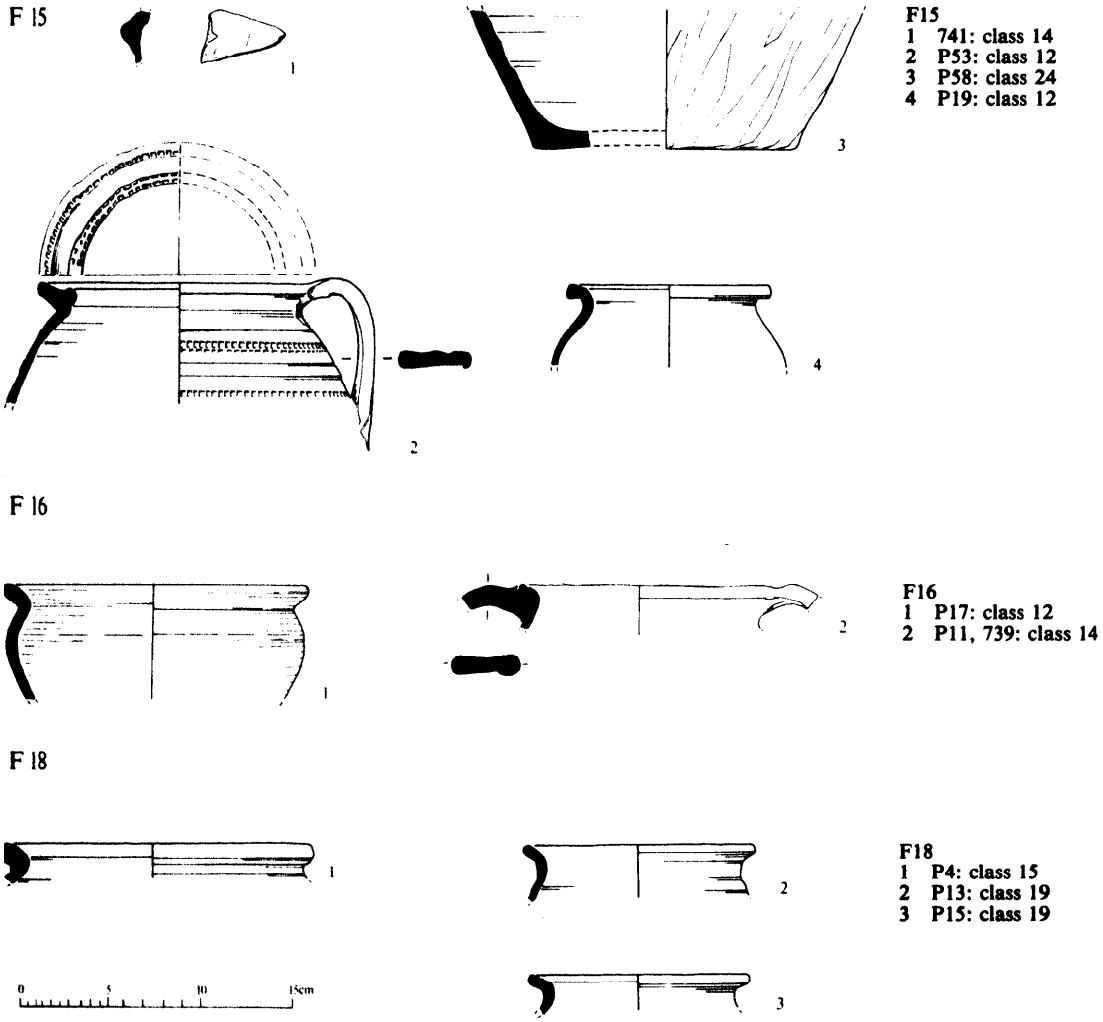


Fig A,2,1 Imports from selected features on Site 11, 1947. (Note: class 10 sherd from F18 illustrated in Fig 3,1,7) (scale 1:4)

discussed in Chapters 3 and 7. It is also worth noting that a flanged vessel of class 24 was found in Pit 35 (Fig 3,11,14): it is a unique form in this class at present.

The imported vessels from this site can be assessed in terms of numbers and functions, as was discussed in Chapter 4.

Site 11, 1947

Maitland Muller and Waterman (Maitland Muller 1950; Addyman and Hill 1968, 69-70) trenched in the area of Kingsland, the northernmost part of the known settlement, from 1946 until 1950, during which time they discovered a number of very rich pits. In 1947 they excavated pit 13 which was 5ft square and contained a central circular shaft of 2ft 6in diameter, with 'fist-sized stones' at the bottom and clay and gravel packing around. Pit 15 (DMW 15) cut into pit 13 and in this feature, possibly a well, was found a hoard of *sceattas* which included 23 BMC type 49 and 20 BMC type 39. Pit 15 was itself apparently cut by pit 16 (DMW 16) (Maitland Muller 1950, fig 1). Another pit on this site, number 18 (DMW 18). included a sherd of Tating ware (see Chapter 3, class 6). There seems, therefore, some value in drawing attention to these groups of imported pots (Fig A,2,1) because they are relatively well dated. Hence, the imports from DM W 15, DMW 16, and DMW 18 are assessed here in the same way that those from SARC sites have been considered in Chapter 4.

Appendix 3

Seed and textile impressions on some Hamwih sherds

Several of the locally made sherds, particularly those of classes 1-4, have seed or grain impressions. Mr M Monk, then of SARC, made a brief study of these but discovered that most of the impressions were insubstantial and therefore difficult to identify. It seems likely, however, that a detailed analysis of the impressions in the class 1 sherds from Hamwih and elsewhere in Hampshire, together with a series of heavy mineral analyses to establish the sources of the clays used, might provide some interesting evidence of localized vegetation and perhaps crops in the Early to Middle Saxon periods.

A textile impression has been noticed on the base of a class 12 vessel which also has splashes of pink paint on it (Fig 3,2,16; Fig A,3,1). This base came from Site 11, 1947, feature 28. Mr J W Hedges has provided the following report on this impression:

> The piece of pottery in question bears the negative impression of a textile because the pot came into contact with a piece of cloth when wet. Although this impression covers an area of about 12cm^2 on the circumference of the base, most of it is very faint and when a positive cast was made less than

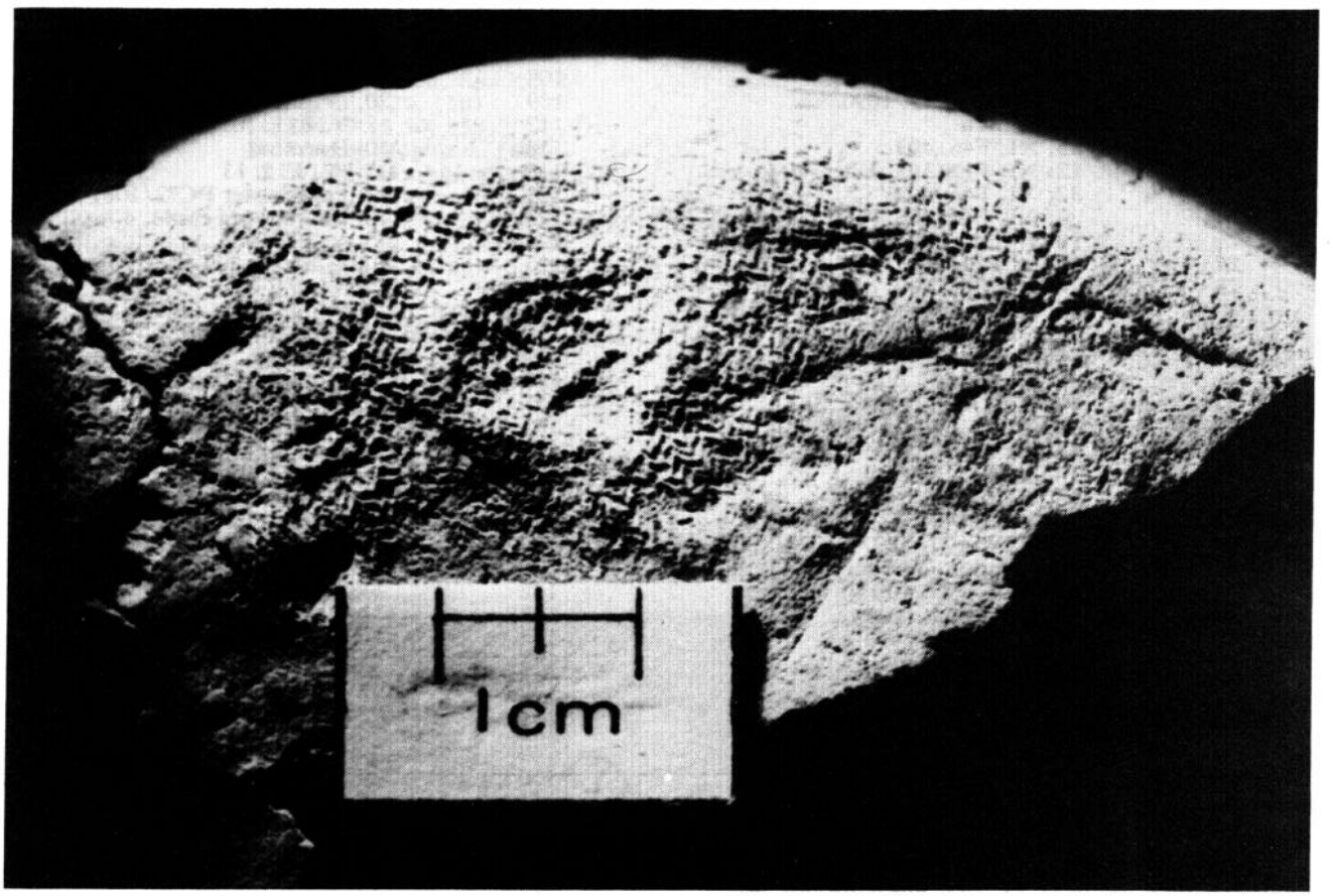


Fig A,3,1 Textile impression on the base of a class 12 red-painted vessel from Site II, 1947, DMW 28 (photograph by C Tilley)

1cm^2 was of any use. From this the textile could be seen to be a fairly fine 2/2 twill which was reversed in at least one direction (ie it was herringbone or diamond), and this reverse had accurate meetings. Although the area observable was small, twelve Z-spun threads appear to have been used per centimetre in one direction and fifteen S spun ones in the other; clay shrinks when baked so that the cloth would actually have been slightly coarser.

One possibility is that the impression was made when the potter was removing the vessel from the wheel and dashed it against his knee.

Appendix 4

List of thin sections

TSP	1	class 15: V, F16,680
	2	15: XI, F54, 675
	3	14: XI, F46, 975
	3	15: XI, F46, 578
	5	14: XI, F46, 448
	6	15: V, F21, 854
	7	15: XI, F66, 698
	8	15: XI, F48, 350
	9	14: XI, F47, 969
	12	Pingsdorf (Dowgate, London)
	18	18: CLS 'A', F64, 1050
	19	18: KL'C', F15, 1090
	20	6: V, F16
	21	15: XI, F46, 403
	22	12: XI, F12, 365
	23	32: XI, F46, 402
	24	24: XI, F46, 405
	26	14: I, F35, 785
	27	14: V, F11, 141
	28	14: XI, F46, 870
	30	Orleans: red burnished pitcher
	34	12: V, F11, 140
	35	6: Dorestad
	36	6: Dorestad
	37	14: XIV, F30, 1568
	38/39	14: V, F11, 1091
	40	14: XIV, F30, 1896
	41	14: V, F11, 119
	42	14: XIV, F24, 645
	43	14: KL'C' (site 11, 1947), F16
	44	14: XIV, F27, 1297
	45	14: London, Treasury
	46	14: VIII, F82, 100
	47	15: Île Agois, Jersey
	48	14: V, F11, 1086
	49	11: I, T11, 1
	50	14: XIV, F30, 1891
TSP	51	class 14: V, F14, 545
	52	14: XIV, F30, 1884
	53	13: I, F9, 560
	54	14: I, F26, 27
	55	14: V, F13, 623
	56	13: Lime Street, London
	59	14: IV, E1-2, 48
	60	14: IV, 03-5, 47
	61	14: XI, F45, 848
	62	14: V, F14, 209
	63	14: V, F14, 635
	64	14: V, F16, 763
	65	: Dorestad
	66	: Dorestad
	67	: Dorestad
	68	: Dorestad
	69	9: Beauvais
	70	Tours 10th century cooking-pot
	71	Isle Aumont red-painted pot
	73	Sorrus ware
	78	8: Dorestad
	81	6: KL'C', F18, 613
	82	6: North Elmham Park, F34, 192
	83	6: Paderborn
	84	6: York, 1974 14, 2310
	86	20: I, F5, 408
	87	11: IV, E3-17, 65
	88	11: I, F1, 355
	89	11: VI, F37, 406
	90	13: IV, E3-4, 168
	91	13: I, unstrat, 774
	93	12: VI, F30, 376
	94	12: VI, F30, 377
	95	14: VI, F16, 669
	97	14: I, F7, 532
	98	14: I, F6, 525
	99	14: I, F6, 519
	100	14: VI, F49, 247
TSP	101	14: I, F9, 549
	103	15: VI, F39, 419
	104	15: V, F24, 997
	105	15: IV, F13, 488
	106	15: IV, F51, 676
	107	15: V, F11, 1087
	108	15: IV, F2351, 848
	109	20: IV, unstrat, 1024
	117	13: V, F11, 1090
	118	10: Dorestad
	119	15: IV, Fl5, 13
	121	15: Portchester PC72/108, 68
	123	13: Valkenburg castle, 4
	124	25: V, F24, 996
	125	12: I, 20/20, 809
	126	33: VI, F1, 15
	127	10: KL'C', F18, 640
	128	11: IV, F3521, 928
	129	14: XV, F49, 2997
	130	7: Dorestad: Badorf 1
	131	27: V, F32, 1029
	132	16: V, F14/15, G31
	134	14: V, F14/15, G69, 601(a)
	136	14: V, F14/15, G69, 780
	137	Wareham, Normandy gritty ware
	138	24: Wicken Bonhunt 1679(a)
	140	14: Wicken Bonhunt F5
	141	16: HAM 69, unstrat, 229
	142	13: XV, F1, 226
	143	12: VII, F21, P1
	144	24: XV, F75, 2666
	145	15: KL'B', F43, 750
	146	19: IV, F3501/54, 852
	147	11: HAM 69/554, 211
	148	13: VI, layer 2, 135
	149	29: V, F34, 510
	150	3: XV, F1, 3195
	151	1: XIV, unstrat, 762
	152	12: KL'C', F19, 748
TSP	153	14: I, F14/15, 611
	154	25: XI, F15, 935
	155	12: XV, F1, 4025
	156	31: XIII, F84, 100
	157	25: IV, F3, 419

	158	34: V, F14, 252
	159	16: XI, F45, 745
	160	18: VI, F30, 121
	161	7: HAM, unstrat, 227
	162	22: XI, F54, 603
	163	11: CL'B', F66, 848
	164	7: HAM, F487, 223
	165	6: SM69.10.8a, 27
	166	23: KL'C', Fl0, 652
	167	17: KL'C', F5, 89
	168	21: KL'B', F22, 618
	169	Middle Saxon ware: Oxford, St Aldate's 226
	170	*Céramique onctueuse,* Bodéres
	171	13: Valkenburg 3
	172	13: Valkenburg 5
	173	15: CLS'B', F69, 791
	174	14: VII, F53, 146
	175	33: SM.69.10.8, A243.69
	176	15: HAM 69/336, 210
	177	15: XIV, F27, 166
	178	13: I, unstrat, 861
	179	Dieue-sur-Meuse
	180	25: V, F24, 996
	181	11: Guernsey CM/75/RW/QlB
	182	Lucera broad-line red-painted sherd
	183	Lucera narrow-line red-painted sherd
	184	28: IV, Flll, 787
	185	11: Southampton, Spa Rd, 2
	186	: 1, unstrat, 767
	187	11: V11, F55, 82
	188	?9: Southampton, Spa Rd, 2
	190	34: KL'B', F29, 1101
	191	14: SM 69.10.50, 158
	192	13: Wicken Bonhunt, F605
TSP	193	7: Wicken Bonhunt, F605
	195	14: Breedon-on-the-Hill Pc.
	196	? 15: Guernsey CM/75/RW/QiB/2
	199	Wareham 139, grey-ware rim
	202	14: Chichester, Chapel St, layer 8(c)
	203	19: KL'C', F18, 641
	204	Northampton M115, A567, 10
	205	4: KL, F67B, 771
	206	6: Winchester, BS 1971, T3, 1815
	207	5: KL'B', F30, 606
	208	3: HAM, F46, 644
	209	14: Ipswich
	210	Hereford red-painted pitcher: 68, 201,41
	212	2: CLS'B', F2, 847
	213	1: GS'A', G63, 764
	214	14: Winchester AC 1963, N, TRD5 27
	215	33: IV, F50, 644
	216	24: HAM E, 158, 72
TSP	217	Castor Black ware (class 14?)
	218	Kaupang A783, Tating ware
	219	Ribe 1, Tating ware
	220	Ribe 2, Tating ware
	221	Ribe 3, Tating ware
	222	Trier *Hospitalkeramik* 1
	223	Trier *Hospitalkeramik 2*
	224	Trier *Hospitalkeramik 3*
	225	Trier *Hospitalkeramik 4*
	226	Dorestad, undecorated Tating ware
	227	3: XV, F1, 302
	228	3: XV, F1, 617
	229	Ipswich 7402 0022
	230	Ipswich 0350 5502
	231	Ipswich 5502 0345
	232	Ipswich 7402 0090
	233	Ipswich 7402 0090
	234	Ipswich 5502 0383
	242	Trier *Hospitalkeramik 5*
	243	Kaupang, brown-burnished Tating ware
	244	Kaupang, black-burnished Tating ware
	245	Brancaster ? Tating ware

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Abbreviations used: AS—Anglo-Saxon; BA—Bronze Age; IA—Iron Age; M—Migration; Med—Medieval; R—Roman; RB—Romano British