

UNIVERSITY OF SOUTHAMPTON

MEDIEVAL AND LATER CERAMIC
PRODUCTION AND DISTRIBUTION
IN SOUTH-EAST ENGLAND

A study in ceramic archaeology
and historical geography

Anthony D. F. Streeten

Volume 1

Part i

(Master)

MEDIEVAL AND LATER
CERAMIC PRODUCTION
AND DISTRIBUTION IN
SOUTH-EAST ENGLAND



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UNIVERSITY OF SOUTHAMPTON

ABSTRACT

ARCHAEOLOGY

Doctor of Philosophy

MEDIEVAL AND LATER CERAMIC PRODUCTION AND DISTRIBUTION

IN SOUTH-EAST ENGLAND

by Anthony David Friend Streeten

This regional study in ceramic archaeology and historical geography draws upon both archaeological evidence and written sources to relate changes in the organisation of medieval and later ceramic production and distribution to wider themes of social, economic and settlement history. The contributions of documentary and material evidence are contrasted, and methodologies developed for evaluating the evidence, illustrated by examples from South-East England.

Searches of publications and museum collections yielded information about 11th- to 17th-century pottery from over 1800 sites here listed in county gazetteers. Ceramic research strategies for the historic counties of Kent, Surrey and Sussex are based on systematic data recording. Characterisation of pottery fabrics using a modified technique of thin-section analysis enables identification of products from different workshops in an area where locally produced ceramics lack diagnostic mineral inclusions. Description and testing of the method are followed by assessment of its potential for characterising sand-tempered pottery fabrics in general.

A gazetteer presenting evidence for medieval and later pottery manufacture includes a survey of occupational surnames and place-names and is used to assess how the scale and location of ceramic production was related to resources and demand in conjunction with chronological and geographical changes. Distribution methods and marketing patterns inferred from the archaeological record are related to settlement patterns, communications and a hierarchy of market centres illustrated by maps with a tabulated synthesis of known settlements and markets. Demand for pottery is contrasted with the production and distribution of ceramic building materials and four case studies illustrate the definition of ceramic chronology.

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pl.xxiv no.3)

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PREFACE

My attention was drawn to the need for a study of medieval ceramics in the Weald following discussions in 1975 with Mr C.F.Tebbutt whose fieldwork had yielded a growing collection of pottery from minor Wealden settlements. There was evidently scope for examining the marketing of medieval ceramics in relation to contrasting settlement patterns.

The project began at Southampton University in 1976 and was confined initially to the Weald itself, but it soon became apparent that significance of the data could only be appreciated by comparison with the surrounding areas as well. Moreover, the rural markets served by centres of pottery manufacture on the fringes of the Weald invited comparison with urban demand in east Kent, south-west Sussex and the London area. Thus, the historic counties of Kent, Surrey and Sussex provided an obvious framework for the survey - convenient both as a compact, well-defined region and as a unit for searching the published archaeological and historical literature.

Earlier work in the region had concentrated on the dating and development of medieval ceramics. The approach now to be adopted was quite different. Four principal themes were identified:-

1. Assessment of the location, density and organisation of pottery production, exploiting the evidence from fieldwork, documentary sources and place-names
2. Evaluation of geographical variations in the demand for a household commodity such as pottery by studying the spatial relationships between production centres, markets and 'consumer' settlements
3. Definition and mapping of pottery distributions, where possible attributing the wares to their source of manufacture by the development of characterisation techniques
4. Comparative studies of ceramic and other building materials as a contrast to the archaeological record of traded commodities

Common to each of these themes was the need to examine pottery in the wider context of medieval archaeology, regional geography and economic trends.

In addition to these major themes of research the work has been guided by three underlying principles: the value of clear visual

representation of the information; the need to evolve methodologies potentially capable of being applied to similar problems in different regions; and, finally, the importance of the fullest possible documentation as the basis of further work and reassessment in future.

Thus the intention has been to create a research archive, analogous to that compiled for an archaeological excavation, which comprises both the general conclusions and a synthesis of the evidence from which they have been drawn. As in an excavation archive, the gazetteers, location maps and tables offer a clearly-defined statement of the available data, yet they also provide a framework for subsequent additions. These intentions are reflected in the structure of the thesis. General discussion ranging from the scope of ceramic studies to the production and distribution of ceramic building materials appears in Sections 1-8 while the more detailed evidence has been presented separately in Sections 9-13. Thus the sources and information used to compile maps accompanying the general discussion will be found in the gazetteers.

The nature of archaeological and documentary evidence and its relevance to the study of medieval ceramic production and distribution is considered in some detail (Section 1). Particular attention is also paid to the regional background and to the methodologies adopted for this survey (Sections 1-3). Discussion of ceramic chronology and the details of production and distribution rely to a large extent on the drawings which have been prepared to illustrate these themes. Protracted descriptive material has been avoided, preference being given to visual representation.

One of the most surprising aspects of research into medieval and later ceramics in South-East England has been the sheer quantity of available material. The number of place-names and excavated pottery groups, for example, was seriously under-estimated in preliminary studies. Nevertheless, every effort has been made to include known sources of information whether or not these have been used as the basis for more detailed research. Sources have included published material, museum and private collections, and correspondence and discussion with excavators and historians. Specific items are acknowledged in the text and a separate list of acknowledgements appears after the Preface. It remains, however, to express a general word of thanks to all who have generously contributed information to this survey.

In the circumstances - and perhaps with hindsight - comments made by Fowler (1978, 7) at Southampton University seem particularly appropriate:

'If we have learnt anything from the last two decades it is surely that time, a long time, is of the essence in archaeological research'.

Tunbridge Wells

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Information has been obtained from both national and local sources including the Public Record Office (Kew and Chancery Lane); former Archaeology Division, Ordnance Survey (Southampton), Institute of Geological Sciences (London); Society of Antiquaries (London); University of London Library; English Place-Name Society (London); Hampshire Record Office (Winchester); Kent Archives Office (Maidstone); Canterbury Cathedral Archives and Library; Surrey Record Office (Kingston-upon-Thames); East Sussex Record Office (Lewes); West Sussex Record Office (Chichester); County Libraries for Hampshire (Winchester), Kent (Maidstone; Tunbridge Wells), Surrey (Guildford), and West Sussex (Chichester); and libraries of the county archaeological societies for Kent (Maidstone), Surrey (Guildford) and Sussex (Lewes).

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1. INTRODUCTION

1. INTRODUCTION

1.1 CERAMIC STUDIES IN AN HISTORICAL PERIOD

1.1.1 Scope and limitations of ceramic studies in the medieval and post-medieval period

The abundance of surviving evidence for certain aspects of English medieval history after the Norman Conquest - both from written sources and material remains - has always held a particular attraction for historians, antiquarians and archaeologists alike. Influenced by the outlook and attitudes of their own age, successive generations have exploited the legacy of documents and the landscape to enhance our understanding of medieval history. Many of the earliest, and in some cases the most rapid, advances were accomplished in fields for which the information was most readily accessible. Taking as an example just two classes of material evidence for medieval history, studies of architecture in the early nineteenth century (Rickman 1817) and of earthworks in the opening years of the present century (Allcroft 1908; Armitage 1912) owed their stimulus, at least in part, to the abundance of the material remains. Likewise, conventional historical subjects such as constitutional history and the economics of agriculture continue to reflect the bias of documentation. Studies of other potentially more far-reaching themes such as demography; the wider aspects of economic history; and landscape development have grown more slowly owing to the need for intensive scrutiny of disparate sources.

The medieval pottery industry is one such field of research which, although touched upon in the antiquarian literature, has only received systematic attention as a result of the accumulation of scattered archaeological and documentary evidence this century. In many respects the stimulus for a recent acceleration of interest in the subject is the same as that which facilitated earlier studies of architecture and earthwork castles; namely the ubiquity of the excavated evidence. Only comparatively recently has there been a general acceptance of the need for selective studies to elucidate particular problems.

The historiography of medieval ceramic archaeology will be reserved for a subsequent section, but it is pertinent first to consider the scope and limitations of the subject.

A recurrent theme of academic debate during recent decades has been the need for an interdisciplinary approach to problems which can be investigated by the integration of material and documentary evidence. There are few areas, however, in which these two types of evidence can share an equal role. Indeed, the paucity of documentary sources compared with the excavated data is perhaps nowhere more vividly apparent than in the study of the medieval pottery industry. Nevertheless, there is considerable scope for integration of the different forms of evidence.

This imbalance between the archaeological and documentary record, combined with the lack of comprehensive written sources for many minor medieval crafts and industries, demonstrates the value of archaeological research into specific aspects of well documented periods. In the words of Professor Harvey (1983, 79), study of medieval industries

'offers....greater returns than any other work on the period's archaeology simply because it fills such a gap in the written records'

Far from duplicating what is known from other sources, this branch of medieval archaeology therefore offers a positive contribution to matters of historical concern. Fundamental to such studies, however, must be an assessment of the extent to which pottery manufacture and distribution can be regarded as a model for the organisation of other industries which are represented less vividly in either the documentary or archaeological record.

Despite the potential scope of their subject, ceramic archaeologists have failed to communicate effectively the wider implications of their work. Thus, as recently as 1979 a major work of synthesis concluded that:

'In view of the uneven distribution of suitable clay, a substantial trade in pottery might always be expected, but the documentation so far published is very slender'

(Beresford & St. Joseph 1979, 253)

Although this is not an altogether realistic assessment of the literature, it does underline the importance of relating ceramic research to historical issues. Indeed, the fact that pottery is one of the few household items found in the archaeological record which (under favourable conditions) is capable of being linked with its source of production offers a potentially unrivalled means of monitoring the lower levels of inland trade.

Many of the most significant archaeological discoveries of the 1960s and 1970s came from systematic analysis of both rural and urban landscapes. Such was the euphoria that some were tempted to use the phrase 'total archaeology', while others wisely adopted the more cautious term 'landscape history' (Taylor 1974a, 150-1; 1974b, 16). At the same time that there is now a change of emphasis from the mere reconstruction of past landscapes to an understanding of man's impact on them, there are also signs that economic and social studies pursued through artifact assemblages will prove just as important as landscape history in assessing past societies. If nothing else, such studies must surely have secured for themselves a place, hitherto omitted, in the ambitious concept of 'total archaeology'.

It is important, however, not to overstate the significance of pottery as an economic indicator. While archaeology is undoubtedly capable of yielding more information than mere illustration of the housing conditions of the medieval peasantry (Miller & Hatcher 1978, 161), there can be no question that wider conclusions should only be drawn with caution. The value of the archaeological evidence must therefore be assessed in relation to the available documentation.

With increasing pressure on scarce academic resources it is often maintained that archaeological effort should be directed to the period before 1200 when, in the absence of extensive written sources, the material evidence assumes greater relative importance. Such a belief, however, raises two fundamental issues. Firstly, there is an underlying assumption that the documentary evidence is superior to the archaeological; and secondly there is an illogical belief in the importance of studying material evidence during a period when it is impossible to evaluate its significance independently, rather than when there is some hope of doing so. Both of these issues are illustrated conveniently by changing attitudes to the significance of pottery imported to Britain from the continent.

Dunning (1968, 35) believed implicitly in the value of pottery as a reflection of international trade, even though he was more sceptical about the existence of a trade in ceramics themselves. Critics of this idea would draw attention to the overwhelming documentation which demonstrates that pottery was insignificant as a traded commodity and that patterns derived from archaeological evidence convey a misleading impression of the principal trade relations (e.g. Hinton 1977b, 226-7). As an alternative to direct trade it would be appropriate to cite the use of pottery vessels as

containers; as items among the personal equipment of mariners; and as the possessions of foreign merchants residing at English ports. Here, therefore, we witness the apparent superiority of documentary evidence over the archaeological; yet systematic scrutiny of the documentary sources now suggests that the use of pottery containers may have been over-emphasized and there is indeed unequivocal evidence for a minor trade in (empty) pottery vessels during the later middle ages (Le Patourel 1983, 33-4).

The academic value of pottery imports would therefore seem to lie in their very insignificance. Just as locally-produced wares are capable of illuminating inland trade in household goods, so the imports provide an archaeological manifestation of the incidental trade in minor consumer goods at an international level. Hitherto, specific studies have concentrated on mapping the overall distribution of particular wares, but more significant economic conclusions could undoubtedly be drawn from systematic interpretation of inland distributions as a means of evaluating the extent to which these minor imported goods were marketed in the hinterlands of English ports. As in so many fields of archaeological research, it is not possible to offer a simple explanation of an observed pattern, but it would be wrong to discard the evidence because it appears to contradict the documentary sources. One significant justification for studying the archaeology of well-documented periods should be as a control against which to measure the evidence derived from the material culture of earlier societies.

So far emphasis has been placed on the contribution of ceramic studies to general themes of economic history, particularly when the insights of archaeology help to counteract weaknesses in the documentation. As Peacock (1981, 187) reminds us, however, this is only one facet of ceramic archaeology. In considering the use of archaeological data derived from a known historical context to act as a control against the evidence for poorly documented periods we move into a more ambitious - some would say over-ambitious - sphere.

First among these wider implications the scrutiny of documentary evidence for the production and distribution of medieval and later pottery increases awareness of the variety of interpretations which might be placed upon the archaeological data. In seeking to understand and explain the location of former pottery kilns, for example, details of land tenure gleaned from the documents may be as important as geographical information concerning the

availability of ceramic raw materials. Likewise, distribution of the potter's products may have been enforced by manorial organisation rather than determined by purely economic considerations such as competition and demand. As in the case of ethnographic evidence, however, historical sources are more successful in suggesting a variety of possible explanations for the observed patterns than in providing specific solutions to the problems of archaeological interpretation. Nevertheless, if used sensitively, some of the ideas generated by appreciation of the documentary evidence will be applicable to ceramic studies elsewhere.

A second significant contribution offered by the ceramic archaeology of historical periods is the opportunity to examine production and distribution within a known, albeit imperfectly understood, social and economic context. Independent evidence for settlement patterns and demographic trends can be used to simulate the conditions under which the archaeological record was formed. One obvious application of such an approach is in assessing the effects of geographical variations in demand upon the organisation of production. Here the enhanced knowledge of medieval settlement provided by documentary sources offers a more comprehensive picture than the incomplete pattern which would be derived from archaeological evidence alone.

At the same time, however, it is fitting to emphasize the traditional contrast between the significance attached to pottery studies in the historic and prehistoric periods. The study of exchange in primitive societies may provide an insight into social organisation, but historical knowledge of Medieval England reduces the range of feasible interpretations which can be placed upon the archaeological record of this period. For the Roman period, too, Fulford (1981, 196-7; 201) has recently emphasized the dangers of drawing social inferences from the evidence of pottery distributions. Patterns which might appear to reflect social change could equally have resulted from economic factors. In many respects therefore the academic approach to the study of pottery manufacture in historical periods is fundamentally different from that adopted when the evidence is purely archaeological.

Nevertheless, even if there are limitations to the social and economic inferences which can be derived from ceramic studies the examination of pottery production and distribution in historical periods can contribute to the formulation and testing of general

theories of craft organisation. At a time when some ethnographic studies have been criticised for placing undue emphasis on technological matters (Peacock 1982, 26), the impetus for generalization must come from research into the documented practices of traditional crafts. Moreover, the historical perspective provides an opportunity denied to the ethnographer of examining the changes which occur through time. Written evidence seldom offers very detailed information concerning the organisation of medieval pottery manufacture but documentary sources for the later post-medieval period - particularly the eighteenth and nineteenth centuries - are more illuminating. From this period, too, recorded oral traditions provide an important source of information. Thus the post-medieval evidence for country crafts such as pottery manufacture can be exploited in two ways: firstly, it demonstrates chronological changes in the organisation of production, often in response to known historical developments; and, secondly, the enhanced knowledge derived from fuller documentation provides a framework against which to measure the archaeological record of earlier periods. With proper safeguards, the study of material evidence derived from post-medieval Britain can play an important role in studying the ethnoarchaeology of pottery manufacture.

These then are the broad themes of ceramic archaeology. Specific studies, however, can seldom contribute with equal application to all aspects of the subject. Moreover, an unpalatable fact must be recognised at the outset, namely that the starting point for much ceramic research is a collection of material which has been gathered as a by-product of excavations usually undertaken for reasons unconnected with the specific aims of ceramic archaeology. It is hardly surprising, therefore, that students of medieval ceramics examine their material with widely differing objectives. For some, the sheer quantity of data has an almost hypnotic fascination, while to others it is a source of bewilderment or frustration. Because of its value as a chronological and potentially as an economic indicator, however, no excavator can justifiably disregard the pottery from his site.

The excavation of production centres offers one possible exception to the generalization that excavated assemblages are seldom recovered with regard to the specific requirements of ceramic studies. Yet, by the very nature of the evidence, the initial stimulus for such excavations comes, more often than not, from chance discoveries rather

than from the evaluation of research priorities. There are encouraging signs of change, however, as the needs of ceramic studies become voiced in the research designs for excavations (Blake & Davey 1983, 6-9). Indeed, to name but one early example, the evaluation of material culture as an index of marketing was included among the specific aims of the Sussex Archaeological Field Unit's medieval towns project carried out during the 1970s (Aldsworth & Freke 1976, 5).

Despite these encouraging trends in the field of medieval ceramics, site-orientated studies remain more common than regional approaches. The topics selected for examination are therefore influenced strongly by the artificial constraints of the available evidence. There can be no doubt that the contribution of pottery as a method of dating stratigraphic sequences remains fundamental to the study of medieval archaeology. Nevertheless, even in terms of the pottery from one site alone, the evidence has more far-reaching potential. Studies of technology, source identification and function, especially when related to spatial patterns on the site, all offer rewarding lines of enquiry.

Regional research programmes, however, provide more than just corroborative or supplementary evidence of the patterns revealed by individual excavations. They enable answers to be sought to more ambitious questions. Above all, regional studies provide a geographical dimension to the organisation of production and distribution which can only be glimpsed in a narrower sense through the examination of single sites.

There are two distinct types of regional ceramic research: the first comprises projects concerned with one or more wares, usually the products of known manufacturing centres; secondly, there are regional research programmes which seek to examine the relationship between different modes of production and distribution in a given area, either during a specific period or over a longer time-span. Examples of the former now abound in the archaeological literature, but owing to the investment of effort required for the latter, not only is there a reluctance to embark upon this type of work, but also, once begun, such surveys take longer to complete.

Certain themes can be pursued through both types of regional research. Attempts to reconstruct methods of marketing from archaeological data, or assessment of the differences between coarse and fine ware distributions, for example, can be examined either through case studies or by the judicious selection of a suitable

region. Other issues, however, can only be studied effectively by research based upon well-defined regions. Examples of this include the evaluation of factors affecting the location and development of industries; the assessment of competition between workshops meeting local demand; and chronological changes in the organisation of production and distribution. This does not deny the potentially significant contribution of case studies to these problems, but in each of the examples cited above, the well-chosen geographical region provides a vital thread of uniformity which is the prerequisite of comparison.

It will be apparent from the broad scope of ceramic archaeology that selection is crucial to the formulation of any research programme. In the words of a recent commentator:

'ceramic historians have the choice whether to elaborate [the] history of minor technical adaptations, or to analyse distributions, or to play a role in the reconstruction of social and economic history' (Blake 1980,9).

Stemming from a belief that regional ceramic research offers the most promising scope for illuminating aspects of the medieval economy through study of the archaeological record, South-East England has been selected as a viable unit for examination. The criteria not only for selecting, but also for defining this region will be discussed in subsequent sections. It therefore remains to sketch here the outlines and limitations of the subject determined by the adoption of a regional framework.

Research on a regional scale is best suited to an appraisal of the economic aspects of production and distribution. Historical sources, amplifying the archaeological evidence, provide a useful means of assessing the density and spatial distribution of production centres. Moreover, the relationship between workshops and geographical variations in demand can be examined at a regional level through the study of markets and settlement patterns in a way that would be impractical for unrelated case studies. A natural emphasis of regional research concerns the definition and mapping of pottery distributions. This not only helps to define ceramic regions, but more importantly the distribution of marketed vessels from known kilns provides a valuable index of local trade in household goods. The regional framework also provides an opportunity for more comprehensive scrutiny of the available data than might otherwise be possible, thereby enabling the differentiation of significant patterns from

those generated by the bias of archaeological fieldwork. Finally, the historical dimension of regional study lends itself well to the reconstruction and explanation of changes through time, both in the location of production and in the patterns of distribution.

Inevitably, this geographical emphasis must be at the expense of other equally significant aspects of ceramic archaeology. Themes such as the use and disposal of medieval pottery are approached more conveniently through site-orientated studies and have not therefore been treated in depth. On the other hand, understanding of the chronology and of variations in the technology, requires a regional perspective and a detailed assessment of specific sequences. In neither case, however, can regional studies hope to achieve the comprehensive treatment to which urban pottery researchers or students of ceramic technology would hope to aspire. For the present purpose, consideration of technology is confined largely to selected aspects of ceramic production, and the chronological framework adopted is one of broad divisions intended to highlight trends rather than to provide a reliable basis for dating sites and other sequences.

The important link which can be established archaeologically between the production and distribution of ceramics sets those medieval industries using clay as their raw material aside from most others. It has been suggested recently 'that students of medieval industry should have a primary concern for the personal and individual rather than the theoretical aspects of their subject' (Keene 1981, 151), yet as we have seen the scope of ceramic studies in an historical period extends far beyond this. Even the simplest comparison between the production and distribution of pottery and ceramic building materials highlights significant contrasts which are of general, and perhaps theoretical, application.

Before considering the definition and characteristics of our region, we must examine in greater depth two topics which have been touched upon already: firstly, the nature of historical and archaeological evidence; and secondly, the significance of pottery in the medieval and later household. This will be followed by a brief survey of developments in the study of medieval ceramics. Detailed evaluation of the methodology employed in the regional research strategy will be discussed in Section 2.

1.1.2 History and archaeology: the nature of the evidence

An assumption that the nature of the evidence determines the questions which can be answered using documentary and archaeological data has had a profound - and perhaps stultifying - influence on the development of medieval archaeology as an academic discipline. In studying 'buildings and documents', for example, Pantin (1958) saw the material evidence as providing details of form and construction whereas it was the documentary evidence which enlightened us about function and use. Dymond (1967,7) put the case succinctly when he wrote:

'[Archaeological evidence] is at its safest and strongest when used to reconstruct the technological side of human life. It is also good at answering questions about the basic economy of a community because this is closely related to technology. But it is not so suitable when it comes to details of social and political organisation because material evidence reflects such things only indirectly'.

It would be wrong, however, to assume that while archaeological evidence requires interpretation the documents are somehow capable of speaking for themselves. In reality the craft of interpreting either is highly skilled, and the discipline of medieval archaeology has done much to dispel the simplistic belief that

'with the Norman Conquest Archaeology gives way to History and the tangible "find" tends to become less important than the written document' (Salzman 1946, 74).

Academic methodologies based upon a belief in the limitations of the evidence lead to sound yet cautious scholarship. In the words of F.T. Wainwright (1962, 35):

'The basis of reliable interpretation is the asking of the right questions, that is questions capable of being answered from the evidence available, and all questions addressed to archaeological evidence must take into account its limitations. Otherwise they will be illogical and absurd.'

This reflects both the strength and weakness of medieval archaeology: its strength because the historical framework imposes the need for precision when interpreting the material remains, and its weakness because the status of the archaeological evidence too often becomes subordinate to the documentation. In an ideal situation the two are

complementary. There can be no doubt, however, that the methodologies of the historian and archaeologist are somewhat different. Indeed, the lively debate in the 1960s concerning the origins of the English Castle illustrates clearly the contrast between the deductive approach of the historian and the archaeologist's preference for inductive reasoning (Brown 1969; Davison 1967).

Here we must return once more to the nature of the evidence, for whereas extant documents are often themselves vestiges of an administrative system which is capable of reconstruction, the archaeological record comprises only the indirect and incomplete traces of past activities. Thus while the historian has at his disposal the means to recreate former systems, the archaeologist relies exclusively upon his powers of inference when analysing variations in the archaeological record. This is not to imply that the documentary sources are always complete or indeed that historical questions are exclusively of an administrative nature. At the risk of over-simplification, however, it is the historian's capacity for a more direct form of reconstruction which distinguishes him from the archaeologist. Nevertheless, some measure of the broadening scope of historical enquiry is perhaps provided by the fact that the study and analysis of ceramics is now deemed admissible as 'primary evidence for the nature of the medieval economy and society' (Dyer 1982, 40).

One important result of growing interest in economic and local history has been the increasing integration of archaeological and documentary evidence (Dymond 1967, 3). However, even though there is general acceptance of the principle of integration, the discipline of the process still lacks refinement. Opinion is divided: on the one hand there are those who would advocate the full integration of all evidence into a coherent synthesis, while others draw attention to the hazards of identifying precise connections between the documentary and archaeological evidence where none may have existed. In practice, however, the extent to which integration is desirable will depend upon individual circumstances.

Adoption of a particular methodology must also take account of the level at which integration is being attempted. Thus the need to consider material evidence is implicit in economic and local studies. To use the words of S.E. Rigold (1982, 84),

'Historic archaeology is an auxiliary science, to fill the gaps, often vast, in the written record, and to define the terms in which the records are couched'

In this context, therefore, it is important to achieve the fullest possible integration of the available evidence to provide a coherent historical synthesis. Nevertheless, it is not so easy to determine the proper approach to more specific studies requiring the integration of these two different forms of evidence. The medieval pottery industry is just one example among many where our understanding of a single problem depends upon the correct evaluation of both documentary and archaeological evidence.

The sources are complementary and not mutually exclusive. Taking the example of ceramic production, two types of documentation can be identified. Firstly, there are those sources which merely record the existence of a potter by the mention of his occupation (not to be confused with the evidence of surnames which belong to quite a separate class of information: see Section 2.4.4). Secondly, however, there are fuller references which offer some insight into the organisation of the industry, perhaps through the payment of rents or the supply of specific consignments of pottery. In the first case, it may be instructive to map the documentary evidence alongside the archaeological as a means of assessing the density of production at a particular period. Thus far integration is both practical and worthwhile, yet when considering the second type of documentary evidence, it may be unwise to mix specific conclusions drawn from the documents with those inferred from the archaeological record. Of course it is important to balance the dangers of too rigid and compartmentalised an approach against the hazards of a sweeping generalization based upon a misunderstanding of the documentary evidence.

It is in the interpretation of archaeological distributions that the dangers of strict comparisons between the documentary and material evidence become particularly hazardous. Here, perhaps, we should follow the advice of the more cautious school of thought and set the two types of evidence beside one another, rather than attempt to integrate them. Documents are valuable as a source of ideas, but as a means of explaining specific patterns in the archaeological record they contain innumerable pitfalls. Above all, however, there is the temptation to view historical information in the light of the archaeological and then to invoke the documentary sources as corroboration of the archaeological inferences. This aspect of the relationship is so fundamental to current trends in archaeological research that it merits an example to illustrate the problems.

Our example relates to stone artifacts rather than to pottery, but the problems are the same for they concern the extent to which isolated documentary references can be used to substantiate archaeological generalisations. It is necessary, therefore, to compare two fairly lengthy quotations: the first written by an historian concerned with a particular manor; the second from a work of archaeological synthesis.

'Apart from Spanish iron, millstones were the only items regularly used on the manor [of Cuxham] which had a really distant origin; they probably came from northern France or the Rhine valley and were bought in Southampton (1305) and London (1330-1). In 1305 the stone was brought to Cuxham by the miller, with the carter and three horses; but on the latter occasion five stones were bought, and a very full account is preserved of the expenses of bringing them by water to Henley, where they were bored, with costs of tolls at London and Maidenhead. In 1409 the farmer of the manor accounted for millstones bought at Henley and Steventon (co. Berks); earlier in 1302-3 one had been bought at Wallingford, when a toll of 8d had to be paid on leaving the town besides a further 5d at Crowmarsh for permission to take the cart onto the fields - presumably the road was so muddy that the heavy load would cause the cart to sink in....'

(Harvey 1965, 103)

The second quotation, using the first as a basis for generalisation, runs as follows:

'Quernstones:...By the late medieval period ... even in towns with access to nearer sources of millstones in France like Southampton, Exeter and Plymouth, lava querns occur in significant quantities. For some reason the Germans seem to have won western European respect for their commodity and as a result its trading overlapped areas traditionally dominated by other sources. The extent of this is illustrated by P.D.A. Harvey (1965: 103-4) in his account of the later medieval manor of Cuxham in Oxfordshire in which he describes how the peasants from the village went to Wallingford to acquire Niedermendig querns that had been shipped there along the river Thames.'

(Davey & Hodges 1983, 9)

Leaving aside the consequences of a confusion between large millstones and smaller hand querns, comparison of these two passages illustrates the very dangers outlined above. Having adjusted the historical facts to suit the archaeological evidence they are then used to corroborate the archaeological record. These abuses are worthy of closer scrutiny for they illustrate the general issues.

First, we must note that a reputed source for the millstones in Northern France or the Rhineland has been misrepresented as a positive identification of Niedermendig querns. Secondly, a single visit to Wallingford, selected from among others including Southampton, Steventon and Henley, has been chosen as the basis of generalisation. Thirdly, an assumption about the method of transport to Wallingford has been incorporated, apparently without qualification, into the historical description. Finally we are led to believe that the peasants acquired querns, whereas on the occasions when the purchaser of the Cuxham millstones was recorded (admittedly not in 1302-3) it was the miller and farmer who bought them: they are technically peasants but certainly not the typical medieval villager who might have needed a hand quern. These four instances of misleading interpretation therefore reinforce the need for careful assessments when comparing documentary and archaeological data. Even if no greater emphasis than illustration is to be placed upon the historical sources they must not be misrepresented.

The comparison of documentary and archaeological chronologies is also a major source of difficulty when seeking to integrate the two forms of evidence. Although the pitfalls were summarised some 20 years ago (Hurst 1962-3, 140) the role of documentary evidence for dating ceramics is still a source of controversy (Pearson 1982, 91-2). There are, however, two quite separate problems; namely the calibration of ceramic sequences, and what are perhaps the more significant difficulties of equating ceramic chronologies with historical trends.

As far as the former is concerned, systematic study of the processes which lie behind the formation of the archaeological record has done much to dispel belief in the precision of ceramic sequences linked to documentary termini. Nevertheless, it is amusing to consider the precision which some might have envisaged, for among the Austen Collection of medieval pottery wasters from Brede, East Sussex (see Section 9.1.6 no. 368), probably picked up during the second

quarter of this century, was a hopeful label which read::

'thought to have been made

by John Harry, potter, 1405'

Would that the archaeological record really was capable of such precise interpretation!

It may be true that medieval pottery studies have provided a chronological framework superior to that enjoyed by other fields of archaeology (Hodges 1983, 29), but for the post-Conquest period in particular the ceramic chronology is still inadequate, and is likely to remain so. Its inadequacy of course stems from the difficulties of establishing a link between the very precise chronology of the documentary sources and the less clearly defined archaeological record. For this reason, it is necessary to accept that the contribution of archaeology 'is often going to be limited to observation of long-term trends not of short-term fluctuations' (Hinton 1977a, 209). Nevertheless, to dismiss the ceramic chronology altogether because of its deficiencies would be to deny access to an important source of information for dating elements in the medieval landscape. This contribution of ceramic research to medieval archaeology will be discussed further in subsequent sections, but it remains here to emphasize that if medieval pottery is to be studied within an historical and geographical framework, allowances must be made for the different methods of constructing the respective chronologies. Again, this will be the subject of further discussion.

To conclude, therefore, it is useful to summarise a few of the limitations governing the study of archaeological evidence. The fact that the archaeological record as a whole relies upon inference before it can mean anything should not, however, be regarded as an obstacle to research. Nevertheless, without awareness of the documentary controls, there are clear limitations to the usefulness of archaeological studies in well-documented periods. Moreover, larger quantities of sophisticated data do not necessarily increase the range of questions which can be answered. Thus, despite the range and complexity of the material culture which is characteristic of 'historical archaeology' on the American continent, the final analysis frequently rests with an assessment of the documentation (Streeten 1982c).

One undeniable limitation to the scope of archaeological evidence must be its differential survival. In the context of ceramic studies this could lead to a misplaced confidence in the significance

of pottery. A more important implication, however, is that the choice of evidence with which to evaluate particular problems will almost certainly be determined by practical rather than by theoretical considerations. Taking an example discussed already, it could be argued that one of the most effective ways of monitoring the coastal hinterland as evidenced in the archaeological record would be through quantified assessment of the marine resources represented at inland sites. Yet differential survival of fish bones, particularly on acid soils such as those of the High Weald, renders such an approach quite unrealistic. Instead, the practicalities dictate that the problem can be examined more effectively through studies of imported pottery, even though the distribution of manufactured goods may have followed quite different patterns from the consumption of marine foodstuffs. Perhaps some indication of this contrast could be ascertained by comparing the quantities of marine molluscs from coastal and inland sites.

Limitations imposed by the imprecise chronology of the archaeological record have been stressed elsewhere, but some are quick to draw attention to another increasingly significant problem; namely the cost of recovering archaeological evidence (Sawyer 1983, 45). Archaeologists are growing accustomed to the need for careful choice in the deployment of scarce resources, but seldom (except perhaps for space to publish results) have 'archaeological' and 'historical' projects found themselves in competition with each other. It is certainly right to consider the costs of recovery as limiting the scope of archaeological evidence, but selective expenditure is justified in view of the threatened destruction of historic landscapes. Our understanding of ceramic production and distribution can be enhanced using data which are already available, in conjunction with systematic sampling at a few well-chosen sites (see Section 2.3.2). There is a need, however, to integrate ceramic studies with broader research designs (see Sections 1.2.6-7).

Having considered the scope and limitations of archaeological and documentary evidence, and more particularly the problems of integration, it is now necessary to examine the significance of pottery in the medieval and later household.

1.1.3 Pottery in the medieval and later household

The importance attached to pottery by its medieval users was certainly less than is often assumed by the archaeologist. It is true that there were some types of vessel for which pottery was the favoured material, but more often than not the potter supplying the needs of a medieval household would be in competition with craftsmen using other materials. It is also important to consider variations in the extent to which pottery was used in the different strata of medieval society. These problems can be approached through the study of both documentary and archaeological evidence. Some themes such as competition with other craftsmen and the value of pottery as an index of demand for household goods will be considered more fully in subsequent sections, but it is fitting that these problems should be examined first in relation to the nature of the archaeological and documentary record.

Medieval documentation is of limited value in providing a quantitative assessment of the relative use of earthenware vessels and those of other materials. The problems are twofold: firstly, the scattered references to vessels of any description are seldom specific about the material, and, secondly, owing to their low value and ubiquitous occurrence, earthenwares may often have escaped attention in accounts and inventories. Thus, while the published Cellarers' Accounts of Battle Abbey contain numerous references to vessels of unstated material (probably metal), there are only two references to earthenwares: one in 1306-7 (Searle & Ross 1967, 48); the other in 1464-5 (*ibid.*, 140). Studies of post-medieval inventories, however, offer a more reliable basis for quantification. In seventeenth-century Wharfedale, for example, analysis has shown that references to pottery account for as few as 1% of the total entries (Le Patourel 1976, 176). A similar pattern has emerged from a study of seventeenth- and eighteenth-century inventories in mid-Essex. Taking as a sample those vessels described as a 'pot', there are 87 references to brass vessels; 51 to iron; 35 unspecified and only eight to earthenwares (Steer 1969, 294). Even allowing for the possibility of a higher proportion of earthenwares in the classes of vessel described as a 'platter' or 'dish', the documentation serves to illustrate the humble status of pottery in the post-medieval household. There can be no doubt, however, that a good deal of pottery would probably have been included among miscellaneous articles not itemised in the inventories.

Although simple quantitative data are only available from

the post-medieval documentation, medieval sources do provide qualitative information about the extensive use of vessels other than those of pottery. Taking one example, Le Patourel (1968, 101) has inferred from an albeit limited range of sources that there was a growing use of metal vessels among the fourteenth-century peasantry. This, she argues, is demonstrated by the increasing occurrence of these vessels as heriots and as pledges for appearances in court. Many of a peasant's possessions would have been associated with the preparation of food, and metal vessels would have been items of some considerable value (Miller & Hatcher 1978, 158). Metal pots could have remained serviceable for a long time, and at all levels of society they would have been bequeathed on the owner's death. Thus in 1534 the will of Margery Battel records that among the items left to the monks of Waverley Abbey were 'a gallon panne; great kettys and brass pottes' (Robo 1935, 284). The life of a metal vessel could be prolonged by repairs, and even when it came finally to the end of its useful life, there would still be a value as scrap. In 1470, for example, the cargo of a ship sailing from Southampton under its master Geoffrey le Bluet included 'one puncheon; 1 cwt. 22 lbs. old pewter vessels and 3 qtrs. old broken cauldrons' (Quinn 1937, 28). Perhaps some measure of the contemporary significance attached to metal vessels is provided by the extensive occurrence of pottery skeuomorphs (see Section 5.7).

This consideration of metal as an alternative to earthenwares highlights important limitations to the scope of the archaeological evidence. Although more durable than wood or leather the metal vessels are unevenly represented in the archaeological record not only because of their varying popularity at different periods but also because the material can be recycled. Fragments of bronze cauldrons are being found in increasing numbers on excavations (Goodall 1981, 64-5), but their contemporary value as scrap precludes the discovery of complete examples, save in exceptional circumstances as at New Elvet, Durham City (Carver 1974, 139-40). At Bayham Abbey, East Sussex a late medieval deposit in the reredorter and drain presumably representing material discarded when the Abbey was dissolved in 1525 included a surprisingly high ratio of one metal vessel to only 7.5 of earthenware (based on a sample of 6 metal vessels and a minimum of 45 pots). Nevertheless, precise statistical inferences are meaningless owing to unknown factors concerning the salvage of metal for scrap both during the monastic occupation and at

the Dissolution (Streeten 1983a, 100-4; 109-10).

Even though differential rates of survival preclude reliable calculation of the ratio between earthenwares and other types of vessel, comparisons between the quantity of pottery and other classes of material which are equally well represented in the archaeological record offers a more rewarding method of monitoring broad trends in the amount of pottery in use at given periods. Animal bone is an obvious index against which to measure the quantity of pottery. Such an approach has been used successfully by Vince (1977c, 68-72) to demonstrate an overall increase in the amount of pottery represented in the archaeological record at Hereford and Gloucester, principally between the tenth and sixteenth centuries. The methodology requires qualification, however, (*ibid.*, 71) and there are no generally agreed standards by which the quantities of pottery and bone should be measured for this type of comparison. Yet the observation of similar trends on different sites in the same towns reinforces the validity of this approach. The quality of published data does not permit analysis of these problems at towns in South-East England, but there would be much to be gained from such studies for comparison with other regions. Judging from purely empirical observation, the amount of pottery in use in South-East England before the twelfth century would seem to be by far greater than in the west of the country, though apparently less than in East Anglia. Quantified comparisons would be of immense value.

Pit groups from towns like Chichester, Lewes, Canterbury and perhaps Guildford would provide a sufficient range of material to justify evaluation of the excavation archives with such aims in mind. It is doubtful, however, whether there are enough securely stratified deposits on rural sites in the region to search for the potentially interesting contrasts between town and country. The urban practice of rubbish disposal in quickly-filled pits is unlikely to produce archaeological data which are comparable with rural middens such as examples found near the coast of the Isle of Wight which received systematic publication as early as the 1930s (Poole & Dunning 1937; Dunning 1939b). This type of deposit would have accumulated more slowly than the contents of a pit, and, even with the benefit of sophisticated quantified recording, the very nature of the archaeological record therefore conspires against its usefulness for making comparisons between urban and rural sites.

Differing practices of rubbish dispersal also constitute another problem when attempting to achieve relative estimates for the amount of pottery in use at given periods. The difficulties of assessing the significance of so-called 'secondary rubbish' (that is rubbish dispersed away from the settlement at which it originated) have been emphasised in connection with archaeological studies of land use (Drewett 1982, 208-210), but medieval pottery seldom occurs in large quantities during fieldwalking in South-East England. In some cases the absence of medieval sherds scattered as a result of manuring could reflect a retreat from cultivation to pasture (Biggar 1978-9, 146), but there is important negative evidence from some areas of known medieval cultivation to suggest that manuring practices may have differed from those indicated, for example, by large quantities of abraded Romano-British pottery (Fowler 1965,67). Nevertheless, some medieval rubbish would doubtless have been carted away from rural settlements, with a consequent loss of material from the archaeological record of these sites, and there are also signs of regional variations in the practice of manuring (Moorhouse 1978b, 6).

The problem of 'secondary rubbish' is even more acute when considering pottery found in late medieval towns. There are obvious archaeological implications, for example, in the increased controls over communal hygiene reflected in the disposal of rubbish outside towns rather than in pits dug on private tenements (Davey & Hodges 1983, 6). Moreover, specific documentation attests that the carting away of rubbish was an accepted practice at least among the larger households (Keene 1982, 28). An alternative use for urban refuse would be as make-up for land reclamation, particularly on waterfront sites (Milne 1981, 33). In both cases, however, differing practices result in distortion of the primary archaeological record. Indeed, excavations on both urban and rural sites have shown that house floors were frequently swept clean. Thus, with the possible exception of messy street surfaces sealed between successive layers of metalling, few archaeological horizons in medieval towns are derived from the simple accumulation of occupation debris (Keene 1982, 28).

These examples serve to illustrate some of the processes involved in the formation of the archaeological record and at the same time they illustrate the limitations of material evidence as a means of monitoring variations in the amount of pottery used in medieval households. It seems, therefore, that the archaeologist cannot aspire to what one historian would have as the most simplistic level of a

quantitative analysis; namely, 'knowing that at one period the average household owned twice as many pots as it did at another' (Harvey 1983, 76). Such simplifications are intended to focus attention on specific problems; in this case to emphasise the archaeologist's ability to provide quantified data. Nevertheless, the statement also underlines the fundamental principle of quantification that while it may be possible to demonstrate relative changes, absolute ones are far harder to detect.

Relative quantification has dominated studies of ceramic marketing for some time, but its application to problems of social status has emerged more slowly. Indeed, the archaeologist still remains better equipped to ask questions about the effects of social status on the use of medieval pottery than he does to answer them. Observations are generally of a qualitative rather than quantitative nature (Le Patourel 1976, 179; Hinton 1977a, 206; 1977b, 226). The social status of the consumer, however, may be crucial to an understanding of marketing. Many commentators have drawn attention to the contrast - and in some cases lack of contrast - between the ceramic assemblages from urban and rural sites. Yet the effect on the archaeological record of differing social status within urban communities has only received proper emphasis more recently (Davey & Hodges 1983, 6-7). False comparison between dissimilar sites could distort patterns which might otherwise be assumed to have resulted from economic forces. The problem is particularly acute when considering imported or exotic wares, and these issues have profound implications in the formulation of urban research strategies. If full use is to be made of the evidence derived from material culture then meaningful comparisons can only be made if a range of high/low status and intra-/extra-mural sites has been examined in selected towns. The same may also be true to a lesser extent in the countryside where there may be a contrast between manorial and peasant properties. Systematic evaluation is essential, however, in order to establish that differences really do exist before more resources are invested in expanded research programmes. We are approaching the stage at which sufficient sites have been excavated to enable these judgements to be made on a regional scale, but in South-East England the task of evaluation has barely begun.

Finally, in defining the scope and limitations of the archaeological record for the status of pottery in the medieval and later household it remains to consider briefly the uses to which

ceramic vessels were put. Moorhouse (1978a; 1981, 114-119) has presented an impressive array of documentation to illustrate the diversity of function among medieval ceramics. There are several instances where recipes state a preference for the use of earthenware vessels, but more often than not pottery had no great merit other than its cheapness. In the sixteenth century it is hardly surprising therefore to find that, 'one dosyn erthyn potts' were used as containers for 'colors' by William Elders the plasterer during the royal building works at Dartford in 1542 (Kirby 1961, 18). Even for the medieval period, Hinton (1977a, 196; 1977b, 226) has drawn attention to the relatively low prices paid for pottery in relation to available denominations of the currency. The value of an earthenware cooking pot measured in fractions of a penny, compared with a metal cauldron costing several shillings, highlights the importance of pottery as a cheap, if breakable, substitute for other materials.

Thus, save for one or two exceptions, there are few functions for which materials other than pottery would not be equally suitable. Moreover, there is a dangerous assumption among archaeologists which equates form with function. We are reminded of the problems by a practising potter:

'The search for the function of particular items and shapes should be pursued with some caution....a pot's function is to do the job the user has in mind for it' (Bosworth 1982, 48)

Thus the term 'cooking pot' has come to have two meanings in the archaeological literature: to some it denotes specifically a vessel with signs of having been used for cooking; while to others it is a convenient short-hand expression of a shape. In this context, Moorhouse (1981, 118 fig. 90) has illustrated some unusual uses for the medieval 'cooking pot'. Nevertheless, the discovery of complete pots buried in a hole, such as the example at Dale Hill, Brighton (Section 10.2.5 no. 0760), should not always be assumed to denote a specialized function. In this case the charcoal fragments, soot-blackened exterior, and associated oyster shells can probably be taken at face value to represent the relics of food preparation. On the other hand, scientific analysis of residues inside a pot can demonstrate that conventional forms were sometimes put to unexpected uses. A jug from Hertford, for example, had been used for storing urine, which suggests a possible association with medieval beliefs in the value of urine as a remedy for ailments (Dunning 1942). The

importance of this discovery, however, lies not so much in the interesting sidelight on medical history, but in the fact that the jug belongs to a well-known Hertfordshire type (Biddle 1961a, 68; Renn 1968a). This reinforces the contention that the repertoire of the medieval potter included forms which would be suitable for a wide range of uses, thereby enhancing potential sales.

Documentary research and the scientific analysis of residues helps to refine our appreciation of vessel functions, but by their very nature such studies relate to individual cases. It is therefore difficult to draw general conclusions about the relationship between form and function. The most useful contribution of functional analysis lies in the identification of activities or 'industrial' processes on specific sites. From these, it is true, generalisations can be derived. The study of pottery marketing, however, requires the definition of broad classes of product rather than the identification of functional types. The distinction^{between} coarse (culinary) and fine (table) wares is far less clearly defined in the medieval period than it is for example in the Romano-British. Moreover, with the increasing use of alternative materials in the post-medieval period such distinctions retain little value. Nevertheless, the status of the commodity will almost certainly be reflected in the extent of its distribution because of the economic ratio between the costs of production and transport. Such an assumption is borne out by empirical observation of the contrast between the extensive distribution of decorated medieval jugs compared with a more restricted market for culinary wares made at the same centre (Jope 1953-4, 39). Attempts to relate these observations to the status of the consumer (and thus by implication to the status of the commodity itself) are fraught with difficulties. Highly decorated jugs, for example, are to be found both at villages and seigneurial sites, but in the case of the latter we have no means of assessing whether they were used at 'high' or 'low' tables (Hinton 1977a, 196). Moreover, in the post-medieval period, systematic study of the social context in which pots appear in contemporary paintings has demonstrated changes through time in the status of the consumer using the same type of vessel. A form which begins its life in the households of the wealthy may be adopted subsequently by the lower ranks of society (P. Peremans, lecture: Hull, 1979).

In assessing variations in pottery distribution therefore it may be appropriate to shift our emphasis from the status of the

consumer to the investment of labour by the craftsman. Thus it could be inferred that the items which took longer to make (e.g. highly decorated jugs or special table wares such as aquamaniles) would be more expensive and therefore had greater potential for wider markets when transport would account for a relatively smaller proportion of the cost. According to this economic view of marketing, the social status of the consumer is of minor significance and is merely reflected by his ability to pay for special goods which have absorbed a greater amount of the craftsman's time in their manufacture. Demand would therefore be determined by the amount of surplus wealth available for such purchases and upon the relative attraction of pottery compared either with other materials or with the output of different centres. In the context of archaeological research this underlines the importance of quantification rather than merely recording the presence or absence of a particular ware. At the same time, however, it also emphasises that differences of 5% or less in the content of a ceramic assemblage may be more significant among the wares which are poorly represented than among the common types. In statistical terms, minor variations are more significant at the lower end of the percentile scale than they are in the middle or upper ranges.

Returning to the problem of defining broad ceramic classes for use in the study of distribution patterns, it becomes clear that the amount of labour invested by the medieval craftsman offers a more useful criterion for classification than attempts to identify the function of specific vessel types and relate these to patterns of demand. Taking as an example the earthenwares produced in South-East England during the thirteenth and fourteenth centuries, most of the hollow wares can be classified according to three principal shapes: the open-topped container (cooking pot); the open vessel (bowl) and the narrow-mouthed container (jug). There are, of course, minor types such as lamps, costrels and aquamaniles, which do not conform to these classes, but most vessels are derived from one of the three principal forms. Skeuomorphic cauldrons, for example, comprise the open-topped container with the addition of loop handles and feet; the skillet or frying pan consists of a 'bowl' with an added handle; the saucepan or ladle is similar to a small 'cooking pot' with pouring lip and handle; and plain 'jugs' can occur either with or without a bunghole. Each of these forms could have had a variety of uses, but in terms of production they form a consistent group, quite distinct from the

considerably greater effort required to make a highly decorated jug perhaps intended for use at table. If distribution patterns really do reflect economic forces rather than demand for specific types of vessel, then with the demise of the highly decorated jug in the late fourteenth and fifteenth century one might anticipate greater uniformity in the marketing of different forms at this period.

These problems will be discussed more fully in relation to the evidence for changes in the pattern of ceramic marketing (Section 6.3) but, to conclude, it should be emphasized that both vessel function and the social status of consumers must be considered in relation to pottery distributions so that the significance of purely economic factors can be assessed. Even if the patterns of use and disposal of medieval pottery are not the primary concern of a regional research strategy, study of the documentation and systematic evaluation of the archaeological record provides a more realistic impression of the significance of pottery in the medieval and later household than would be gained from examination of ceramic marketing alone.

1.2 POTTERY STUDIES AND THE DEVELOPMENT OF 'MEDIEVAL
ARCHAEOLOGY'

1.2.1 Changing approaches

Trends in the study of medieval pottery reflect many of the developments in medieval archaeology as a whole. The historiography of medieval ceramic studies deserves attention not only as an index of changing academic approaches, but also as an essential background to the data which are used in contemporary research. Information derived from excavations and chance discoveries will reflect the interests and attitudes of the generation which collected the material. It is therefore essential to consider the developments in ceramic research in order to understand the limitations of the evidence from which conclusions are to be drawn.

Changing approaches to the study of medieval pottery over more than a century are reflected in the literature concerning an earthenware aquamanile discovered at Seaford in 1858. This example will serve as an introduction to the broad developments.

The circumstances of discovery in the foundations of a new school were typical of any age, but recognition of the vessel clearly owed much to the local secretary of the then recently-formed Sussex Archaeological Society (Figg 1858). The society, which had been formed some twelve years previously, provided a means of communication whereby chance local discoveries such as this could be published within the County. By coincidence, another aquamanile had been found at Lewes in 1846 and was published in the first volume of the Sussex Archaeological Collections (Figg 1846, 44-5). It was this rather than the Seaford vessel which attracted the attention of early writers on medieval ceramics (Chaffers 1883, 39; Jewitt 1883, 67; Solon 1883, 6). Following the discovery of medieval tile (and pottery ?) kilns at Hastings, Lower (1859, 230) observed that the pottery from these kilns bore some resemblance to the Lewes and Seaford aquamaniles. Ross (1860, 269) was more confident in his attribution to the Hastings potters, an opinion which was to be strengthened by the discovery a few years later of yet another highly decorated medieval vessel from a building site in the town (Ross 1866).

Even by the 1860s, therefore, a methodology had been established which was to continue for a century or more. After each new discovery, the earlier finds were reassessed with growing confidence and each time bolder conclusions were drawn from the

evidence. The formation of the Sussex Archaeological Society in the mid-nineteenth century had not only offered a journal in which discoveries could be published, but the Society's museum also provided a safe repository for the antiquities. Both the Lewes and Seaford aquamaniles were early acquisitions and have remained in the collection ever since. There were no new discoveries to revive interest in these objects during the later nineteenth century, and a report in 1886 suggests that early records and displays in the museum left something to be desired (Sutton 1946, 83-5). Nevertheless, Hobson (1902, 6) included both the Sussex aquamaniles in his masterly synthesis of 'medieval pottery found in England'. He was not tempted to suggest the source of manufacture, but some five years later the views of Ross were reiterated in the Victoria County History (VCH Sussex 1907, 251). A later commentator was more sceptical about the suggested attribution to the Hastings kilns (Sutton 1946, 79), and Rackham (1948, pl. 13a) published an illustration of the Seaford aquamanile principally for its aesthetic qualities, without reference to a possible source of manufacture.

Dunning's description (1968, 42) probably marks the first attempt to break away from the antiquarian approach which had hitherto dominated the literature concerning this vessel. He tried to set the style of decoration in a wider European context. This stylistic approach was characteristic of a particular phase in ceramic research, exemplified by his earlier work on the Moot Hall jug from Nottingham (Dunning 1955a). Nevertheless, despite the lack of examples from the kiln site at Hastings, Dunning's comment (1968, 40) that aquamaniles were made there implies that he accepted - perhaps subconsciously - the attribution of the Seaford vessel to this source. The stylistic approach also dominated Barton's discussion in 1972 (published 1979, 30-35) when he examined more fully the affinities of the Sussex aquamaniles. It is significant that he drew attention to similarities between the Seaford vessel and the Moot hall jug from Nottingham. Indeed, the Midland analogies led him to suggest, indirectly, a possible source of manufacture in the North-East Midlands/South Yorkshire area (ibid. 32), although he was unable to take account of the suggestion published a few months later that the Moot Hall jug might be a product of the Scarborough kilns (Laing & Robertson 1969-70, 149).

A new chapter in the literature concerning the Seaford aquamanile begins with a recent comprehensive survey of Scarborough

ware (Farmer 1979, 38 pl. VII). Close examination of the style, fabric and above all technique of manufacture has enabled P. and N. Farmer (lecture: Canterbury, 1980) to identify the Seaford aquamanile as a product of the Scarborough industry. Moreover thin-section analysis has subsequently confirmed the identification as Scarborough ware of both the Moot Hall jug and the Seaford aquamanile (Williams & Tomber 1982, 115). For the first time in 125 years, therefore, it has become possible to speak with confidence about the origin of the vessel discovered at Seaford in 1858.

This changing emphasis in the literature reflects the broad trends in medieval ceramic research. We can identify an 'antiquarian phase' supplemented in the second half of the nineteenth and early twentieth century by attempts to define a reliable chronology for medieval pottery. Systematic reassessment of the dating pioneered by Dunning from the 1930s onwards was accompanied by an interest in ceramic distributions and traits of style. Meanwhile, the century between the 1860s and 1960s witnessed numerous excavations on kiln sites, usually resulting from the chance discovery of medieval wasters. The value of pottery as a social and economic indicator has only become accepted comparatively recently, and problems of assimilating the data have hindered the widespread adoption of an integrated approach to the study of production and distribution. While it would be misleading to examine these themes in tight chronological compartments, a broadly chronological framework has been adopted for a survey of the principal developments outlined in the ensuing sections.

Firstly though, it will be helpful to quote from one of the few general books devoted entirely to the study of English medieval ceramics. The following passage underlines both the problems inherent in the subject matter, and the way in which certain fields of ceramic study have tended to diverge from the more exacting demands of the archaeological discipline.

'It is the purpose of this book...', wrote Rackham (1948, 3) '...to present typical examples of these [medieval] wares in such a manner that their aesthetic qualities as works of handicraft may be appreciated as they deserve to be;...It is not to be inferred that chronological sequence and evolution, the local distribution of the manufacture, and the purposes for which the wares were intended, are questions that can be ignored as irrelevant; for thorough understanding of the aesthetic qualities of the products of

human craftsmanship in the past cannot be reached unless these aspects of the matter are taken into account. The definitive archaeological treatise, on historical lines, has yet to be written, and would entail not only a harmonisation of all the notices scattered over a period of nearly a century through the Transactions and Proceedings of antiquarian societies, but also a close comparative study of specimens preserved in museums, large and small, and other depositories over the length and breadth of the country.'

The magnitude of such a task demonstrates clearly the importance of regional research programmes.

1.2.2 Antiquarian interest in medieval and later ceramics

Early contributions to the study of medieval ceramics came principally from the collectors of antiquities. These collections, assembled before the days of highly mechanised and destructive techniques of building construction, now provide important groups of complete vessels with which to compare the sherd assemblages from more recent excavations. Hinton (1977b, 221-3) has drawn attention to some of the early acquisitions in the Ashmolean Museum and the historical background to collections of Roman and medieval pottery from London has been summarized by Rhodes (1979, 81-4). The problem of differentiating medieval from Roman pottery must account, in part at least, for its apparent scarcity in early publications. Yet Ingrams (1846, 63) observed that...

'...specimens of medieval pottery are supposed to be of very rare occurrence. The smallest fragments of Samian ware and the minutest relics of ancient art, connected with our classical predilections, are carefully preserved; but the rudeness of execution or the coarseness of the material has generally consigned to oblivion even the sacred vessels of our barbarous ancestors'.

Difficulties of identification may not, therefore, have constituted the only reason for a lack of interest in medieval ceramics. It is certainly true that some of the early collectors outside London acquired medieval pottery on account of its curiosity rather than because they appreciated its historical context. Thus the Catalogue of the Mantellian Museum, Brighton included what we now know to be a medieval chimney pot from Cissbury, and the bones of a cock found in an earthenware vessel at Lewes Castle; the latter almost certainly of

Roman date (Mantell 1836, 38;40).

The importance of early county archaeological societies in promoting field archaeology has been emphasized already in connection with the Seaford aquamanile. In South-East England, formation of the Sussex Archaeological Society in 1846 was followed by the genesis of county societies for Kent, London & Middlesex and Surrey during the 1850s. Much of the stimulus for these initiatives would have come from the influence of the newly formed British Archaeological Association, and the Archaeological Institute, founded in 1843 and 1844 respectively (Salzman 1946, 6-7; Beresford & Hurst 1971, 80-1). It was perhaps the influence of the Cambridge^d New Camden (or Ecclesiological) Society which accounts for the emphasis on ecclesiastical architecture among the antiquarian investigations during the second half of the nineteenth century. Thus, the foundation of the Sussex Archaeological Society partly as a result of the destruction wrought at Lewes Priory was a significant reflection of the times. Detailed plans of the Priory buildings were made both at the time of discovery (Blaauw 1850) and as a result of subsequent excavations (Hope 1884), but in neither case was there any reference to associated pottery. Excavations within the claustral ranges of monastic sites are notoriously disappointing for the recovery of medieval artifacts and examination of the stratigraphy often reveals more about the post-medieval history of the site than about the monastic occupation itself. At least a partial explanation for the lack of medieval pottery from early excavations as opposed to chance discoveries must be sought therefore in the nature of the sites which attracted antiquarian interest. The aims and techniques of excavation provide another explanation. Contemporary attitudes are exemplified in the words of St. John Hope, a well known ecclesiologist responsible for unearthing numerous monastic sites, who wrote of his work at Canterbury:

[The Chapel of St.Pancras]'...has now been properly excavated down to the floor level, and for the first time we are able to speak definitely concerning the plan and architectural history' (Hope 1902, 228).

Excavation was therefore a means of exposing the architectural remains rather than a key to the understanding of stratigraphy.

There were, of course, exceptions to the preoccupation with architecture. Indeed, Hurst has drawn attention to the detectable shift of emphasis from the pioneer excavations of the 1840s and early

publications concerning medieval pottery, towards the study of ecclesiastical architecture in the second half of the nineteenth century (Beresford & Hurst 1971, 81) The work of General Pitt-Rivers at Caesar's Camp, Folkestone was therefore exceptional at this period.

His illustrations and 'Relic Tables' laid the foundations of a scientific approach to the principles of stratigraphy and association (Pitt-Rivers 1883). Moreover, the exemplary care with which the finds were marked - each with a neatly hand-printed label - and bagged in groups demonstrates an unprecedented thoroughness. Indeed, using the collection of pottery in the Pitt-Rivers Museum at Oxford, it is still possible to distinguish those sherds which were stratified in the make-up of the twelfth-century earthworks from the material which had accumulated after their construction. Four years after the publication of the report on Caesar's Camp, Pitt-Rivers wrote of his work at Woodcuts Common:

'It would be thought by some that I have recorded the excavation of this village and the finds that have been made in it with unnecessary fullness, and I am aware that I have done it in greater detail than has been customary, but my experience as an excavator has led me to think that investigations of this nature are not generally sufficiently searching, and that much valuable evidence is lost by omitting to record them carefully...' (cited in Daniel 1967, 238).

Perhaps this criticism was levelled against contemporary ecclesiologists? It is certainly unfortunate that Pitt-Rivers' advice remained unheeded even some 30 years later during renewed activities at St. Augustine's Abbey, Canterbury. Hope (1915, 294-6) writes:

'...it was thought advisable to remove the layer of earth which marked the level of the monks quire at the suppression and to excavate beneath it for traces of earlier buildings.'

Once again, no finds are recorded from this potentially useful archaeological horizon, and one can only speculate what discoveries from the 'layer of earth' might have appeared in Pitt-Rivers' Relic Tables.

Whereas poor attention was paid to artifacts found during excavations, the antiquarian literature contains numerous instances of chance encounter with medieval pottery. Finds at Lewes, Seaford and

Hastings have been described already, but, even excluding the chance discovery of medieval kilns (Section 1.2.4), these were just the first of many examples in South-East England. Pottery was found at Burlough Castle, East Sussex in c.1856 (Barbican House Museum, Lewes: 53.37); Thomas Honeywood discovered a cache of jugs at Horsham in 1867 (Honeywood 1868); and the following year Edward Turner (1869) reported on a 'fictile vessel' found beneath the floor of Buxted Church. Another discovery of particular interest was the 'earthen jar or crock' containing the hoard of late Saxon coins found at Chancton Farm, Washington (Beck 1867; Holden 1982). Extensive church restorations during the second half of the nineteenth century also resulted in the discovery of several acoustic jars. Minns (1871) had recorded examples from two churches in Norwich and had drawn attention to continental analogies for the use of pots apparently to improve church acoustics. His publication doubtless assisted with recognition of the Kentish examples at Leeds (Morris 1878). Two vessels - not necessarily acoustic jars - were found buried in a wall at Bexley Church in 1883 (Tester 1956, 260), and in Sussex an acoustic jar was discovered in Ford Church (Barbican House Museum, Lewes: 33.40).

The apparent lack of published medieval pottery in the county journals for Kent, Surrey and Sussex during the 1880s and 1890s may reflect the nation-wide phenomenon of declining interest in antiquities which accompanied the increasing attention paid to architectural and ecclesiological studies. Nevertheless, chance discoveries continued to be published during the early years of the twentieth century, with finds from Camberwell (Mainwaring Johnston 1908) and Guildford Castle (Elsley 1909). Many of the excavations at this time were still concerned with recovering the ground plans of monastic or seigneurial buildings (e.g. Allington Castle: Conway 1909), but there is a recognisable change of emphasis in the literature published during the second decade of this century.

The pottery report accompanying the account of excavations at Rayleigh Castle, Essex, published in 1913, represents a landmark in the history of medieval ceramic studies in South-East England, not only because of the methodology adopted, but also because the material was used extensively as a source of comparisons during the next 20 or 30 years. Reader's (1913, 176) fabric classification was remarkable for the time, and he was perhaps one of the first to appreciate the problems and principles of selecting finds for publication:

'It should be pointed out that a selection only of the general pottery has been preserved and, again, that a selection only of this has been sent me for examination. In the case of that from special localities (the quantity being comparatively small although by no means inconsiderable), it has all been kept. In this way, an appearance of greater diversity than exists may have been made between the two sets of conditions' (*ibid.*, 175).

Reader then went on to describe the chronological significance of pottery groups found in different areas of the castle, and it is this appreciation of the potential importance of provenanced groups which marks a distinct change from most of the earlier excavations in the region. It is perhaps significant that at about this time, too, the first stratified groups of pottery were being recorded in London (Rhodes 1979, 83). Moreover, Salzman (1912, 59-60) had used ceramic evidence for dating the fill of a ditch excavated at 'The Mound', Selsey in 1911, and two years later medieval pottery was found during investigation of the ruined parish church of Excete (Budgen 1916, 167).

This period, therefore, saw a revival in the practice of field archaeology directed towards medieval monuments. Until now, published finds of medieval pottery had been confined largely to individual finds or groups of complete vessels, usually discovered by chance. With increasing fieldwork, however, collections of sherds began to be retained for their chronological significance. In many respects, this marks the end of a purely antiquarian phase in the study of medieval ceramics.

1.2.3 Establishment of a ceramic chronology

To identify the establishment of a chronology for medieval pottery as a single phase in ceramic studies would be a gross oversimplification. Sequences will always be capable of refinement. Nevertheless, it is instructive to consider three principal phases in the establishment of a ceramic chronology before the dating evidence was enhanced immeasurably as a result of excavations undertaken in the 1960s and 1970s. First, there was the antiquarian groundwork, principally during the second half of the nineteenth century and culminating in the publication of well-known museum catalogues shortly after 1900. Secondly, as we have seen, there was a period during the early decades of the twentieth century when increasing emphasis was placed on pottery from excavations. Thirdly, the work pioneered by

Dunning in the 1930s, later accompanied by fellow researchers, marks another significant phase in medieval ceramic studies. It will be convenient to examine each of these developments in turn.

Early attempts to define a chronology for medieval pottery relied both upon documentary sources or illustrations and upon the evidence which could be deduced from technical developments or the style of the pots themselves. Occasionally this could be supplemented from chance coin associations. Highly decorated wares, for example, could be dated by the style of hair depicted on certain anthropomorphic motifs or by details of the armour on knight jugs. Chaffers' magisterial study, first published in 1863, made extensive use of MSS illustrations both for dating and as an indication of the uses to which the vessels were put (Chaffers 1883, 32-53). Jewitt (1883, 60-5) also reproduced drawings in support of his dating, but with the obvious exception of a well-known illustration from the Luttrell Psalter which shows an earthenware jug being smashed (Rokewode 1885, pl. xxiv no. 3), doubt must remain as to whether certain vessels shown in contemporary illustrations really were of pottery as opposed to metal or other materials (e.g. Jewitt 1883, 65 figs. 285 & 288). The British Museum Catalogue of ... English Pottery..., published in 1903, provided clearly defined comparanda for certain forms, and also included information, where relevant, about coin associations (Hobson 1903, 58-9). This valuable guide to hitherto scattered literature was supplemented by a general survey of medieval pottery published the previous year, in which Hobson (1902, 1-11) reviewed the principal sources of dating evidence. The Catalogue of the ... Guildhall Museum (1908, 177-232) also contained numerous illustrations of medieval and later pottery, and there were dated catalogue entries for over 1000 items divided into two categories: 'various wares' and 'special wares'. The dates, however, were given without substantiation and were frequently incorrect. Nevertheless, the publication of illustrated museum catalogues must have offered an important stimulus to developments in field archaeology concerning the use of pottery as a means of dating.

It is clear from MSS notes written between 1911 and 1918 that T.S. Cooper appreciated the value of pottery as a means of dating glass-making sites at Chiddingfold, Surrey (Kenyon 1967, 8). Winbolt, too, made extensive use of ceramic evidence for his research into Wealden glass manufacture (Winbolt 1933). He also published pottery from the excavations at Sedgwick Castle, Sussex (ibid. 1925, 109-10).

This report is characteristic of the period for analogies were based on comparison with the medieval pottery in Devizes Museum. Similar long-distance comparisons were made by Hogg (1932, 65) who relied upon the finds from Rayleigh Castle, Essex to date his pottery from Tonge, Kent. At this time, ceramic regions had not been defined, and excavators did not always appreciate the unreliability of long-distance comparisons. Analogies were selected at random according to the extent of the author's familiarity with the literature. Nevertheless, there were significant contributions to the dating of medieval pottery at this time. Publication in 1935 of the finds recovered by Lord Curzon in 1919 from the moat at Bodiam Castle provided one of the first recorded groups in the region to have been both a reliable and useful terminus post quem. The material had evidently been deposited in the moat after construction of the castle in c.1386. It was with some justification, therefore, that Myres (1935, 223) could claim:

'We have thus a group of pottery datable without much doubt to the century following 1386, and even those wide limits introduce greater precision than is possible in the material from many medieval sites.'

Some of the vessels in this collection are probably later than Myres had thought, but this in no way detracts from the important principle underlying his publication.

In the next volume of the Sussex Archaeological Collections, Dunning (in Vidler, 1936) contributed a report on pottery from the medieval kilns at Rye. This was the first of his many publications concerning medieval ceramics in South-East England. Dunning's approach to chronology using typological analogies as a means of dating was similar to that of his predecessors in all but one important respect: he began to acquire a first-hand knowledge of excavated material which soon surpassed the experience of those whose attention had been confined to a mere handful of sites. His contribution to the study of medieval ceramics has been described in a recent tribute (Hurst 1982, 12-13), but perhaps the most significant aspect of this work was that he established a strong tradition of specialist reports on medieval pottery. Hitherto, separate pottery reports like that for Rayleigh Castle had been the exception rather than the rule. Following the 'Pitt-Rivers' tradition, excavators generally assumed responsibility for the publication of both the structural features and portable finds from their sites. The

establishment of a ceramic sequence was just one example of the way in which specialist knowledge based on experience of many collections enabled Dunning to mould the evidence into a coherent pattern.

By comparison with Bruce-Mitford's work in Oxford (Bruce-Mitford 1939), urban excavations in South-East England during the 1930s did not contribute significantly to the establishment of an independent medieval ceramic chronology for the region. In publishing the finds from Chichester, Cottrill (1935a; 1935b) would have drawn upon his experience of London material. Two pit groups were discovered but there was insufficient evidence from which to establish a sequence, and the published parallels for dating were taken, once again, from Reader's report on Rayleigh Castle, Essex. In Canterbury (Mead 1933) and Guildford (Dunning 1937a), too, the small groups of medieval pottery provided no independent evidence for dating.

The publication in 1940 of Dunning's important contribution to the London Museum Medieval Catalogue highlighted the problems of dating, but comparison of this with Hobson's (1903) Catalogue demonstrates the achievements of the intervening years, not least in the amount of comparative material now available from excavations. The vacant sites resulting from war-damage to the City of London, and in Southwark, Canterbury and Dover provided a new stimulus to urban archaeological fieldwork in the region. These post-war excavations seldom yielded any pottery groups which could be dated independently, but stratified associations, particularly with Saintonge polychrome, were used to establish a chronological framework for the locally-produced wares (Rix & Dunning 1955; Dunning 1957). Many of the medieval pits encountered at Canterbury contained residual Roman pottery. Only in one instance was a useful terminus post quem offered by numismatic evidence, when a worn cut halfpenny of Henry II suggested that some of the post-Roman refuse at Butchery Lane had been deposited after the mid-twelfth century (Williams & Frere 1948, 40). Nevertheless, the sequence of pit groups recorded both at Butchery Lane and on other sites in the City enabled Frere (1954) to reconstruct a valuable chronology for the Rose Lane finds ranging from late Saxon wares to the end of the thirteenth century.

A similar range of material was found at Chichester where excavations in advance of redevelopment during the late 1940s also confirmed fairly dense late Saxon occupation within the former Roman town (Wilson 1951-2, 172-3). Compared with excavations at Canterbury and Southwark, however, the work at Chichester was on a fairly small

scale, and publication of a typological sequence of medieval pottery was confined initially to a few selected items (*ibid.*, figs. 10; 13 & 14). A more comprehensive review of the material from several different sites in Chichester appeared in the next volume of the Sussex Archaeological Collections (Wilson & Dunning 1953). Owing to the nature of the excavations, however, the illustrations were generally arranged by typology, rather than according to pit groups as Frere had done at Canterbury. Dunning was faced with similar problems when he examined the material from excavations in Dover which had been directed principally towards elucidating the Roman history of the town. Here, too, the medieval pottery was relegated to appendices comprising catalogues of items dated by analogy rather than as a result of systematic study of the stratigraphy (Dunning 1951; 1955). It is a reflection of increased archaeological activity on medieval sites during the 1940s that a chronological summary of the principal ceramic developments was published at the end of the decade (Dunning 1949a; 1949b; 1949c; 1949d; 1950a). Moreover, publication of Dunning's summaries in The Archaeological Newsletter also reflected a growing amateur interest in fieldwork (Piggott 1948, 2). This in turn witnessed yet more excavations on medieval sites in South-East England during the 1950s, with consequent additions to the available collections of medieval pottery. Whereas post-war attention had been devoted to early 'rescue' excavations in medieval towns, the 1950s saw an apparent shift of emphasis to rural sites. With the exception of castles such as Abinger (Dunning 1950b) and Pevensey (*ibid.*, 1958b), stratified associations were seldom as clearly defined on rural sites as they were in the towns. Pottery reports of this period, therefore, relied heavily upon dating by analogy, and few excavations contributed useful independent evidence for the ceramic chronology. Among the typical collections of medieval pottery recovered from rural sites during this period were those from Patchesham, Surrey (Lowther 1947; 1948; 1949b; 1949c; Ruby 1950; 1951); Balsdean Chapel, East Sussex (Dunning 1953); Bramble Bottom, Eastbourne, East Sussex (*ibid.*, 1955); Seasalter, Kent (*ibid.*, 1956); and Joyden's Wood, Kent (*ibid.*, 1958a). In all these cases pottery was used to date the sites rather than vice-versa.

Excavations at Eynsford Castle, Kent, principally between 1953 and 1961 (Rigold 1971, 109), foreshadowed developments in the study of ceramic chronologies during the 1960s. Securely stratified deposits not only provided sequences, but, on castle sites in particular, it was also sometimes possible to link the stratigraphy

with documented building phases. Thus, even before its eventual publication in 1971, the pottery from Eynsford Castle had been used for many years as a type series for medieval wares found in West Kent. Hurst (1962-3) set out clearly the potential and pitfalls of the different methods used to date medieval ceramics, and samples from some of the most important groups, including Eynsford, were displayed at the CBA Exhibition of Medieval Pottery in 1964. Moreover, Blake and Davey (1983, 35) have drawn attention to the opportunity - sadly missed - of publishing a synthesis entitled 'Medieval Ceramics of the British Isles' which was to have appeared at about this time.

In South-East England during the 1960s, stratified deposits containing medieval pottery were examined at a number of sites. The information ranged from long sequences at Eynsford (Rigold 1971; Rigold & Flemming 1973); Dover Castle (Rigold & Mynard 1967; Cook et.al. 1969); and Bramber Castle (Barton & Holden 1977) to more restricted yet still firmly stratified groups at Pivington (Rigold 1962), New Romney (a reassessment of earlier excavated material: Rigold 1964), and Strood (*ibid.*, 1965b) in Kent; at Guildford (Holling 1964) and Nonsuch (post-medieval: Biddle 1961) in Surrey; and at Michelham Priory (Barton & Holden 1967), Tarring (Barton 1964a) and to a certain extent at Hangleton (Holden 1963; Hurst & Hurst 1964) in Sussex. Material from moated sites at Leigh, Kent (Parfitt 1976); Burstow, Surrey (Turner 1966); Stretham, West Sussex (Wilson & Hurst 1959, 155) and annual summaries to 1978); and Gottenham, East Sussex (Martin 1972b) was seldom securely stratified. Thus it is clear that the 1960s witnessed an expansion not only in the number of medieval excavations but also in the quality of the ceramic information derived from them. Moreover, a measure of the scale and complexity of these projects can be seen in the increasing length of time taken to prepare the reports for publication.

Most of the evidence for the chronology of medieval pottery in South-East England is based upon the results of these excavations carried out in the 1960s. Notable additions to knowledge of the ceramic sequence are the pit groups from Chichester recovered annually since the late 1960s, and the work of the Canterbury Archaeological Trust since 1976 which has provided unprecedented insight into ceramic developments in the City. A few important groups have also been excavated during the 1970s at Croydon (Drewett 1974) Lewes (Freke 1975; 1976) Reigate (Turner 1970; Williams 1981) and Rochester (Harrison 1972; Flight & Harrison 1978). Excavations at medieval

religious houses, too, have provided significant datable assemblages from St. Augustine's Abbey, Canterbury (Webster & Cherry 1973, 144 and annual summaries to 1978; Saunders 1978), and Maison Dieu, Ospringe (Thorn 1979) in Kent; from Guildford Friary (Webster & Cherry 1974, 192; 1975, 236; Poulton 1978) and Merton Priory (Turner 1967a) in the historic county of Surrey; and from Bayham Abbey (Streeten 1983a) and Battle Abbey (Streeten in Hare forthcoming) in East Sussex.

The quantity of data collected since the 1960s marks a sharp contrast between this phase of ceramic studies and the earlier stages of development during the nineteenth century; in early decades of the twentieth century; and from the 1930s to 1950s. Before examining some of the specific themes of ceramic research since the 1930s, however, it is necessary to consider the evidence for medieval kiln sites which has accumulated as a result of discoveries between the 1860s and 1960s.

1.2.4 Kiln excavations : 1860s to 1960s

The medieval kilns and pottery wasters from the Bohemia district of Hastings were first recorded in 1859 (Lower 1859). This was the first time that a medieval production centre had been recognised in South-East England. Moreover, this report, published just five years after discovery of the well-known kilns at Scarborough, was one of the earliest examples of this type of work in the whole country. Lower's preliminary notice of the discovery was followed a year later by the publication of further examples of pottery (Ross 1960). Unfortunately, however, ceramic research on kiln sites in the region had made an inauspicious start, for Thomas Ross (1860, 268) was faced with the embarrassment of reporting:

'I had packed [some specimens of the pottery] carefully in a hamper, and placed them in the cave at the back of my house, but on going to seek for them yesterday, hamper and all were gone...'

He then went on to say that he had kept a little of the pottery in his house, and it was these examples with which he illustrated the report. There can be no certainty, however, that all these pieces were indeed from the kiln site (Barton 1979, 188), and at least one fragment was certainly part of a marketed Scarborough ware knight jug (Farmer 1979, 25 pl. VI; 69).

News of medieval kilns found at Silverdale in Lancashire was reported in the Proceedings of the British Archaeological Association in 1865 (21, 85; 353), and three years later Thomas

Honeywood (1868) published his finds from Horsham, Sussex under the mistaken belief that he had discovered the site of yet another potters' workshop. In a flight of fancy, he even went as far as to suggest that he had found the very implement used for the incised decoration on the pots (*ibid.*, 196-7). Levson Gower's reports on the Limpsfield kilns were more systematic (1870; 1891; 1895) and his work represents the first attempt in the region to record the precise location of several different kilns belonging to the same 'industry' (*ibid.*, 1870, 360). Moreover, he was among the first to appreciate the significance of personal names in the study of medieval pottery manufacture.

During some of the early kiln investigations, medieval sites were occasionally confused with Roman ones. In 1884, for example, the published plan of a kiln at Lincoln was erroneously dated as Roman (Webster 1949, 6). The same year, too, Christy (1884) believed that the pottery found at Mill Green, Ingatestone in Essex was Roman, although this attribution was rectified in a subsequent report (Christy & Reader 1918). These problems were not encountered in South-East England, but there was sometimes confusion between the identification of pottery and tile kilns. Despite the discovery of pottery wasters at Hastings, for example, it is clear from descriptions published in connection with the Farringdon Road tilery in London that the structures found at Hastings in the 1850s were probably tile kilns rather than pottery kilns (Price 1870, 35). At Ringmer, too, the excavated (? brick- or tile-) kilns were not definitely associated with medieval pottery wasters found in the same field (Martin 1902). Nevertheless, the discovery of wasters at these and other sites such as Earlswood in 1897 (Hooper 1926) or at Borough Green in c.1900 (Rackham & Read 1924, 134) enhanced considerably the available evidence for both medieval and later pottery manufacture.

Owing to the nature of this evidence, discoveries have usually been made quite by chance. It is interesting to note, for example, that Sturt (1919, 56) records the discovery of post-medieval pottery waste during construction of the Alma Public House at Cove, Hampshire; then, in 1967, wasters were revealed once again during redevelopment (Hurst 1968, 186; Holling 1971a, 61). One of the earliest systematic 'rescue' operations on a medieval kiln site was at Parkside, Cheam in 1923. The report, published very promptly, provided a comprehensive account of the kiln, its products and raw materials, together with a consideration of the relevant documentary

evidence (Marshall 1924). Another probable medieval pottery kiln had been found at Maidstone two years earlier, but this discovery received scant attention at the time (Grove 1967).

The circumstances of excavation at Rye in 1931 were slightly different. Here, Leopold Vidler had begun to search for the site of St. Bartholomew's Hospital. Instead of the hospital, he found and excavated four medieval pottery and tile kilns (Vidler 1932; 1933; 1936). This site was evidently far more complex than the one at Cheam, but Vidler's approach was somewhat less systematic than Marshall's had been. He did, however, have the benefit of the fine drawings prepared by Gerald Dunning to accompany the report. The method of excavation is described elsewhere (Section 9.1.6 no. 502), but despite its shortcomings the project represented a considerable advance on the evidence recovered from earlier kiln investigations in the region. Whereas the pottery from Cheam had appeared to be of one period, Vidler recognised that there were several different phases of production at Rye. Thus in his second report (*ibid.*, 1933, 57) he wrote:

'My opinion as to the dating of the various finds on this site may not be of much value, except in so far as it is based on the actual facts of its incidence, scarcity and association one with another'.

As in the case of Cheam, the sheer quantity of material recovered from the excavations at Rye encouraged dispersal of the collections. Pottery from Cheam found its way not only to the local museum but also to the British Museum and Victoria & Albert Museum, as well as to museum collections at Brighton, Guildford and Newbury. Many of the vessels from Rye were discarded on site, but others were given to museums at Rye, Winchelsea and Eastbourne, the latter destroyed during the Second World War. In part at least, these acquisitions by several different museums indicate the contemporary importance attached to the investigations. A further indication is provided by the fact that the entire kiln from Cheam was removed to the Science Museum, and that a model was constructed to illustrate the structures found at Rye.

With the advantage of knowledge derived from kilns excavated during the 1960s it is easy to forget just how slowly evidence for the structure of medieval pottery kilns had accumulated during previous decades. Indeed, of the 29 plans listed by Musty (1974, 61-65) about two thirds had been published since 1960. Thus the published plans of kilns at Cheam and Rye represented the

first examples of their type in South-East England and it was not until Hope-Taylor's work at Limpsfield in the late 1940s and early 1950s that there was any further attempt to elucidate the structure of medieval pottery kilns in the region (Jope 1956, 285). In the meantime, however, wasters had been found at Ashted in 1939 (Frere 1941), and while war-damage had resulted in the destruction of pottery from the Rye kilns stored at Eastbourne, it was also responsible for bringing to light the important medieval pottery industry at Tyler Hill, near Canterbury. Quantities of medieval pottery, including wasters were found there in a bomb-crater in 1942, and the probable site of a kiln was located nearby during fieldwork in 1947 (Spillett et.al. 1942; Spillett 1949).

Known centres of medieval pottery manufacture were listed in two contributions to The Archaeological News Letter in 1949. Webster (1949, 7) mentioned four examples in South-East England, to which Dunning (1949b, 8) added another five sites from Hampshire, Surrey and Sussex. The only sites already discovered by this time but not mentioned in either list were at Maidstone (see above) and Brede (Austen 1945, 94-5). Improbable evidence from Bury (Winbolt & Ward 1928-9; Winbolt 1936, 41-2) and Lower Beeding (Barbican House Museum, Lewes: 35) in West Sussex was justifiably omitted. Apart from the work at Limpsfield and in neighbouring parishes, the only new kiln site discovered in the region during the next decade was at Potter's Corner, Ashford (Grove & Warhurst 1952).

As we have seen, the 1960s witnessed a significant expansion in fieldwork on medieval kiln sites, not only in South-East England but also in the country as a whole. During the late 1950s and 1960s there emerged a distinctive style of archaeological reporting which provided summary details of the kilns, a description of the products and a consideration of the raw materials, sometimes supplemented by a brief survey of marketing. The report by Fox and Dunning (1957) on a kiln at Exeter (then thought to be thirteenth-century rather than Saxo-Norman) set a pattern which was to be emulated in the publication of numerous individual sites at Potters Marston, Leicestershire (Haynes 1959); Audlem, Cheshire (Webster & Dunning 1960); Ham Green, near Bristol (Barton 1963a); Upper Heaton, Yorkshire (Manby 1964); Maidenhead, Berkshire (Pike 1965-6); Hermitage, Dorset (Field 1966); and Knighton, Isle of Wight (Fennelly 1969). More substantial reports on Laverstock, Wiltshire (Musty, Algar & Ewence 1969) and Lyveden, Northamptonshire (Steane 1967;

Bryant & Steane 1971) described the results of larger-scale excavations concerned with groups of kilns and associated structures. In South-East England, too, there was a considerable amount of fieldwork but not quite so much publication. A thirteenth-/fourteenth-century site was investigated at Ash, Surrey in 1965-6 (Holling 1968; 1969); a medieval kiln and associated waster dumps were excavated at Chichester in 1967 (Down & Rule 1971, 153-164); important groups of wasters and traces of a kiln were recovered at Kingston-upon-Thames in 1968 (Canham 1970; Hinton 1980); and interim reports have been published on the combined potteries/tileries excavated at Binsted, West Sussex in 1965-6 (Wilson & Hurst 1967, 316-8) and at Tyler Hill, Kent between 1965 and 1970 (Lyle 1965, 34; Cramp 1969; 1970a; 1970b). A late medieval pottery kiln was excavated at Biddenden, Kent in 1969 (Kelly 1972), and towards the end of the 1960s post-medieval production centres also began to receive systematic attention. Notable among the excavations in South-East England were fairly long-term projects at Farnborough Hill, Hampshire (Holling 1970; 1971a, 64-65; 1971b; 1971c) and at Southwark (Dawson 1976) and Lambeth (Bloice & Thorn 1969a; 1969b; Bloice 1971) in London.

All these sites are considered more fully in the Gazetteer of production centres (Section 9.1), but it has been useful here to examine the excavations in broadly chronological order for three reasons: firstly, we have a very clear demonstration of the limited amount of fieldwork undertaken before the enormous increase in activity during the 1960s; secondly, it is possible to trace the evolution of archaeological methodologies concerned with the excavation and publication of medieval kiln sites; and thirdly, the geographical distribution of known kilns helps to explain why the study of pottery distributions has developed more rapidly in some regions than in others since the 1930s. Having considered already the self-evident increase in excavation and the evolution of methodologies, it remains to discuss the distributional approach to the study of medieval ceramics.

1.2.5 Studies of distribution : 1930s to 1960s

Although the systematic study of pottery distributions is a product of scholarship since the 1930s, the potential of pottery as a means of monitoring trade was recognised by antiquarian excavators. Thomas Ross (1860, 269), for example, noted in connection with his study of the Bohemia kilns at Hastings:

'I have seen similar small pieces at Romney, Winchelsea and

Northay, and have no doubt that Hastings carried on a large coasting trade in pottery. I also think it probable that the Lewes and Seaford knights may have come from Hastings'. As we have seen, doubts about the identification of the aquamaniles expressed by Sutton (1946, 79) have been substantiated by further research (Section 1.2.1), but it remains significant that Ross had considered the wider potential of ceramic evidence. Outside the region, too, Micklethwaite (1893) included comments on distribution in his pioneer study of Cistercian ware. Nevertheless, it is Dunning's work (in Fox & Radford 1933, 126-134) which is rightly regarded as the genesis of systematic evaluation of pottery distributions (Hurst 1982, 12).

For more than a decade after publication of this work on Saintonge polychrome wares, the problems of distinguishing between the products of different English workshops, combined with the small sample of excavated material available, precluded similar approaches to the study of locally-produced ceramics. These difficulties are exemplified by Bruce-Mitford's (1940) comments on the distribution of tripod-pitchers. It was in the late 1940s however, that the need for comprehensive regional studies became apparent. Dunning (1948a, 243-4) acknowledged the significance of markets and fairs as an explanation for the long-distance Midland trade in ceramics, but it was Jope (1947; 1952a; 1953-4) who set the standards of mapping and research required for regional surveys. Most of the evidence available was best suited to the definition of regional ceramic types or styles, but the identification of marketed vessels from the potters' workshops at Brill, Buckinghamshire firmly established the pattern of future research. Two observations, namely the wider distribution of jugs than of coarsewares and the restriction of coarseware distributions to a radius of about 20 miles from their centre of manufacture, became firmly entrenched in the literature of the 1950s and 1960s. Indeed, Moorhouse (1983, 108-9) has observed that the progress and goals of ceramic studies can be monitored by the type of information portrayed on the distribution maps accompanying articles in the national and county journals.

Three principal lines of research into pottery marketing were to develop: firstly, the definition and mapping of regional types such as scratch-marked ware (Dunning 1950b; Morgan 1957-8, 44); secondly, the analysis of marketed vessels from known kilns such as Staxton (Brewster 1958, 445), Ham Green (Barton 1963a, 115-119; *ibid.*

1967) and Upper Heaton (Manby 1964, 109-110); and thirdly - the corollary to regional studies - specialist contributions accompanying excavation reports which sought to set stratified sequences in a regional perspective. Notable among the latter were reports on the Manor of the More (Biddle, Barfield & Millard 1959, 161-177), Northolt Manor (Hurst 1961), Pontefract Priory (Le Patourel 1965), and Kirkstall Abbey (ibid. 1967).

It is only since the later 1970s with the increasing complexity of the data that archaeological reporting has begun to change. Indeed, the shift of emphasis from defining ceramic regions by examining the traits of style and technology of jugs (Barton 1967; 1968; Bellamy and Le Patourel 1970) or cooking pots (Jope 1952a; Hinton 1973a), towards the examination of fabrics and marketed vessels from known sources has arisen partly because of the increasing availability of quantified data. Moreover, these changes in the study of distributions coincide with a phase of ceramic research in which the potential of archaeological evidence as a social and economic indicator has been recognised (see Section 1.2.6) and when the integrated study of production and distribution has become an accepted ideal (see Section 1.2.7).

Owing to the nature of the evidence, evaluation of inland marketing has been less critical of the supposed significance of pottery as a traded commodity than those studies which are concerned with the identification and mapping of overseas imports. In a region such as South-East England, assessments of both the organisation and extent of continental trade are significant themes of ceramic research. Dunning (1951a, 186-7) summarized the problems:

'With regard to the general question of trade connexions with France in the Norman period, it may be pointed out that the red-painted pottery of early character is known only from sites grouped in extreme South-East England, at Pevensey, Dover and Stonar. These imports are evidence of direct cross-Channel trade after the Conquest, between Normandy and the Cinque Ports Confederation. It may be inferred from the distribution of red-painted pottery in Normandy and South-East England that the basis of the connexion was the wine trade of Rouen, already established with London early in the eleventh century, and still prosperous during the latter part of the twelfth century'.

As we have seen (Section 1.1.1) both the concept of a trade in

ceramics themselves and the suggested link with the wine trade have been called into question. Indeed, in his later synthesis, Dunning himself (1968, 35) placed less emphasis on the archaeological record as a direct manifestation of international trade relations. Nevertheless, systematic mapping of the imported pottery distributions remains fundamental to studies of inland trade. The information recorded and summarised in the 1960s (Hurst, Dunning & Barton 1968), combined with papers to assist with the identification of specific classes of pottery (e.g. Barton 1963b, Hurst 1974; *ibid.* et.al. 1975; *ibid.* 1977a; 1977b) provides the basis from which quantified studies can now be developed.

Among the numerous contributions during the formative decades of medieval ceramic research, two principles emerge as pre-eminent: firstly, the importance of the region as a unit for investigating pottery distributions, and secondly the need for rigorous mapping of the evidence. In both cases, however, the investment of time and effort needed to achieve these standards has hindered progress. Studies by Hinton (1973) and Moorhouse (1973-4) are among the few published surveys since Jope's contributions in the 1940s which have sought to define pottery distributions in terms of both the presence and absence of a particular ware. Nevertheless, with the application of micro-computers to the problems of data handling, it is now becoming possible to assimilate the volume of information required to fulfill the promise of earlier research into pottery distributions.

1.2.6 Medieval and later pottery as a social and economic indicator

It would be misleading to infer from the historiography of ceramic studies between the 1930s and 1960s that research undertaken since then has lacked innovation and merely represents the development of already well-rehearsed themes. While pottery distributions remain fundamental to the study of marketing, the wider social and economic implications of the archaeological evidence also require systematic evaluation. The potential is considerable, but in the words of Davey and Hodges (1983, 13):

'... far too few archaeologists are presenting their information in a way which will allow systematic and objective socio-economic interpretation'

Solutions to these social and economic questions inevitably involve making comparisons of material culture between different sites or

between different parts of the same site. Such comparisons can only be made, however, when the ceramic groups are reliably stratified, identified and quantified.

Evidence which fulfills these requirements can be harnessed to the needs of three principal types of enquiry. The first involves the assessment of variations within the archaeological record to identify, where possible, the different uses to which areas of a settlement were put. Owing to the standardisation of forms and the ubiquitous occurrence of English medieval ceramics there are few published reports which provide conclusive evidence that it is possible to identify such zones within a settlement from the pottery alone. Nevertheless, the identification of diagnostic forms, analysis of surviving organic residues and assessment of quantified chronological changes in the proportion of vessel types all serve to illustrate the nature of former activities represented in the archaeological record.

The second significant contribution of pottery as a reflection of social and economic circumstances must be examined at a regional level. On the one hand there may be variations in the organisation of pottery marketing within a particular region, while comparisons between different regions may also reveal significant chronological contrasts in the development of ceramic production. Such observations are likely to be an indication of broader economic and social trends.

Finally, at a more generalised level, comparing the organisation of pottery production and distribution with other crafts and industries can contribute to an understanding of the management of resources; the demand for household goods within the medieval village; and the status of lesser medieval craftsmen in the peasant economy. Two important articles by Jope (1963; 1972) represent the first significant attempt to combine the evidence of medieval ceramics with other archaeological data and to address the information to general economic and social themes. As in the case of urban topography (Carter 1976, 13), Jope's geographical approach to artifact data required the medieval archaeologist to confront the problem of identifying dynamic processes from the static pattern of the evidence.

Even more significant, perhaps, than the academic impact of this approach has been its effect on fieldwork practices. As emphasized by Le Patourel (1976, 172-3; 179), the quality of the data needed to answer social and economic questions demands precise

reporting of the excavated evidence. In particular, the need for greater detail in recording, for regional surveys, and for the adoption of sampling strategies - all now accepted as a prerequisite of sound archaeological practice - represents a response to the increasing complexity of the questions to which answers are being sought. Indeed, the quest for generalisation has obscured some of the less ambitious yet significant aspects of ceramic studies. Blake (1980, 4) has advocated that:

'... of the traditional approaches to pottery as a dater, cultural characteristic, index of technical progress and functional object, only the last may make any significant contribution to our understanding of the past'

Clearly, there has been a change of emphasis in ceramic research, but it is questionable whether chronology, the relationships between pottery styles, and studies of technology are incapable of making any significant contribution to our understanding of the past. These are certainly important ingredients for an integrated approach to the study of production and distribution.

1.2.7 Production and distribution : an integrated approach

Integration in this context embraces both the interdisciplinary evaluation of archaeological and documentary evidence (see Section 1.1.2) and, more importantly, the integrated study of the relationship between pottery production and distribution. Examples of the former have appeared since the second half of the nineteenth century when chapters on medieval pottery were included in some of the general books on ceramics (e.g. Jewitt 1883). It was Salzman (1913, 114-127), however, who made the first attempt to consider the production and distribution of medieval pottery as part of a single enterprise.

The direction of early regional studies was guided to a large extent by the nature of the evidence. This is highlighted by comparing the surveys of medieval ceramics in Hertfordshire (Renn 1964) and Shropshire (Barker 1970). Owing to the discovery of numerous kilns in Hertfordshire, Renn concentrated on production and confined his treatment of marketing to general observations. The material available to Barker on the other hand was quite different. While potters were recorded at Shrewsbury, there were no known kilns in Shropshire. His approach was therefore to draw conclusions about regional styles and distributions by comparing assemblages of marketed vessels. In neither county, however, was it possible to achieve

sufficiently reliable identification to emulate the mapping of kilns and their marketed products pioneered by Joep in the early 1950s (see Section 1.2.5).

In Yorkshire, on the other hand, investigations during the 1960s included both kilns and stratified sequences of medieval pottery (Le Patourel 1965; 1967; Bellamy & Le Patourel 1970). Conditions were therefore favourable for the definition of competing pottery distributions and for examining chronological changes in the marketing of medieval ceramics. Moreover, the mapping and assessment of markets as a possible means of explaining developments in the style of decorated wares represented a significant movement towards an integrated view of production and distribution.

Although, with hindsight, it is true that these first regional surveys were based upon insufficient data (Blake & Davey 1983, 35), it would be misleading to infer that the direction of all research into medieval ceramics has been determined by the nature of the evidence. One of the most significant aspects of more recent approaches to the problems of production and distribution has been the greater diversity of economic and social questions to which the evidence is addressed. Nevertheless, the nature of the archaeological record often does place serious constraints upon the answers, if not the questions. Even within the broader scope of ethnographic studies the criticism can be levelled that

'... too often papers on modern pottery-making record all the technical details of the process, but fail to mention the obvious such as the relation of the ceramic industry to the local economy' (Peacock 1982, 26).

Information concerning traditional themes such as chronology and technology can be derived directly from examination of the ceramic evidence but these issues need to be studied in a wider context for the light they can shed on the organisation of production and fluctuations in the pattern of marketing. Yet, it must also be recognised that the evidence from one region may be better suited than that from another to answer particular types of question.

Instructive comparisons can be made for example between ceramic production in East Anglia and the West Midlands during the eleventh and early twelfth centuries. In East Anglia, the type and location of the kilns which have been found at Langhale and Bircham suggest the existence of itinerant potters in the rural areas not dominated by the urban-based and apparently market-orientated

industries producing Thetford-type ware (Wade 1973, 10-12; Wade 1976; Rogerson & Adams 1978). So far, however, characterisation has not been reliable enough to monitor the precise extent of these local distributions. In the West Midlands, on the other hand, geologically distinctive fabrics can be mapped with greater precision suggesting the presence of numerous small but coherent production centres (Vince 1981, 314-316). Does this represent a different organisation from that of contemporary pottery manufacture in East Anglia or is the contrast an artificial one created by differences in the nature of the evidence - in one case the discovery of kilns; in the other the definition of fabric zones ? There can be no better demonstration than this of the need to undertake systematic regional research programmes for the purposes of comparison.

The potential of the regional research strategy is unquestionable. Indeed the approach advocated by Moorhouse (1973-4) for the study of a distinctive type of late medieval pottery found in the East Midlands is applicable to all periods and all areas. He called for more detailed regional studies

'... contrasting known late medieval markets, trade routes by road and river and detailed regional geography as these were important factors in the distribution of any ordinary household commodity until more recent times.'

Yet, before examining these themes in South-East England it is fitting to consider the dilemma which has to be faced in any regional research strategy:

'One of the current problems of regional archaeological work is that areas large enough to be interesting may be too big to be tackled except on a very long time-scale or with the input of large amounts of money ...' (Shennan 1981, 106).

This is certainly one problem for which there is no immediate solution.

1.3 SOUTH-EAST ENGLAND: NATURAL REGIONS AND RESOURCES

1.3.1 Natural Regions

The medieval economy of an area was invariably linked with its resources. Natural regions are therefore an important consideration both in the formulation of research strategies and in the interpretation of economic patterns.

'The counties of Kent, Surrey and Sussex constitute one of the most clearly defined natural areas in Great Britain, marked by certain striking physical features common to these counties and not extending sensibly beyond their borders' (Hall & Russell 1911,1).

The Weald and Downlands provide a coherent link between the three counties, yet diverse topography on the fringes of the area offers a variety of contrasting regions for comparison one with another.

Relief, drainage and soils reflect the geological structure of the Weald. Erosion of the massive Wealden anticline has exposed concentric zones of sands and clays bounded by the chalk escarpment and truncated at the south-east corner by the English Channel. Moreover, the shape of the anticline is echoed in the radial pattern of drainage which has always imposed a significant influence on communications within the region (Fig 1.1). In the centre of the area lies the High Weald comprising sandstones of the Hastings Beds which attain their maximum height on Ashdown Forest (Fig 1.2). The High Weald is surrounded on three sides by the Weald Clay. This broad lowland area of the so-called Low Weald is known as the Vale of Sussex in the west and as the Vale of Kent in the east. Beyond the Low Weald to the north and west lie the Lower Greensand hills which include the well-known Ragstone ridge in Kent. Another lowland area of Gault Clay intervenes between the Greensand Hills and the downland escarpment. These zones are clearly defined in Surrey where the clay lowlands form the Vale of Holmesdale. A small outcrop of Upper Greensand lies at the foot of the chalk downs where the spring-line villages congregate on the well-drained soils of the scarp-foot zone.

In general terms, the Weald comprises the area between the North and South Downs, but for centuries commentators have sought more precise definitions. Writing about 'the bounds of the Weald' c.1570, Lambarde (1826, 192-3) made the following observations:

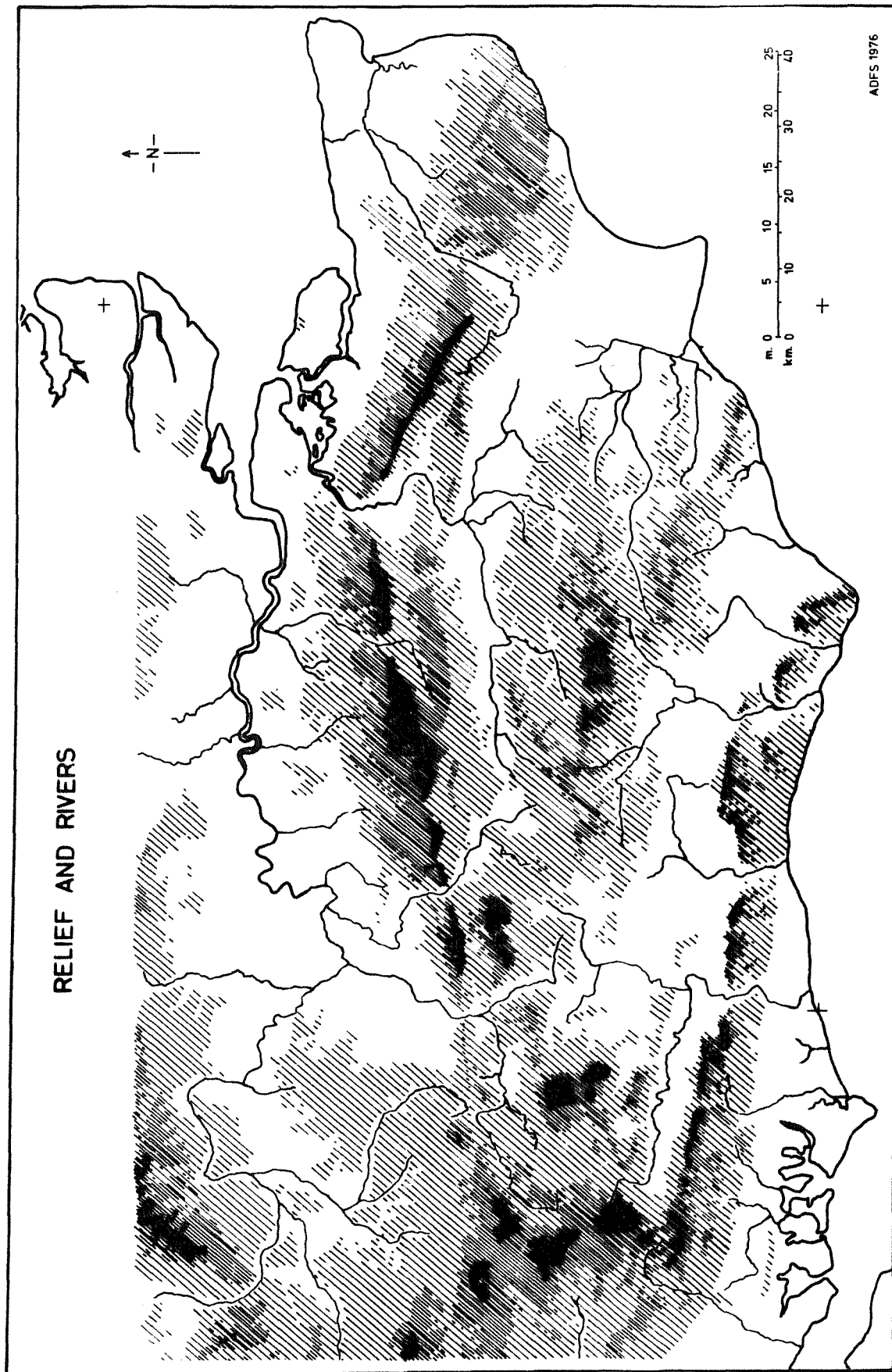
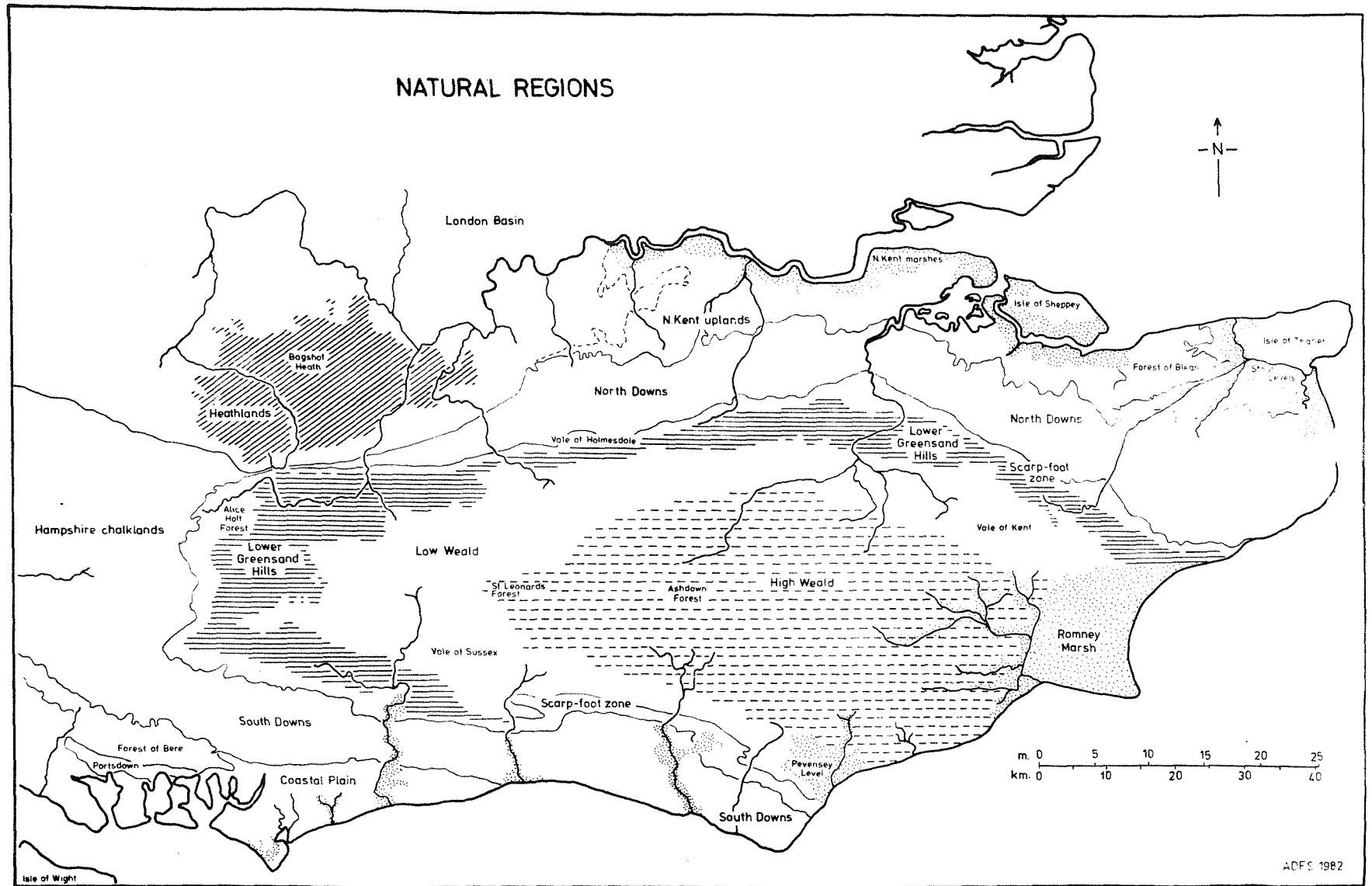


Fig. 1.1 South-East England. Relief and rivers

Fig. 1.2 South-East England. Natural regions



ADFS 1982

'And heereout also springeth the diversitie of opinions, touching the true limits of this Weald: Some men affirming it to begin at one place, and some at another: whereas (in my fantasie) there can be assigned none other certaine boundes thereof, than such as we have before recited out of the auncient Hystories. For, even as in the old time (being then a meere solitude and on no part inhabited) it might easily be circumscribed: So sinnce (being continually from time to time made lesse by industrie) it could not long have any standing or permanent termes. And therefore, whatsoever difference in common report there be as touching the same, for as much as it is nowe (thanked bee God) in manner wholly replenished with people, a man may more reasonably mainteine there is no Weald at all, than certainly pronounce, either where it beginneth or maketh an end.

And yet, if in question in Lawe should fortune to be mooved, concerning the limits of the Weald (as indeed it may happen upon Statute of Woods and otherwise) I am of opinion that the same ought to be decided by the verdictes of twelve men, grounded upon the common reputation of the countrey thereabouts, and not by any other meanes'.

Irrespective of its population and vegetation, however, the Weald remains a clearly-defined geological region.

Although similar in their solid geology, the topography of the North and South Downs is markedly different owing to the extensive capping of clay-with-flints on the North Downs. The natural woodland cover of the chalk dip-slope in Kent and Surrey contrasts with the grasslands of Hampshire and Sussex.

Beyond the chalk, however, there are greater similarities between the respective parts of the region, local conditions being determined by the occurrence of drift deposits. Both to the north and to the south, the edge of the chalk is marked by outcrops of Oldhaven, Woolwich and Reading Beds, the latter being an important source of raw materials for ceramic production (see Section 1.3.2). In East Kent and the coastal plain of Sussex and Hampshire, these and the adjacent outcrops of London Clay are capped by drift deposits of Brickearth and Head Gravels, providing some of the most fertile soils in the region. The London Clay with its characteristic woodland vegetation is exposed, however, on the North Kent coast; in the London

Basin and in South-East Hampshire. Thus the Forest of Blean north-west of Canterbury has its counterpart in the Forest of Bere north of Portsdown Hill (Fig. 1.2).

There remain two quite distinct natural regions in South-East England. The first is the Surrey heathlands situated on the Bagshot, Barton and Bracklesham Beds. The distinctive landscape of peat and fine sand deposits has influenced strongly the settlement history of this area (see Section 1.4.2). The second and more diverse of the regions comprises the marshlands of Kent and Sussex. Romney Marsh and the Pevensey Levels are the largest of these marshes and both were drained systematically for agricultural use during the medieval period. Similar alluvial soils occur in the choked estuaries of the principal Sussex rivers; along the Thames Estuary and around the Isle of Thanet. Thus they form a fragmented peripheral region of varying economic potential.

There have been significant coastal changes both during the medieval period and subsequently. On the one hand, the silting of harbours such as Shoreham, Lewes, Pevensey, Winchelsea, Rye and Smallhythe illustrates the extent to which alluvial soils have accumulated, while the Nonae Rolls of 1341 help to indicate the significant effects of coastal erosion (Barker 1970, 90). Coastal changes can be monitored even more precisely from post-medieval maps (Brandon 1974, 115-118) and similar erosion is to be noted in east Kent. Indeed, the discovery of a well belonging to a lost medieval settlement at Middleton-on-Sea, West Sussex (Page 1925, 237) has its counterpart in similar discoveries on the eroded foreshore of the north Kent coast at Birchington (Powell Cotton Museum). These natural forces are significant both in terms of settlement history and as an explanation for the vicissitudes of trade through medieval south-coast ports.

The coastline provides a convenient rather than realistic limit to the study region. Whereas the agricultural economy is linked closely to natural regions and resources, it would be misleading to examine trade in the context of clearly-defined natural boundaries. Coastal trade demands a wider view of the region (see Section 1.4.6) but the counties of Kent, Surrey and Sussex provide a coherent area for assessing the manufacture and distribution of locally-produced ceramics.

1.3.2 Economic geology and clay resources

There are few areas in South-East England, apart from the chalklands, which do not have access to sources of clay (Fig. 1.3). The widespread availability of clay for ceramic production is evidenced by the distribution of brickworks. Indeed numerous brickyards are marked even on recent Ordnance Survey maps (Fig. 1.4). Some of these enterprises have closed owing to commercial competition, but brickmaking remains an active industry in the region.

Tithe Maps and Awards provide a useful insight into the extent of former brick-making. Information is being gathered systematically by members of the Sussex Industrial History Society but a sample study of the place-name evidence in Kent demonstrates the potential of this approach. Even using very generalised mapping techniques, the occurrence of minor place-names indicating former brick- and tile-making shows that there were few parishes which did not have suitable raw materials (Fig 1.5). Moreover, other field names often allude to the materials themselves - typical examples being Clay Pit Field and Sand Hole Field. Place-names must, however, be evaluated with caution because not all of them will relate to ceramic production. Among field names in the Tithe Awards, Brick House Field, for instance, is more likely to describe a house built of brick than a place where bricks were made. Nevertheless, the generalisation remains valid that nineteenth-century field-names are a useful reflection of the natural resources available for ceramic production (see Section 2.4.5).

The potter and tile-maker require more plastic clays than those for making bricks (Topley 1875, 392). Thus it is interesting that a comprehensive review of the evidence for pottery and tile manufacture in the region during the medieval and later period (see Sections 9.1 and 9.4) demonstrates quite clearly a preference for certain deposits. Other enterprises exploited smaller clay seams, many of which have long since been worked out, the only testimony to their former existence being field-names and local tradition. This emphasizes the importance of research into place-names and the recording of oral traditions such as those described by Baines (1980). The Weald is an area where small seams of potting clay have been exploited by short-lived industries, while some areas such as Chailey (Section 9.1.6, nos. 407-9) and the Dicker (Section 9.1.6 nos. 452-456) have a long tradition of post-medieval pottery and tile-making.

Fig. 1.3 South-East England. Surface geology

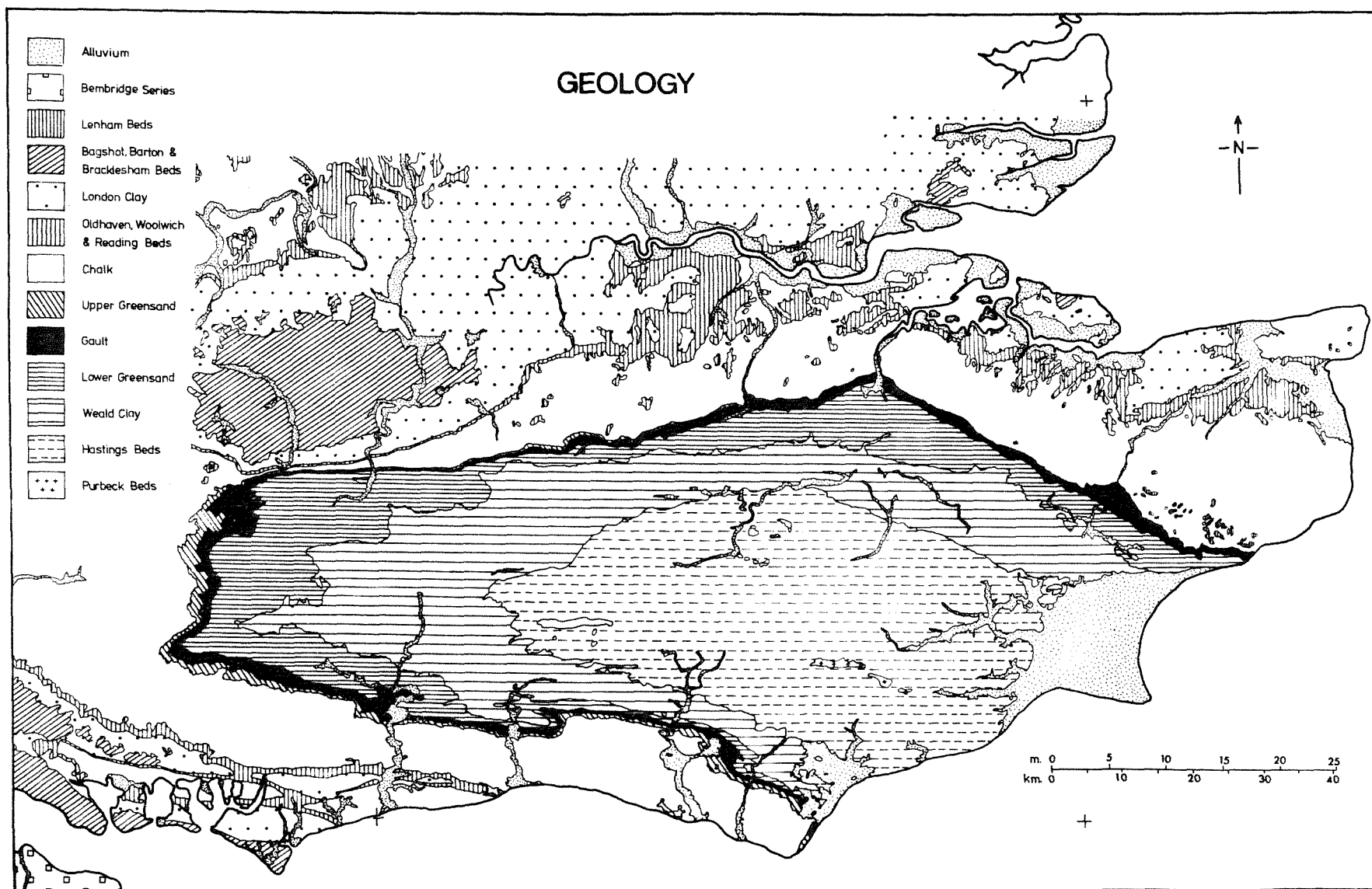
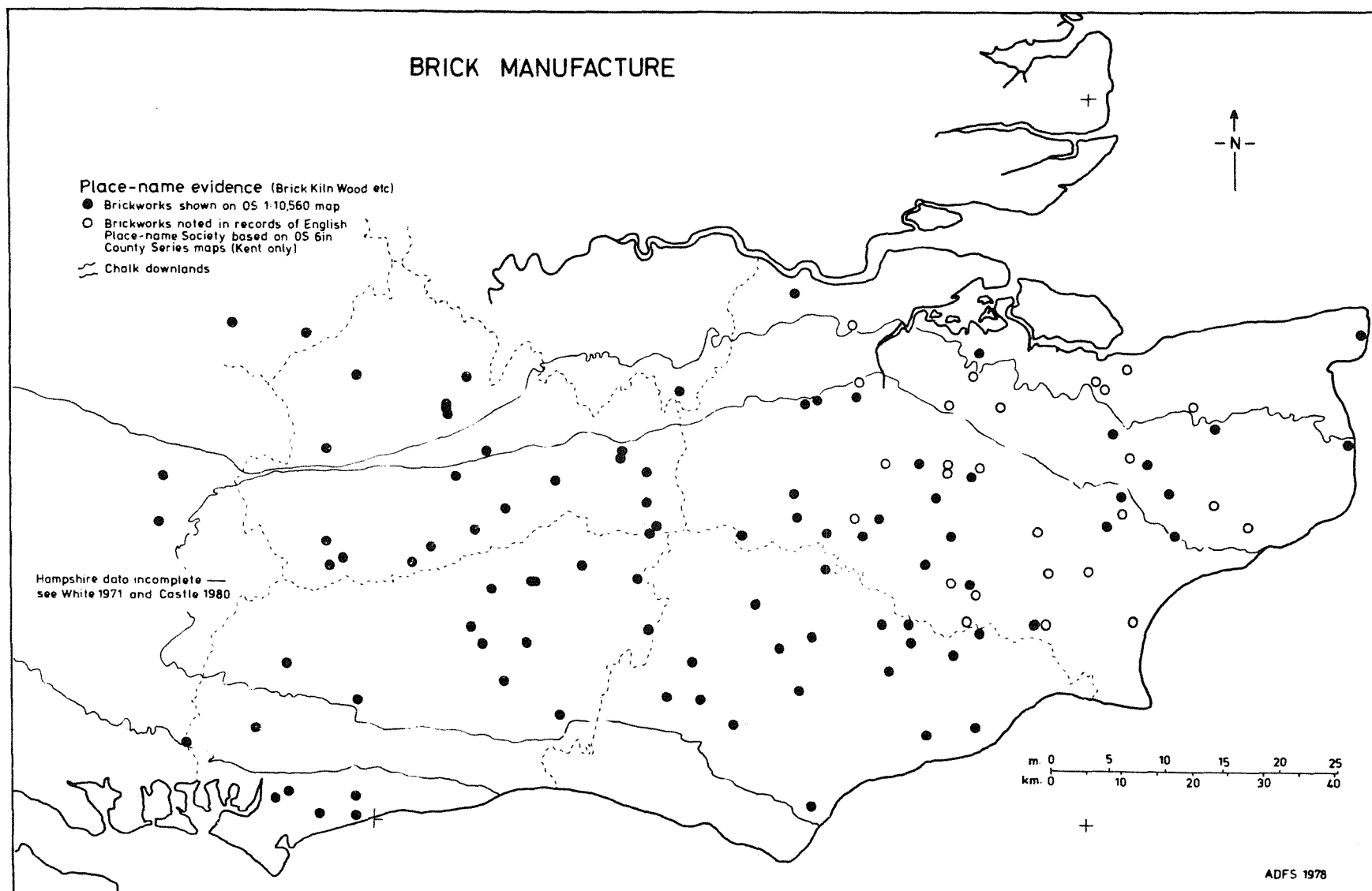


Fig. 1.4 Kent, Surrey and Sussex. Brick manufacture



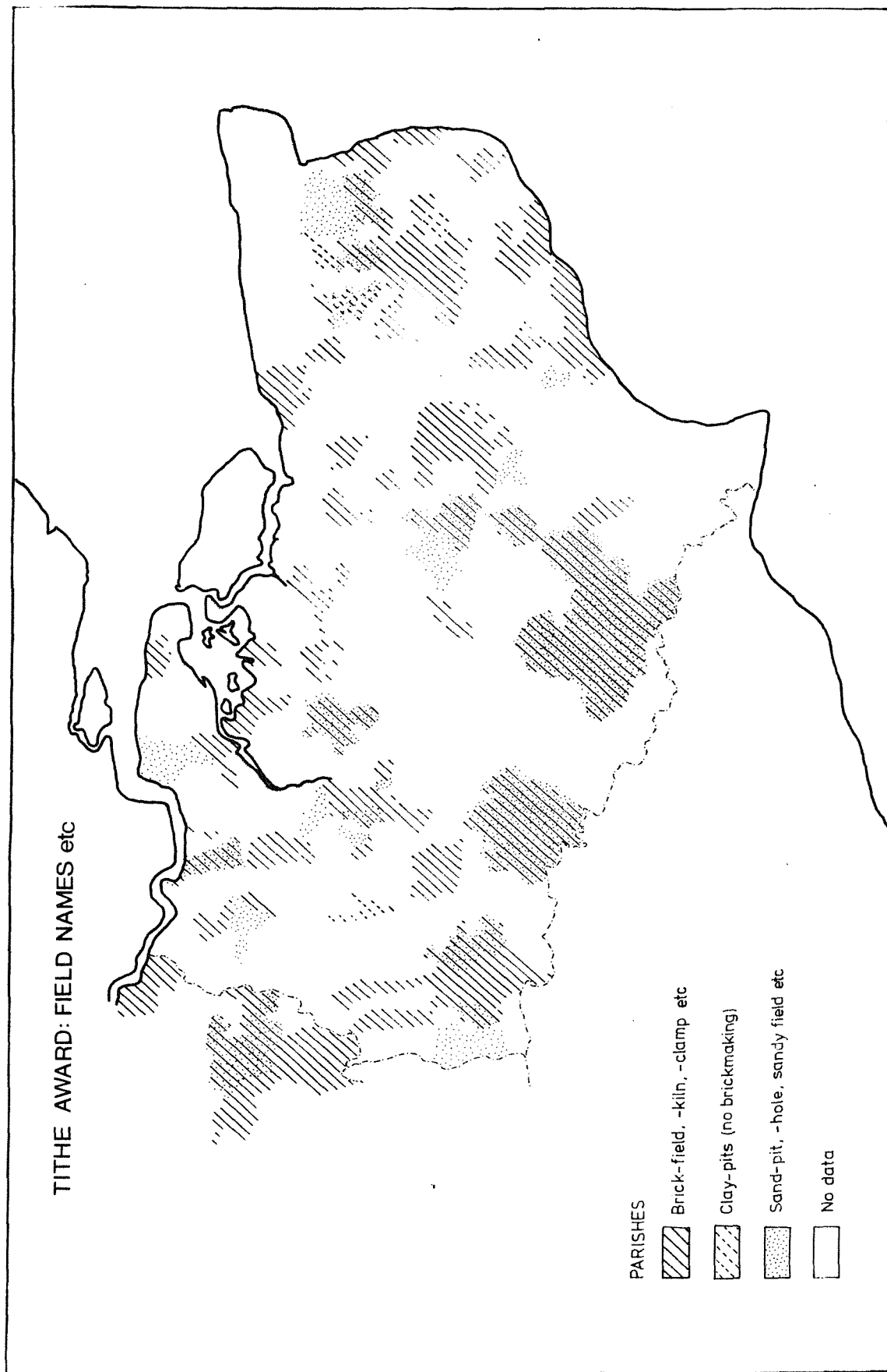


Fig. 1.5 Kent. Field-names indicating the location of raw materials and post-medieval brick and tile manufacture. (Source: Tithe Awards transcribed for English Place-Name Society, University College, London. See also Section 2.4.5)

Elsewhere, notably on the Gault Clay and Reading Beds, the distribution of potters' and tile-makers' workshops shows a deliberate choice of location to exploit these deposits (see Section 5.3.2). The Gault Clay occurs on the fringes of the Wealden Series (Fig 1.3) and numerous tileries in Kent and Surrey, including the extensive medieval industry at Naccolt, Kent, were situated on these outcrops. Pale-coloured bricks are a distinctive product of the Gault Clay especially from the area around Aylesford and Burham, Kent (VCH Kent 1932, 393). Elsewhere, however, tiles and pottery made from the Gault Clay generally occur in the usual range of colours appropriate to the conditions of firing. As at Wrecclesham, Surrey, clay from the same horizon in the Gault often differs from place to place (Dines & Edwards 1929, 163).

The Reading Beds on the other hand comprise predominantly white-firing clays, especially in Surrey and north-east Hampshire where these raw materials were used not only by potters working near the outcrops but also by those who transported the clay to areas further afield. Important sources were in Farnham Park and at Tongham (see Section 9.1.5, nos. 319-322 and no. 372) but claypits were certainly worked as far east as Sutton and Cheam. In Sussex, too, pottery made from the Reading Beds is generally pale in colour but careful selection would have been necessary to obtain pure white clay from the mottled pink and white deposits exposed on the surface of the Reading Beds between Chichester and Arundel. At Westhampnett, for example, extensive seams of red-coloured clay occur in Clay Pit Lane. Isolated outcrops of Tertiary Clay, some of it possibly used for the manufacture of pale-coloured earthenwares, are also exposed to the east of Arundel, but the majority of known ceramic industries exploiting these resources are found to the west where the narrow outcrop of the Reading Beds extends through southern Hampshire as far west as Laverstock, Wiltshire.

The Reading Beds deposits are by no means the only source of white-firing clay in the region. At East Lavington and Graffham, West Sussex, for example, white wares were manufactured in both the medieval and post-medieval period (see Section 9.1.7 nos. 571-574 and 577-579). Seams of pipe-clay occur at Woolwich (see Section 9.1.2, nos. 23-24) and Hastings (see Section 9.1.6, nos. 444-450), while white-firing clays are also known at Rye and in the Fairlight area.

The London Clay has been exploited extensively for the manufacture of red earthenwares and tiles. In Kent there were centres of medieval and post-medieval ceramic production in the Forest of Blean and to the east of London. In Surrey, too, the post-medieval red wares which superseded the output of white fabrics were evidently made from London Clay occurring alongside the Reading Beds. The use of these two different types of clay found in juxtaposition also accounts for the diversity of medieval wares occurring in south-west Sussex and south-east Hampshire. Indeed, the London Clay was certainly exploited for pottery manufacture at Chichester in the late Saxon, medieval and post-medieval periods (see Section 9.1.7, nos. 551-559).

Other restricted outcrops of clay had special uses. Leland in his Itinerary, for example, recorded a vein of 'earth' at Cuddington, Surrey from which were made the moulds (i.e. crucibles ?) for goldsmiths and metal-casters. He asserted that during his day a load of this earth 'the like not to be found in all England' would be sold for a crown or two crowns of gold (VCH Surrey 1902, 282). The evidence of analyses undertaken so far, however, indicates that glass-making crucibles were probably imported from outside the region (Kenyon 1967, 52). Nevertheless, the raw materials for glass-making were available from the Folkestone Beds of the Lower Greensand, especially in the vicinity of Reigate, Surrey and around Aylesford, Bearsted and Hollingbourne in Kent. Indeed the juxtaposition of the place-name 'Glasyers' with the probable site of a medieval pottery at Platt, Kent, for example, suggests that medieval potters and glass-makers may have been drawn to the same area, owing to the availability of Gault Clay suitable for pottery manufacture and the Lower Greensand from which sand for glass-making could be obtained (see Section 9.1.4, nos. 224-231).

Fullers' Earth on the other hand is quite unsuitable for pottery-making. Topley (1875, 393) records a trial in 1693 which was charged with the task of determining whether or not a certain potters' clay was deemed to be fullers' earth. Evidence was cited as follows:

'Whereas this makes the best Clay Wall in England, if it were of the nature of Fullers'-earth, upon the first wet Weather it would fall to the Ground. The said Warner's Clay, tho' never so often dissolved in Water, may be brought into a Body again, and will work like Wax into any shape, whereas Fullers Earth being once dissolved is never to be got into any Body, but when it is dry crumbles like

sand, and all the art of Man can never make a Pot of it'. Thus, while brick-making has been widespread in South-East England, the properties of the clay required for tile-manufacture and more especially for potting demand more rigorous selection of the raw materials. Nevertheless,

'...the soil of the Weald, abounding in clay, has always been particularly suited to [pottery] manufacture. But pottery as an industry, as supplying the domestic needs of more than a single community, is of comparatively recent date. As an industry it has existed at only a limited and changing number of centres. Potteries, like brickfields, spring up and disappear so quickly that it is difficult to keep track of them at all' (Kaye-Smith 1953, 157).

Raw materials are, of course, only one factor influencing the location of a potter's workshop. The relationship between raw materials, the availability of land and potential demand for the finished product will be discussed more fully in Section 5.3. Nevertheless, this broad assessment of the principal clay sources in South-East England illustrates the general pattern of ceramic production, and demonstrates above all the importance of making comparisons between different parts of the region which have a similar geological structure.

1.3.3 Woodland and fuel resources

The coincidence of clay subsoils and natural woodland has always provided favourable conditions for ceramic production using wood-burning kilns. During the medieval period, the importance of woodland crafts in the Weald and on the clay-with-flints is demonstrated by the occurrence of occupational surnames connected with woodworking (Birrell 1969). The potter and the tile-maker were just two of the numerous woodland craftsmen and, like the ubiquitous clay sources, the availability of fuel placed few constraints on the location of their workshops.

Wood, from the Low Weald in particular, had attained considerable commercial significance by the fourteenth century, not only as a source of timber for export but also as the raw material for a growing trade in finished wooden products (Pelham 1928, 180). Nevertheless, this would have had little effect on supplies of fuel. There is no evidence so far that potters, tile-makers or indeed the glass industry used charcoal as a fuel. Instead, all these craftsmen

required dry underwood to fire their kilns. Any shortage of fuel is more likely to reflect increasing demand to meet the domestic needs of a growing Wealden population rather than competition with the commercial consumption of 'standards'.

Potters and tile-makers often obtained the right to gather underwood in the lord's wood, and in 1380-5 there is a specific reference to the supply of 'underwood' for the Schurterre glass-furnace (Kenyon 1967, 45). A large community of potters such as those at Ringmer could create a heavy demand for small timber, but the evidence is lacking to indicate whether or not they participated in woodland management such as the 'coppice-with-standards' recorded on the Archbishop's manor of South Malling in 1273 (Brandon 1974, 103). Old woodland at this time would have been dominated by oak and beech, while cleared land which had reverted to woodland would often be colonised by birch. The shaws or rewes which are such a distinctive feature of the Wealden landscape delineate the patchwork of small fields cleared from the forest, but some of the wider hedgerows may also have resulted from later encroachment on to abandoned fields. All would have been a potential source of underwood for the medieval potter-farmer.

Exhaustion of fuel supplies within a convenient distance of the workshop has been suggested as a possible explanation for the multiplicity of medieval and later glass-furnaces in the western part of the Weald (Kenyon 1967 fig 21). Frequent changes of site would have been necessary to exploit new sources of fuel. It is questionable, however, to what extent fuel supplies determined the longevity of potters' workshops. Certainly by the sixteenth century large quantities of timber were being consumed in the iron-furnaces, yet the potter's needs were somewhat different. As we have seen, he required underwood not charcoal, and it is doubtful therefore whether the shortage of fuel would ever have been so great as to necessitate moving the workshop to a new site for this reason alone.

The woodland cover of the London Clay, notably in the Forests of Blean and Bere, would have been similar to that of the Low Weald. On the more fertile soils, however, a higher proportion of arable land would have intensified demand for the available fuel. In the Surrey heathlands, too, fuel may have been transported some distance. This was certainly so in the nineteenth century (Sturt 1919, 94), but it is also possible that peat may have served as an alternative to underwood. Again, during the nineteenth century peat

was burned to heat the drying sheds (ibid., 73).

Thus there were few areas in South-East England where supplies of either clay or fuel were entirely inadequate for ceramic production. It remains, however, to consider in a subsequent section (5.3.2-3) the organisation of these supplies, especially where there was a heavy demand from a large community of potters or tile-makers.

1.4 SOUTH-EAST ENGLAND: SETTLEMENT AND COMMUNICATIONS

1.4.1 Medieval rural settlement: towards a chronology

Medieval ceramic production and distribution should be examined in the context of consumer demand from settlements within the region. Thus the chronology of expansion and contraction within the settlement pattern must be considered in relation to the level of demand and the geographical distribution of the potter's potential customers. Moreover, pottery recovered from fieldwork may also assist with establishing the broad outlines of settlement chronology.

Chronological changes within medieval settlement patterns fall into three principal groups: the expansion or contraction of existing settlements; the growth or decline of towns; and the colonisation of hitherto unsettled land. The nature of medieval settlement in South-East England will be discussed in subsequent sections (1.4.2, 1.4.7), but it will be helpful first to consider in general terms the principal chronological developments and the evidence available for their reconstruction.

The sources of evidence for settlement chronology are both numerous and diverse: place-names, taxation and manorial records, church architecture and archaeological fieldwork to name but a few. Place-names are particularly important for the earlier periods, and the interpretation of this evidence is a specialised discipline. Minor place-names mentioned incidentally in manorial and other records, however, also constitute an important source of information for the later medieval period when these documentary sources can indicate a terminus ante quem for medieval farms and hamlets. The application of this approach to the assessment of consumer demand in the parishes of Hartfield and Withyham, East Sussex is shown on Fig 5.27.

Taxation records, too offer a useful illustration of settlement distribution and chronology.

'The Subsidy rolls also provide something of a Directory to the rural settlements of England, even fuller than provided in that other by-product of taxation, the Nomina Villarum of 1316. They ... offer proof of the existence (and of the minimal population and relative wealth) of hundreds of settlements which were to perish in the next two hundred years' (Beresford 1963, 3-4).

Of course, the evidence afforded by both place-names and documentary sources gives little clue to the nature of the settlements, but the information remains useful for the identification of general patterns at both a regional and a local level.

The structural history of medieval churches is also an indication of settlement chronology. Moreover, church archaeology can offer evidence for periods when there are few documentary sources. Aldsworth (1978, 79-81) has stressed the importance of church archaeology to settlement history in Sussex, while outside the region in West Hertfordshire, Doggett (1981, 28-30) has illustrated how church architecture can reflect social and economic processes. He has shown both that the expansion of settlement in the twelfth and thirteenth centuries is reflected in the structure of churches and that there is a complete change in the type of church buildings erected in that area after c.1350.

Archaeological fieldwork and excavation provides similar material evidence for settlement history. In this instance, the discovery of pottery, as opposed to the identification of surface features alone, is a valuable, if imprecise, chronological indicator. Only limited inferences can be drawn, however, from surface collections, and even general conclusions require the analysis of reliable quantified assemblages. Nevertheless, given favourable conditions, the presence or absence of diagnostic wares can help to indicate the longevity of occupation at particular settlements (Streeten 1979a, 118). Notable examples of settlement models derived from extensive archaeological fieldwork include studies by Wade-Martins (1975, 139-40) in Norfolk and Cunliffe (1972; 1973a, 185-9) in Hampshire. Such hypotheses, however, are always susceptible to revision in the light of new evidence (Hinton 1981, 60). Differential survival of early pottery fabrics also hinders reliable interpretation of the material evidence. Hand-made and poorly-fired wares disintegrate rapidly thereby distorting the observed settlement pattern, particularly in the Saxon period (Shennan 1981, 119; fig 33).

Excavation on the other hand enables more controlled recovery of the data. Mercer (1975, 35) has stressed the importance of stratified groups of pottery as a means of dating house-types. Likewise, there are numerous instances where the ceramic evidence can help to refine our understanding of the different periods of abandonment within shrunken or deserted medieval villages, as at Hangedon, East Sussex (Holden 1963, 72; Hurst & Hurst 1964, 120-1).

The accumulation of excavated data also enables more specific conclusions to be drawn about the chronology of certain settlement types. Notable among these are the medieval moated sites for which Le Patourel and Roberts (1978, 46) have proposed a broad pattern of development, including a phase of innovation c. 1150-1200, followed by a considerable increase in the number of new sites c. 1200-1325. Indeed, in the absence of successive phases on many of the Kentish moated sites, Rigold (1982, 86) has concluded that they are probably fairly late examples. Such a pattern would be consistent with that in Warwickshire where there appears to be a connection between the distribution of moats and areas of late colonisation (Roberts 1962, 27). The chronology can only be calibrated, however, by the discovery of datable artifacts - notably pottery - in stratified contexts.

Excavated medieval industrial sites can usually be dated more reliably from archaeomagnetic samples or radiocarbon determinations than by the associated ceramics. Nevertheless, Holden and Hudson (1981, 129-143) have demonstrated the importance of pottery for dating medieval salt-workings. Likewise, there are many instances where scientific methods of dating are either impractical or too expensive, and the excavator must depend upon artifact evidence for establishing a chronology. In the case of fieldwork on ironworking sites in the Weald, a few scraps of pottery may be all that distinguishes medieval from Roman bloomeries (Tebbutt 1981, 59). Similarly, Grove (1952, 191) has drawn attention to the value of pottery finds for dating successive reclamations in Romney Marsh, an approach pursued to a certain extent by Williams (1977, 84-5) in her study of deserted medieval villages in that area.

Thus ceramic research has assumed increasing significance in studies of medieval settlement. Taylor (1974, 52-55), for example, advocated a systematic approach to fieldwork with the intention of recovering datable groups of pottery rather than random surface collections. A measure of the impact of this approach is witnessed by Hoskins (1982, 14) who has identified the study of artifact evidence as one of the most significant developments since the first edition of his important handbook on Fieldwork in Local History. Students of medieval ceramics, however, have seldom shown an equal willingness to consider the relevance of settlement studies to the production and distribution of pottery and ceramic building materials. It is as a background to the marketing of medieval ceramics that broad trends in the settlement history of South-East England will now be considered.

A tabulated summary of the evidence for medieval settlement and an introduction to evaluation of the data appears in Section 11.3.

Erroneous opinions about early settlement in the Weald owe much of their origin to the statement by J.H. Round (1899, 3) who maintained that the area

'... was still at the time of the [Norman] Conquest, a belt some twenty miles in width, of forest, not yet opened up except in a few scattered spots for human settlement.'

This view was based to a large extent upon a misinterpretation of the Domesday evidence: much of the land within the Weald would have been assessed under parent manors outside the area, and the paucity of returns for the Weald does not necessarily imply a lack of settlement. To take one significant example, Tonbridge in Kent is known to have been held from the Archbishop of Canterbury and the castle dates from shortly after the Conquest, yet there is no Domesday entry. It seems probable, therefore, that some of the Domesday figures for Wrotham - one of the parent manors with lands in the Lowy of Tonbridge - included these Wealden possessions. This would certainly account for the abnormally high figure of 500 swine entered under Wrotham.

Commentaries by Sawyer (1979, 1-3) and Haselgrove (1978, 204-5) and the detailed research undertaken by Witney (1976) has redressed the balance of opinion about early settlement in the Weald. Indeed, the evidence - both architectural and documentary - for late Saxon churches in the Kentish Weald (Fig 1.6) compared with Domesday place-names (Fig. 1.7) emphasises the limitations of the Domesday data. Rodwell (1981, 45), too, has drawn attention to the unique survival of the Textus Roffensis and Domesday Monarchorum (see Section 11.3.1) as a caution against placing undue statistical emphasis on the number of Domesday churches: whereas 176 are listed in the Domesday Survey of Kent, the contemporary local records indicate a total of over 400. Similar trends can be inferred in Sussex (Kirby 1978, 162; Brandon 1978a, 157) and it is also instructive to compare the survival of early architectural features with the documentary evidence (Fig. 1.6). These sources indicate the extent to which early structures have been concealed or obliterated by later remodelling.

Nevertheless, it would be equally misleading to ignore the contrast between the Wealden settlements and those of the surrounding areas. These differences have significant implications for the production and marketing of consumer goods. Saxon churches in the Weald served scattered and probably self-sufficient farming

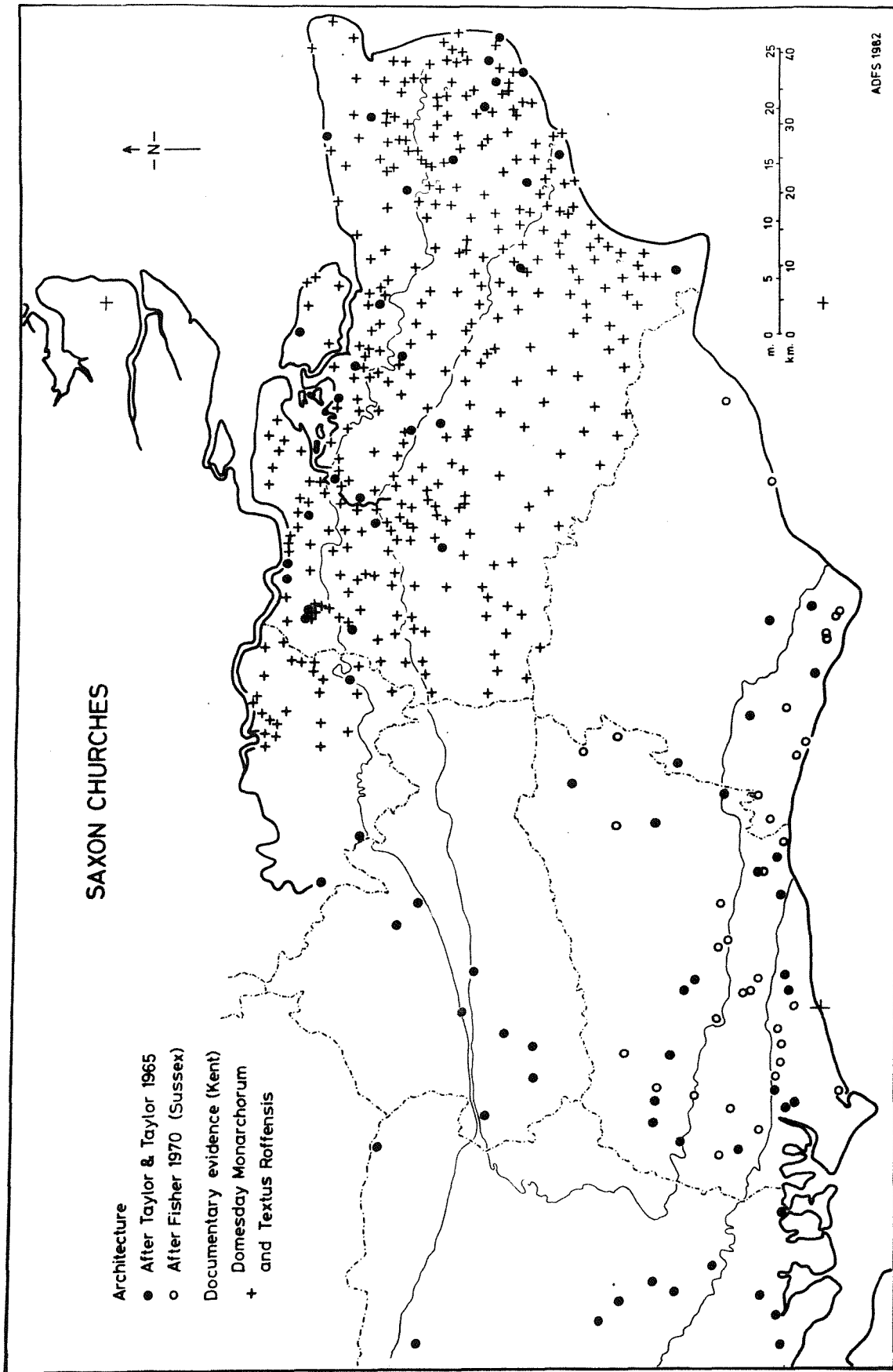
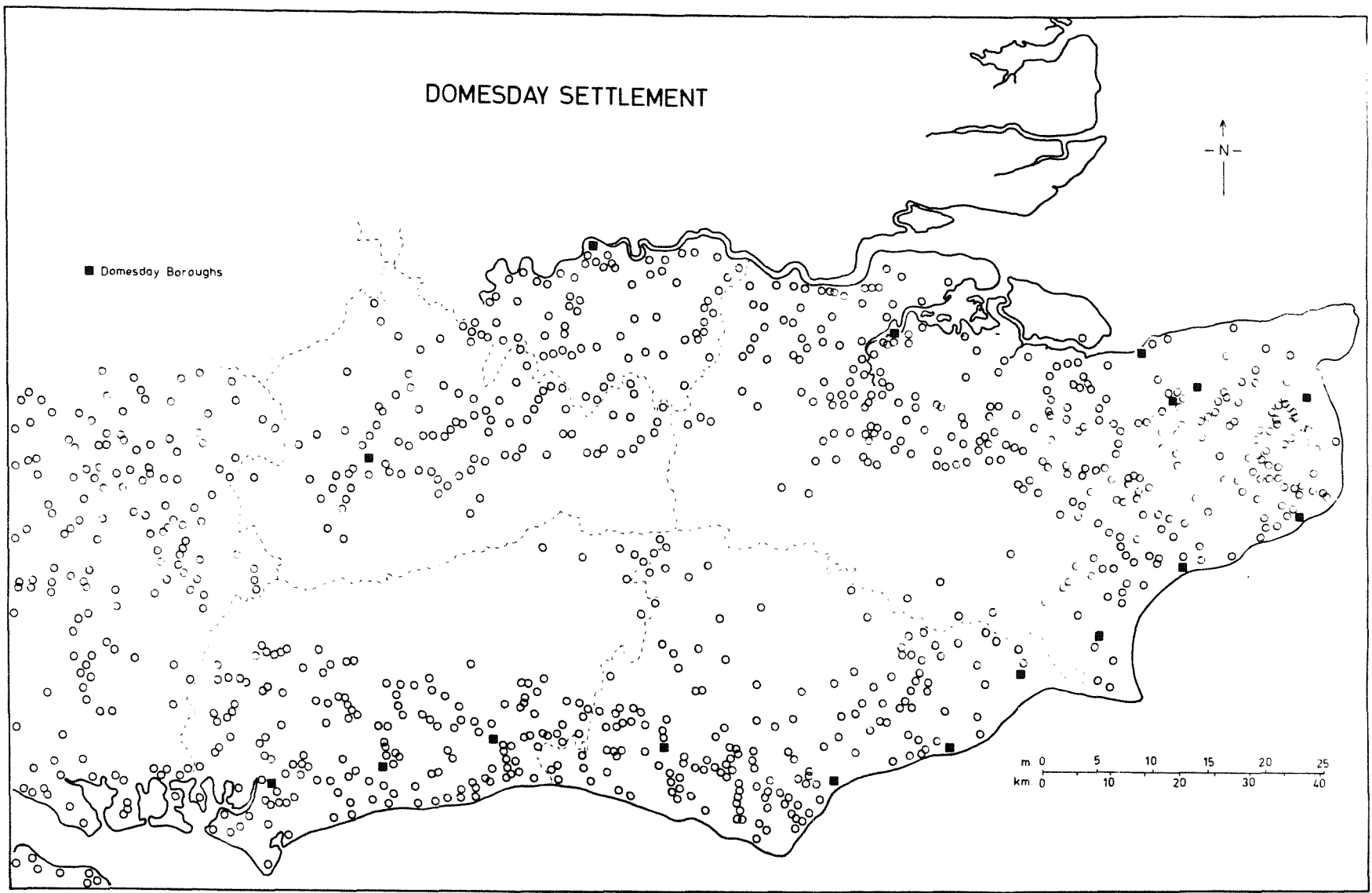


Fig. 1.6 South-East England. Saxon churches known from archaeological evidence, and from documentary sources (Kent only)

Fig. 1.7 South-East England. Domesday settlement



communities, whereas the albeit limited archaeological evidence confirms the Saxon origins of many nucleated settlements on the coastal plain of Sussex (Bell 1978, 50-51). Despite the problems of dating Saxon architecture (Kirby 1978, 160-3), the survival of Saxon and Saxo-Norman churches reflects this pattern, and nucleated settlements would have favoured specialist production of domestic utensils such as pottery.

There are also regional variations in the settlement history of the Weald itself. This, too, is reflected in the survival of Saxon churches in the Low Weald of West Sussex and adjoining areas of Surrey, where place-name evidence attests the early emergence of permanent farms (Brandon 1978a, 150-1). In the High Weald, however, the pattern was rather different. Brandon (1969, 136), for example, has expressed the view that

'It seems very probable that pioneering settlements were widely scattered amidst clearings within the wood at the end of the eleventh century, but their origin, number and size and the economic and social conditions prevailing in them are still shrouded in mystery.'

In a more recent review Brandon (1978a, 154-5) has emphasised the problems of distinguishing permanent from seasonal occupation in the High Weald and has also drawn attention to the potential contribution of archaeological evidence to an understanding of the nature of these early settlements (ibid., 149). An unexpected discovery in 1980 illustrates one such contribution. A watching brief on the construction of a pipeline across Ashdown Forest revealed a Saxon bloomery furnace dated subsequently by archaeomagnetic samples and radiocarbon determination to the ninth century (Tebbutt 1982, 19). Associated pottery from the excavation at Millbrook is significant for three reasons: most importantly, the dates derived from scientific analysis of the samples taken from the bloomery furnace assist with calibration of the ceramic sequence within the region; secondly, the discovery of flint- and vegetable-tempered fabrics demonstrates that Saxon pottery can survive in the acid soils of the High Weald; and thirdly, the use of non-local temper provides a possible indication that pioneer Saxon ironworkers carried pottery vessels with them into the Weald - a suggestion supported by the presence of limonite ore which also points to the transport of certain raw materials, possibly from the northern margins of the Weald (Streeten in Tebbutt 1982, 27 and Fells in Tebbutt 1982, 29).

While there is undeniable potential for exploiting archaeological evidence to elucidate the settlement history of the Weald, the archaeological record of Saxon Wealden settlements has proved elusive. For example, the ceramic assemblage recovered in 1982 by M. Gardiner (pers. comm.) at Ivenden, Mayfield included stratified shell-tempered wares, but these are probably Roman rather than late Saxon or medieval. Likewise, there are no grounds for assigning a date earlier than the twelfth century to the isolated flint-tempered sherds from fieldwork elsewhere in the High Weald (Streeten 1979, 117 and 120).

Ceramic assemblages from rural settlements in the Weald are generally typical of the thirteenth and fourteenth centuries, and a view of settlement history in the area based upon archaeological evidence alone would therefore be biased towards late colonisation. There are several feasible explanations for this.

Firstly, it seems unlikely that Wealden farming communities would have supported a well-organised system of ceramic production and distribution. Indeed, until the discovery of ninth-century wares at Millbrook in 1980 (see above) it would have been possible to infer an aceramic region in the High Weald, perhaps relying on wood and leather for domestic utensils. Even now the evidence for local production is lacking and in the absence of comparative material it is impossible to assess the significance of the Millbrook sherds. Thus the chances of recovery and survival of the ceramic evidence are minimised both by the small quantity of pottery likely to have been used and by the quality of poorly-fired domestic wares which are liable to disintegrate in the soil.

Secondly, conditions for fieldwork are unfavourable owing to the dispersed settlement pattern and modern land use. Again, there appears to be a contrast between the High Weald and the Low Weald of West Sussex where vesicular late Saxon wares have been discovered in the vicinity of the church at West Harting (Brightwell 1949, 7; Barbican House Museum, Lewes: 53/6412) and elsewhere. In the High Weald on the other hand identifiable farms and hamlets recognised by house platforms or other earthworks tend to represent the later phases of medieval settlement (Tebbutt 1981, 115). In some cases, these may have obliterated traces of earlier occupation. Thus it will take time, skill and an element of good fortune before Brandon's somewhat optimistic expectations of the archaeological evidence for Saxon settlements in the Weald can be fulfilled.

The problems of defining settlement chronology are

exemplified by the parish of Rotherfield:

'The important difference between Rotherfield of c. 1200 and the place in the fourteenth century is that there was no nucleated village at the earlier date ... We have, therefore, the somewhat unusual circumstance that many of the relatively outlying, peripheral settlements in the parish of Rotherfield are older than the central nucleated village, the reverse of the 'normal' development in England generally, but the prevailing rule in the High Weald. The origin of such villages warns us against assuming that even a medieval village had been a village from the first'

(Brandon 1978, 155).

Nevertheless, there would undoubtedly have been local variations in the chronology of colonisation. The evidence for late assarting and the growth of associated hamlets in Rotherfield and adjacent parishes is not necessarily applicable to all areas of the Weald. Indeed, research by Searle (1974, 54-58) has demonstrated the effects of monastic stimulus to the process of colonisation on the Battle Abbey estates, where the value of the leuga multiplied fourfold between 1086 and 1115. Waverley Abbey may have exercised a similar influence over the western parts of Surrey at a slightly later date (Hallam 1981, 75). These trends are not typical, however, and the development of the Battle Abbey estate certainly stimulated more rapid assarting and enclosure than in other parts of the Weald during the period before c. 1200. Thus, twelfth-century pottery is more likely to be found on rural sites here than elsewhere in the Weald, and the evidence from excavations at the abbey itself certainly confirms that well-fired wares were available in the area at this date (Streeten forthcoming a).

Evidence for the broad chronology of assarting can be deduced from the form of manorial rents. Money payments, as opposed to services, tend to indicate later colonisation. In County Durham, for example, an attempt has been made to identify generations of village settlements using this approach (Roberts 1977, 106-7), while in South-East England the type of payment constitutes important chronological evidence for assarting in the woodland areas of the Weald, the Forest of Bere, the Forest of Blean and in parts of North-East Hampshire and on the clay-with-flints beyond the North Downs. In the words of H.E. Hallam (1981, 75)

'The confines of London were wild and undeveloped until

a remarkably late period in medieval history'.

In the Kentish Weald, however, there was extensive new settlement during the twelfth and thirteenth centuries (*ibid.*, 78), reflecting to a certain extent the national trend in which the spate of town plantation was mirrored in the countryside by the establishment of new or extended rural settlements (Rowley 1978, 48). These developments are also reflected in church architecture and ecclesiastical organisation. In west Kent, for example, surviving thirteenth-century churches in the Weald attest a period of rebuilding and expansion, while there are numerous instances where outlying chapels were built to meet the needs of a growing population in large rural parishes. Manorial or demesne chapels were frequently associated with communities on newly opened land (Owen 1979, 40). The vanished chapel at Cansiron is one example situated on the western fringe of Hartfield parish. In terms of both documentary sources (*ibid.*, 35) and archaeological evidence (Rodwell 1981, 50), however, it is difficult to establish a definitive list of churches and chapels in a given region. Our knowledge of medieval settlement therefore remains incomplete and even in a densely-populated midland county such as Northamptonshire, additional evidence is accumulating for small hamlets interspersed among the nucleated villages (Taylor 1978, 134).

Settlement history reflects population trends and thus documents - in geographical as well as chronological terms - the demand for consumer goods such as pottery. National population figures have been summarised succinctly by Miller and Hatcher (1978, 29):

'Few would dispute that the population of England between the late eleventh and early fourteenth century more than doubled and somewhat less than quadrupled'

In a regional context, however, woodland areas such as the Forest of Arden or the Weald experienced some of the highest rates of growth (*ibid.*, 34). A consensus of opinion suggests that the national population had reached a total of some 5-6 million by c. 1300 (Dyer 1982, 33), with rapid expansion during the period 1292-1315 (Hallam 1981, 80). These trends are reflected in the High Weald where assarting continued right up to the Black Death, and a similar pattern has emerged from research by Stamper (1983) in the Pamber Forest area of north-east Hampshire. In the Forest of Bere, however, the main period of expansion occurred during the thirteenth century, while in the Low Weald assarting had generally ceased by the mid-thirteenth

century (Brandon 1969, 142).

Using contemporary records in conjunction with topographical information it is possible to reconstruct the outlines of the medieval settlement pattern in South-East England during this period of population growth in the late thirteenth and early fourteenth centuries. This provides the geographical framework within which the marketing of medieval ceramics is considered in Section 6.3, but it is appropriate here to examine the general patterns which emerge from the data.

Parish churches and chapels are a significant guide to the location of the principal medieval settlements in a region. Neither documentary information from the Taxatio Ecclesiastica c. 1291 (Fig. 1.8) nor the architectural evidence of surviving medieval churches (Fig. 1.9) provides a complete picture, but each yields a similar overall pattern. Irrespective of the settlement types or sizes with which they are associated, the distribution of churches and chapels identifies those areas of closely-spaced settlements both where consumer demand would have been intense and where consumer goods might be traded easily, either through markets or by itinerant salesmen. Dense settlement on the coastal plain of Sussex and Hampshire; in the scarp-foot zone of the North and South Downs; and in parts of East Kent contrasts with the more widely scattered churches situated in the Weald, north-east Surrey and the Hampshire downlands.

Lay taxation records include the names of smaller settlements, some of which had neither a church nor a chapel. Of the extant returns dating from between 1296 and 1334, none provides complete coverage for all parts of the region (Figs. 1.10 and 1.11). Moreover, there are significant variations between the selection of taxation districts on each occasion. Nevertheless, it is instructive to note that the distribution of 'vills' and 'hamletti' denoting units of taxation follows a similar pattern to that representing ecclesiastical organisation, while detailed comparison of the tabulated information in the gazetteer assists with the identification of minor settlements mentioned only in the taxation records.

The Nomina Villarum of 1316 provides yet another convenient if incomplete guide to the location of vills in the region (Fig. 1.12). Again, the pattern of settlement density confirms that derived from churches and chapels and from lay taxation returns. Information from all of these sources has been incorporated into the geographical assessment of medieval marketing (Section 6), but even taken

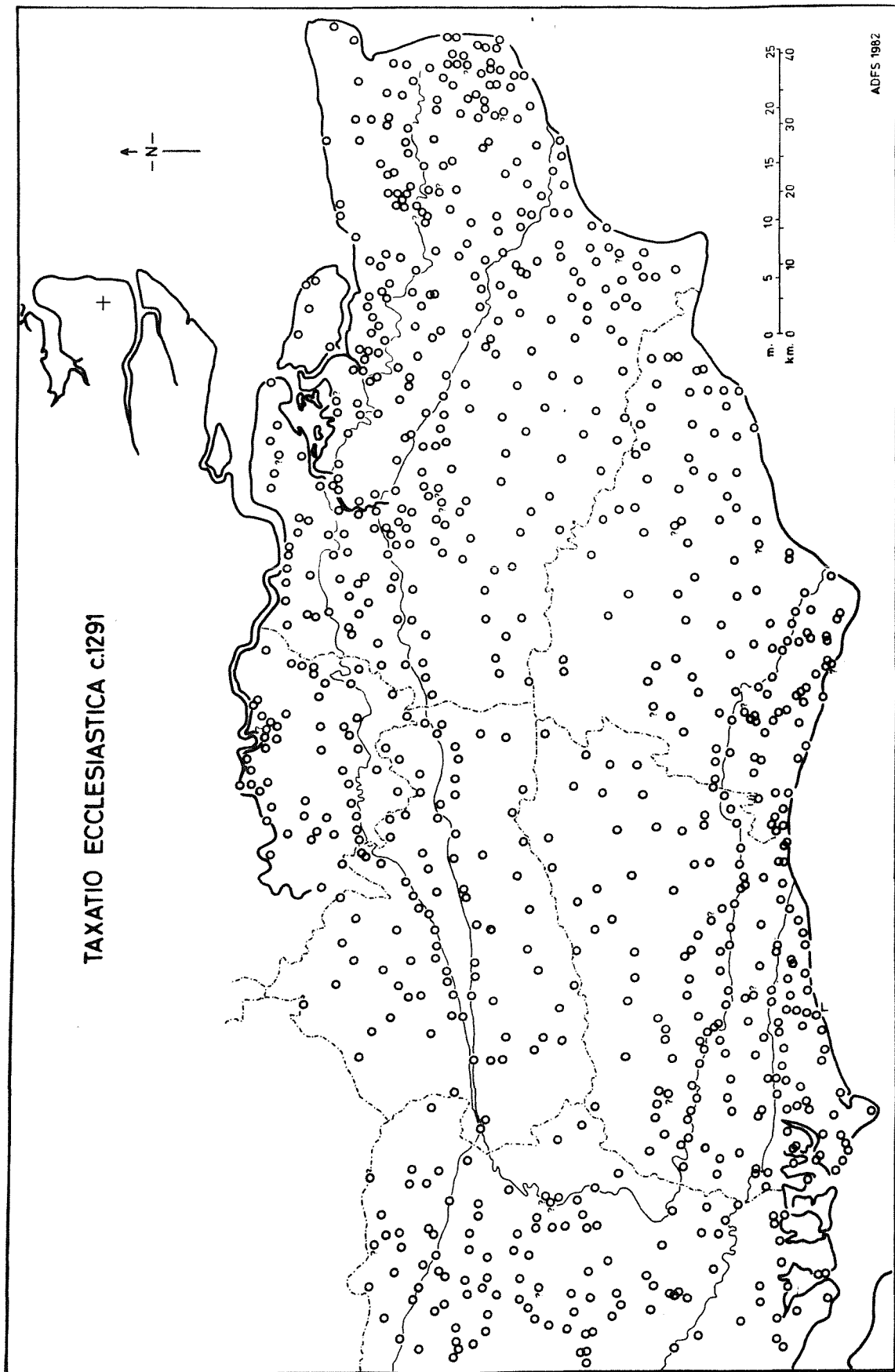
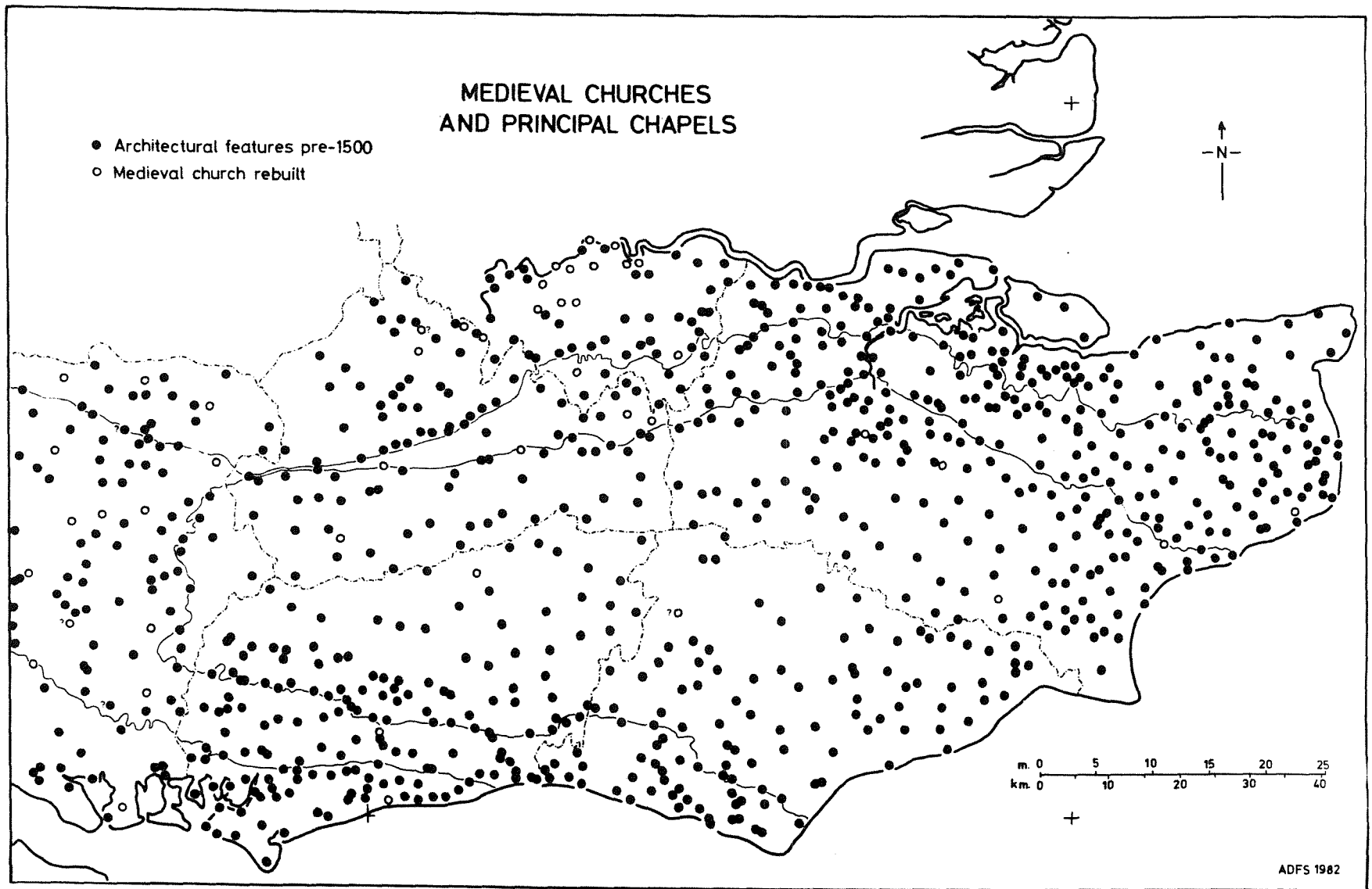


Fig. 1.8 South-East England. Churches mentioned in the Taxatio Ecclesiastica

Fig. 1.9 South-East England. Medieval churches and principal chapels



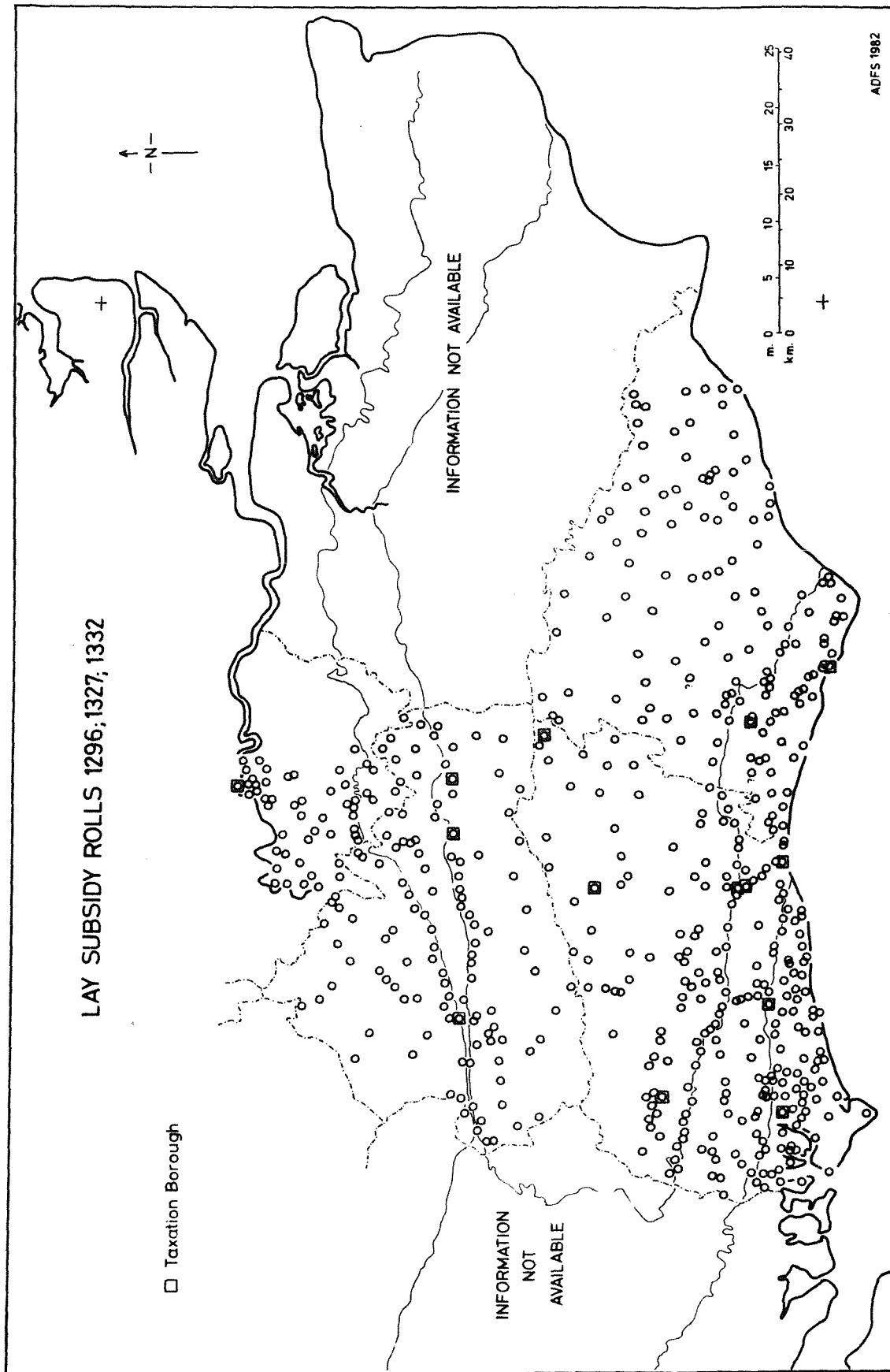
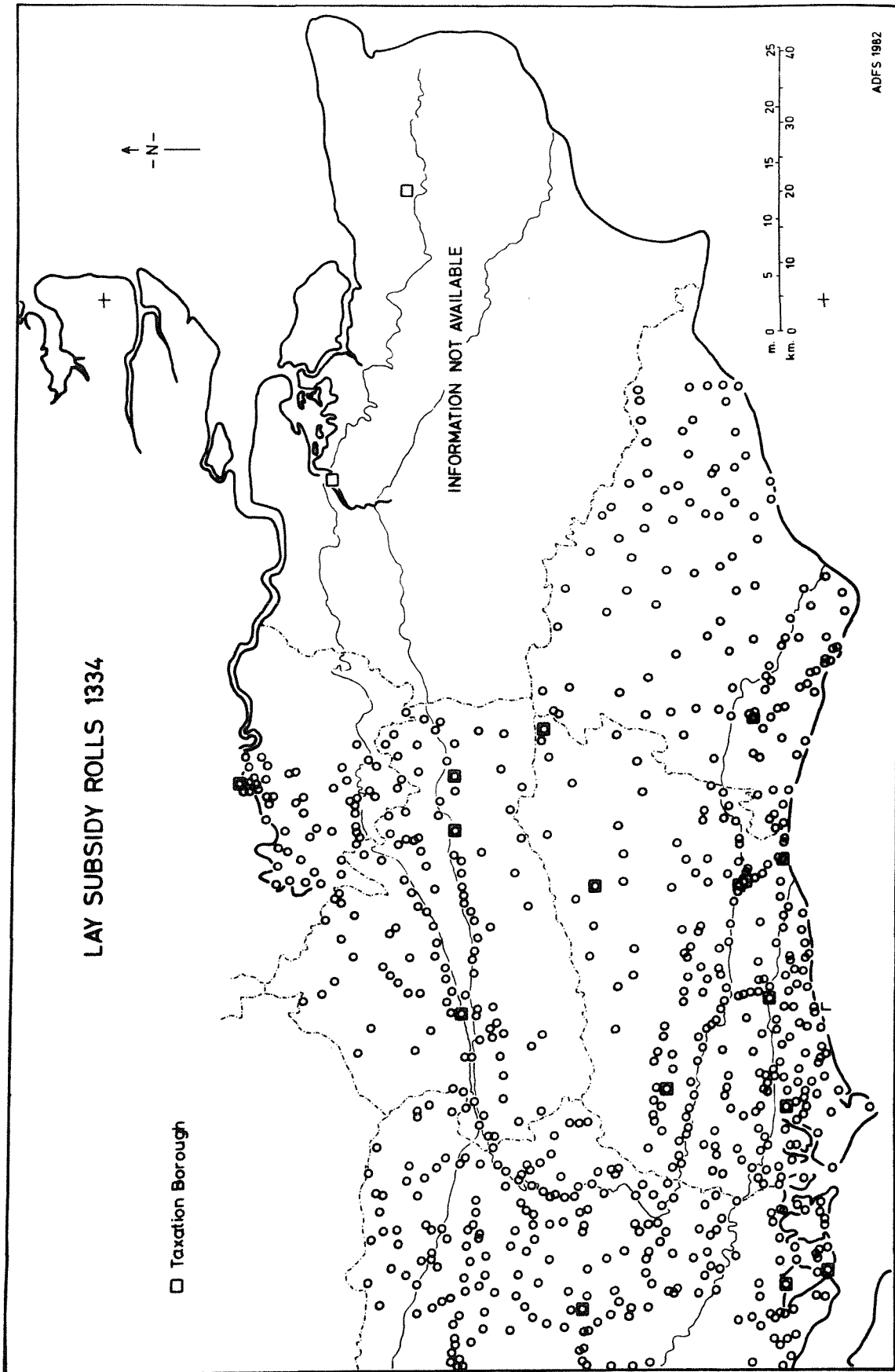


Fig. 1.10 Surrey and Sussex. Places mentioned in the Lay Subsidy Rolls 1296; 1327; 1332



ADFS 1982

Fig. 1.11 South-East England. Places mentioned in the Lay Subsidy Rolls 1334

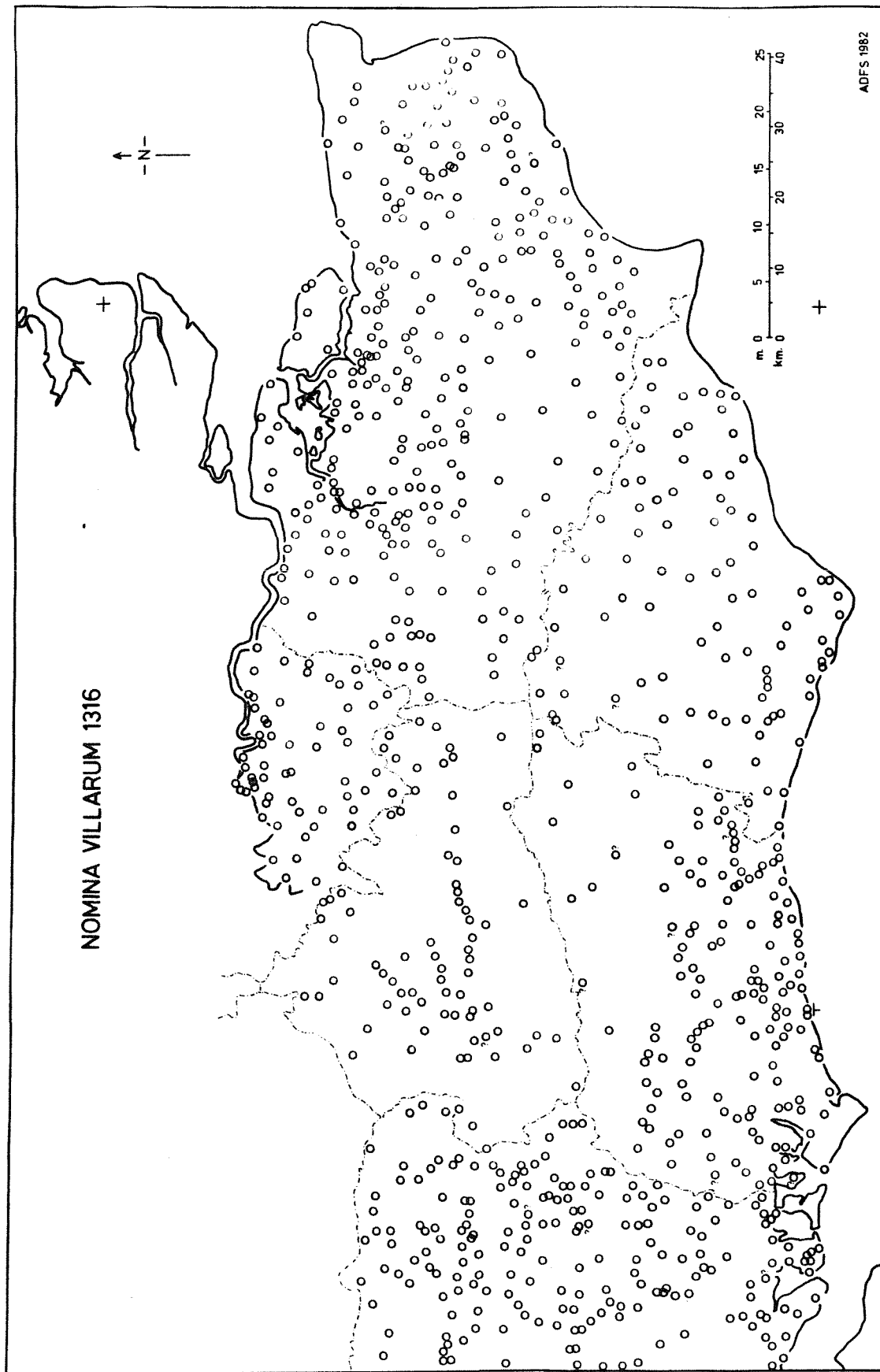


Fig. 1.12 South-East England. Places mentioned in the Nomina Villarum 1316

individually the historical sources highlight significant regional variations in settlement density. Distance is the single most important factor governing the distribution of a fragile low-value commodity such as pottery. Thus, disregarding settlement size, the density alone points to the likelihood of contrasting patterns of ceramic distribution in different parts of the region during this period.

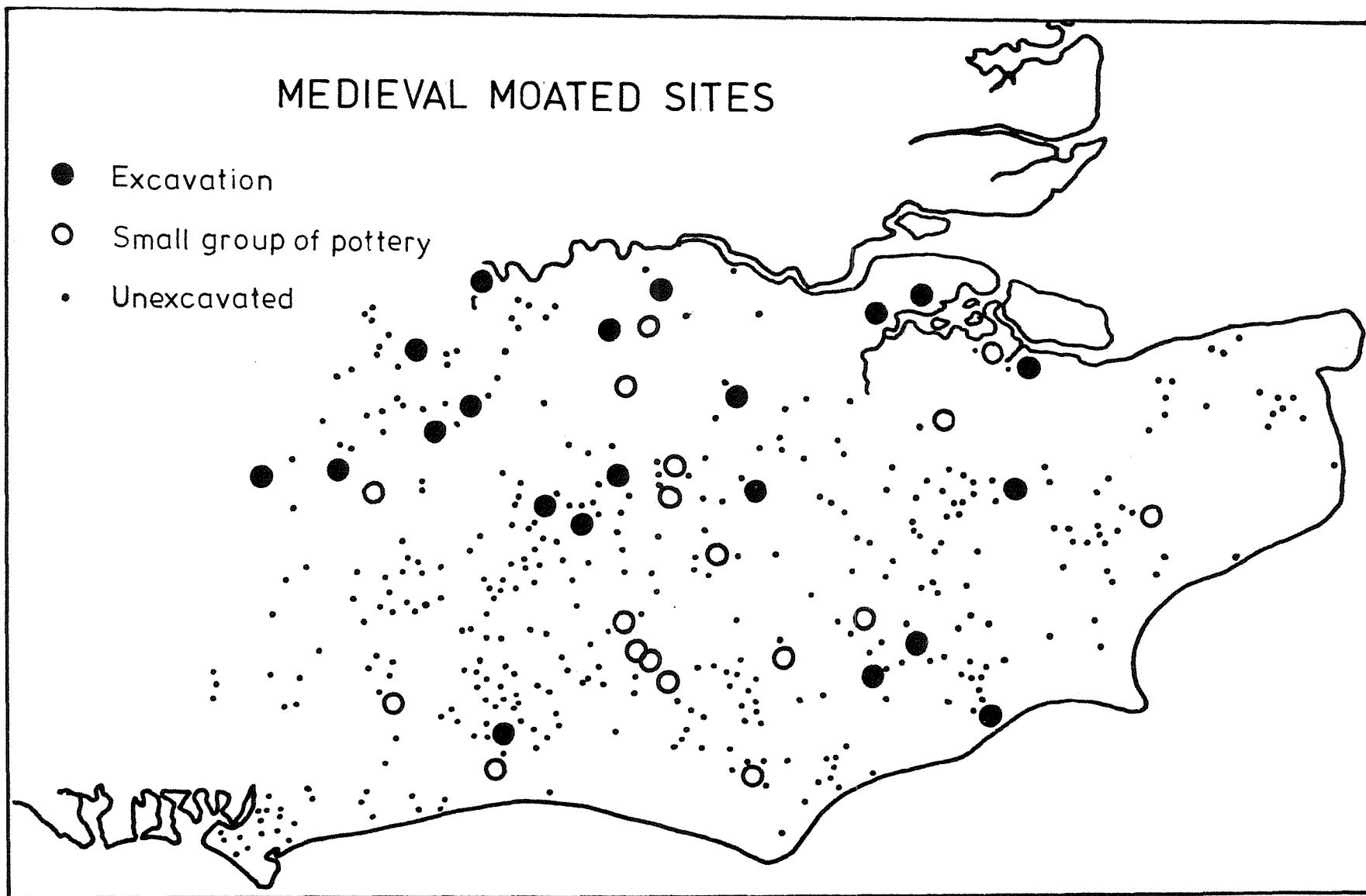
It is more difficult to assess the geographical distribution of isolated medieval manors and farms, yet their occupants would have constituted a significant element in the demand for consumer goods. Moreover, economic interpretation of pottery distribution should include comparisons between the ceramic assemblages from the full spectrum of settlement types. It would be impractical, however, to reconstruct a comprehensive regional pattern owing to the sheer number of these isolated sites, and the documentary evidence has to be tackled at a local rather than regional level. Nevertheless, as we have seen in the case of Hartfield and Withyham, place-names combined with fieldwork can assist with the reconstruction of local settlement patterns (Fig. 5.27).

On account of their distinctive morphology, moated sites are a class of medieval settlement for which regional distribution patterns can be assessed (Fig 1.13). In terms of geographical variations in consumer demand, however, the evidence is misleading because moats are more easily recognised than contemporary unenclosed settlements. Thus the concentration of moats on the clay subsoils of the Weald reflects topography rather than indicating a significantly higher number of isolated seigneurial sites in this area. In the context of ceramic studies the moated sites of South-East England represent known centres of demand but they cannot be used as the basis for regional comparisons of settlement density.

We have been concerned, so far, with the geography of settlement expansion and the effects of increasing demand for consumer goods, demonstrating in particular the significant changes likely to have taken place in frontier regions such as the Weald. Succeeding phases of contraction, however, have equally significant implications for the organisation of ceramic production and distribution.

The combined effects of famine and plague had resulted in a reduction of some 50% in the national population by the mid-fourteenth century. There followed a period of 100-150 years when the population level appears to have remained static at around 2-3 million (Hatcher

Fig. 1.13 South-East England. Medieval moated sites



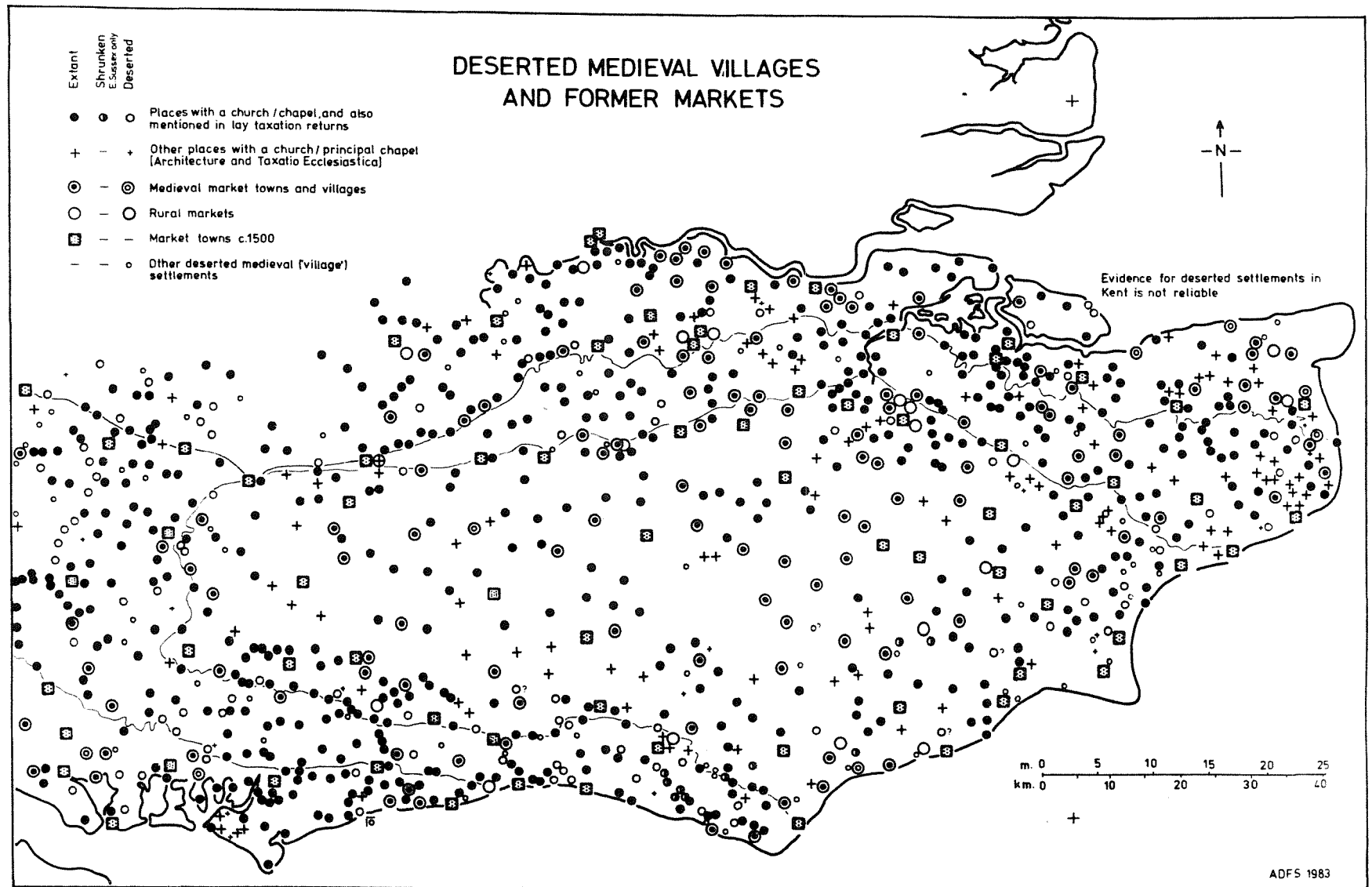
1977, 68-71). These trends are reflected in settlement history, but detailed assessments depend upon systematic local studies.

In the High Weald, for example, about one third of the new assart land around Ashdown Forest was untenanted after the Black Death, but there is no evidence for a widespread reversion to woodland (Brandon 1969, 143). Documentary evidence, however, is usually inadequate for dating the abandonment or shrinkage of settlements as opposed to lapsed payments of rent for land. Likewise, while there is abundant charter evidence for the establishment of medieval markets, we know little of their fortunes in the later medieval period. The interpretation of settlement history normally depends, therefore, upon datable artifacts recovered from fieldwork and excavation. However, increasing knowledge of late medieval pottery types has necessitated revision of certain long-established conclusions about the chronology of desertion, notably on Dartmoor and in Oxfordshire where occupation may have continued longer than has been supposed hitherto (J. Allen and M. Mellor, lectures 1982).

In order to observe general trends it is therefore necessary to examine a wide range of evidence. Hughes (1981, 72), for example, has emphasized the value of comparing the lists of settlements in fourteenth-century taxation returns with those in the Lay Subsidy rolls of 1524/5. Likewise, information about sixteenth-century markets compared with earlier charters can assist with the identification of those centres which had 'failed' at some time during the intervening centuries. The overall pattern in South-East England (Fig. 1.14) indicates general thinning of the settlement density and a reduction in the number of market centres. Closer inspection, however, reveals the expected regional contrasts, including a higher proportion of deserted medieval villages in the sheep-rearing areas of the Downlands and on Romney Marsh - a pattern which is reflected in the abandoned medieval farms also found on the chalk Downlands (Drewett & Freke 1982).

Shrunken and deserted villages have also been identified in the Weald (Burleigh 1973; 1976), but the apparent extent of abandonment is undoubtedly distorted by the nature of the settlements. As we have seen, there are few Wealden 'villages' and it is only as a result of thorough fieldwork that minor deserted farms and hamlets have been identified (Tebbutt 1981, 115). In one case, a dispersed industrial settlement at Upper Parrock, Hartfield appears to have been abandoned by the end of the sixteenth century, possibly owing to

Fig. 1.14 South-East England. Medieval villages: extant, shrunken (East Sussex only); deserted settlements; and former markets



changes in organisation of the iron industry at that time (Tebbutt 1975a, 150). Elsewhere, however, fourteenth-century desertion cannot be ruled out:

'Despite the plausibility of the arguments based upon scattered settlement and the consequent obstacles to transmission of disease there is no reason to believe that as a rule the plague claimed fewer victims in the more remote parts of the country (Hatcher 1977, 24).

Study of the artifact assemblages is crucial to an understanding of the chronology of Wealden settlements, but it is doubtful whether the ceramic sequence can be calibrated with sufficient precision to identify those hamlets which perished specifically as a result of the Black Death. The composition of rural ceramic assemblages from the Weald, however, leaves little doubt that the demand for pottery diminished appreciably during the second half of the fourteenth and in the fifteenth century.

Regional variations in prosperity, and perhaps population, are reflected, as in earlier periods, by church architecture. The survival of unaltered Early English churches in western parts of the Kentish Weald, for example, points to a lack of motive and resources for rebuilding (Witney 1976, 140). Conversely, Brandon (1974, 125) has stressed that Perpendicular details occurring in Wealden churches coincide with areas of rising population. Prosperity, too, is witnessed by the rebuilding of church towers in the fifteenth century, notably at Cranbrook, Kent and Lingfield, Surrey (Mason 1975-6, 41-2). Indeed, the survival of secular buildings of the fifteenth and sixteenth centuries reflects the outward expression of prosperity among the yeoman class at that period, while the later history of the region is witnessed by the limited extent of subsequent replacement of these buildings.

It would be inappropriate to make superficial comparisons between the various types of material evidence for economic history. Nevertheless, fluctuations in consumer demand are crucial to an understanding of ceramic production and distribution, and it would be unrealistic to consider marketing in isolation from geographical changes in the settlement pattern. In the next section, the economic implications of regional variations in medieval settlement will be examined in relation to ceramic marketing.

1.4.2 Regional contrasts in the nature and density of medieval settlement

Settlement density affects the marketing of consumer goods in terms of both demand and transport. In parts of South-East England, the medieval population was both sparse and dispersed, while elsewhere, particularly on the coastal plain, closely-spaced nucleated villages - interspersed with towns - are characteristic of higher population levels. Thus, during the thirteenth and fourteenth centuries a potter working on the coastal plain of south-west Sussex would have benefitted both from a large number of potential customers and from more accessible outlets compared with his counterpart in the Weald.

The effects of higher transport costs in remote areas are likely to have been twofold. Firstly, there may have been a large number of small enterprises, possibly including domestic production. Traces of these small production centres would be less easy to detect in the archaeological record than the extensive waster heaps characteristic of larger centres of pottery manufacture. Secondly, the costs of transporting the pottery to scattered consumers in dispersed settlements might have favoured the use of other materials such as wood and leather for domestic utensils. Again, ceramic evidence in the archaeological record of dispersed settlements might prove more elusive than in nucleated villages.

It is not possible, in the light of available archaeological evidence, to quantify these potential economic forces. Nevertheless, it is appropriate to identify those parts of the region where settlement density might point to contrasting modes of production and distribution.

Settlement density is not always synonymous with population density, but lay taxation returns confirm - albeit in general terms - that the hamlets and isolated farms of the Weald do reflect a sparse population. Using data from the Kentish Lay Subsidy rolls of 1332, Hanley and Chalklin (1964, n.p.) have calculated a density of 4.5 taxpayers per 1000 acres in the Hundreds of Washlingstone and Somerden and in the Lowy of Tonbridge, compared with 10 taxpayers per 1000 acres in Romney Marsh - a contrast which is echoed in the density of medieval churches in these areas (Figs. 1.8 and 1.9).

In a national context, the Weald may be classified as an area of 'hamlet settlement associated with occasional villages and many dispersed farms', whereas the coastal zone and London Basin

comprise 'village settlements associated with hamlets and dispersed farms' (Roberts 1977, 16; 84). Local studies, however, enable more precise regional distinctions to be made. Evidence from the 1494 rental of Wrotham Manor, for example, shows that there were few farms on the clay-with-flints, most messuages being nucleated at the foot of the chalk escarpment with other dispersed hamlets. By contrast, on the south side of the Vale of Holmesdale at Ightham, there was a village, seven hamlets and numerous farms (Baker 1965, 156). Thus, the dispersed settlement pattern on the clay-with-flints and in the wooded areas situated on the London Clay was similar to that in the High Weald, while the dipslope of the Downs and the Vale of Holmesdale had villages as well as hamlets and isolated farms. Evidence for similar distinctions can be drawn from Sussex (Yates 1954, 78-9; Brandon 1969, 141) and from Hampshire (Hughes 1981, 69; Shennan 1981, 119).

As we have seen, the medieval settlement pattern of the Weald evolved as part of the process of colonisation. The early 'borghs' like Hildenborough in Kent (Rigold 1982, 85) or those such as the Borgh of Greenhurst and others named in the Custumals of the Archbishop's Manors in Sussex (Redwood & Wilson 1958, xxxi; 62-3; Miller & Hatcher 1978, 86) were accompanied by new hamlets and eventually, during the thirteenth and fourteenth centuries, by the agglomeration of villages around hitherto isolated churches. Occupational surnames attest that craftsmen such as the blacksmith, miller, baker etc congregated in these new settlements where they could serve the demand from outlying farms and hamlets. Some churches, however, remained isolated and never acquired nucleated settlements. Pembury old church in Kent, for example, must always have served outlying communities alone because there is no evidence for deserted tenements in the vicinity of the church (Fig. 1.27). Nevertheless, the density of Wealden churches and their accompanying settlements does provide a useful index for comparing regional variations in the settlement pattern which had emerged by the first half of the fourteenth century.

The distribution of consumer goods such as pottery is unlikely to reflect minor variations in the nature or density of medieval settlement. Owing to the effects of transport, however, dominance of the potential market by a single large production centre is more likely to occur in areas of closely spaced nucleated settlement than in districts which are characterised by scattered

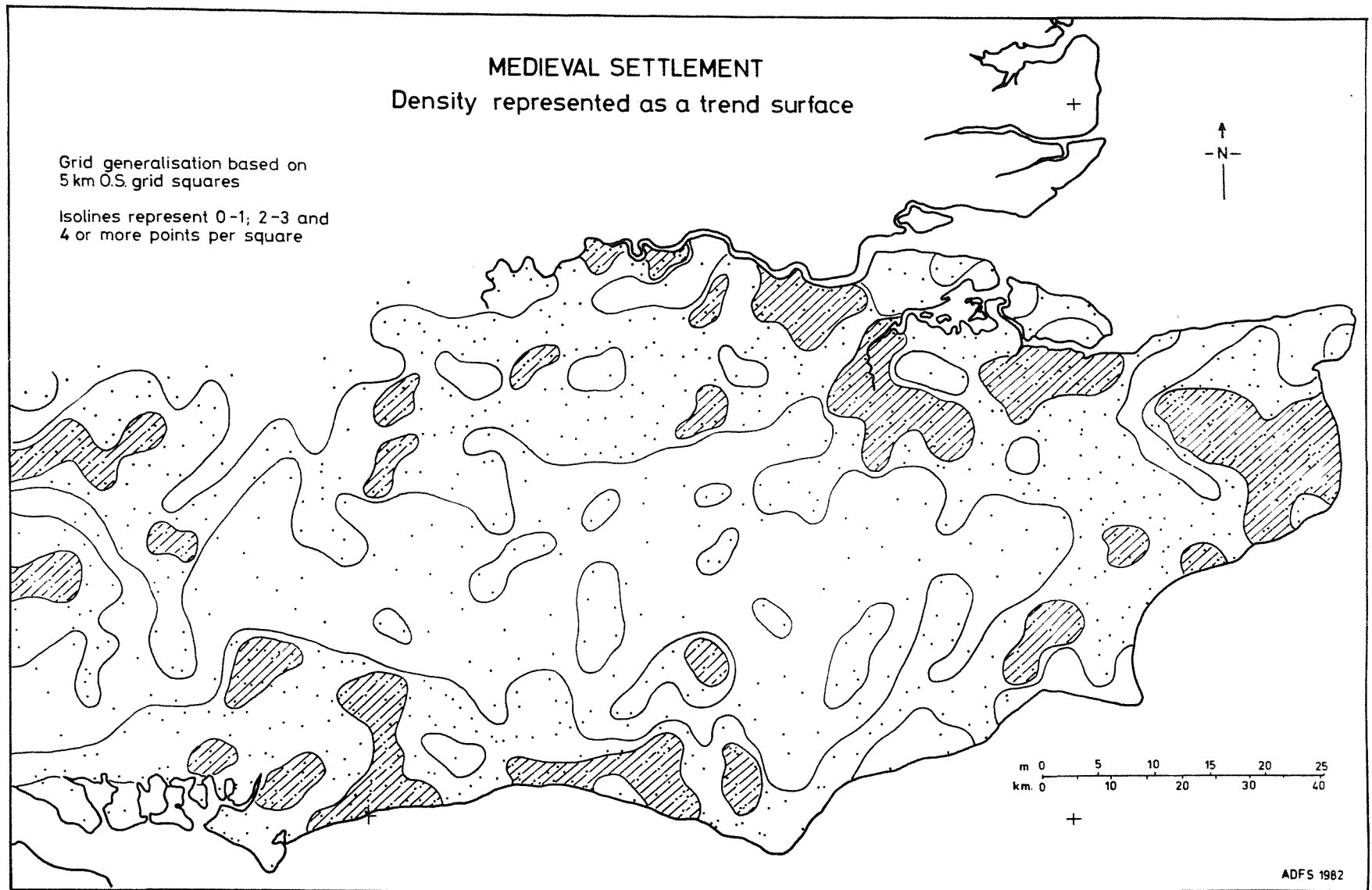
farms and hamlets. It is therefore instructive to identify general trends in settlement density as shown on Fig 1.15. Shaded portions of the map show areas of highest density based upon a sample comprising those settlements with a church or chapel and which were also mentioned in late thirteenth-/fourteenth-century taxation returns. Mapping is by grid generalisation using 5km Ordnance Survey grid squares with isolines to represent 0-1; 2-3 and 4 or more settlements per square.

This simple type of analysis highlights broad regional variations, notably the high density of settlement in east Kent; along the north Kent coast and Medway Valley; on the coastal plain of Sussex; and in parts of north Hampshire. Indeed, independent evidence suggests that for certain areas these trends also coincide with variations in the size of settlements. Thus, using data from the 1332 Lay Subsidy rolls, for example, Hallam (1981, 90) has shown that Holmstrow Hundred in the fertile valley of the River Ouse south of Lewes had only three settlements and 110 taxpayers, whereas Rotherbridge Hundred on the Lower Greensand between the South Downs and the Weald had only 100 taxpayers living in nine settlements. These statistics are not a precise indication of settlement size, but the general trends are clear.

Nearest neighbour distances are also a useful means of identifying regional variations in settlement density. Thus there are few areas in South-East England which compare with the pattern in part of Northamptonshire to the east of Banbury where 30 out of a sample of 53 villages have neighbours between 1.0. and 1.2 miles away (Beresford & St. Joseph 1979, 79). In the lower reaches of the Sussex Ouse, however, the spacing of known medieval villages approaches the average of only 0.9 miles noted by Beresford and St. Joseph (ibid.) in the valley of the River Nadder between Timsbury and Salisbury, Wiltshire. Once appropriate artifact distribution data are available, it will be instructive to compare the marketing of medieval ceramics in different parts of the country where there are similar settlement patterns.

To anticipate discussion of pottery marketing in South-East England (Section 6), it is significant that at least three of the zones with a high density of medieval settlement shown on Fig. 1.15 correspond with areas where thirteenth-/fourteenth-century ceramic distributions are clearly defined. Tyler Hill ware is the dominant pottery type found among the closely-spaced villages of east Kent.

Fig. 1.15 South-East England. Medieval settlement, with density represented as a trend surface



Likewise, the distribution of Binsted wares and Graffham types coincides with an area of dense settlement in south-west Sussex, while much of the pottery used in villages flanking the River Ouse can be attributed to the craftsmen working at Ringmer. In all these cases, dominance of the market may reflect the ease with which pottery could be distributed among closely-spaced settlements. Clearly, the systematic study of settlement patterns as shown in Section 6.2 is fundamental to an understanding of ceramic marketing.

Settlement density, however, is only one factor likely to have influenced the marketing of goods such as pottery. The role of towns and communications will be examined in ensuing sections.

1.4.3 The growth and decline of medieval towns

Towns are significant to the study of ceramic distribution both as centres of demand and as foci of exchange in the market economy. The size and economic importance of particular towns fluctuated at different periods in the middle ages. This would certainly have affected the demand for domestic utensils, both among the urban population and within the rural hinterlands.

Leaving aside for the moment the definition of 'urban' status (Heighway 1972, 9; see Section 1.5.1), three principal phases of medieval urban expansion can be identified: late Saxon towns, urban centres of the Norman period, and those which emerged during the period c. 1200-1350. During each of these periods, trade would have been stimulated by the increasing number of towns as a higher proportion of the rural population came within reach of an urban market. Moreover, surplus wealth stimulated the demand for consumer goods, and craftsmen were attracted to these new settlements either as residents or as traders.

Late Saxon towns in the region were located principally near the southern and eastern seaboard. Some such as Canterbury, Chichester, and Rochester occupied the site of Roman towns, while others like Sandwich, Fordwich and perhaps Lydd, had been founded in the mid-seventh century as trading centres similar to Hamwic in Hampshire. Fig. 1.16 shows the location of late Saxon towns in South-East England based on recent county surveys (Hampshire: Hinton 1984; Kent: Tatton-Brown 1982; Surrey: O'Connell 1977; O'Connell & Poulton 1984; Sussex: Aldsworth & Freke 1976; Freke 1978a; Hill 1978).

Guildford is a notable exception to the coastal distribution of urban centres but few rural areas inland would have

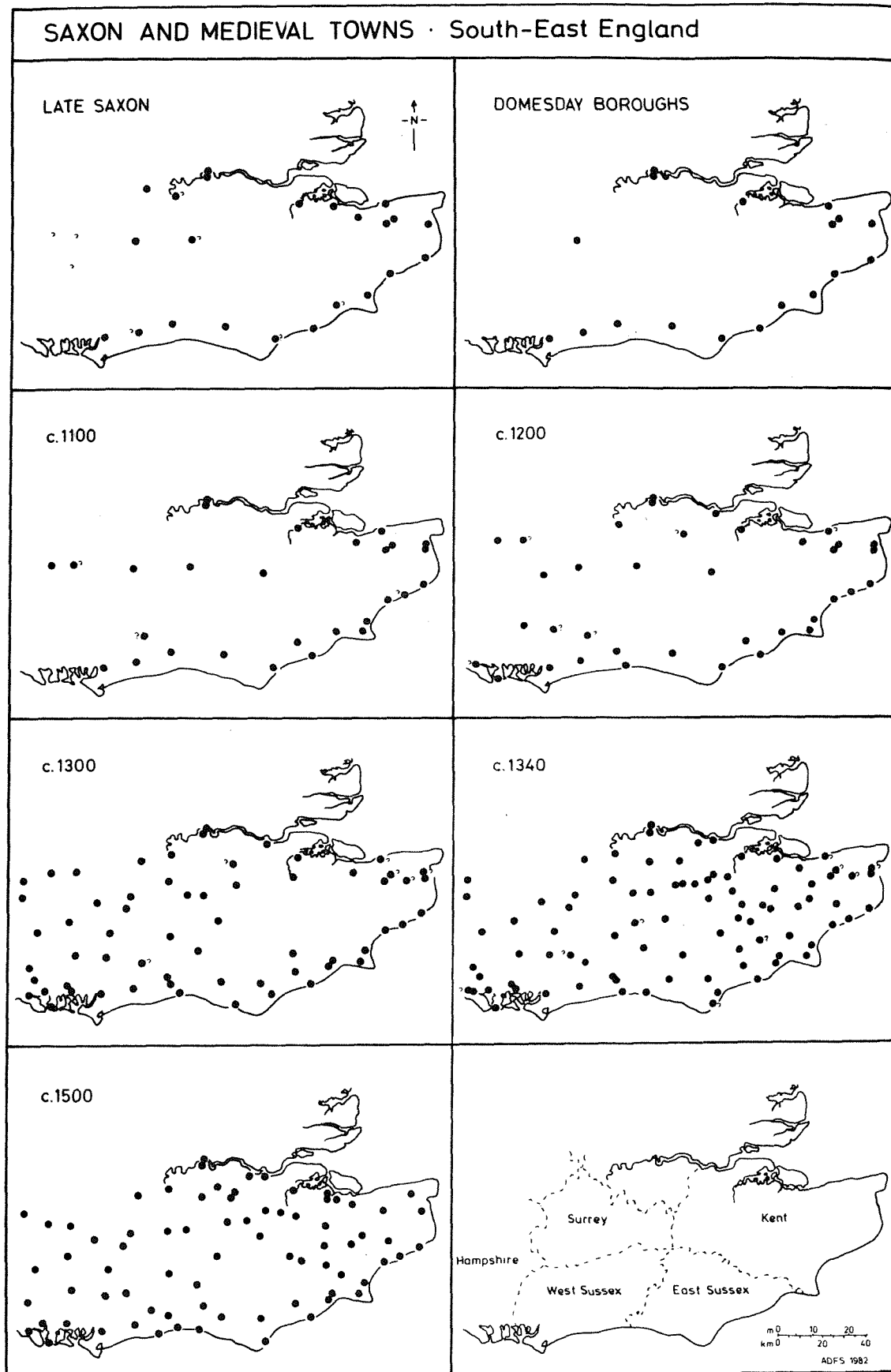


Fig. 1.16 South-East England. Late Saxon towns; Domesday Boroughs; medieval towns c. 1200 to c. 1500

been within reach of a town during this period. Attention has been drawn, however, to the significance of early markets in Hampshire (Hinton 1984, 149-152), while in Surrey archaeological evidence suggests the possible existence of small pre-Conquest urban or proto-urban centres at Reigate and Kingston. Continuity of Saxon occupation has also been established at Staines, but the status of this settlement remains uncertain (O'Connell & Poulton 1984, 41; 47-4). Nevertheless, there can be no doubt that in South-East England the majority of the more important pre-Conquest towns were located near the coast of Kent and Sussex.

The discovery of late Saxon pottery both at the larger centres including Lewes, Sandtun (Hythe) and Dover, and at smaller settlements such as Kingston and Churchfelle (Reigate) bears witness to local ceramic production. However, only at Chichester (Down 1978, 158), Canterbury (Mainman 1982,, and of course at Hamwic and London outside the study region (Hodges 1981; Orton 1977), has sufficient evidence been accumulated to draw even general conclusions about the supply of pottery to pre-Conquest urban communities (see Section 5.4.3). Meanwhile, definition of the rural hinterlands of these centres remains imprecise.

Norman urbanisation included both the expansion or re-planning of existing settlements and the foundation of new towns. Pottery finds are a significant, if imprecise, indicator of chronological and topographical developments within these early towns (O'Connell 1977, 45-8; Freke 1978a, 88). Notable among the new foundations was Battle, East Sussex, associated with the Benedictine Abbey founded as a thank-offering on the site of William the Conqueror's victory at the Battle of Hastings. Other new foundations of the Norman period included coastal towns at Seaford, New Shoreham, Littlehampton and (Old) Winchelsea. In addition to their role as ports, these new coastal foundations would have functioned as local market centres.

The status of inland settlements, however, is less clear. Battle owed its origin to exceptional political circumstances, and Tonbridge had almost certainly emerged as an urban market centre by the late eleventh century. The status of other settlements associated with Norman castles in the region is more doubtful. In general it seems that the inland centres did not achieve urban status until the thirteenth or in some cases the fourteenth century. As inferred from the nature of dispersed rural settlement, the late emergence of towns

would probably have encouraged small enterprises rather than large-scale pottery manufacture to meet the demand of an urban market and its hinterland.

The development of Wealden medieval towns is a neglected field of study, but it is clear that by the early fourteenth century some settlements had emerged as rather more than rural markets (see Section 1.5.5). Nevertheless, the economy remained rural in character. At East Grinstead in 1340, for example, taxation of a Ninth on sheaves of corn yielded nearly three times as much as a Ninth on all other goods (Platt 1976, 15). In the absence of extensive excavation at these smaller inland towns, it is not possible to assess their economies in terms of material evidence. The marketing of rural produce, however, is likely to have been accompanied by trade in domestic utensils, even if the range of wares did not include the quantity of imported goods available at coastal towns. Thus, apart from the exceptional circumstances at (New) Winchelsea, most of the new towns which emerged in the region after c. 1200 were established inland, but they were accompanied, of course, by the expansion of existing urban centres near the coast.

In the words of J. Hatcher (1977, 45):

'Most towns had many fewer inhabitants after the Black Death than before it'

Some towns such as Oxford had begun to decline before the Black Death, but the situation at Battle, where Searle (1974, 357) has identified a mortality rate of some 65%, must have been typical of many towns in South-East England. The population of Battle in the early fourteenth century has been estimated as c. 2-3000, but by 1367 there were only 210 dwellings representing a population of perhaps no more than c. 1000 (ibid., 354). Moreover, by 1433 there were 25% fewer dwellings than in 1367 (ibid., 362).

Quantified assessments such as these are exceptional, but the effects of a declining population would have been especially severe in the small market towns which had emerged only during the thirteenth and fourteenth centuries. If an explanation is to be sought for the apparent scarcity of later medieval ceramics in the archaeological record, then population decline, accompanied by a reduction in the number of tenements and combined with the decline of many medieval markets, must be regarded as one of the most significant factors.

Historical opinion is divided about both the extent and

duration of urban decline in the later middle ages (Phythian-Adams 1978; 1979; Dyer 1979; Rigby 1981 and Bridbury 1981). As noted by Hatcher (1977, 45) some would regard the period 1420 to 1550 as a phase of relentless urban decline. Clearly, however, there were marked regional variations (Dyer 1982, 35) and in parts of the Weald some villages which had emerged as cloth centres developed into small towns. Cranbrook is a notable example. Elsewhere, however, evidence from Elizabethan muster rolls attests the extent of decline during the preceeding centuries. In 1566 for example there were only 46 households at Old and New Shoreham, and a similar situation prevailed at Hastings (Brandon 1978b, 84). Nevertheless, the evidence for urban history is often derived from sources which reflect the self-interest of the burgesses to whose advantage it would be to emphasize the impoverished state of their town. Urban archaeology will undoubtedly have much to contribute to an independent understanding of the economic fortunes of towns during the later middle ages (Davey & Hodges 1983, 6). In this context, changing patterns of ceramic production and distribution can be just as informative as the more 'direct' material evidence concerning the history of sample urban tenements.

1.4.4 The medieval road network: approaches to its reconstruction

So far we have assessed the production and distribution of medieval pottery in the context of natural resources and chronological changes in the settlement pattern. Communications represent the third significant factor affecting the distribution of marketed vessels. In many respects, however, this evidence is the most intangible of all.

Reconstruction of the medieval road network in a given region involves the assimilation of three broad classes of information:

- i Documentary evidence including known medieval itineraries and legal documents in which roads are mentioned as boundaries.
- ii Cartographic evidence including the few surviving medieval maps and the evaluation of post-medieval sources which may contain evidence for earlier road networks.
- iii Topographical evidence from field survey concerning the specific course of medieval roads.

Clearly it would be inappropriate for the present purpose to attempt a

comprehensive reconstruction of the medieval road network in South-East England. Nevertheless, it would be misleading to examine medieval ceramic distributions in the context of a 'medieval transportation network' based entirely upon the known pattern of Roman roads and trackways (Kilmurry 1980, 157, fig. 31). It will be necessary therefore to review briefly the evidence available for the region and to consider ways in which a generalised reconstruction of the medieval road pattern can be achieved.

In making such assessments, however, it is important to distinguish between three broad types of medieval road:

- i Principal routes connecting important commercial and political centres.
- ii Lesser cross-country routes linking minor towns and villages.
- iii Access ways within the medieval village.

All would have been used by the medieval potter or his customers.

The evidence from royal and seigneurial itineraries is particularly suited to the identification of principal through routes. Systematic research by Hindle (1976, 212-3; 1982a, 198-9; 1982b, figs 5-8) has identified those parts of the English medieval road network which were travelled frequently by monarchs and their retinues. In South-East England these include the important route through north and east Kent from London to Canterbury and Dover, and likewise the roads on the west side of the region leading from London towards Portsmouth and to Winchester and Southampton. More surprising, however, are the east - west journeys made by King John on the north and south sides of the Weald, and, in the case of King Edward I, travelling through the heart of the Weald on several occasions. Wealden journeys would doubtless have been necessitated by visits to the Royal Hunting Lodge near Nutley (Martin 1980, 3). Journeys through Surrey, however, suggest that the principal east-west route was along the Vale of Holmesdale (Turner 1980, 11).

Property boundaries abutting the King's Highway provide additional evidence for the existence of through routes (Lopez 1956, 24). In c. 1280-90, for example, we hear of the 'King's Highway which leads from the market in Hastings to Battle' (ESRO: Add MS 4949). This would have formed part of the route from London to Hastings because the turnpike road via Seddlescombe was not opened until 1838 (Baines 1980, 73).

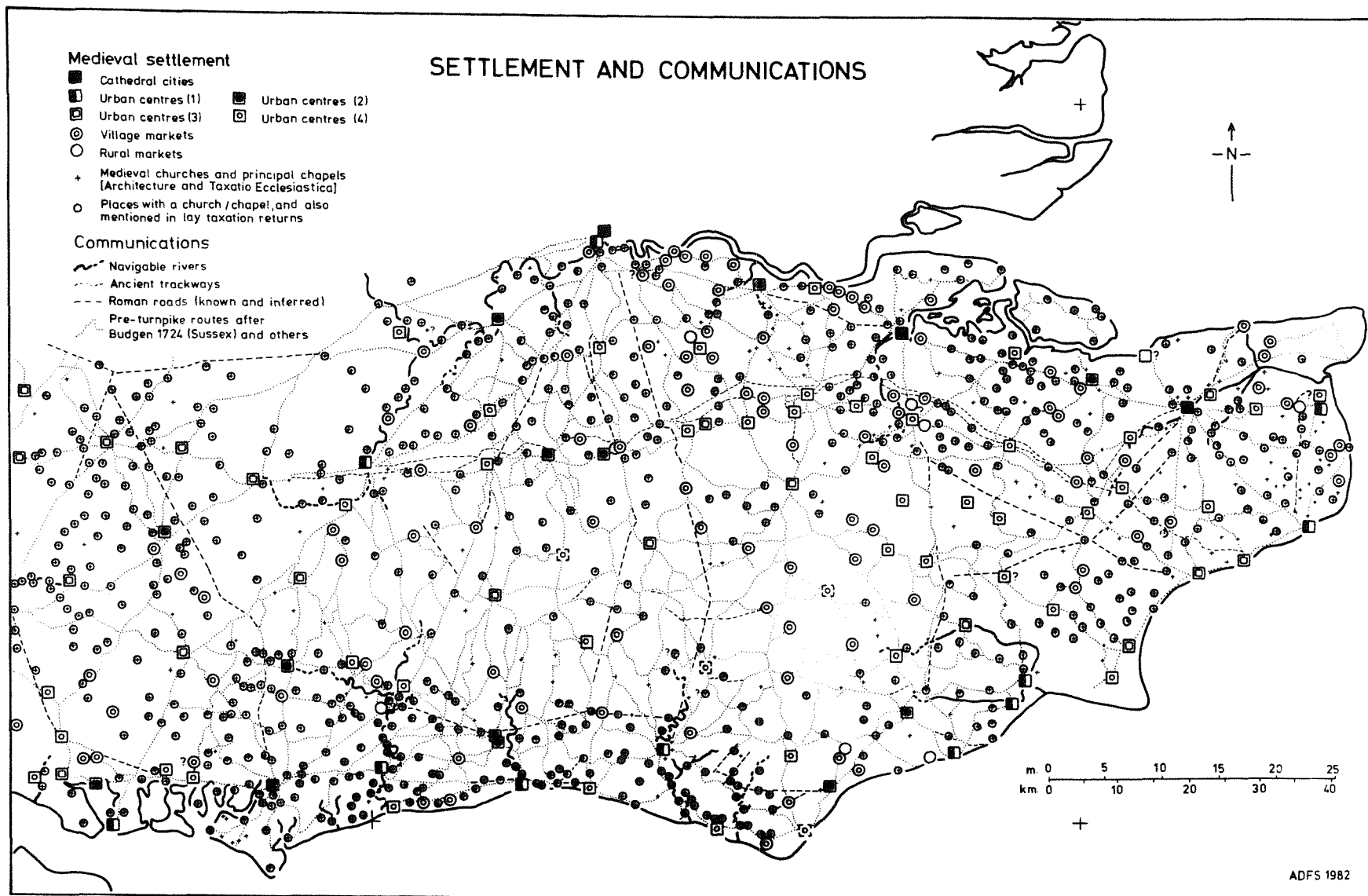
Accounts and custumals comprise another type of documentary evidence for the medieval road network, although they seldom indicate precise routes. Manorial carting services frequently involved quite long journeys (Willard 1926, 367) and in Sussex the Sheriff's Accounts for 1319 provide useful information for differential transport costs over relatively long distances. The cost of transporting grain appears to have varied according to terrain. Thus the average carriage cost for 100 quarters of wheat and 200 quarters of oats taken across the Weald from Mayfield to Lewes was 5s 8½d per league, compared with 3s 6d per league on the downland section of the journey from Lewes to Shoreham (Pelham 1931, 170). In this instance, however, it is significant that road transport was chosen for the journey from Lewes to Shoreham in preference to carriage by sea. Indeed, there is a danger of placing too much emphasis on coastal trade when interpreting the archaeological record of medieval marketing (see Section 6.4.3).

Despite obvious omissions such as the important route from London to Dover, the Gough Map of c. 1360 attests the significance of the road along the south coast from Canterbury to Southampton, via Appledore, Rye, Winchelsea, Battle, Boreham Street, Lewes, Bramber, Arundel, Chichester and Havant. There is no contemporary source, however, to indicate the routes linking lesser towns and villages in the region, yet it was these minor roads which must have carried the bulk of local traffic. For the purposes of reconstructing a regional - as opposed to local - road network, post-medieval maps provide a convenient starting point.

Christopher Staxton's map of 1575 showing the counties of Kent, Surrey and Sussex includes the names of over 300 places in Sussex alone, but roads were not marked on the first printed series (Kingsley 1980-1, pl.4). Indeed, roads shown on later editions had been added over a century later for Philip Lea's edition of 1694 (Fordham 1926, 65). Likewise, roads are omitted both from John Norden's map of 1595 and from the later editions published by Speed in the early seventeenth century. Thus, the first comprehensive county road maps date from the eighteenth century. Even at this date, however, these maps can assist with the identification of traditional lines of communication within the region.

The road network shown on Fig. 1.17 has been compiled from Robert Morden's map of Kent (c. 1694) supplemented by the maps accompanying Hasted's History and Topographical Survey of the County

Fig. 1.17 South-East England. Medieval settlement and communications



of Kent; from Rawlins' maps published in 1719 with Aubrey's Natural History and Antiquities of the County of Surrey; and from Richard Budgen's printed map of Sussex, first issued in 1724. It would be misleading to consider this as an accurate reflection of the medieval road system, not least because it is biased by the contemporary significance of post-medieval resorts such as Brighton and Tunbridge Wells. Nevertheless, adjustments have been made to exclude roads of known post-medieval origin. Thus downland routes are shown in place of the gap roads at Shoreham and Glynde in Sussex (Brandon 1974, 178-9); the east - west route (A272) through the centre of the Weald is omitted; and later additions to the network such as Junction Road near Bodiam have been excluded. When examined in the context of known medieval settlements, the overall pattern must bear a reasonable resemblance to that which existed in the sixteenth century and probably also to that which had emerged by the fourteenth century.

Precise routes can be clarified by local topographical investigations. In the Weald, for example, sunken lanes bear witness to the antiquity of certain roads (Beresford & St. Joseph 1979, 274), while in at least one instance excavation has yielded thirteenth-/fourteenth-century horseshoes from a buried road surface. That particular route may have originated as early as the eighth century (Moss 1973). Likewise, it is significant that many of the lanes converging on Pembury old church in Kent have been worn deeply into the clay and sandstone subsoil (Fig. 1.27). In the parish of Hartfield, too, most of the roads shown on the map accompanying the sixteenth-century Buckhurst terrier are still in existence today (Fig. 5.27). Thus, when the outlines of medieval settlement pattern have survived, there is some justification for accepting the eighteenth-century network as a general indication of the traditional routes between the settlements. Indeed, earlier lines of communication such as the Saxon drove roads may also remain fossilized within the later patterns (Witney 1976, 135), while the discovery of twelfth-century or earlier pottery on the surface of a Roman road at Footlands, near Seddlescombe, East Sussex lends support to the view that many of the Roman roads remained visible well into the medieval period (Lopez 1956, 17; Bland 1957, 5; Mason 1969, 9).

Minor divergences between past and present routes are to be expected. Taylor (1979, 115-9), for example, has compared in some detail the course of the medieval and modern road between Kettering and Stamford. Although such studies are important to an understanding

of the medieval landscape, they are not necessarily relevant to the evaluation of inland trade. It is the overall pattern rather than the minute reconstruction of particular routes which is of economic significance. Despite its shortcomings, therefore, the network outlined on Fig. 1.17 is proposed as a more realistic framework within which to consider the marketing of medieval ceramics than one based on Roman roads (Kilmurry 1980, 157 fig. 31), or for that matter on the skeleton of principal routes identified by Searle (1974, n.p.) which, one might observe, leaves a more vivid impression of the nineteenth-century rail network than of the likely course of medieval roads!

1.4.5 Medieval settlement and communications

The flow of goods along medieval roads was determined by the nature of the settlements served by these routes, while the size and condition of the road often reflected the amount of traffic which it carried (Bland 1957, 10). In the case of large towns such as Canterbury, the development of suburbs is a guide to the importance of the routes along which they grew up (Keene 1976, 75 fig 38; Taylor 1979, 123). At a local level, the emergence of villages stabilised the pattern of communications but the significance of the routes changed according to the economic fortunes of the settlements which they served.

The growth of Cranbrook as a centre of cloth manufacture in the fifteenth century, for example, would have attracted traffic to the ridgeway leading from Goudhurst. Indeed, the growth of minor Wealden towns depended to a large extent upon their communications. Conversely, isolation must have been a significant factor accounting for the 'failure' of the market at Smarden (Witney 1976, 152). Difficulties of inland communication in Surrey doubtless account, too, for successive changes in the location of the administrative and legal centre for the county (Bird et. al. 1975, 143).

Documentary sources attest that even the trade of large ports was influenced by their inland communications. The fifteenth-century Brokage Books of Southampton, for example, reveal a bias of inland trade towards the north and west, reflecting both the principal lines of communication and the competition with other south-coast ports to the east (Coleman 1960-1, op. 144). Dover, too, being poorly served by navigable waterways inland, relied on packhorse traffic carrying commodities such as cloth. As observed by Pelham (1930, 142), this was reflected in the predominance of cloth among medieval

exports from the town.

Hindle (1982a, 199-204; 206 fig 7.6) has attempted to reconstruct the pattern of medieval communications using gravity models to assess interaction between the principal towns. In the absence of documentation or reliable population statistics for lesser towns, however, the archaeological evidence of artifact distributions is one of the few sources for reconstructing local patterns of inland trade. Goods such as pottery would have been carried along the principal through routes, but the extent of known ceramic distributions can assist with identifying the limits of local networks.

There were only two principal medieval through routes in the Kentish Weald. One, as we have seen, led from London to Hastings and Rye, via Tonbridge and Battle; the other from London to Romney via Rochester and Maidstone (Witney 1976, 147). Other routes to the coast were along Watling Street and from Ashford to Folkestone and Hythe. Indeed, the significance of these routes in the sixteenth century is witnessed by the recorded distribution of 'rippiers' whose occupation was to carry fish and other produce to London (Dulley 1966a, 102). Thus, when assessing the archaeological record of pottery distributions it can be inferred that both imported wares found inland and the London types found in parts of Kent probably entered the region either by water or along one of these through routes. A similar pattern can be inferred in West Sussex and Hampshire, but north-south communications between Surrey and the Sussex coast were poor until improvements were effected in the eighteenth century by the Turnpike Trusts. Nevertheless, King John was able to travel between London and Knepp Castle in one day (Gulley 1960, 416).

Medieval roads in the Weald were local routes, mostly running either from the north or south and ending in the forest (Searle 1974, 46). Many of these routes had emerged in the Saxon period, linking Wealden swine pastures with their parent settlements. Thus:

'The first need for regular travel beyond a limited horizon came when villagers were involved in wider social and economic relations' (Beresford & St. Joseph 1979, 273).

In the medieval period, however, the evidence for inland transport implies that rural settlements were far from isolated (Willard 1926, 374). Carts were used regularly for services on the manor (Willard 1932-3, 250; Lennard 1938, 261) and deeply rutted road surfaces such

as those excavated at Hangleton (Hurst & Hurst 1964, 94; 114-5) attest the regular passage of wheeled traffic in medieval villages. 'Strong carts' are likely to have been used to carry timber from the Weald to ports on the Sussex coast (Pelham 1928, 181). It is somewhat misleading, therefore, to assert that:

'Journeys to markets, churches and courts are the principal exceptions to the generalisation that most medieval roads were entirely local in purpose with an ambition no higher than to serve the villagers' immediate wants' (Beresford & St. Joseph 1969, 73).

Ceramic distributions illustrate the extent of journeys made both by itinerant salesmen and by villagers to their markets. While there were few major through routes in the Weald, a network of local roads carried the trade in domestic utensils such as pottery over distances of 10-15 miles or more (see Section 6.5), and specific commodities such as timber were transported greater distances. In terms of local trade, the High Weald offers considerable potential for establishing the effects on ceramic distributions of the road network which penetrates the area from north and south (see Section 6.4.2).

Communications were essential to the economic success of a market, and many of the newly-established markets of the thirteenth and early fourteenth centuries were situated to take advantage of 'natural' lines of communication. As we have seen, once established these centres would exert their own influence over development of the road network. The economic significance of roads to the establishment of a market is witnessed by post-medieval analogy with the 'new' market at Tunbridge Wells. Benge Burr (1766, 288-90) writes:

'If ... the inhabitants, to complete their project for advancing the interest of the place, would get a market established at Tunbridge Wells, this would undoubtedly bring such an increase of trade as must be universally beneficial ...

... And perhaps this scheme will be greatly facilitated by making a good road between the Wells and Woodsgate as this will be laying all that side of the country open to themselves and consequently tend to enlarge their communication, and extend their trade to the surrounding farmers'

The construction of a new road to ensure that travellers passed through the lord's market was not unknown even in the middle ages.

More common, however, were the lesser markets founded at existing nodes on the medieval road network. Markets on the north and south fringes of the Weald are notable examples situated where 'gap' routes across the Downs bisect the east - west routes linking the scarp-foot villages. These markets were well placed to serve as an entrepôt between the downland economy to the south and the Wealden economy to the north. Moreover, they must have provided significant outlets for the marketing of ceramics produced on the clayland fringes of the Low Weald (see Section 5.3.6). Elsewhere, as in Hampshire (Hughes 1981, 66) and east Kent, markets were spaced at intervals along important through routes. In these areas, it would have been easy for a potter to travel between the markets selling his wares over a geographically elongated area. Indeed, the distribution of Tyler Hill ware certainly seems to have been influenced by the course of Watling Street through this part of Kent (see Section 6.5.12).

It remains to consider briefly the effects of road conditions on the transport of a fragile commodity such as pottery. Celia Fiennes in the late seventeenth century and numerous other post-medieval writers complained about the notoriously bad condition of Wealden roads (Furley 1874, 490). Comments by Benge Burr (1766, 260) concerning Mayfield, East Sussex, are typical:

'This town is situated upon the top of an hill and therefore extremely pleasant in the summer season; but in the winter, the roads all around it are so execrably bad that its inhabitants are in a manner imprisoned during one half of the year'.

The broad tracks of many medieval roads leave little doubt that in winter the medieval traveller would have had to pick his way across a morass of soft clay. Indeed John Ogilby's map of the Road from London to Arundel and Chichester shows an interesting deviation at Honey Lane near the county boundary between Surrey and Sussex - surely a seasonal diversion reflecting the miry conditions likely to be encountered in Honey Lane during winter. This is just one example among many where the name 'Honey' denotes soft or sticky ground (Cameron 1977, 208). Medieval documents, however, seldom contain information about the condition of the roads (Bland 1957, 10).

Nevertheless, in the country as a whole, the duration of recorded medieval journeys suggests that fairly rapid travel was feasible, even in autumn or winter (Willard 1926, 367-8). Hindle (1978, 177) has made a comprehensive study of seasonal variations in

medieval transport and concludes that the wetter seasons did not present insuperable difficulties to movement of the royal household. By the sixteenth century, the Accounts of Robertsbridge Forge record payments totalling 20s 6d in 1555 for the carriage of 'lodes of synder from the forge' which appear to have been used to improve the surface of a nearby road (Crossley 1975, 158). Poor road surfaces may have hindered the movement of wheeled traffic carrying heavy loads such as iron or timber, but the condition of the roads is unlikely to have affected the potters who may have used pack animals rather than carts for their light loads carried on local journeys (Willard 1932-3, 369). Indeed, the sixteenth century glass-seller depicted on a well known engraving (Kenyon 1967, pl. xi) carried a basket on his arm. Moreover, a medieval potter-farmer who needed to tend his crops and livestock and who was only able to ply his craft during the summer months may have been obliged to travel the roads for selling his wares in the autumn. To these men the condition of the roads would have been an accepted part of daily life which had little bearing on the marketing of their products.

In order to obtain a balanced view of inland communications, however, it is necessary to consider the relationship between road travel and the use of boats both on rivers and for coastal shipping. The potential influence of water transport on artifact distributions will now be considered.

1.4.6 Ports and water transport

The region comprising Kent, Surrey and Sussex is bounded by navigable water to the north, south and east, and the fringes of the area are penetrated by navigable rivers. As in the case of the road network, however, it is difficult to reconstruct precisely the pattern of medieval water communications.

Firstly, the coastline has been changing significantly both during the medieval period and afterwards. Ballard (1910, 6), for example, illustrated some of these changes along the Sussex coast. He noted several areas which, assuming that sea level had remained constant, would be inundated if sea walls were removed, in particular Pagham harbour; the Arun estuary as far north as Pulborough; the Ouse estuary and Laughton Levels; the lower reaches of the Cuckmere inland as far as Alfriston; the Pevensey Levels; and of course the mouth of the R. Rother and the R. Brede adjoining Romney Marsh. We know that sea level has risen, nevertheless many of these areas had already

begun to silt up during the medieval period, while deliberate 'inning' of marshlands accelerated the retreat of the coastline particularly on Romney Marsh and the Pevensey Levels (Salzman 1910; Dulley 1966b). In Kent, too, significant changes were taking place on the shores of the Wansum channel. Elsewhere, coastal communications would have been affected by erosion notably in West Sussex (Ballard 1910, 21) and on the north Kent coast. Fig. 1.18 shows an attempt to reconstruct in broad terms the medieval coastline of the region.

Difficulties in defining the navigability of inland waterways constitute the second problem when attempting to understand the pattern of medieval communications in the region. Geomorphological changes on the coastline during the medieval period would have determined the draft of vessels which could use the higher reaches of the south-coast rivers. A few medieval boats have been discovered but documentary references to the transport of cargoes provide the most reliable indication of the commercial use of inland waterways, yet the evidence is insufficient to establish a definitive pattern.

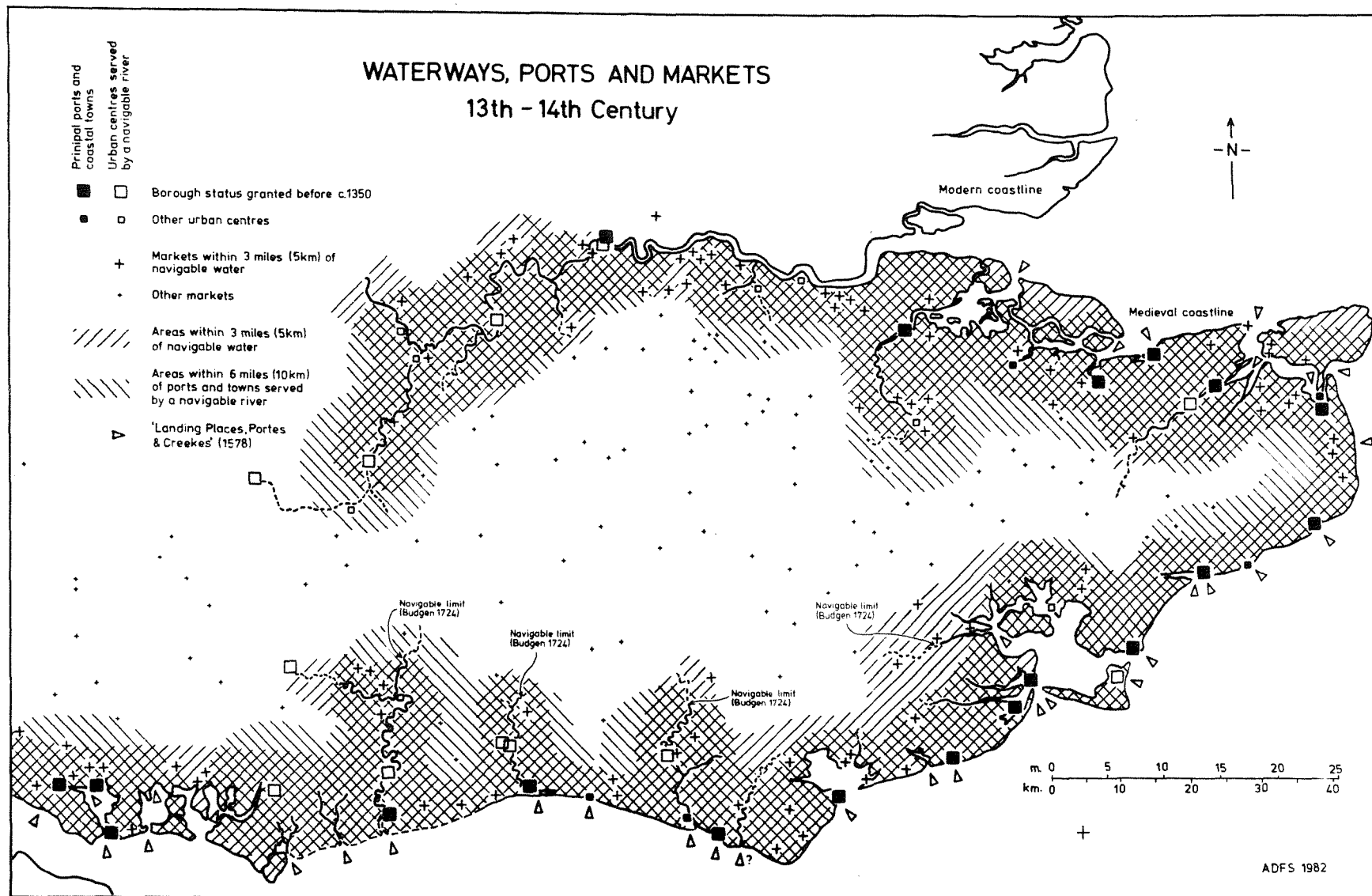
Among the documentary sources which indicate the importance of river transport was the complaint in the fourteenth century against the construction of a bank to resist tidal water at the mouth of the River Rother. Pelham (1930b, 133) cites the case as follows:

'Forasmuch as thereby (i.e. the construction of the bank) such Ships and Boats which used to pass with victual and other things from divers places in these counties of Kent and Sussex unto his (i.e. the King's) mannour of Echingham, through this Chanel, were then hindered; as also to the destruction of his Market Town of Salehurst, situate upon the said River, and of his Market there, which by the course of that water had been supported'.

References such as these combined with the prominence accorded to rivers on the Gough Map (Platt 1976, 81), leave little doubt as to the significance of water transport. Larger rivers such as the Medway or Thames would have carried heavy barge traffic during the fourteenth century (Willard 1926, 369-71). Indeed, the centre section of London Bridge could be removed to allow the passage of larger ships (Salzman 1926, 270). This was an exceptional case, however, and generally the presence of bridges must have hindered river traffic while at the same time their existence illustrates the increasing importance of roads (Hinton 1977a, 183).

In order to assess the significance of water transport for

Fig. 1.18 South-East England. Medieval waterways, ports and markets



the distribution of medieval and later pottery it is essential to identify regional rather than purely local patterns of communication. Any attempt to assess the regional network of navigable waterways, however, must rely to a large extent upon post-medieval evidence. As in the case of roads, it is sometimes difficult to evaluate the extent of post-medieval developments. In Surrey, the seventeenth-century navigation of the River Wey certainly provided convenient access to the county (Bird et al. 1975, 144). The early growth of Guildford, however, reinforces the view that the River Wey was undoubtedly navigable during the Saxon period (Hill 1981, 11).

Seventeenth-century records, pre-dating many of the navigation improvements of the eighteenth century, constitute an important source of evidence for the navigability of Kentish rivers (Willan 1936, 32 fig. ii). In 1635, for example, river traffic on the Medway could penetrate some 5 miles upstream from Maidstone; boats reached Dartford via the River Darent in 1673; and in 1632 the River Stour was navigable as far as Fordwich. Sixteenth-century records, however, show that, on occasion, boats using the River Stour travelled inland to Wye (Hoskins 1982, 60). Place-names and casual documentary references such as these are indeed an important source of information for identifying lesser ports and landing places.

The evidence for navigable waterways in South-East England is summarised on Fig. 1.18. The navigable limits of Sussex rivers are based on Richard Budgen's map of 1724, but the upper reaches of these waterways can only have been capable of carrying very light craft. Possible extensions to these limits are shown as dotted lines. Few rivers were navigable for more than 10 miles inland. Nevertheless, a large proportion of the area lay within a mere 3 miles (5km) of navigable water. Even in the eighteenth century, however, much of the Weald remained more than 15 miles away from access by river (Willan 1936, 68 fig. iii).

The economic significance of these waterways depended upon the fortunes of the ports and landing places which they served. As we have seen (Section 1.4.3), geomorphological changes are reflected in the vicissitudes of south-coast ports. Bramber is a notable example where the quay was in operation when the castle was built, but it had become silted up before the end of the twelfth century (Evans 1928, 391-4; Holden 1975a). The harbour at Old Romney on the other hand had silted up by 1086 (Beresford & St. Joseph 1979, 206-7). The commercial, as opposed to seigneurial, significance of the quay at

Bramber is not unequivocal, but excavations at Pevensey have certainly demonstrated the economic implications of coastal change (Dulley 1967). At Winchelsea, too, there was concern in c.1400 for the welfare of the port:

'It is given us to understand that many mariners, both native and foreign, daily trading to the port of Winchelsea in ships and other vessels, have filled up and obstructed the channel of the said port from a certain place called Camer (Camber) as far as Bodyham, with stones, sand, and other ballast, so that vessels laden with merchandise, have been unable to enter the port as formerly, which tends to the destruction and danger of our town and its adjacent haven ...' (Lower 1857, 296).

Thus the economic implications of water transport for interpretation of the archaeological evidence for inland trade are two-fold. Firstly, merchandise and building materials could be carried on waterways as far as the draft of the vessel would allow. Secondly, however, the location of markets in relation to these waterways would affect both the origin and the range of goods offered for sale there. It is instructive, therefore, to compare on Fig. 1.18 the 3 mile (5km) zone adjacent to navigable water with the areas lying within a radius of 6 miles (10km) of a port or market situated on one of these waterways. Even taking somewhat arbitrary distances such as these, it can be inferred that non-local merchandise and building materials are more likely to occur here than further inland. Indeed, Britnell (1981a, 19; 1981b, 215) has noted the emergence in the thirteenth century of numerous markets situated near the Essex coast, reflecting, he believes, the comparatively rapid growth of coastal trade during this period. These inferences will be evaluated in the light of archaeological evidence in Sections 6.4 and 7.7.

There is little evidence from which to assess the relative cost of road and water transport in the middle ages. Nevertheless, as we have seen, inland routes were sometimes used to convey goods between the south-coast ports. Short journeys by sea or river would seldom have been viable owing to the costs of loading and unloading the cargo. In Kent, however, there is evidence that traffic bound for Canterbury and Dover would sometimes be carried by river as far as Gravesend, thence by road (Stenton 1936, 19-20). The mode of conveyance must have been determined to a large extent by the nature of the cargo. Thus, bulky building materials including roof and floor

tiles are more likely to have been carried by water than, for example, lighter loads of domestic utensils such as pottery.

It is important to distinguish between the three principal types of coastal traffic: ships engaged in international trade; coasting craft used for the redistribution of merchandise from the larger ports; and finally the small boats which doubtless made purely local - and hence unrecorded - journeys. One can envisage pottery as part of any of these cargoes, perhaps among some of the mixed loads mentioned in the sixteenth-century shipping records. Nevertheless, specific documentary evidence for the carriage of earthenwares is scarce, especially during the medieval period. The archaeological evidence of ceramic distributions must therefore be assessed within the known economic framework of trade in other commodities.

The Sheriff's Accounts for the provisioning of Dover Castle in 1326 demonstrate the importance of smaller ports in local communications along the south coast (Pelham 1931, 172-3; fig.5), and these centres must have performed a similar function in redistribution as well as in the collection of supplies. At a somewhat later date, the fifteenth-century Port Books of Southampton attest voyages made by local ships from neighbouring ports on the coast of Hampshire and West Sussex. In 1469-71, for example, there were ships from Portsmouth, Bosham, Langstone, Tarring and Shoreham (Quinn 1937). Later still, the importance of coastal trade is reflected by references in the Rye shipping records to imports of English glass (Dell 1965-6, 69; 83-4). Glass was always a more valuable commodity than pottery, but it is reasonable to assume that small consignments of earthenware were also transported by coasting traffic.

There were numerous small ports and landing places along the coast of Kent and Sussex. Those mentioned in the list of 1578 are shown on Fig. 1.18 (Mathew & Mathew 1933, 96-7). Some landing places merely served local traffic; other ports engaged in international trade, while there were those which had once attracted foreign shipping but which had declined by the sixteenth century. Smallhythe is an instructive example. The launching of a ship named 'Eneswithe' in 1400 demonstrates that Smallhythe continued to serve as a port - for Tenterden nearby - until this date. Moreover, the maiden voyage of 'Eneswithe' to Rochelle implies that she was a vessel of some size (Taylor 1914, 135). An association with the sea was still recognised in 1509 when the chapel at Smallhythe received confirmation of its licence permitting burial 'of bodies of men who by shipwreck shall

have been cast up on the sea shore within the town ...' (ibid., 146). Although the harbour had already begun to silt up at this time, the need to confirm the burial licence does not necessarily imply that the custom had lapsed. Indeed, economic well-being was sufficient for the chapel to be rebuilt after a fire in 1514, but by 1549 there were claims and counter-claims concerning the significance of the port (Winnifrith 1970). At that time Smallhythe was referred to as 'the said hamlet' and in 1614 it was mentioned as 'our ancient town of Smallhith' (Gulley 1961, 126). Thus it can be inferred that whereas imports would probably have entered the market at Tenterden during the late medieval period, trade in the later sixteenth century would have been more akin to that of other inland markets.

The significance of the Rother Estuary for foreign shipping is further witnessed by the discovery in 1822 of a boat embedded in the silt near Matham Wharf. It was a single-masted 'cog', probably of Dutch origin (Rice 1824; Bowen 1939, 39; Rosa 1982). The vessel was probably built in the thirteenth or fourteenth century, but may have been wrecked as late as the fifteenth or sixteenth century. While this evidence is a significant indication of the waterways leading to potential landing places for imported goods - including, perhaps, consignments of ceramics - the artifacts associated with the vessel discovered in 1822 are also crucial to an understanding of the chronology of coastal change, and hence to the elucidation of economic trends in this area. Philp (in Rosa 1982, 234-5) follows Fenwick (1978, 258) in assigning the tripod pipkins found inside the craft to the fifteenth or sixteenth century, but similar forms do occur at an earlier date in the Low Countries. Indeed, floor tiles from the wreck have been dated to the fourteenth century or later. Nevertheless, a later date can be inferred from the presence of a glass bottle and 'Tudor' style shoes. In view of conflicting contemporary accounts concerning the significance of the Rother Estuary for shipping in the sixteenth century, archaeological evidence such as this constitutes a potential source of independent information. Interpretation requires caution, however, because this case demonstrates both that a vessel may be of some age before it was wrecked and that it is essential to consider the full range of artifacts when assessing the date of an assemblage.

Pottery carried by sea was an incidental cargo both during the medieval period and later. Its distribution therefore mirrors the broad spectrum of overseas trade in other commodities, but the extent

to which there was a precise correlation between specific products and certain types of pottery is questionable. Moreover, the distinction must be made between the use of pottery as containers and the trade in ceramics themselves (see Section 6.1).

In the absence of reliable inland communications to the Thames Valley, exports from the south-coast ports were confined principally to local raw materials. Wool was the major item from the chalk downlands, although the national shift from wool to cloth during the fourteenth century is reflected in south-coast trade. Exports from the Weald comprised forest products, especially timber. Winchelsea was the most important outlet for timber during the fourteenth century, although the accounts for 1323-9 show that Pevensey and Seaford also carried some trade. By the end of the fourteenth century Chichester had achieved supremacy over Pevensey in timber exports. Destinations varied, but links existed with the poorly-forested areas of the Netherlands and Northern France, paralleled to a certain extent by contacts established through the wool and cloth trades.

Two examples will serve to demonstrate how incidental cargoes of domestic utensils fitted into the broader pattern of international trade during the middle ages. In 1397-8 denizen trade at Sussex ports included the import of earthenware valued at 11s and the export of 80 wooden cups worth 2s 4d (Pelham 1930b, 195). This not only provided evidence for reciprocal trade, but also attests a general trend towards the export of manufactured wooden goods in addition to raw timber, which becomes apparent from the port statistics during the later fourteenth century. The second example, although not specifically associated with pottery, illustrates a similar pattern of reciprocal trade. In this instance, again during the 1390s, a ship registered at Biervliet imported ewers and returned with a cargo of oak bark and billets (*ibid.*, 203). Cargoes reflect the business interests of the merchants who handled them and it would be misleading to infer that a reciprocal trade in domestic goods accompanied all exports. Many ships carrying raw timber, for example, entered south-coast ports under ballast rather than with a consignment of imports (*ibid.*, 202). Nevertheless, when assessed at national level, the archaeological evidence for imported pottery found at major medieval ports does reflect the regional variations in overseas trade (Allan 1983, 204; Davey 1983, 214; Brooks & Hodges 1983, 239-43). In order to assess the significance of these patterns it is therefore

important to understand the nature of the trade conducted through the south-coast ports.

Specific links between pottery types and the trade in a single commodity are seldom capable of positive proof. Despite detailed research into the Gascon wine trade (James 1971) and the identification of distinctive traded Saintonge polychrome wares from the same region of South-West France (Dunning 1933), the likely association between the archaeological and documentary evidence remains a matter of inference. Production of the Saintonge polychrome wares appears to have been short-lived, but green-glazed pottery from South-West France enjoyed a longer period of popularity. Its distribution including inland castles and religious houses as well as areas near the coast is consistent with the trade in a high-status commodity such as wine. Nevertheless, there are too few inland pottery finds to verify that the pots actually travelled with the wine beyond the port at which they entered the country.

The Cellarer's Accounts for Battle Abbey record, for example, that wine was purchased in 1384-5 at centres as far away as Sandwich, Canterbury and London (Searle & Ross 1967, 79), while in 1371-2 Gilbert Carter was paid 4s for transporting one pipe of wine from Sandwich to Battle (*ibid.*, 65-6). It seems doubtful whether French green-glazed wares found during excavations at the abbey would have been obtained via a port so far afield as Sandwich, on account of their fragility. Wine was supplied to Battle from the nearby ports at Hastings and Winchelsea on more than one occasion, however, and in 1371-2 Robert Hampton was paid expenses of 10d for the journey (*ibid.*, 65-6). Sandwich and London both ranked highly as wine ports, but the Sussex ports appear to have been of little significance, and there are some periods for which surviving documents demonstrate that no shipments of wine were recorded (James 1971, 95-116). Nevertheless, excavations at Sussex ports have yielded significant quantities of imported pottery from South-West France. Thus, although it is impossible to make quantitative comparisons, it is feasible that these imported wares were redistributed from the principal wine ports and reached their destinations quite independently of the wine alongside which they may have been exported originally.

This assessment of water transport and the medieval trade conducted through the ports of Kent and Sussex serves not only to demonstrate the difficulties of reconstructing changes in the economic significance of particular ports and waterways, but also to emphasize



the complex economic processes which lie behind the patterns observed in the archaeological record. These will be considered further in the light of ceramic evidence in Section 6.2. Meanwhile, it is appropriate to consider the changes which had emerged by the sixteenth century in the relationship between towns and their rural hinterlands.

1.4.7 Rural settlement and towns in the sixteenth century

The process of contraction within the rural settlement pattern following the decline of population during the mid-fourteenth century has been discussed in Section 1.4.1. By the sixteenth century there were also fewer towns than in c.1300 (Section 1.4.3) and trade at certain south-coast ports had been curtailed owing to coastal changes and other economic factors (Section 1.4.6). Despite the difficulties of establishing a precise chronology for individual settlements, it is important to consider the organisation of ceramic production and distribution within the broad patterns of change in demand for consumer goods which had taken place by the sixteenth century.

The national population c.1520 had not risen appreciably since the late fourteenth century and remained at a level of some 2-3 million (Hatcher 1977, 68-71). The Lay Subsidy records of 1524-5 show that some boroughs in Hampshire had no more than 100 taxpayers (Hughes 1981, 68), which is unlikely to represent a population of more than 500, based on estimates of between 4.5 and 5 persons per household (Miller & Hatcher 1978, 29). Indeed, an average country town in Southern England would have had a population of no more than 5-600 (Platt 1976, 15) and many, particularly in the Weald, were much smaller (Everitt 1976, 178).

Thus, disregarding any changes in cooking and eating habits, the demand for domestic utensils such as pottery during the first quarter of the sixteenth century might have been somewhat less than half that of two centuries earlier. Against this, however, must be balanced the likelihood of increasing demand generated by surplus wealth (Dyer 1982, 38-9). Nevertheless, lower levels of urban population might account for the apparent demise of certain workshops which had formerly served particular towns. In Chichester, for example, it seems that, among other factors, urban demand was no longer sufficient to support local workshops; instead, the distinctive white-painted wares of this period were obtained from rural potteries on the fringes of the Weald (see Section 5.3.6). Taking the region as

a whole, it is only in the London area that there is definite evidence so far for ceramic production related specifically to an urban market during the early sixteenth century.

In addition to the contraction of urban populations, some of the smaller centres which had acquired a market during the thirteenth and fourteenth centuries failed to retain any economic significance which they might once have had (see Section 1.5.2). As Britnell (1981a, 19) has observed in Essex, markets situated on through routes were more likely to survive than those in isolated rural locations. Thus the market economy was focused on fewer centres, reflecting a trend towards the rationalisation of trade which became concentrated in the boroughs during the second half of the fifteenth century (Platt 1976, 95).

Agricultural recession during the mid-fifteenth century was a significant factor contributing to the decline of rural markets. Moreover, fewer small transactions and a lesser number of markets must certainly have affected the incidental - and unrecorded - trade in domestic goods. On the one hand, longer and less frequent journeys to market might have resulted in a higher proportion of sales at the workshop or by itinerant salesmen, while conversely a craftsman whose workshop was accessible to a flourishing market might have attracted customers from a wider area than had hitherto been possible.

The geographical implications of these changes could be monitored by mapping the settlements mentioned in the sixteenth-century Lay Subsidy rolls. This information has been used to illustrate variations in wealth within South-East England (Glasscock 1965, fig 2), but no systematic attempt has yet been made to compare at regional level, the settlement data for the fourteenth and sixteenth centuries. The later Lay Subsidy records are subject to the same limitations as those of the earlier period (see Section 11.3.1), but they do offer a general guide to the extent of contraction within the rural settlement pattern (Hughes 1981, 72).

Regional contrasts in the nature and density of medieval settlement persisted into the sixteenth century, but expansion of the Wealden iron industry was accompanied by a new wave of immigration into the area (Awty 1981). Organisation of the industry, however, maintained the dispersed settlement pattern, served - it would appear on the basis of available evidence - by small rural potteries (see Section 6.7.2). Changes in consumer demand are reflected by the appearance of imported wares among ceramic assemblages from minor

settlements in the High Weald. Indeed, those markets in the Weald which persisted after c.1500 appear to have flourished in the early sixteenth century. In 1549, for example, it was deemed desirable that the market at Hailsham should be resumed as soon as possible after a serious fire in the town (Gulley 1960, 284).

The rural self-sufficiency of Wealden towns was still evident in the seventeenth century, the majority of craftsmen being engaged in service activities or the processing of produce from the rural hinterlands (Chalklin 1960, 51-81). Material evidence for the economy of post-medieval Wealden towns is therefore of potential interest, and ceramic assemblages offer a means of monitoring the extent to which non-local utensils reached these markets. Before attempting to interpret the ceramic evidence, however, it is necessary to examine in greater detail the nature of the market economy both during the medieval period and afterwards.

Preceding sections have been concerned with reconstructing spatial patterns of rural settlement, towns and communications as the geographical framework within which to consider demand, production and distribution. It remains now to evaluate the hierarchy of centres within the medieval and later market economy and to assess the likely implications for ceramic production and marketing.

1.5 SOUTH-EAST ENGLAND: THE MEDIEVAL AND LATER MARKET ECONOMY

1.5.1 Medieval 'urban' markets

For centuries the sale of pottery has accompanied the numerous transactions conducted in market towns. The well-known deposit of samian ware found in a gutter at the Roman town of Wroxeter, for example, has been interpreted as the upturned contents of a potter's stall (Wacher 1974, 364). During the medieval period, too, potters sold their wares at the markets in Oxford, York and elsewhere (Le Patourel 1968, 119). Sometimes craftsmen would travel considerable distances to a market, and although the length of their journeys is seldom recorded, there is evidence that the inhabitants of Tornarios in Spain sold their dishes and earthenware jars in the regional market centre at Leon (Verlinden 1963, 123). Longer journeys such as these would generally have been confined to the more important markets. Thus any assessment of material evidence for the trade conducted in medieval markets should take account of their relative significance.

Tupling (1933, 75) advanced the view that:

'The market ... distinguished an agricultural community from its neighbours and transformed it into a town, which subsequently grew more or less rapidly according to the convenience of its situation for industry and trade'.

Palliser and Pinnock (1971, 49) adopted a similarly broad definition of market towns in Staffordshire:

'The term 'market town' as used here implies no more than a settlement with market rights, irrespective of whether it was large or small or whether it enjoyed economic specialisation or not'.

Market rights, whether prescriptive or granted by charter, were a prerequisite for urban status in medieval England, but not all market towns can be regarded as urban, and there were numerous rural markets for which the term 'town' would be misleading.

An attempt will be made in Section 1.5.5 to identify a hierarchy of medieval market centres in South-East England. Meanwhile it will be helpful to consider the factors which distinguish 'urban' markets from their rural counterparts in the region. Both urban and rural centres would have performed similar functions as foci for the market economy. Differences in the level of demand and in the extent of their hinterlands, however, are likely to be reflected in the

archaeological record of the incidental trade conducted through these medieval markets.

The criteria recommended by Heighway (1972, 9) for identifying medieval urban centres have been adopted as a guide for assessing the archaeological and documentary evidence of urban status in numerous county and regional surveys. Generally, the possession of just one of the 'urban attributes', as summarised by Heighway, in addition to the existence of a market has been deemed sufficient to identify these economic centres within the medieval landscape. Fig. 1.19 shows the location of the small towns which had emerged in South-East England before the mid-fourteenth century.

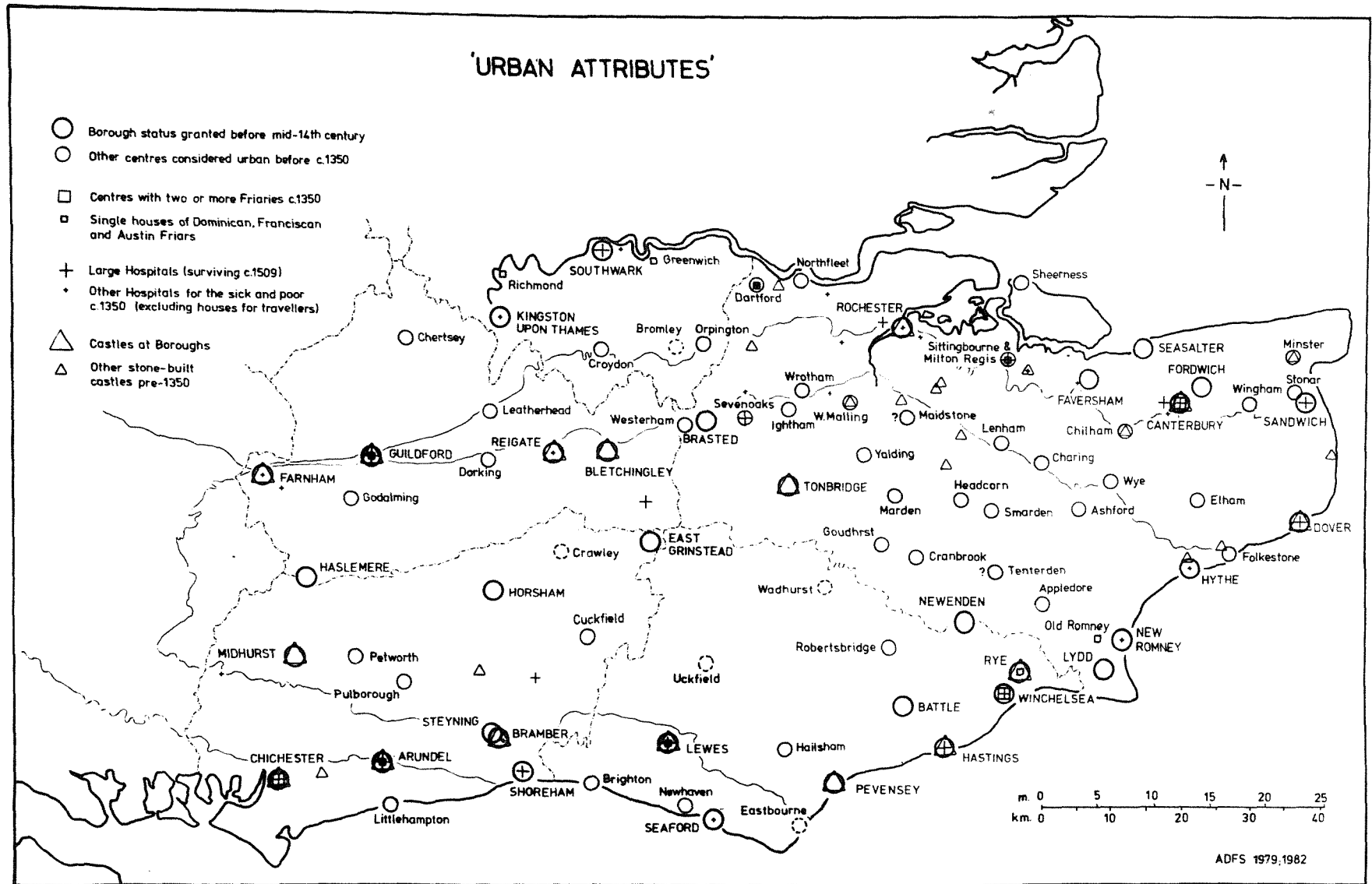
Some centres had acquired urban status during the late Saxon period, while others were the product of post-Conquest expansion (see Section 1.4.3). In the words of Finberg (1957, 61):

'The consolidation of Norman power imparted a new vigour into commercial life'.

The evidence relating to Sussex has been summarised succinctly on maps prepared by Freke (1978a, figs. 38-41) which illustrate the accumulation of 'urban attributes' at successive stages of town development within the county. Medieval urban expansion in South-East England had reached its zenith by the fourteenth century, and it is at this period that the contrasts in size and economic status become clearly apparent among towns within the region.

Despite obvious limitations, the possession of 'urban attributes' provides a convenient means of distinguishing between the larger and smaller market centres (Fig. 1.19; see Section 1.5.5). By no means all of these small medieval towns achieved borough status and some which did were evidently of minor economic significance. At the lowest end of the scale, places such as Uckfield and Wadhurst are typical of small 'towns' in the Weald. The borough status of Uckfield has not been recognised hitherto in either national or county summaries (Beresford & Finberg 1973; Aldsworth & Freke 1976), but the Custumal of the Archbishop's Manors in Sussex records both burgesses and shops in the 'Borgh of Uckfield' (Redwood & Wilson 1958, 76-77). At Wadhurst, too, topographical evidence for an apparently infilled market place (Fig. 1.27) implies a centre of somewhat greater economic significance than the other minor rural markets in the area. Indeed, among the larger centres, encroachment on the market place was a sure sign of economic prosperity. Cirencester in Gloucestershire is a well-documented example (Slater 1976, 101).

Fig. 1.19 Kent, Surrey and Sussex. Medieval settlement and 'urban' attributes



Religious houses and seigneurial centres stimulated the foundation of certain new towns and encouraged their subsequent development. At Battle, for example, the abbey cellarer spent £500 in the town during one year in 1346-7 and specialist tradesmen and craftsmen were attracted by the opportunities for monastic patronage (Searle 1974, 351). Elsewhere, however, there were numerous religious houses and seigneurial centres which did not acquire the commercial significance of a market (Fig. 1.19).

Owing to their role as preachers, the Friars were drawn to centres of medieval population. Thus the existence of one or more Friaries provides a satisfactory means of identifying the larger towns. The Friars were also attracted to religious centres, but their presence in South-East England provides a fairly reliable indication of the flourishing towns in the region (Fig. 1.19). Canterbury and Chichester each had two or more Friaries, while there were single houses of Dominican, Franciscan or Austin Friars at several of the Sussex towns and also at Guildford in Surrey. Several of the other towns had hospitals. Significantly, none of the Wealden towns was large enough to support a Friary, and comparison with the national pattern emphasises the contrast with other parts of Southern England (Fig. 1.20). Despite the limitations of this approach, the location of medieval Friaries demonstrates that the larger centres of population and economic activity were unevenly distributed on the periphery of the region.

Some towns such as Sevenoaks had prescriptive rights to hold a market, but most market rights were granted or confirmed by royal charter. The case of Battle is a notable and early example recorded in the Chronicle of Battle Abbey:

'The great-souled king [William the Conqueror], watching over his church, authorised a market in the town of Battle, on Sunday, wholly free and quit, and under the sole management of the church and monks, without exaction by any in perpetual right, and he confirmed it with royal authority' (Searle 1980, 84-5).

Sunday markets are characteristic of the early charters (Salzman 1931, 123) and bear witness to the traditional importance of churches as centres of exchange. By the end of the twelfth century, however, there was opposition to Sunday markets (Watkins 1915, 40). It was perhaps in response to such criticism that the men of Ramsbury asserted that only agricultural produce was sold on a Sunday:

Fig. 1.20 England and Wales. Medieval Friaries

'When the men of the district come together on Sunday and feast days, they buy flesh, fish and other foodstuffs, but they do not sell anything else there' (Salzman 1928, 208).

In 1306, too, complaint was made of a 'congregatio gentium' who would buy and sell corn, flour, fish, peas, beans, flax, yarn, flesh and fish at Cockermouth (ibid., 207). In view of frequent attempts to stop churchyard trading, however, it seems probable that a wide range of goods was being sold. Indeed, games and the conduct of secular business in churchyards were forbidden by the Synod of Exeter in 1287 (Heales 1888, 105). Again in 1363 the constitutions of Archbishop Thoresby at York maintained that the church should be a house not of merchandise but of prayer, and forbade once more the holding of a market in churches, porches or churchyards (ibid., 105). Even as late as the sixteenth century, an enquiry was made:

'yf any person have kept faire or market in the churchyard'
(Baines 1955, 76).

Thus it would appear that trading in medieval towns was not always confined, as in the case of Lydd, to the 'High Strete' (Watkins 1915, 29). Moreover, it seems unlikely that Sunday markets were concerned only with the sale of agricultural produce and some may well have included ceramics among their wares.

During the later middle ages, Saturday markets were often the largest and most important (Unwin 1981, 243), while many of the larger towns had two or more markets each week (see Section 11.1). The presence of more than one market also serves to identify significant minor centres such as Eastbourne and Crawley which display few tangible signs of medieval urban status. At Mayfield, too, the Archbishop of Canterbury was granted markets on Thursdays, Tuesdays and Wednesdays in 1261, 1314 and 1394 respectively. This certainly distinguishes this village from other rural markets in the Weald, but it is difficult to assess the extent to which the market grants reflect the level of economic activity or the fiscal interests of the Archbishop. In the absence of available corroborative evidence therefore, Mayfield has not been included among the small towns shown on Fig. 1.19.

'The market town was not simply a centre of trade; it was the focus of the rural life around it' (Everitt 1976, 186). This was certainly true in the sixteenth century, and a similar relationship between town and country can be inferred during the medieval period. Potters are unlikely to have ranked among those who

occupied establishments within the medieval town (Harvey 1975, 71), but the market would have served the needs of rural craftsmen as well as agricultural producers. As Hilton (1975, 88) has stressed, the small town and its rural hinterland should be regarded as a continuum. Poll Tax returns of the later fourteenth century attest that many craftsmen congregated in these towns, but owing to the lack of adequate documentation precise measurement of the interaction between town and country is impossible. Nevertheless, the medieval potter provides an important insight into this relationship: not only did he occupy an unusual position normally as a rural craftsman, but his products can also be recovered from the archaeological record. In the same way that the circulation of medieval currency indicates the extent to which the money economy had penetrated the countryside during the thirteenth century, so too the marketing of domestic utensils such as pottery documents the extent of inland trade in humble commodities.

1.5.2 Medieval market charters and the expansion of rural marketing

The majority of small medieval towns not only functioned as centres for local transactions but they also served as regional markets through which exports could pass to other areas. The economies of certain lesser rural markets, however, appear to have remained entirely local in character. These village markets generally received their charters rather later than those centres which acquired urban status (Astill 1978, 7).

Broad chronological trends in the granting of market charters have been identified in numerous regional studies including Lancashire (Tupling 1933; 1936); Yorkshire (McCutcheon 1940; Oxfordshire (Hoskins 1954); Gloucestershire (Finberg 1957); Derbyshire (Coates 1965); South-West England (Shorter et.al. 1969); Staffordshire (Palliser & Pinnock 1971); East Anglia (Danks 1977); Buckinghamshire (Reed 1978); Essex (Britnell 1981a) and Nottinghamshire (Unwin 1981). The evidence for South-East England is summarised in Section 11.1.

Essex is typical of many areas where less than one third of the known medieval markets had been founded before 1200 (Britnell 1981a, 17), while in Buckinghamshire the main period of expansion came between 1200 and 1250 (Reed 1978, 566). The Charter Rolls, however, only survive for the period after 1199 (Britnell 1978, 191-2) and some of the later grants confirmed the market rights of centres which were

already firmly established. Of particular interest are the markets and new towns such as Haslemere which emerged within the old hundred manors, implying perhaps the rationalisation of hitherto informal centres of exchange associated with local government (*ibid.*, 188-9). Indeed, it is significant that uniform terminology for a market as we know it did not emerge until the twelfth century (Harmer 1950, 345-6).

The thirteenth and fourteenth centuries, however, also witnessed the emergence of entirely new markets, some of which were recognised in contemporary documents as '*villae mercatoriae*' (Hilton 1975, 76). Many of the rural markets shared features - particularly of land tenure - which were characteristic among the small towns (Britnell 1981b, 216). In Essex, for example, landless messuages identified from the Feet of Fines are to be found in nearly half of the rural markets in the county, yet they seldom occur in villages which did not have a market. Specialised non-agricultural activities representing the minimal elements of burghal status therefore distinguished some of the rural markets from neighbouring villages (Britnell 1981c, 148).

Rural craftsmen were also to be found in nucleated settlements with no claim to formal market status (Fox 1970, 661). Indeed, rather than being agricultural communities in their own right, a large number of the Wealden villages - '*villate*' or '*ville borga*' - acted as centres of craft and trade for the outlying farms (Witney 1976, 144). Many of these villages doubtless had informal systems of trading, about which little is known but which may have been centred on churchyards. Indeed, some market charters were probably granted to places where the trade had become sufficiently well established to benefit from more formal organisation (Britnell 1981b, 211). The numerous market charters of the thirteenth and fourteenth centuries therefore manifest the expansion of rural trade during this period. Regular markets provided opportunities for the exchange of agricultural produce, prepared foodstuffs, rural industrial products and goods offered for sale by chapmen and pedlars. In the absence of documentation it is impossible to quantify this trade, especially in the case of tinkers and pedlars who were exempt from tolls (Jusserand 1961, 128). Nevertheless, rural markets would have been particularly significant for those such as the potter who often combined agricultural work with another craft. It seems reasonable to infer that market sales would have been equally important as the pottery sold to customers who came to the workshop (see Section 6.2.1).

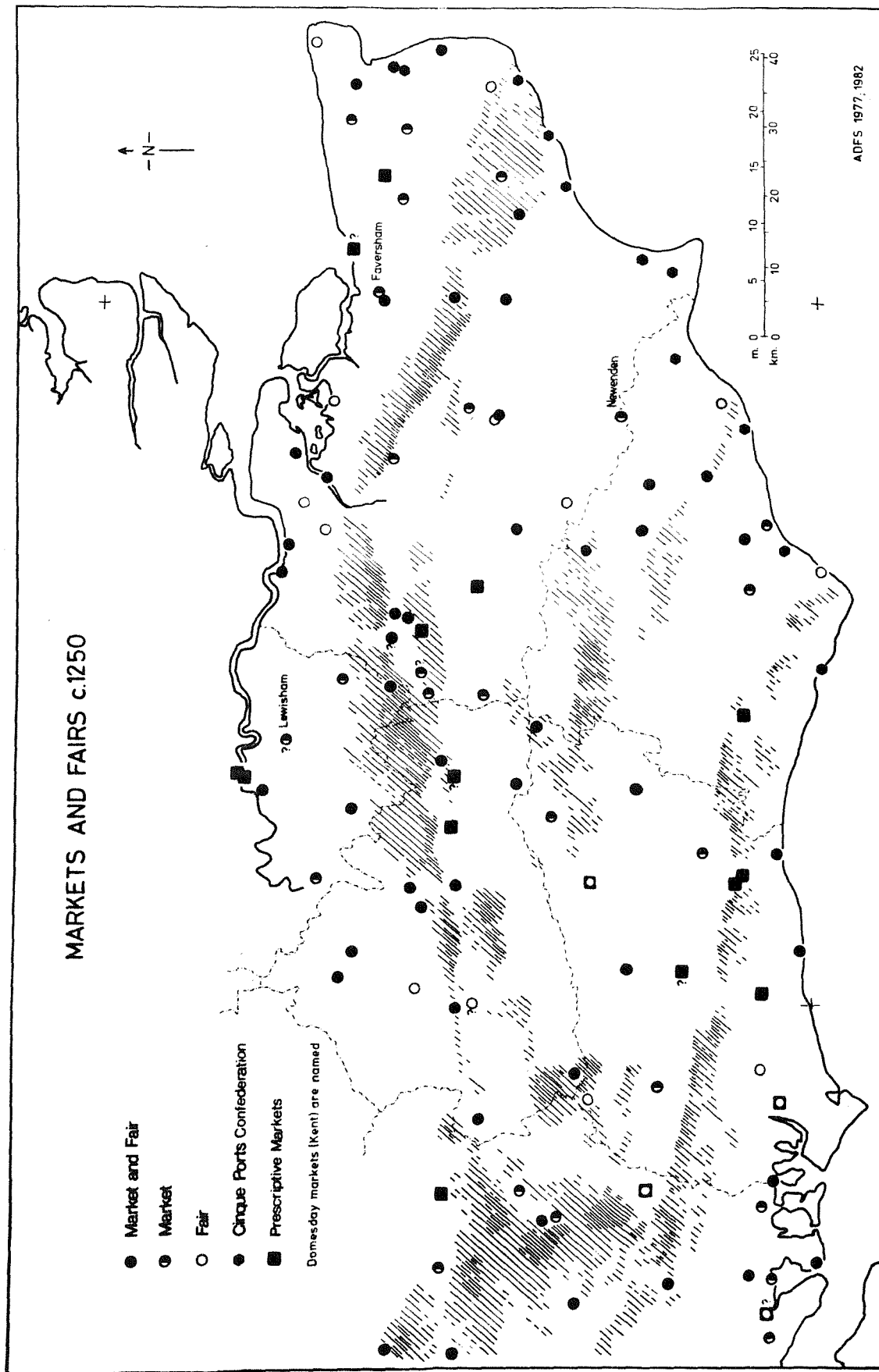
The evidence of market charters illustrating the expansion of rural marketing in South-East England between 1250 and 1350 has been mapped on Figs. 1.21, 1.22, and 1.23. There were several markets in the Weald by c.1250, but many of these charters had been granted only a decade or so previously. Significantly, settlements such as Robertsbridge and perhaps Crawley, which developed as small towns, acquired their charters somewhat earlier than the majority of Wealden markets. Detailed quantitative assessments have not been attempted, but taking the region as a whole it is clear that the chronology of market charters was somewhat different from that which has been identified in Buckinghamshire (Reed 1978, 566) and Essex (Britnell 1981a, 18). There were nearly 1½ times as many new market foundations between 1250 and 1300 as there had been during the preceding half-century, compared with an equivalent ratio of just under one half in Buckinghamshire. Moreover, the number of new foundations between 1300 and 1350 was only slightly less than it had been a century earlier, compared with considerably lower figures in both Buckinghamshire and Essex. The earliest known market charters for settlements in South-East England are summarised in Section 11.3.

The evidence should be examined with caution, however, because:

'A list of this kind can be as misleading as a distribution map since it imposes the same spurious air of permanence upon what was in fact an ever-changing situation' (Reed 1978, 574).

Nevertheless, it is necessary to make certain assumptions for the purposes of evaluating ceramic distributions, and the unknown vicissitudes of particular rural markets constitute no more of a hindrance to our understanding than the imprecise calibration of ceramic sequences. Thus, although the mapping of medieval market areas is unduly precise for the information upon which the patterns are based, it is important to consider general trends rather than specific details. There can be no doubt, therefore, that the majority of the population in South-East England found themselves within closer reach of a market during the 1340s than they would have done a century earlier. Moreover, the increased opportunities for market sales are unlikely to have been overlooked by the medieval potter. With more markets held on different days of the week, so too there would have been scope for trade within a cycle of weekly markets (Fox 1970, 667).

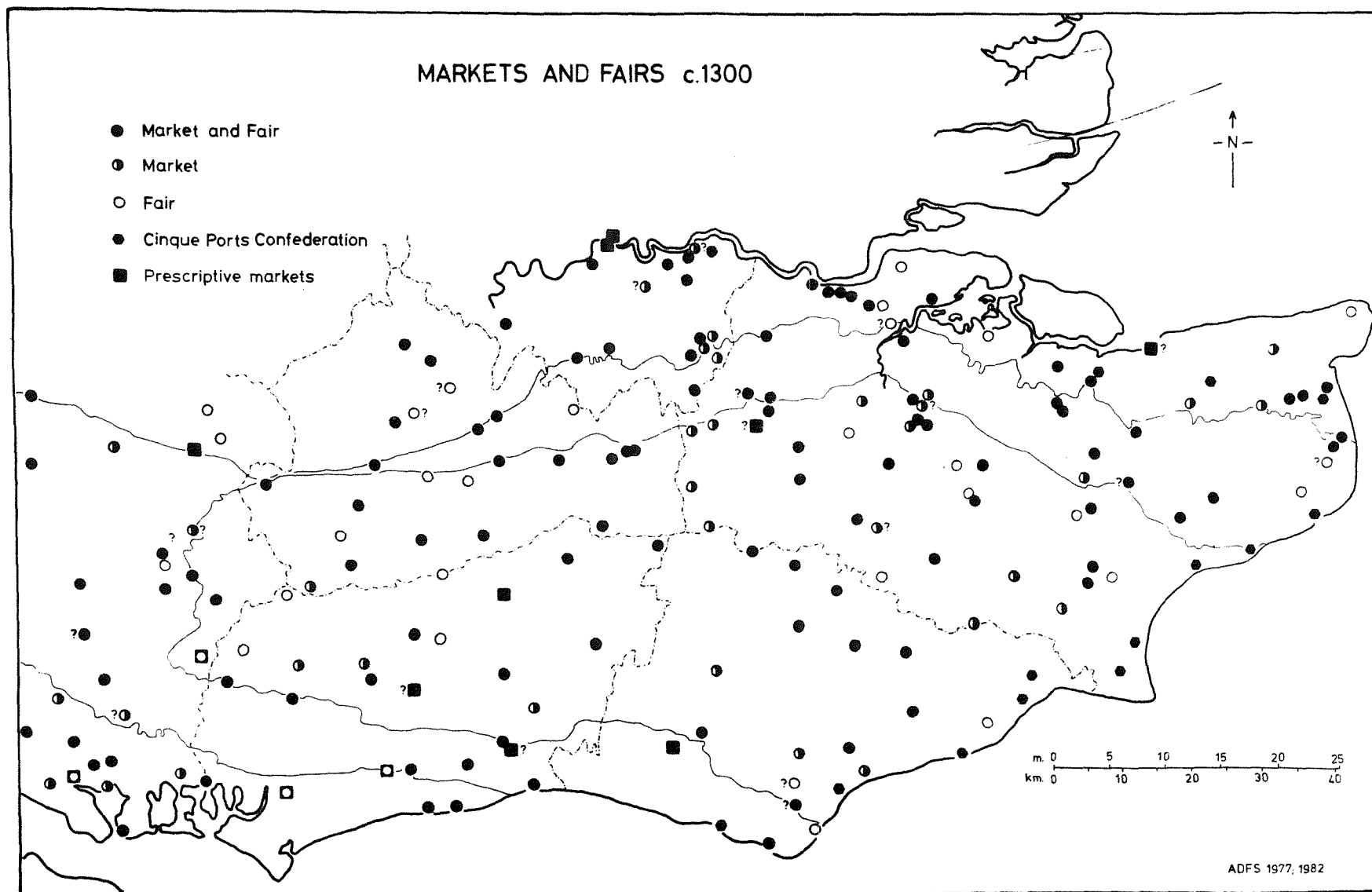
Despite the economic insignificance of certain lesser



ADFS 1977, 1982

Fig. 1.21 South-East England. Markets and fairs c. 1250

Fig. 1.22 South-East England. Markets and fairs c. 1300



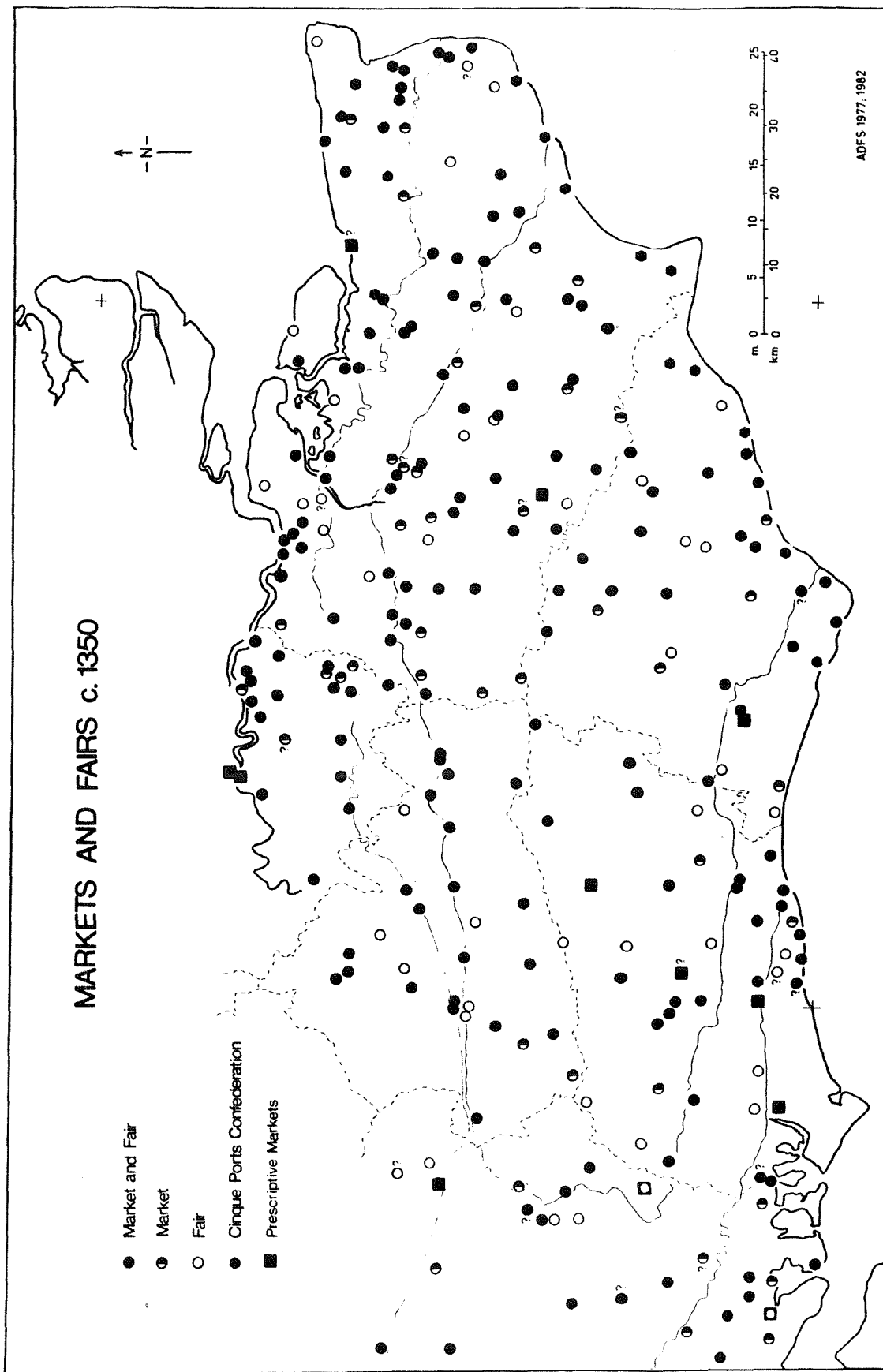


Fig. 1.23 South-East England. Markets and fairs c. 1350

markets, it is clear none the less that the charters do reflect a real expansion of rural trade during the thirteenth and fourteenth centuries (Unwin 1981, 231). In areas such as South-West England, or perhaps in the Weald, it could be argued that the growing number of medieval markets represents a response to the terrain and difficulties of communication. The phenomenon is so widespread, however, in counties of such diverse topography as Oxfordshire (Hoskins 1954, 109) and Derbyshire (Coates 1965, fig. 9) that an explanation must be sought in economic, demographic, and to a certain extent political, factors. In Staffordshire, for example, there is a clear correlation between population growth and an increase in the number of rural markets (Palliser & Pinnock 1971, 53). Likewise, it can be argued that the decline of markets during the later fourteenth and fifteenth centuries occurred during a period when the population had been reduced by around 50% (Unwin 1981, 249). Clearly, though, the relationship between markets and demography was more complex than it might appear, because the renewed growth of population in the sixteenth century was not accompanied by any significant increase in the number of markets (Palliser & Pinnock 1971, 57). The medieval expansion of rural marketing depended upon the fusion of favourable economic conditions arising from surplus agricultural production and the emergence of a peasant monetary economy, combined with seigneurial initiative.

Tupling (1933, 77) stressed the significance of economic forces resulting in the natural growth of medieval markets. Subsequent research, however, has demonstrated the importance of seigneurial patrons in determining the precise location of market centres (Reed 1978, 568). Thus, in South-East England there were some areas of dense medieval settlement accompanied by several contemporary markets, notably in the Medway valley; on the shores of the Thames Estuary; and in the valleys of the Rivers Arun and Rother in West Sussex, but there were also areas of dense settlement served by few markets. Fig. 1.24 shows the hierarchy of medieval market centres, as defined in Section 1.5.5, superimposed upon settlement density represented as a trend surface (see Section 1.4.2). Some instances where there were few markets to serve numerous settlements, such as the environs of Chichester, Lewes, Canterbury and Guildford, can be explained by the effects of commercial competition, but regional variations elsewhere may have arisen from seigneurial interests. In areas of low settlement density such as the High Weald for example,

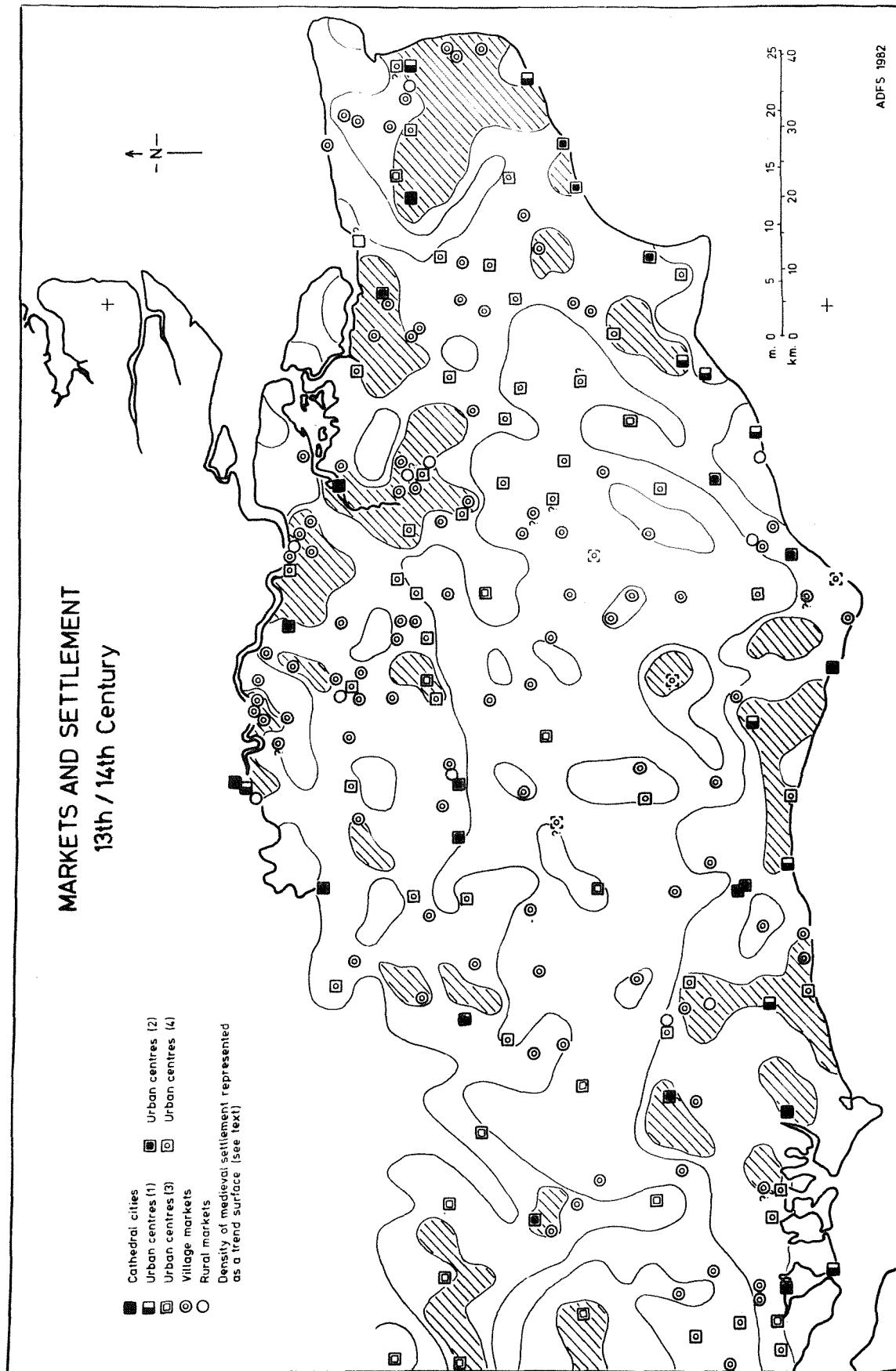


Fig. 1.24 South-East England. Markets and the density of medieval settlement c. 1290-1340

the greater number of markets in the east compared with the west of the region may have been determined as much by land ownership as by economic factors.

The economic climate of the thirteenth and early fourteenth centuries stimulated the growth of markets, but regional historical geography has been influenced strongly by seigneurial patronage. This, together with the legal status of medieval markets, will be discussed in the following section.

1.5.3 Patronage and the legal status of medieval markets

The association between Domesday markets and royal manors demonstrates the fiscal interests of the crown in the regulation of commerce. Indeed, as early as c.935 the Laws of Athelstan sought to restrict transactions of 20 pence or more to the 'ports' (Britnell 1978, 187). From c.1200, however, the growing number of charters attests the importance of seigneurial initiative and royal consent for the establishment of new markets. Quo Warranto records confirm that:

'no one in the realm is permitted to have a market without the licence and good will of the lord king or his predecessors (Salzman 1928).

The text of the charters is often brief (Britnell 1979, 91) but even the date, day and patron of a market provide significant evidence for the geographical understanding of medieval markets.

The Lambeth charter of 1199 seems to have set a pattern for the wording of numerous later market charters (ibid., 92-4). Indeed, a total of more than 2,000 market grants were recorded between 1199 and 1483 (Coates 1965, 95). Not all these foundations were successful, but only in exceptional cases was the failure of a market recorded. One such example, however, was at Ripley, Surrey where, in 1279, the Prior of Newark claimed the right to hold a market which he had received by charter from Henry III, but he contended that the market was of no value because no one came to it (VCH Surrey 1911, 366). As the number of markets increased, the competition for customers would have intensified. Many thirteenth-century grants acknowledge the potential detriment to existing markets caused by new rivals.

The case was stated by Henry de Bracton, a thirteenth-century lawyer who considered the legal definition of unfair competition between neighbouring markets. The new market, he said,

'... may be called neighbouring and the nuisance tortious

... if [it] has been raised within six miles and half and the third part of a half [of an existing market]... When therefore a market has been obtained within such a limit, it will have to be levelled since it is a hurtful and a tortious nuisance because it is so near' (Twiss 1880, 584-5).

Salzman (1928, 210), however, dismissed this as a ...

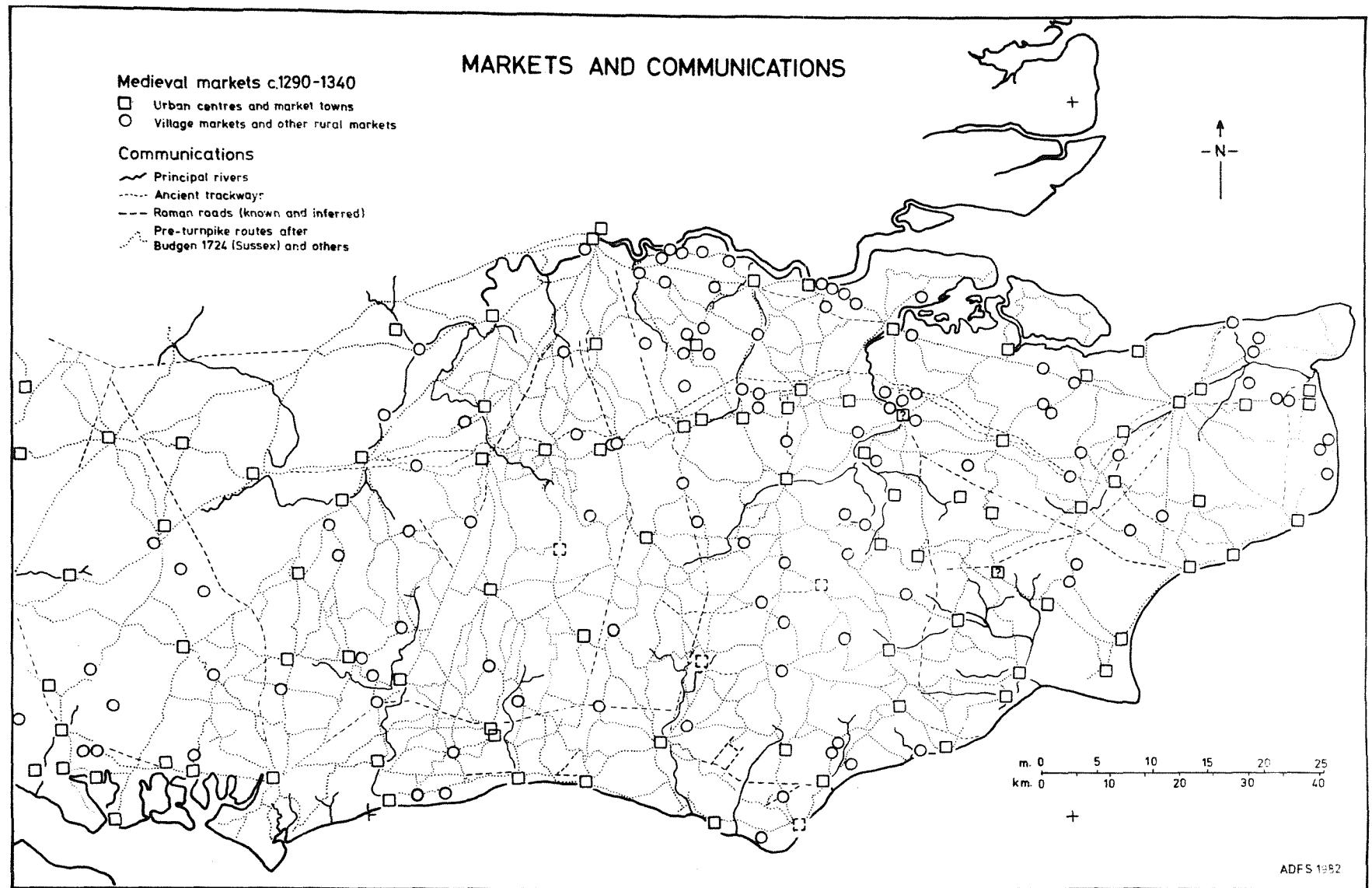
'... typical piece of medieval confusion masquerading as logical exactitude'.

Indeed, regional studies of medieval markets in various parts of the country do not offer clear empirical evidence of equal spacing. Nevertheless, the statement by Bracton does acknowledge the effects of economic competition, and if the distribution of markets is examined in relation to the medieval road network then there is some evidence that the spatial pattern was influenced by competition (Fig. 1.25).

Notable examples of fairly regular spacing occur on the route which passes south-westwards through Guildford, and likewise along Watling Street on the north side of Kent. Elsewhere, even in the Weald, a fairly regular pattern can also be detected. A more dense distribution of markets is to be found, however, in the Cray and Medway valleys, and along the Thames Estuary. Assuming that all these markets were successful, legal practice was evidently flexible and by no means the majority of medieval markets were situated on principal lines of communication. Remote rural locations account for 41% of the Essex markets while the figure for Staffordshire is as high as 70% (Britnell 1981b, 215).

It is in these rural areas that the proprietary interests of the lords can be seen most clearly. In 1315, for example, Bartholomew de Baddlesmere was granted market charters throughout the county (Reed 1978, 268). In South-East England these included Kingston (Kent), Eastbourne, Erith and Lesnes (see Section 11.1). The church and religious houses also received numerous market charters. Indeed, Donkin (1962, 1) has estimated that some 50% of Cistercian houses held market rights. In Kent, for example, Boxley Abbey was the patron for markets both at Boxley itself and - as early as the twelfth century - on the abbey lands at Hoo. Likewise the Prior and Convent of Christchurch, Canterbury were granted market charters for Appledore, Eastry, Godmersham, Great Chart, Meopham, Monkton, St. Mary Cray and Westwell, while successive Archbishops received the tolls from their markets at Crayford, Croydon, Mayfield, Northfleet,

Fig. 1.25 South-East England. Medieval markets and communications



Reculver, St. Nicholas Thanet, Wingham, Wrotham and elsewhere.

As we have seen (Section 1.5.1), however, some medieval markets were held by prescriptive right and the legal status of others was sometimes unknown. The Custumal of the Archbishop's lands in Sussex records in 1285, for instance

'... that the market is held at Uckfield each Monday and at Wadhurst each Saturday, but it is not known if by licence or not. And the lord Archbishop has a full liberty in them of pillory, tumbrel and other things pertaining to a regality' (Redwood & Wilson 1958, 95).

Thus, the charter evidence is by no means a complete guide to the distribution of medieval markets. Nevertheless, the social and political influences indicated by the charters must be considered when interpreting the organisation of inland trade.

1.5.4 Fairs in the middle ages and afterwards

More often than not, the right to hold a fair was granted with a market charter, the date of the fair often coinciding with the feast day of the Patron Saint of the parish church (Coates 1965, 97). In several areas, the most popular months for a fair were in September and July (ibid., 99; Reed 1978, 572). Unlike the weekly market, annual fairs attracted long-distance trade (Danks 1977, 360) and some acquired national and even international significance (Salzman 1931, 143). Fairs were certainly an international phenomenon:

'The majority of western and central European countries ... were ... characterised by what can only be described as a rash of annual and biennial commercial gatherings' (Verlinden 1963, 151).

It is important, therefore, to consider the relevance of these gatherings to the distribution of domestic utensils such as pottery.

If fairs were a vehicle for an international trade in medieval ceramics, then one might expect a higher proportion of continental imports at inland sites than appears to be indicated by the archaeological record. Nevertheless, potters are known to have sold their wares at fairs during both the medieval and post-medieval periods. In the eighteenth century Lowestoft porcelain figures seem to have been inscribed specifically for sale as souvenirs at fairs (Danks 1977, 368-71). Thus, although ceramics probably did not rank significantly among exotic foreign goods sold at fairs, local potters would doubtless have seized the opportunity to sell their wares at

these annual gatherings just as they would have done in the weekly market.

Information derived from 400 recorded transactions at post-medieval fairs suggests that the trade can be divided into four geographical zones (Everitt 1967, 537-8):

- 10-mile radius: market area
- 10-30 miles: local fair area
- 30-75 miles: regional fair area
- Over 75 miles: national fair area

A similar pattern can probably be inferred for the larger medieval fairs (Hulbert 1936, 154-9). If this assumption is correct then the limited occurrence in any archaeological context of marketed ceramics more than 30 miles or so from their source of manufacture implies that sales of pottery within the 'regional fair area' were insignificant. Indeed, it seems unlikely that either the potter or his customers would take the trouble to carry these fragile low-value goods over longer distances than were necessary. Nevertheless, the mobility of tradesmen attending rural fairs may have been significant in the transmission of ceramic styles from one region to another. Moreover, it is tempting to speculate that certain ceramic novelties such as bird whistles could have been sold as trinkets at annual fairs.

The influence of fairs on mobility of the population is attested by the recorded concern about the spread of infection at times of plague during the sixteenth and seventeenth centuries. In 1610, for example, the inhabitants of Sandwich were forbidden to attend fairs at Staple and in the Isle of Thanet because of infection within the town (KAO: Sa/Z B2/56). At Hastings on the other hand the fair was cancelled in 1582 for fear of infection brought by strangers (Baines 1955, 169), and the fair at Battle was cancelled for similar reasons in 1666 (*ibid.*, 170).

Despite regional variations, there is a remarkable degree of uniformity among the range of English medieval ceramics: inter-regional contacts through annual fairs should be considered as one possible, if partial, explanation.

The material evidence recovered from the sites of medieval and post-medieval fairs has seldom been examined systematically, yet the amount of metalwork recovered from the area in which the fair was held at Nutley, East Sussex suggests that such studies could be rewarding (C.F. Tebbutt, *pers. comm.* 1984). It seems likely that fieldwalking might indicate the extent to which identifiable non-local

ceramics occur at these sites. The location of medieval fairs can often be inferred from local field names: at Egdean, West Sussex the name 'Fairfield' occurs to the east of the Petworth road (Maxse 1935, 63) presumably where passing travellers might be tempted to pause; there is a 'Fair Place' at Otham, East Sussex (Salzman 1901, 187); at Rye post-medieval fairs were held not far from the site of the medieval pottery kilns (Holloway 1866, 16) but Celia Fiennes described the Beggar Hill fair as the 'saddest faire' she ever saw (Morris 1982, 129); while the name 'Ffayre Place' on an estate map of Chingley Manor presumably indicates the site of Combwell fair adjacent to the road from London to Rye, not far from the Kent/Sussex border (Local History Exhibition, Kilndown 1978). Tithe Awards, too, attest the location of fairs at West Malling (TA 380; 381); Baddlesmere and Leaveland (TA 5) and Great Mongeham (TA 247).

Undoubtedly, the sites of fairs will have changed over the centuries, and the material evidence may be slight. Nevertheless, there can be few comparable instances where the archaeological record of a known centre of exchange - albeit one of a specialised kind - is likely to remain relatively undisturbed owing to the isolation of sites often set aside for fairs.

1.5.5 Status and topography: towards a hierarchy of market centres

Three broad classes of medieval market centre have been identified so far: market towns, rural markets, and fairs. Differences of scale have been noted among the market towns, and it is evident that some village markets possessed features similar to those of the lesser 'towns' (Section 1.5.1). Assuming that the hinterland of a medieval market was determined among other factors by the size and economic significance of the market itself, then there is clearly a need for more precise classification. The relative importance of a medieval market would affect not only the location of its competitors but also the area from which traders and their customers would be drawn. This is significant, therefore, when interpreting the artifact evidence for medieval inland trade.

Geographers have sought to establish settlement hierarchies according to population sizes (Berry 1967, 20-23), and Russell (1972, 20-23) attempted similar classifications for medieval European cities and their regions. Deficiencies in the available population data, however, preclude accurate classification of lesser medieval

settlements using these criteria. The three-tier classification outlined by Harvey (1983, 77) is more appropriate to medieval England:

1. Towns acting as regional centres with long distance trade contacts
2. Local market centres with traders and craftsmen serving small areas
3. Villages where the population was predominantly involved in agriculture.

At this level of generalisation it is realistic to expect that contrasting patterns in the archaeological record of these settlement types might be recognisable.

In practice, however, certain medieval towns do not conform precisely to the requirements of either a regional or a local centre, and, as we have seen, some villages functioned as local markets. A more precise classification is therefore required (see Section 1.5.1). For the purposes of a regional study, in which detailed research into individual towns and villages would be impractical, it is convenient to consider the hierarchy in terms of the 'urban attributes' described by Heighway (1972, 9).

The following classification of medieval settlements during the period c.1290-1340 forms the basis of Fig. 1.26, and has been used for the illustrations which accompany discussion concerning the marketing of medieval ceramics (Sections 6.1 to 6.4).

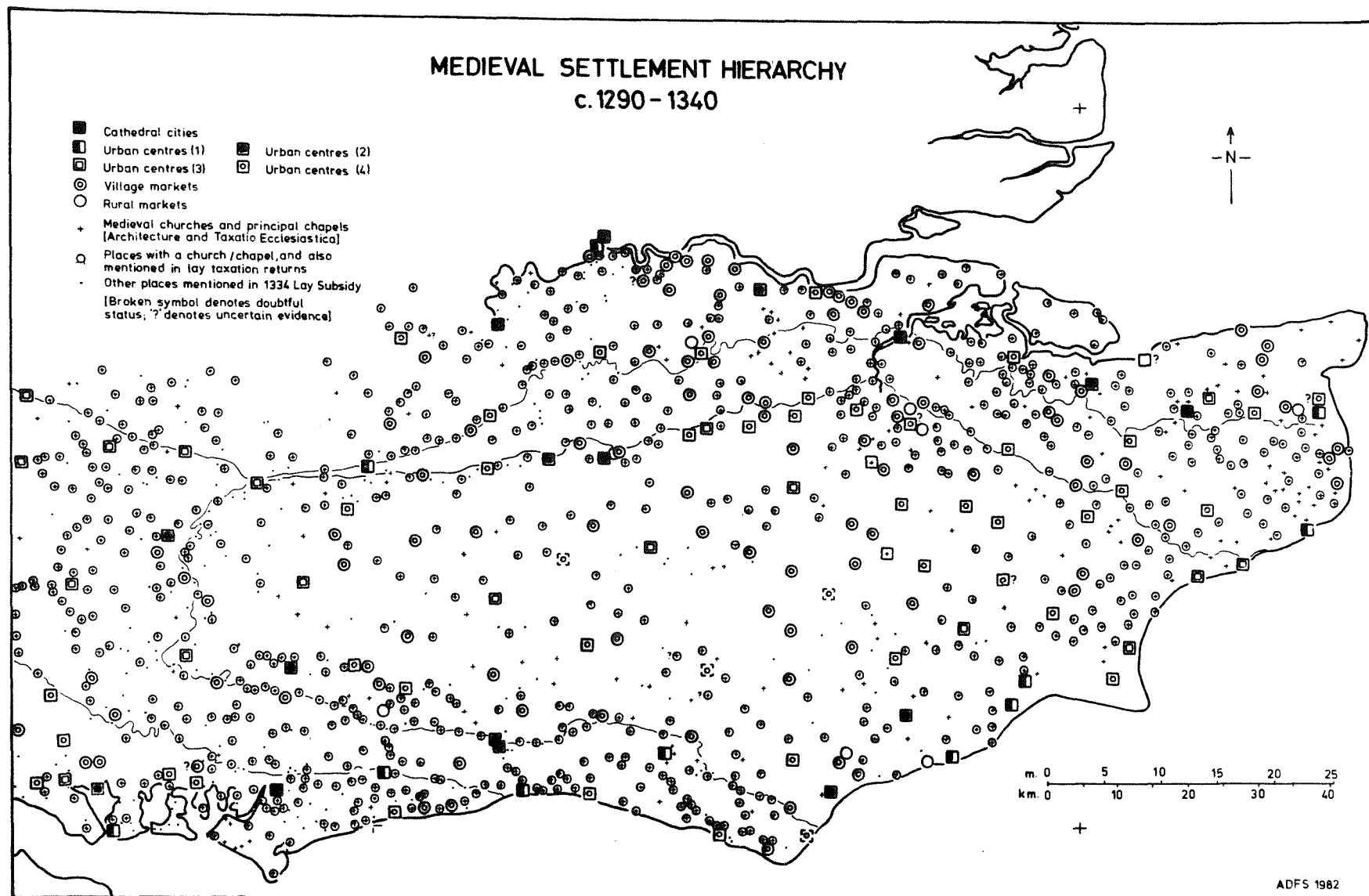
Cathedral cities

Major medieval towns including Chichester (after 1075), Canterbury, Rochester and London, distinguished by their ecclesiastical significance but also ranking as important economic centres. All four are on the sites of former Roman towns. As a measure of their economic significance, lesser medieval markets are scarce in the vicinity of both Canterbury and Chichester.

Urban centres: 1

Principal medieval towns and ports, characterised by Friaries, multiple ecclesiastical parishes and, in some cases, stone defences. Such centres include Guildford, Arundel, Lewes and several of the Cinque Ports. A few towns in this category had suburbs where urban religious houses such as Friaries were sometimes situated (Keene 1976, 72). It should be emphasized, however, that ecclesiastical parishes were often an early creation and do

Fig. 1.26 South-East England. A hierarchy of settlements and market centres c. 1290-1340



not necessarily provide a satisfactory guide to the progress of urban expansion (Platt 1976, 53; 55).

Urban centres: 2

Towns which had acquired burghal status and other 'urban attributes' such as a hospital, castle or planned streets but which possessed neither a Friary, nor multiple parishes, nor stone town defences. Typical examples of such towns include Faversham and Tonbridge in Kent; Reigate in Surrey; and Steyning, Bramber and Battle in Sussex. These places are often distinguished by two or more weekly markets. In the case of Tonbridge, Barley (1976, 72) attributes the earthen defences to seigneurial initiative rather than to the corporate action of the burgesses. Several of the Cinque Ports also come within this category of medieval market town and Rigold (1982, 85) has drawn attention to the surprising number of stone-built houses at places such as Hythe, New Romney and Folkestone which points to the economic prosperity of these towns.

Urban centres: 3

Small market towns with recorded burghal status and an identifiable market place, but seldom with other features by which they could be identified as urban. This small group comprises places such as Brasted in Kent; Haslemere in Surrey; and Horsham and East Grinstead in Sussex. It also includes both Newenden, distinguished by its Domesday market, and Fordwich which had declined from its former importance as a Saxon trading centre.

Urban centres: 4

Lesser market towns are similar to those in the previous group but with no evidence of borough status. They usually have identifiable market places, and in some cases there is a hospital or religious house nearby. The distinction between these towns and those with borough status is of little economic significance but it has been retained for comparison with similar towns in other regions (Beresford & Finberg 1973). Towns in this group are distinguishable by their size from market villages (Everitt 1970, 9) and include many of the small Wealden towns such as Cuckfield, Hailsham and Pulborough in Sussex.

Market villages

These rural markets comprise villages for which charters attest the existence of a market - whether or not it was a successful foundation - yet where there is no clear evidence of planning around a market place. Such villages were usually mentioned in the Nomina Villarum of 1316 and possessed a parish church recorded in the Taxatio Ecclesiastica c.1292. Those settlements in this group which might qualify as small towns are denoted accordingly on Fig. 1.26.

Rural markets

A small number of market charters are recorded for places which cannot be identified with known villages. In these cases the term 'rural market' is used to denote what were probably manorial markets held in the countryside. Examples include Paddock, Petrisfield and Sentling in Kent, Marden near Godstone in Surrey; and Bulverhythe and Watersfield in Sussex. The precise location of these markets is not known, but topographical research may indicate that some were associated with minor medieval settlements.

Villages and rural centres

Villages with a parish church and which were mentioned either in the Lay Subsidy rolls or in the Nomina Villarum probably served as centres for minor transactions. In the absence of market charters, however, there is no evidence of formal trading.

Minor settlements

This last group of medieval settlements includes places which are not known to have a parish church but which are mentioned intermittently in the Lay Subsidy records. They can seldom be regarded as more than hamlets and are unlikely to have been of any significance as centres of trade.

The evidence from which these identifications have been made is summarised in Section 11.3 where the sources and their limitations are discussed more fully. There are undoubtedly instances where the classification is either inaccurate or inadequate, but this hierarchy of market centres does provide a broad geographical framework within which the marketing of medieval ceramics can be considered.

The lesser towns, market villages and other villages would have provided important outlets for locally-produced ceramics. The significance of these settlements in the medieval economy is acknowledged by historians, but there have been few regional surveys which attempt to define a settlement hierarchy (Ellison 1976, 6) and to distinguish market villages from their neighbours. The haste with which urban 'implications surveys' were produced during the 1970s usually precluded tackling the important subject of definitions. In Sussex, for example, Aldsworth and Freke (1976, 31-4) stated their aims clearly:

'This report is intended not as a definitive list of urban settlements, but is intended to include those settlements which appear to require a particular sort of attention that only arises when an urban place has been continually occupied until the present day'.

Nevertheless, it is misleading to distinguish rigidly between urban and lesser markets, for in the words of Platt (1976, 25):

'The creation, or recognition of markets by the King was essentially part of the general urbanising process, and it reached its peak in the reigns of Henry III and Edward I, just when the towns themselves were at their most vigorous'.

The topographical evidence which is so important to medieval urban archaeology can be equally instructive in the rural settlements.

Although medieval village plans were by no means static, topographical evidence in areas of late settlement such as the Weald does serve as a reliable basis for making general distinctions between small towns and villages. A selection of Wealden settlement plans, based on 1st ed. Ordnance Survey Maps and drawn to uniform scale, appears on Fig. 1.27. With the exception of Pembury, which has an isolated medieval church devoid of accompanying settlement and is included only for comparison, the market place can be identified on all of the plans. In most cases it took the form of a slight swelling in the width of the highway near the church, but at Wadhurst the triangular development compares closely with the 'shambles', as it was known in the seventeenth century, on the west side of Tonbridge High Street. As we have seen, this topographical evidence might point to an infilled market place at Wadhurst. Encroachment is certainly well documented from air photographs of medieval towns elsewhere (Beresford & St. Joseph 1979, 179-80).

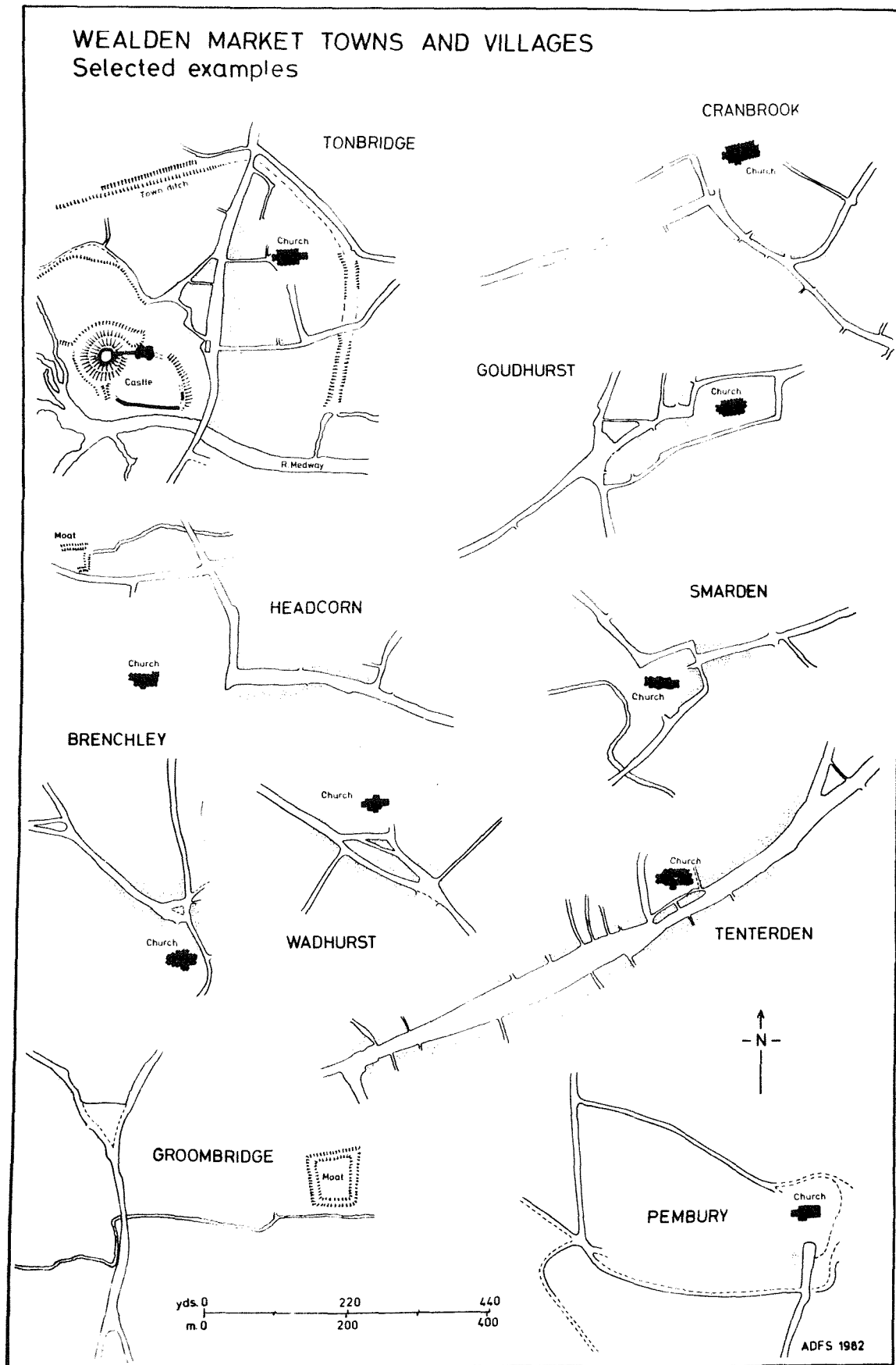


Fig. 1.27 Wealden market towns and villages: the topography of selected examples

Narrow building plots at Tonbridge (Chalklin 1961, 154) do not necessarily represent planned burgage tenements, but they do indicate a degree of pressure for access to the street frontage which is not apparent at East Grinstead where most of the medieval buildings were erected parallel to the street (Mason 1969, 53). This provides useful confirmation that Tonbridge would have been a more significant regional market centre than others in the Weald. At Battle, too, there is evidence of dense building along the High Street, especially where many craftsmen congregated near the market place (Searle 1974, 75). Documentary evidence, however, serves as a caution against placing undue emphasis upon present-day topography when interpreting the layout of a medieval town. Although Butler (1976, 39) cites Battle as a typical example of a town plan incorporating a market place at the gates of the abbey, documentary sources confirm that, during the twelfth century at least, the market was situated at the north end of the town (Searle 1974, 72).

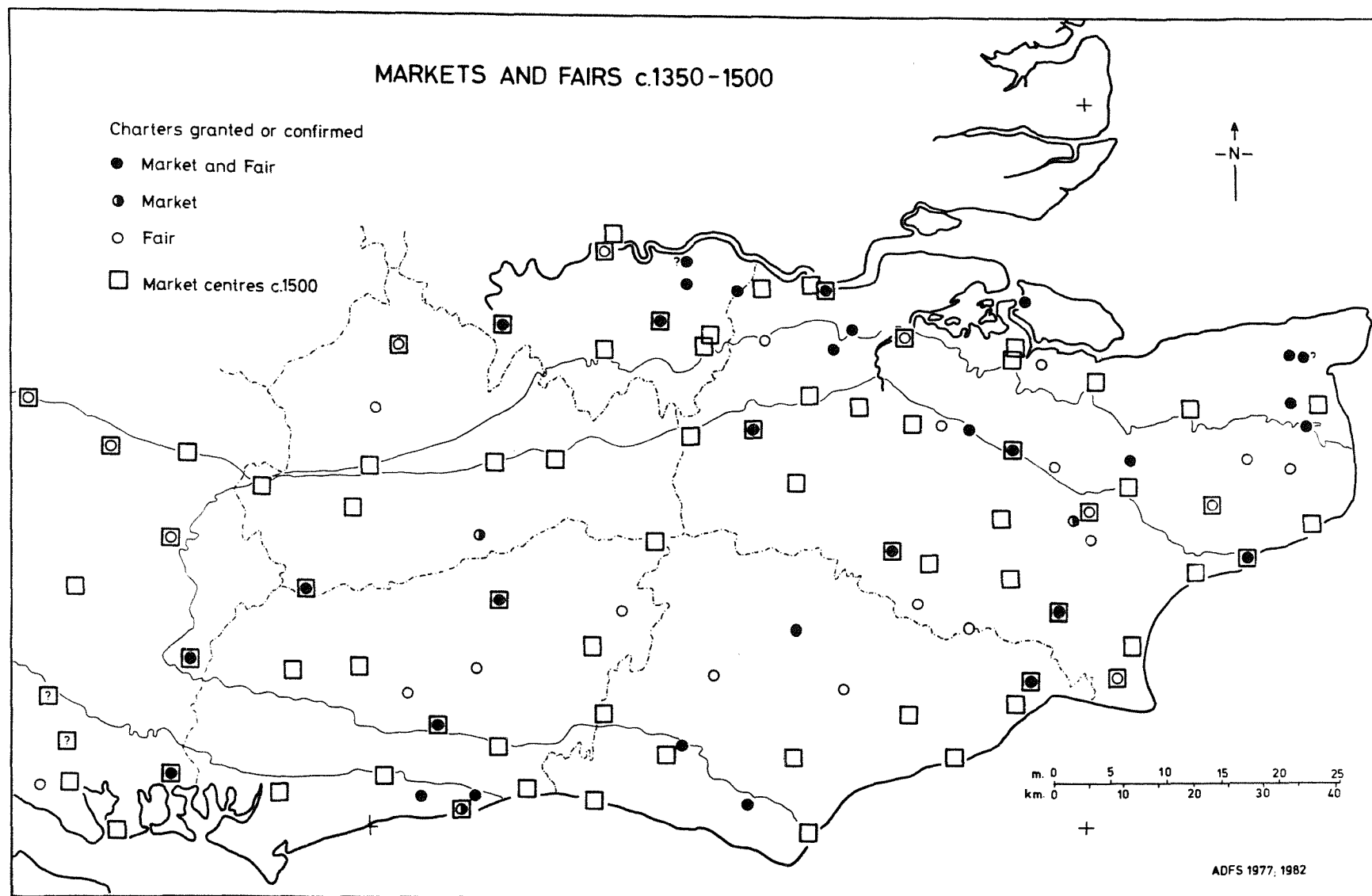
Little archaeological excavation has taken place in Wealden towns. It is not possible at present, therefore, to compare the ceramic assemblages represented at these former markets. It would be interesting to know, for example, whether non-local wares occur at regional market centres in the Weald or whether they did not reach any of the markets in this area. Thus, in addition to defining the probable extent of medieval market hinterlands, the establishment of a broad settlement hierarchy provides a framework within which to compare ceramic assemblages from different types of settlement.

1.5.6 Shops and market towns in the sixteenth century

In concluding this consideration of the medieval market economy it remains to assess the likely effects on the archaeological record of changes which had taken place by the sixteenth century both in the number of markets and in the nature of the business conducted in them.

Unlike certain regions, several market charters continued to be granted to places in the counties of Kent, Surrey and Sussex during the later fourteenth and fifteenth centuries (Fig. 1.28). Some of these markets were to have disappeared by c.1500, but other charters confirmed the market rights of centres which continued to flourish during the sixteenth century (see Section 11.1). Nevertheless, a figure of over 75% for the disappearance of former medieval markets by c.1500 is not uncommon (Britnell 1981b, 219),

Fig. 1.28 South-East England. Markets and fairs c. 1350-1500



while yet further decrease in the number of markets probably occurred at the end of the sixteenth century (Gulley 1960, 285). For the small market towns which did survive, the 90 tenements recorded at Reigate in 1622 was probably typical (VCH Surrey 1911, 233).

Decline of the weekly market at Battle in favour of shops at traders' houses had commenced by the late fifteenth century (Searle 1974, 365). Shops are seldom mentioned in wills but they may simply have been regarded as part of the house (Dulley 1966a, 95-108). At Ashford, for example, some shops were specifically described in 1516 as 'newe buylded' (Gulley 1960, 284). The decline of weekly markets in the sixteenth century coincided with a period of greater mobility (Unwin 1981, 245-7) and shops are recorded at villages such as Leeds in Kent which, so far as is known, had never possessed a weekly market (Everitt 1976, 183). Transactions were being conducted increasingly during the sixteenth century by travellers and traders operating from inns (Platt 1966, 178). Thus the weekly market no longer provided such a good opportunity for minor transactions such as the sale of domestic utensils which might once have accompanied the sale of agricultural produce.

As Everitt (1976, 168) has said,

'Despite the expansion of private bargaining in the sixteenth century the market town was still and was destined to remain the normal place of sale and purchase for the great majority of country people.'

Cornwall (1962-3, 54), too, cites the statement by William Harrison in 1557 which seems to emphasize the continuing significance of weekly markets:

'There are (as I take it) few great townes in England that have not their weeklie markets ... in which all manner of provision for household is to be bought and sold, for ease and benefit of the countrie round about'

Even in the seventeenth century a town such as St. Austel in Cornwall which did not have a weekly market was desirous of obtaining one:

'There is neither markett or faire within the mannor, but the towne is fitt for both especially being soe remote from markett townes. The nearest markett townes are Lostwithiel 6 myles, Tregney 6 and Grampound 6 myles' (cited by Shorter et. al. 1969, 119).

The opportunities for a potter to sell his wares at weekly markets had not therefore vanished completely, but middlemen and

direct sales at the workshop may have become relatively more significant as the number of rural markets decreased. As in the medieval period it seems unlikely that sixteenth-century potters would have occupied shops in the market towns. Nevertheless, the products of local craftsmen may have been purchased by tradesmen for sale in their shops alongside non-local goods. Indeed, there is evidence that some potters may themselves have diversified their interests and acted as general dealers (see Section 6.3.3). The later fifteenth century witnessed diversification in the repertoire of many potteries, accompanied, too, by the wider availability of mass-produced imported stonewares. Shops in which a wider range of goods could be kept in stock might now have become a significant factor in redistribution.

Concerning the disappearance of medieval markets in the Weald, T.W.D. Dearn (1814, 218) wrote:

'a change in the system of barter and sale ... almost superseded the necessity of markets, and for the most part rendered these grants but an empty boast, or at best but an evidence of the change of times'

There can be little doubt that the medieval market economy had been transformed, but the effects on the individual as identified by Dearn (1814, 219) are more questionable:

'the farmers wife and daughters released from the degradation of attending a weekly market, have now merely to attend to the weekly wants of the higler, who very politely waits on them: by this judicious arrangement, time is gained by the female part of the family; the mortifying necessity of displaying their stock of goods at the neighbouring market-cross is done away, and a consequent taste for more lady-like avocations, have gradually been manifested'.

2. METHODOLOGY (1) : A
REGIONAL RESEARCH STRATEGY
FOR THE STUDY OF MEDIEVAL
AND LATER CERAMICS IN
SOUTH-EAST ENGLAND

2 **METHODOLOGY (1): A REGIONAL RESEARCH STRATEGY FOR THE STUDY
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2.1 INTRODUCTION

It is a reflection of the administration of British archaeology that ceramic research tends to be based upon specific localities. Moreover, the rapid accumulation of data over the last decade or so no doubt accounts for the lack of recently published regional studies. Notable exceptions include the work of Barton (1979) and Vince (1981). Research on a regional scale is best suited to an appraisal of the economic aspects of production and distribution. The practicalities of data collection and sampling for these two aspects of the survey will therefore be considered separately in Sections 2.4 and 2.5.

In each case there is a need both for the re-evaluation of information which is already available and for the systematic collection of new data. Reappraisal of past pottery collections whether associated with kilns or derived from settlement sites, as advocated by Blake and Davey (1983, 7), necessitates systematic cataloguing and mapping of the data. Work being undertaken by the Medieval Pottery Research Group towards compilation of a national bibliography represents a substantial investment of effort to facilitate future research. Likewise, disparate sources of information for South-East England have been drawn together for the first time in the Gazetteers of production sites (Section 9.1) and consumer sites (Section 10.2). These are intended not only as the basis for drawing general conclusions about ceramic production and distribution in the region, but also as a source of information for more detailed research in future (see Section 10.1).

In order to assess the potential and limitations of existing collections, it is necessary to examine briefly the circumstances in which medieval and later pottery has been recovered from the archaeological record. Changing approaches to the study of ceramics have been reviewed in Section 1.2. The range of stratified assemblages available to the ceramicist, however, has always been determined by the selection of sites for excavation. An appreciation of the bias inherent in the data is therefore essential not only for interpreting the evidence but also as a guide to the requirements of future research.

2.2 ARCHAEOLOGICAL FIELDWORK AND EXCAVATION

2.2.1 Excavations and fieldwork on medieval sites before the 1960s

Until the 1950s, the recovery of material evidence from medieval sites in South-East England was determined by three principal factors, none of them conforming to a co-ordinated research strategy.

Many sites were identified by chance discovery and by the excavation of areas threatened with destruction. The geographical bias of this evidence was determined by the extent to which archaeologists were active in those areas where disturbance of the archaeological record was taking place. Thus the medieval finds at Lewes during construction of the railway in the nineteenth century and the excavations at Chichester during the 1930s and 1940s resulted from a common threat of destruction coupled with local enthusiasm to recover evidence of the past.

Regional variations in archaeological activity are also apparent in the selection of unthreatened sites for excavation. In addition, however, the choice was influenced by the interests of the excavators. Thus, clearly-defined sites such as castles and moats received more attention than unenclosed settlements (Hope-Taylor 1950). Compared with interest in the prehistoric and Romano-British periods, however, relatively few medieval sites were excavated before the 1950s.

Ownership was the third significant factor which determined the recovery of material evidence from medieval sites in the region. Thus at Bodiam Castle, for example, it was the initiative of Lord Curzon which led to the salvage of artifacts when the moat was dredged in 1919. While there was nothing on the scale of the work undertaken at the Yorkshire abbeys during the 1930s, monuments such as Pevensey Castle which had been placed in guardianship of the Office (later Ministry) of Works also received attention as the task of consolidation and display progressed. At Bramber Castle, too, finds were recovered in the course of similar work undertaken by the National Trust during the 1950s (Barbican House Museum, Lewes: 57.18).

While certain ceramic assemblages recovered during this period can yield useful information concerning the distribution of regional types, their value for quantified analysis is limited owing to selective recovery. Moreover, with the notable exception of the Saxon settlement at Medmerry Farm, Selsey (White 1934) and the work at Bramble Bottom, Eastbourne, few lesser medieval settlements had been

examined. Publications by Winbolt (1933) and Straker (1933) summarised respectively the identification of glass-making and iron-working sites in the Weald. At that time, however, there was little artifact evidence to assist with dating. Indeed, among the earliest attempts to integrate topographical survey with the systematic recovery of artifacts from the fieldwalking was the work undertaken on Sussex deserted medieval villages by E.W. Holden during the 1950s. This work was important not only because many of the sites have since been destroyed by ploughing but also because it was a forerunner of the more intensive identification and recording of medieval sites undertaken during the 1960s and 1970s.

Publication of The Archaeological Newsletter from 1948 onwards stimulated a wider interest in field archaeology. Notable at this time in South-East England was the work of Lowther and Hope-Taylor in Surrey. Indeed, the 1950s and more particularly the 1960s witnessed numerous projects undertaken by local archaeological societies. Much of the evidence concerning medieval pottery distributions is derived from assemblages recovered by local societies during this period.

2.2.2 Two decades of change: the organisation of archaeological fieldwork and excavation 1960-1980

The increasing number of medieval sites investigated during the 1960s reflects the activities of museums, local societies and of excavators working on behalf of the (then) Ministry of Public Buildings and Works. Each had different priorities.

Museums in West Sussex, for example, acted as the centre for a network of voluntary local correspondents who notified chance discoveries. These included numerous finds of medieval pottery which were published in annual summaries contributed to the Sussex Archaeological Collections. Similar notes published by museum staff at Maidstone, Canterbury and Guildford also included chance medieval finds. Furthermore, some museums, notably Worthing and Guildford, became involved either directly or indirectly with excavations. Even quite small excavations such as those undertaken at Tarring, West Sussex (Barton 1964a) helped to establish regional ceramic chronologies. These, in turn, provided a means of dating the sites which had been discovered. Moreover, with the identification of medieval kiln sites, the numerous small assemblages from settlement sites could be used to assess patterns of ceramic marketing. Although

these collections are of limited value for quantified analysis their geographical significance in terms of the presence or absence of a particular ware should not be under-estimated.

Several significant medieval sites were investigated by local archaeological societies and individuals during the 1960s, while other sites excavated previously were now being published. In Kent, for example, the publication of pottery groups from Pivington (Rigold 1962) and New Romney (Rigold 1964, 60-67) redressed the geographical bias of the ceramics reported from Joyden's Wood in West Kent a few years earlier (Dunning 1958a). D.J. Turner published pottery from several medieval sites in east Surrey, including Merton Priory (Turner 1967a) and a moat at Burstow (Turner 1966). Members of the Bourne Society were also active in the recording of newly-discovered sites (e.g. Little 1963b). In Sussex, important work was undertaken by Dullea (1967) at Pevensey; by Barton and Holden (1967a) at Michelham Priory; by Martin (1972b) at Glottenham; and by Barr-Hamilton at Stretham (Wilson & Hurst 1959, 317 and annual summaries to 1978). All these projects demonstrate the increasing pace at which medieval pottery was being recovered during the 1960s. In the majority of cases, however, quantities were of sufficiently manageable proportions to be published in full by the excavators.

Larger assemblages were recovered from excavations conducted by the (then) Ministry of Public Buildings and Works. The Guardianship sites with their structural sequences and associated documentation often yielded independent dating evidence which was not forthcoming from moats and settlements investigated by local societies. In Kent, for example, a ceramic sequence was recovered from various excavations at Dover Castle (Rigold & Mynard 1967; Cook et.al. 1969; Maynard 1969) and important stratigraphic evidence was derived over a period of some years from work at Eynsford Castle (Rigold 1971; Rigold & Fleming 1973). Stratified ceramics were also found at Temple Manor, Strood (Rigold 1965b). Historical synthesis, however, has assumed greater importance than study of the artifacts recovered from excavations undertaken in connection with preparation of the History of the King's Works (Brown et. al. 1963; Colvin et. al. 1975; 1982). Nevertheless, significant groups of medieval and post-medieval pottery await publication from some of the royal sites.

The research project launched in the mid 1960s by the Royal Archaeological Institute to investigate the origins and development of English castles included the excavation of two castles in Sussex.

Results from Hastings were disappointing owing to later disturbances (Barker & Barton 1977), but the work at Bramber yielded an important ceramic sequence (Barton & Holden 1977).

Early 'rescue' excavations in Sussex during the 1960s sponsored by the Ministry of Public Buildings and Works included the deserted medieval village at Hangleton (Hurst & Hurst 1964) and the medieval castle at Tote Copse, Aldingbourne (Brewster & Brewster 1969). Threatened urban sites were also recorded on behalf of the Chichester Excavation Committee and by museum staff working at Steyning (Wilson & Hurst 1968, 162; *ibid.*, 1969, 267), Lewes (Thompson 1967) and elsewhere. In Kent, the cause of rescue archaeology was taken up by a confederation of local societies united under the Kent Archaeological Research Group's Council (later renamed the Council for Kentish Archaeology) which was founded in 1965. Discoveries noted in the Kent Archaeological Review, published quarterly since April 1965, included several medieval sites recorded during road construction, pipe-laying and building works. As with the network of local correspondents reporting to museums in West Sussex, the significance of chance discoveries in Kent for defining ceramic distributions should not be under-estimated. In addition to projects organised by the Council for Kentish Archaeology, urban excavations were also conducted during the 1960s and early 1970s in Rochester (Harrison 1970; 1972) and on a small scale in Canterbury (Millard 1971, 215; Wilson & Hurst 1970, 169; Wilson & Moorhouse 1971, 139).

The policy towards rescue archaeology during the 1970s was different in each of the three counties. In Kent, the activities of the Council for Kentish Archaeology and its constituent groups were supplemented by the full-time staff of the Kent Archaeological Rescue Unit. The aims of both organisations were (and still are) to excavate and record as many threatened sites as possible. Since its foundation in 1976, work by the Canterbury Archaeological Trust has added significantly not only to knowledge of the City's development, but also to the study of medieval ceramics. Documentary research and structural analysis accompanying the excavation of deeply stratified sites has yielded numerous dated groups of pottery. After some eight years of work in the City, the collection of medieval ceramics is undoubtedly the largest from any town in the region, outside Southwark and the City of London.

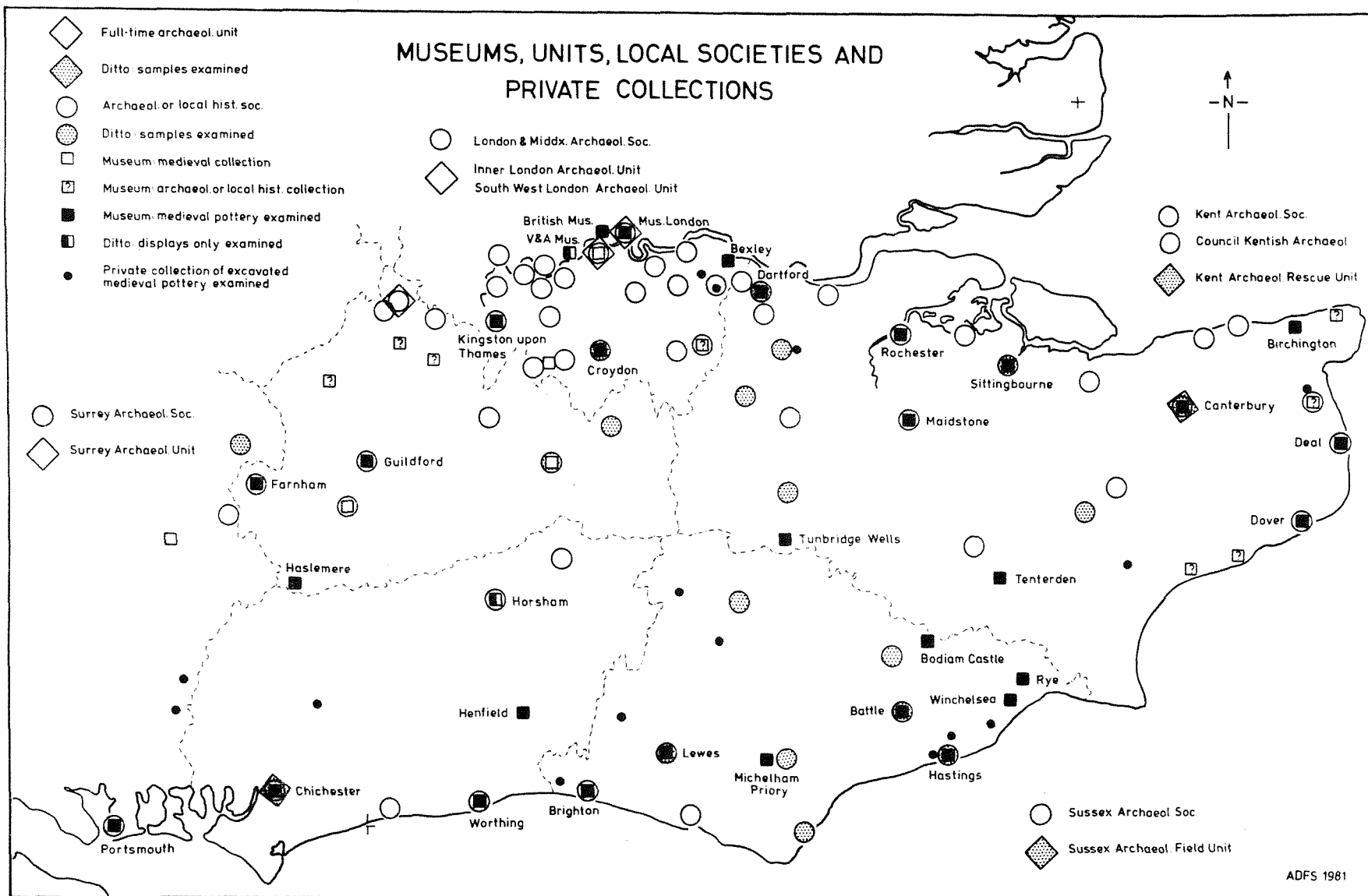
In contrast to Kent, the newly-founded archaeological unit in Surrey was attached initially to the Surrey Archaeological Society.

Responsibility both for maintaining a sites and monuments record and for excavation was transferred subsequently to the County Council. In East and West Sussex, however, the sites and monuments records have been maintained from the outset by the respective County Archaeologists, while excavations are undertaken by the Sussex Archaeological Field Unit, based at the London Institute of Archaeology. Founded in 1974, the Sussex Unit has conducted rescue excavations within clearly-defined research strategies. (Drewett 1974b). A project devoted to the study of medieval towns, for example, included 21 trenches excavated in seven Sussex towns between 1975 and 1982. Related to this work was the excavation of two pottery kilns - one at Lower Parrock, Hartfield (Freke 1979); the other at Ringmer (Hadfield 1981) - both of which were intended not only to refine the dating of ceramics found on urban sites, but also to assist with the identification of traded vessels as a means of assessing urban hinterlands. Projects undertaken by the Chichester Excavation Committee have remained independent of the Sussex Field Unit, and investigations at Eastbourne have been carried out by the local archaeological society there.

It will be apparent from the contrasting organisation of rescue archaeology and the different priorities for archaeological investigation in each of the three counties that the data available for ceramic research in South-East England are variable both in quantity and quality. Ceramic sequences have been established at places chosen for excavation on account of their intrinsic interest rather than because of their likely significance within a ceramic region. Likewise, sherd collections have accrued in areas where fieldwork has been encouraged rather than being collected systematically in order to define competing ceramic distributions. It is important therefore to evaluate the bias of these distribution patterns arising both from differences in the extent to which the archaeological record has been disturbed and from the variable enthusiasm with which the evidence has been recovered and recorded.

In Sussex, for example, Drewett (1974b, fig 12) has shown that threats to urban landscapes have occurred principally in the coastal area rather than in the Wealden towns. Fig. 2.1 shows, too, that archaeological societies and museums are more prolific on the south coast than inland. Information for Fig. 2.1 is derived from the Archaeologist's Yearbook 1977, supplemented where appropriate from local sources. This is not intended as a definitive statement of

Fig. 2.1 Kent, Surrey and Sussex. Museums, archaeological units, local societies and private collections



archaeological activity, but presented in such a form the map does highlight significant variations within the region. In the High Weald, for instance, most of the medieval pottery groups identified in the gazetteer (see Section 10.2.5) have been found by Mr C.F. Tebbutt, who has lived in this area since the mid-1960s. Distribution maps of medieval ceramics should certainly be compared with geographical variations in the intensity of archaeological fieldwork. Moreover, the scope of the present study can be evaluated in terms of the known pottery collections which have been examined.

2.2.3 Rescue excavations and research priorities in the 1980s

Demands for systematic recovery and recording of excavated data have been accompanied by the need to establish priorities for the deployment of limited resources available for rescue archaeology. Moreover, the increasing sophistication of excavation techniques and the growing specialisation of archaeological research has tended to discourage the activities of part-time excavators, both in the field and more particularly in the preparation of reports. In establishing priorities for archaeological research, it is necessary, therefore, to consider both the appropriate use of financial resources for large excavations and the potential contribution to be made by local part-time fieldworkers.

Urban surveys conducted rapidly during the 1970s (e.g. Hughes 1976; Aldsworth & Freke 1976; O'Connell 1977a) have assisted with establishing priorities for rescue archaeology in medieval towns, but no comparable assessments of the rural landscape have been published for the counties of Kent, Surrey or Sussex. Diverse approaches to fieldwork in rural areas have therefore included thematic studies concerned with particular types of site; surveys of landscape development in sample areas; and the random identification and recording of threatened sites. The extent of existing knowledge about certain aspects of the medieval landscape as compared with other archaeological studies necessitates a selective approach to national priorities for future research. Nevertheless, the geographical implications of ceramic distributions point to the continuing need for local fieldwork.

Experience has shown that random small-scale urban excavations seldom contribute significantly to an understanding of urban topography and development. In terms of ceramic research, however, there are numerous towns for which even a small sample of the

pottery sequence from a carefully-selected site would assist with the interpretation of marketing and distribution. Opportunities for excavation are infrequent owing to the constraints on development within conservation areas and because sites of potential archaeological interest are often occupied by listed buildings. Nevertheless, there is a strong case for encouraging local archaeological societies to undertake small-scale excavations on appropriate sites in any of the Wealden towns where an opportunity arises. By analogy with urban excavations in Surrey (O'Connell 1977a,5) and limited work in Tonbridge (Streeten 1976a), towns in the Weald are unlikely to yield deeply-stratified deposits, but the recovery of sample pit groups could be instructive for the assessment of ceramic marketing. Indeed, it would be useful to establish whether any of the Wealden towns were of sufficient size to necessitate the disposal of rubbish in pits rather than by spreading it on backland tenements. Significant questions of wider relevance than the needs of ceramic research (see Section 1.5.5) could therefore be answered with a modest investment of effort.

On the other hand, there are some towns in the region where excavations have not been undertaken hitherto and which present opportunities and problems which could only be tackled realistically by a programme of adequately-funded excavation and research. Among others, examples in Kent include Sandwich, Fordwich and Faversham, while resources could also be invested with benefit should suitable opportunities for excavation arise in Wealden towns of pre-thirteenth-century origin such as Tonbridge or Battle. The latter is of particular interest because the documentation for certain topographical changes has already been studied in detail (Searle 1974, 69-78; 351-367).

A thematic survey accompanied by small excavations undertaken on behalf of the Wealden Iron Research Group serves as an example of the results which can be achieved by part-time fieldwork in rural areas (Tebbutt 1981b, 57-59). Preliminary surveys by C.F. Tebbutt and M. Gardiner have also demonstrated the potential for identifying medieval settlement sites in the Weald. There would indeed be much to commend a sample landscape study in the High Weald for comparison with the Bullock Down project (Drewett 1982). In terms of ceramic marketing alone, it would be instructive to compare the material evidence from a larger sample of Wealden and downland farms than is currently available. Despite increasing pressure on woodland,

the threat of plough damage in the Weald does not yet compare with destruction of archaeological evidence on the downlands and in coastal areas of the region. Landscape studies in the Weald can therefore be organised as longer-term research projects rather than in the context of 'rescue' priorities. Nevertheless, experience has shown the difficulties of excavating medieval buildings on the clay subsoils of the Weald, and area-excavation certainly requires a skilled full-time workforce.

The potential contribution of ceramic studies has seldom been considered adequately in the formulation of research strategies for excavations. The need for large excavations to establish dated ceramic sequences has been acknowledged, but in addition to these expensive projects, fieldwork carried out on a part-time basis and coupled with analysis of pottery fabrics can help to define the extent of trade from specific kilns. The identification, excavation and publication of kiln sites therefore remains a high priority. Using sampling methods such as those recommended by Freke and Craddock (1980, 14-17), it is realistic to expect that all threatened kiln sites should be investigated wherever possible before destruction.

Quite apart from priorities for excavation and fieldwork, the future of ceramic research depends to a large extent upon the availability of accessible fabric type-series. These are essential for the principal ceramic sequences and need to be cross-referenced with the published reports and archives. Faced with limited resources it is important to establish priorities, possibly at the expense of detailed recording for the less significant groups (see Section 2.5.6). Above all, there is a need for close liaison between excavators and the museum staff through whom the material will be available for future research.

2.2.4 Museum collections

Most of the medieval and later pottery excavated in South-East England is deposited eventually at one of several museums in the region (Fig. 2.1). These collections therefore reflect the geographical bias of both fieldwork and acquisition. Moreover, it is reasonable to assume that the presence of a museum in a particular locality may result in the acquisition of material which would otherwise have remained dispersed and probably unknown in private collections. Indeed, a large number of medieval finds deposited in museums have never been published. No one has followed the example of

Rutter (1961) in publishing a complete museum catalogue of medieval ceramics (Blake & Davey 1983, 35).

The chimney pot from Cissbury, Sussex presented to the Mantellian Museum was among the earliest acquisitions of medieval ceramics by a museum in the region (Mantell 1836, 38). Rhodes (1978; 1979, 81-84) has documented the history of pottery collecting in London, and several medieval pots from London were acquired during the nineteenth century by museums in South-East England. This probably accounts for the presence of a London-type baluster jug accessioned among finds from Horsham at Brighton Museum (Ae 338). The jug is certainly not mentioned in the published report of these discoveries (Honeywood 1868). Pottery from London is also to be seen in museum collections at Maidstone, Canterbury and elsewhere. Indeed, pottery from the kilns at Cheam and Rye was dispersed widely among museums in the region (see Sections 9.1.2, no. 85 & 9.1.6, no. 502).

Much of the post-medieval High Halden ware in Maidstone Museum was purchased by Dr. Gordon Ward from households in the vicinity of the kilns (Kentish Express, 19 April 1930). His methods of acquisition were clearly similar to those of Solon (1883, vi-vii) in the nineteenth century. Sherds of medieval pottery, however, generally came from private antiquarian collections when they were donated to local museums. Finds belonging to Benjamin Harrison of Ightham for example were deposited at Maidstone Museum. With a few exceptions, it was not until the 1940s and 1950s that large amounts of excavated medieval pottery were acquired by museums in the region. Since then, quantities have increased steadily to the extent where many of the museums now have supplementary storage facilities for their archaeological collections. Most have adopted a policy of accepting material only from excavations within a specified area.

Owing to other commitments and priorities, museum staff seldom have enough time to undertake academic work on cataloguing their collections (Hinton 1983, 5). The integration of excavation and museum recording systems is therefore particularly important in order to avoid duplication of effort. Jefferies (1977, 14-15) has stressed the need for compatibility of computerised excavation records with museum documentation (IRGMA) systems. In Kent, Surrey and Sussex, however, only one of the 20 or so museums visited between 1976 and 1979 had adopted the IRGMA system at that time, although others did have integrated excavation and accession records.

The bulk of pottery recovered from urban excavations in

particular reinforces the need for a fabric type-series to facilitate quick comparisons with material from other sites. Reserve collections of medieval pottery are consulted principally for comparing and identifying fabrics and types. Only when a particular group, or indeed the assemblage as a whole, is to be reassessed would it be necessary to examine the entire collection. Thus there is a strong argument in favour of easily accessible reference collections with the bulk of material confined to long-term storage, situated, if necessary, away from the main museum building.

A national reference collection of medieval pottery was established at the British Museum during the 1960s (Bruce-Mitford 1964), accompanied later by a similar collection of post-medieval ceramics at Stoke-on-Trent (Blake & Davey 1983, 51-2). The problems of storing excavated material in bulk have been faced by many of the larger museums and archaeological units where reference collections have been formed. It might be reasonable to expect therefore that the submission of an adequately-documented type-series should become a condition of accepting large quantities of excavated material for museum storage. This is especially important in an area such as South-East England where archaeological work is being undertaken by numerous different organisations of varying academic status.

2.2.5 Publication and information technology

Dissemination of the increasing amount of information derived from an excavation raises similar issues to those concerning long-term storage of the finds. Some information will be relevant to the general reader whereas the specialist may require more detail for making comparisons with other sites. Most of the data, however, are only likely to be needed for fundamental reassessment of the site itself.

The so-called Frere report of the Ancient Monuments Board (1975, 2-3) introduced to archaeological publication the concept of 'levels' of information which would be appropriate for excavation archives and published reports. The idea of a comprehensive final report to appear in print had become untenable. Since then, however, the development of microfiche has provided opportunities for greater flexibility in the content of excavation reports. Consensus has yet to be reached, however, on the extent to which microfiche ought to be used in preference to the printed page.

There is agreement that data used to substantiate the

arguments in a published report should be presented in an accessible form (Blake & Davey 1983, 24), whether on microfiche or as a typescript supplement available on request. Faced with rising printing costs, it is necessary to strike a balance between the need for economy and the demand for increasingly sophisticated recording and analysis of ceramic assemblages. Visual summaries of the data using charts and tables are essential (Blake & Davey 1983, 28-34), but microfiche itself is unsuitable for comparing illustrations. Usefulness of the fiche therefore depends upon the availability of facilities for print-out.

The costs of disseminating the information in any form are meagre by comparison with the salaries of staff engaged on recording and analysis of the finds. As with the selection of sites for excavation, it is necessary, therefore, to establish strict priorities for ceramic research and publication (Davey 1983, 92). Thus, there may be poorly-stratified sites in areas where information concerning the ceramic sequence has already been recovered and for which no more than preliminary processing of the finds is appropriate. On the other hand, ceramics from a similar site in an area where pottery has not been studied hitherto might merit more detailed analysis to assist with the interpretation of ceramic marketing. Discussion of excavation research designs provides an appropriate forum for considering such priorities.

The potential of an artifact assemblage is seldom apparent until the excavation is complete. Priorities for publication should therefore be considered once the likely significance of the evidence can be evaluated, but before resources have been invested unnecessarily in unrewarding analysis. Administrative considerations may dictate that priorities be established and funds allocated for particular sites, but there is a danger that this could impose an undesirable academic rigidity on the evaluation and interpretation of results. It may often prove worthwhile, for example, to examine the finds from several similar sites together. Indeed, even such fundamental work as the calibration of an urban stratigraphic sequence is only likely to be accomplished after the material from many different sites has been considered. It is important therefore to allow sufficient flexibility for part at least of the resources available for post-excavation work on individual sites to be devoted to wider studies from which the site reports could benefit.

The balance between information contained in an excavation

archive, on microfiche, and in a printed report will depend both upon the significance of the evidence itself and the extent of previous research in a given area. It would be inappropriate to publish in detail the ceramics from a small excavation simply because none had been examined previously from the area, yet it is realistic to expect that geographical considerations should be taken into account when assessing the form in which stratified sequences are to be published. It is important to ensure a good geographical range of material published in an accessible form. Moreover, there are cases where it is justifiable to review ceramic sequences in conjunction with previous discoveries as a basis for future pottery classification in an area.

There has been no uniform approach to the publication of medieval ceramics in South-East England, because (outside London) it is only in Canterbury and Chichester that the quantity of pottery from excavations has necessitated a review of policy. In many of the Sussex towns, for example, pottery reports have appeared on a site-by-site basis. Successive volumes of Chichester Excavations, however, have included a range of local types as they occur on excavations within the city. Emphasis has been placed on typology and dating rather than on quantification. Moreover, items have generally been selected for illustration in order to fill gaps in the type-series rather than as a comprehensive record of stratified groups. Such an approach could provide a means of selecting significant groups for more detailed analysis once a wide range of material has been recovered.

In Canterbury, on the other hand, several sites have yielded sequences of unquestionable importance which necessitate detailed analysis. Thus, reports published in the Archaeology of Canterbury series include a synopsis of the ceramic sequence for each site to be accompanied eventually by a more comprehensive review of the type-series for the city as a whole. Preliminary statements have been issued already for some of the wares (Macpherson-Grant 1981a; 1981b). This approach is similar to that established for Oxford (Mellor 1976; Haldon & Mellor 1977) and now adopted in the City of London. The publication of well-documented classifications will be indispensable to ceramic research in the region. Moreover, a type-series to which subsequent finds can be related will undoubtedly offer economies for publication in future.

Thus, the establishment of a regional type-series is

important in terms of both publication and museum storage (see Section 2.2.4). In view of visual similarities between fabrics from different parts of the region, it could be misleading to attempt a comprehensive fabric classification. Instead, a reference collection for each of the major towns and stratified sequences could be integrated with existing museum storage arrangements. Save for a few exceptions such as the Canterbury Archaeological Trust and the Croydon Natural History and Scientific Society many areas in South-East England still lack the type of reference collections which have been established in other parts of the country. Without a systematic approach to pottery classification, published reports must inevitably contain uneconomic and repetitious descriptions.

2.3 NATURE AND AIMS OF THE SURVEY

2.3.1 Themes and definitions

Priorities for the recording, analysis and publication of medieval ceramics can only be evaluated reliably in the context of a regional survey (Streeten 1982d). In addition to examining the wider implications of production and distribution, this survey is intended therefore to provide a framework for the assessment of future priorities. Themes such as the pattern of use and disposal of medieval pottery can be approached more conveniently through site-orientated studies and have not therefore been treated in depth. Understanding of the chronology and of variations in technology, however, requires both a regional perspective and a detailed assessment of specific sequences.

Thus the evaluation of medieval pottery production in South-East England is concerned with the exploitation of raw materials; the relationship between the scale of production and potential customers; and changes in the location of manufacturing centres at different periods.

Assessment of distribution and marketing is based upon examination of diverse assemblages from consumer sites both for the identification of products from specific kilns and for the definition of regional types. Variations in market areas linked with changes in the location of kilns at different dates are of particular interest. Although thin-sectioning accompanied by textural analysis offers an objective means of identifying marketed kiln products (see Section 3), certain more general trends can be detected from visual examination of the fabrics.

Once the specific needs of ceramic research have been identified, it is to be hoped that these problems will be considered in the formulation of research designs for excavations in the region.

2.3.2 Data collection and sampling

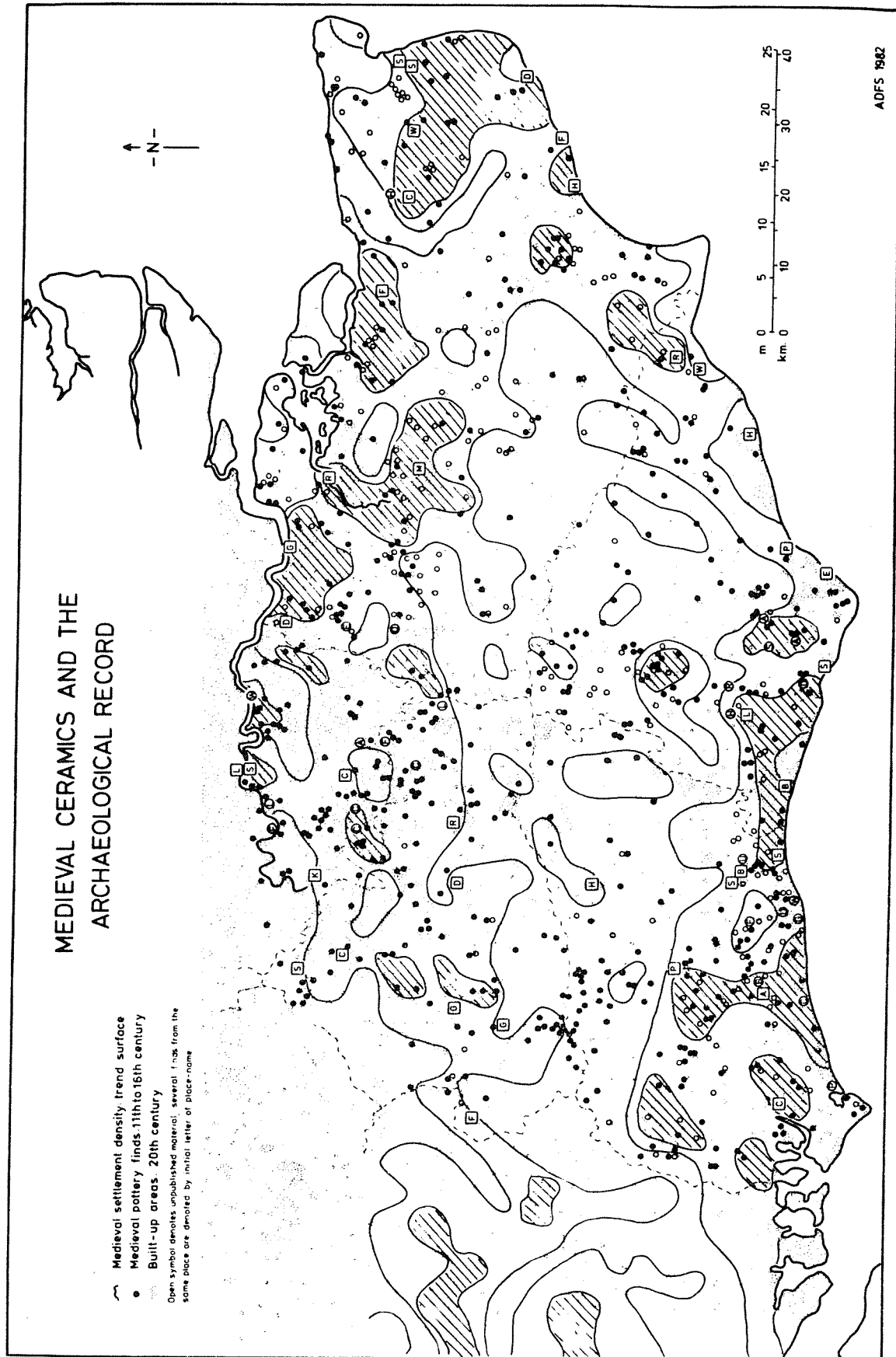
The quantity of information available places a strict limit on the area which can be examined, but the region must be of sufficient size to highlight variations. Indeed, a geographical approach to studying the economic aspects of production and distribution can only be effective at a regional level. The very scale of such a survey, however, imposes limitations upon its scope. Methods of data collection and of recording the information must

therefore be tailored to generalisation rather than to the needs of individual excavations.

Given the broad scope required for a regional study of medieval ceramics, systematic handling of the growing body of data becomes essential. Cherry and Shennan (1978a; 1978b, 105) have stressed the importance of sampling in regional research strategies. Unlike the sampling of the landscape as a basis for fieldwork, however, the study of artifact distributions requires extensive research in order to generate the data which can be sampled. Moreover, Sites and Monuments Records in South-East England could not be relied upon for comprehensive coverage of medieval pottery finds. Experience has shown, too, that it would be impossible to embark upon detailed recording without an extensive preliminary study of the material. In contrast to other types of regional research strategy, therefore, sampling cannot be considered for the study of artifact distributions without substantial prior investment of effort in data collection.

National and county journals, together with local publications, constitute the principal source of information about collections of medieval pottery. Comprehensive coverage of the literature has therefore been attempted for the counties of Kent, Surrey and Sussex. Most museums in Kent and Sussex known to have collections of medieval pottery - whether published or unpublished - have also been visited in connection with the survey. Coverage of museums in Surrey has been more selective (Fig. 2.1).

There are well over 1800 sites at which medieval pottery has been found in the region. The chances of recovery have been determined both by the density of medieval settlement and by the extent of modern development resulting in disturbance of the archaeological record, not to mention by variations in the intensity of fieldwork (see Section 2.2). Fig. 2.2 shows find-spots of pottery dating from the eleventh to early sixteenth centuries, distinguishing between published and unpublished collections. Differences in the number of unpublished collections reflect the geographical bias of museum visits, but it is instructive to compare the overall pattern plotted against both the trend surface of medieval settlement density (see Section 1.4.2) and the built-up areas shown on the Fifth Series 1:100,000 Ordnance Survey map. The evidence which can be derived from these collections is of variable significance, but identification and mapping is an essential preliminary to the sampling of ceramic assemblages.



ADFS 1982

Fig. 2.2 South-East England. Medieval pottery finds (Kent, Surrey, Sussex); medieval settlement; and modern built-up areas

In addition to examining the overall pattern of available ceramic evidence, it is also worthwhile to consider both the number and geographical distribution of excavated examples among certain clearly-defined categories of medieval site (Fig. 2.3). Only in the historic period can such assessments be made with much reliability, and it is salutary to recognise the limited extent of the information available. The maps on Fig. 2.3 have been compiled on the basis of known collections of medieval pottery (Section 10.2) combined with information summarised in the gazetteers (Sections 11.3 & 11.4). This is intended as an indication of those areas where the selection of sites for excavation could assist either with establishing ceramic chronologies or with the acquisition of data relevant to studies of pottery distribution. Marked geographical bias can be detected even among the large number of medieval towns in which excavations have taken place.

The characterisation of kiln wasters is crucial for the identification of traded vessels. Fieldwork to locate medieval and later potteries inferred from documentary sources and place-names therefore ranks as a high priority for research into medieval ceramics. Several sites have been visited in connection with this survey, but it has not always been possible to carry out intensive fieldwork under appropriate soil conditions to search for wasters. Indeed, it is ironical that of the three pottery kilns discovered in East Sussex alone since 1976 all have been found by chance with no apparent documentary or place-name evidence to suggest their existence. With a few exceptions, however, samples have been taken for thin-section analysis from known groups of medieval and later wasters in the region. Fig. 2.4 shows those production centres for which the results of textural analysis are available. Clearly, the analyses will be relevant to the study of pottery from contemporary settlement sites excavated in the vicinity of these kilns. Moreover, the gazetteer of medieval settlements (Section 11.3) provides a means of selecting sites for fieldwork in areas where the ceramic assemblages might yield information about competing pottery distributions.

It is envisaged, therefore, that the information contained in Sections 9.1, 11.3 and 11.4 could be used to compile a fieldwork brief either for known settlements in the vicinity of a medieval kiln site or for the evidence relating to pottery manufacture in a given area. In either case, a structured approach to fieldwork would enable

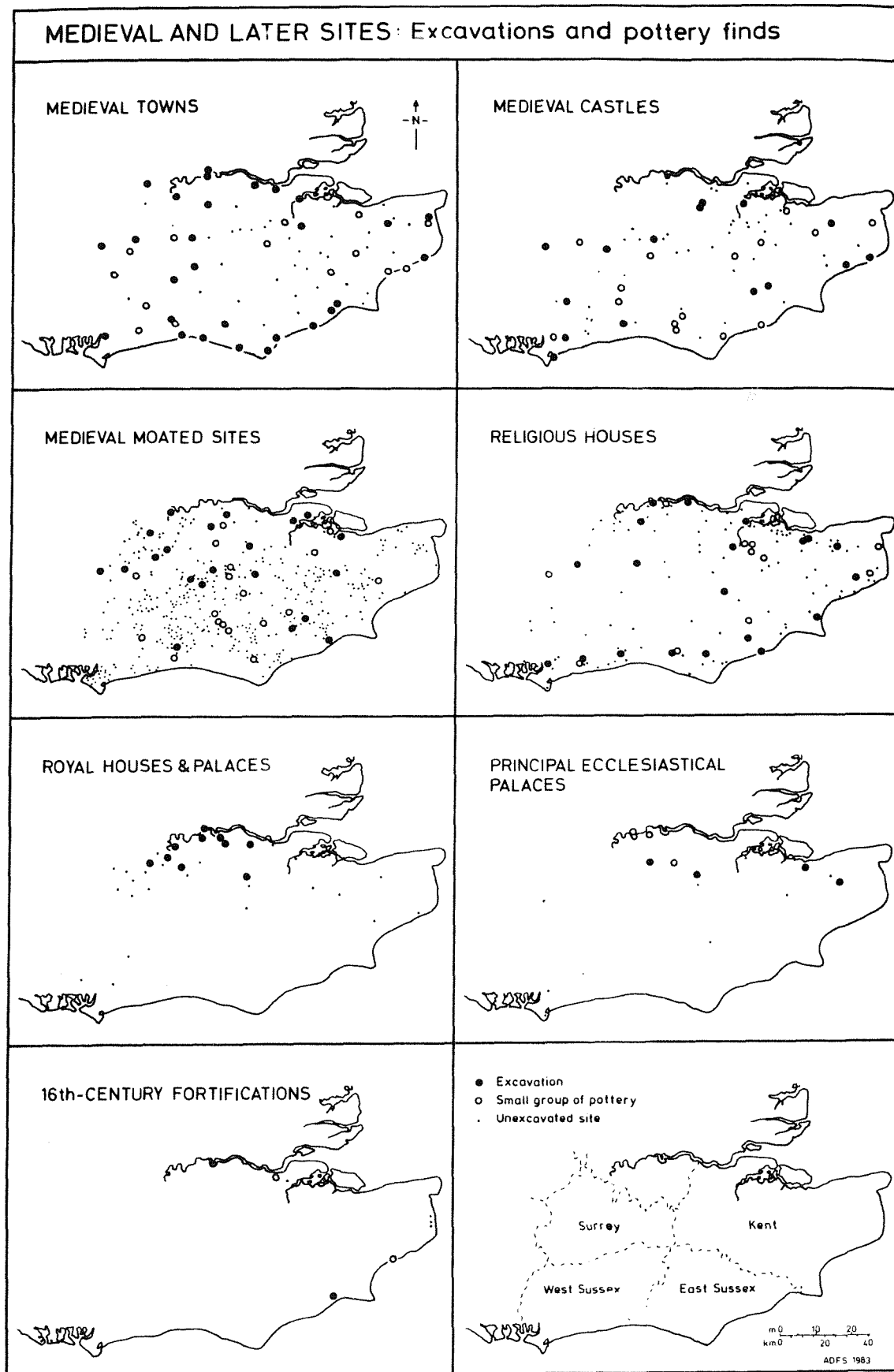


Fig. 2.3 Kent, Surrey and Sussex. Excavations and pottery finds from medieval and later sites in the region

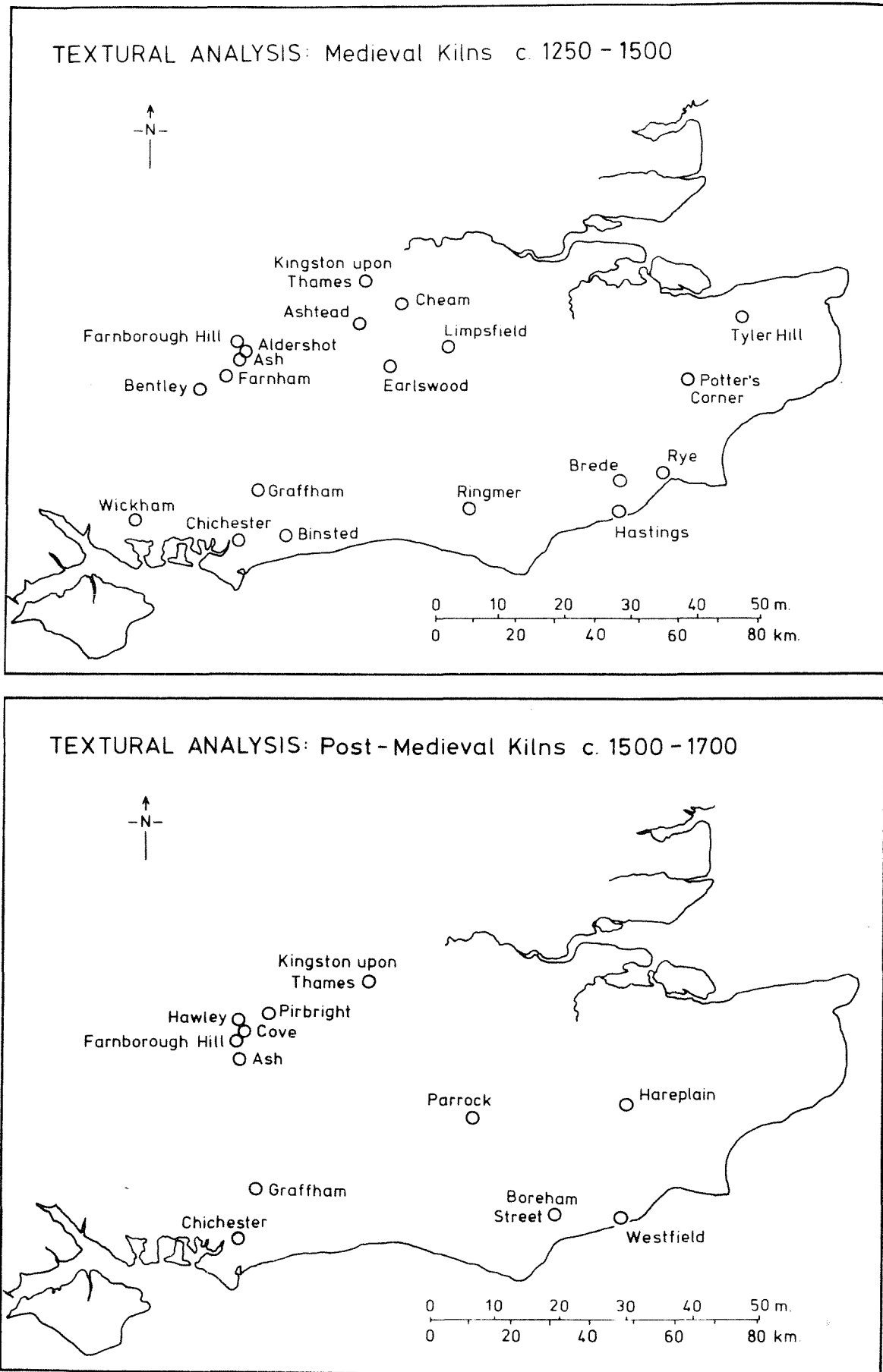


Fig. 2.4 South-East England. Characterisation of wasters from medieval and post-medieval pottery kilns

informed judgements to be made concerning both research priorities and the identification of pottery fabrics.

Having considered the nature of the available information concerning medieval ceramics in South-East England and having explored the potential for future research, it is appropriate now to examine methods of assessing respectively the evidence for ceramic production (Section 2.4) and distribution (Section 2.5).

2.4 EVIDENCE FOR CERAMIC PRODUCTION

2.4.1 The evidence and its limitations

Unlike the study of landscape history, it is seldom worthwhile to undertake fieldwalking in search of medieval or later kiln sites without first having established the likelihood of their existence either from documentary evidence or from the chance discovery of wasters in a particular area. Thus the approach to recovery of archaeological evidence for pottery manufacture cannot be based on rigorous sampling strategies.

Documentary references to medieval and later potters are also scattered among diverse sources. Like the archaeological evidence, therefore, recognition of the documentary references depends to a certain extent upon chance discovery. Gathering the unpublished documentary evidence relies largely upon developing good lines of communication with historians and archivists who are aware of the potential archaeological interest of any reference to medieval potters which may come to light in the course of other work. As in the case of fieldwalking, it would be impractical to embark upon investigation of original documents without independent evidence to suggest the likelihood of finding relevant information.

The study of personal names and place-names, however, can be approached more systematically owing to the accessibility of published sources. County volumes issued by the English Place-Name Society contain several names which may be associated with pottery manufacture. These sources can be supplemented from minor field-names listed in the nineteenth-century Tithe Awards, many of which can now be examined rapidly on microfilm. Numerous medieval occupational surnames, too, appear in taxation returns and other published documents. In this instance, accessibility of the information depends upon local circumstances. Kent, for example, has only a limited number of published and indexed documents and the search for potters must therefore be less exhaustive than for counties with an active record society.

Le Patourel (1968, 121) has observed that,

'In practice, partly because of the relative stability of the medieval population, partly because of the long life of the industry in any given place, it has been proved over and over again that the presence of place- and personal names is a reasonable guide to the existence of an

industry'.

Thus it is worthwhile to search and interpret published sources systematically in order to provide a more reliable indication of the distribution of production centres than could be achieved from the random discovery of archaeological and documentary evidence. The data should be evaluated separately for each location, taking into account both combinations of different types of evidence and the likely availability of suitable raw materials for pottery manufacture.

Joze (1947), working on material from Berkshire, was among the first to stress the importance of an integrated approach to the study of medieval pottery production using both documentary and archaeological evidence (Moorhouse 1983b, 45). Renn's (1964, 2; 6-11) survey of Hertfordshire, however, provides a model for the systematic presentation of information in gazetteers of production and 'consumer' sites. Nevertheless, for the period before c.1500, the study of documentary evidence, personal names and place-names lays a disproportionate emphasis upon the thirteenth and fourteenth compared with earlier and later centuries. Thus White (1977, 121) who has undertaken a comprehensive review of medieval pottery manufacture in North Lancashire concludes that

'the absence of an early mention is not necessarily disproof of early activity'.

For the later period, too, the heredit of surnames deprives ceramic research of an important class of evidence for medieval potters.

Sources of information for medieval pottery manufacture have limitations similar to those of the evidence for other medieval industries such as glass-making (Hunter 1981, 148). Documentary references are scarce and seldom specific, while the recovery of archaeological evidence tends to be arbitrary. Nevertheless, ceramic production does offer greater scope than other industries for assessing combinations of evidence owing to the frequent occurrence of place-names and occupational surnames. Individual sites are considered in detail in the county gazetteers of pottery and tile manufacture (Sections 9.1 & 9.4), where both medieval and post-medieval production is assessed in the context of archaeological, documentary and place-name evidence. Criteria for evaluating the data will be discussed in the ensuing sections.

2.4.2 Archaeological evidence

There are three broad classes of archaeological evidence for the location of medieval pottery production:

- i) Kilns and associated wasters
- ii) Waster concentrations alone
- iii) Topographical features including clay-pits, earthworks etc.

Of these, the first two can provide positive proof for the existence of an industry, but, although topographical features constitute important supplementary evidence, they are seldom capable of definitive identification and interpretation. They are insufficient by themselves to confirm the presence of a former workshop.

There are marked regional variations in the number of known medieval kiln sites owing to factors such as the accident of discovery; variations in the intensity of fieldwork; and different patterns of recent land use. Traces of former medieval pottery production were recognised by nineteenth-century antiquarians in both Sussex (Ross 1860) and Surrey (Leveson-Gower 1870) but it was not until the Second World War that the first evidence from Kent was found in a bomb-crater at Tyler Hill, near Canterbury (Spillet et. al. 1942). Even by the early 1980s, no pottery kilns of the thirteenth or fourteenth century had been excavated within the county, compared with examples from at least five different places in Sussex. The only published plan from Kent is of a slightly later kiln at Hareplain, Biddenden, dated c.1500 (Kelly 1972). Although large quantities of pottery waste have been excavated at Tyler Hill, the kilns investigated there seem to be for tile rather than pottery (Philp 1974). It could be that both products were fired in the same type of kiln, but the scale of excavation has been insufficient to conclude that the normal double-flue pottery kiln was absent at Tyler Hill (see Section 9.4.4, nos. 52-61).

Large quantities of sherds with blisters, fractures, or other firing faults usually indicate a nearby kiln, and frequently the sheer quantity of pottery is suggestive. At Potters Corner, near Ashford, for example, the quantity of waste pottery associated with ash and dark soil is positive proof of an industry in the area, although the kilns have yet to be located (Grove & Warhurst 1952). The evidence from Maidstone on the other hand is less conclusive (Grove 1967). There, a number of tall cylindrical vessels were found

at what was presumed to be a kiln site in Week Street. They were identified originally as 'butter pots'. Subsequent discoveries elsewhere, notably at Audlem, Cheshire (Webster & Dunning 1960, 113-18), however, indicate that these objects are probably kiln furniture. This example demonstrates the difficulties of interpreting evidence which is often inconclusive.

The case of Brede, East Sussex is an instructive example of a different problem. Austen (1946, 94-5) found a concentration of medieval pottery at Broadland Wood which he identified as the site of the fourteenth-/fifteenth-century potteries known from documentary sources. His private collection and the sherds deposited at Hastings Museum included several sizeable fragments, but the abraded sherds seen on the ground surface in Broadland Wood during 1978 were appreciably smaller than those which had been picked up some 30 years earlier. Indeed, had it not been for the presence of clay pits, the quantities of pottery would barely have been sufficient to confirm identification as a production centre rather than a settlement site. Thus, without repeated disturbance of the ground, the evidence of former pottery manufacture can quickly disappear from the surface.

Many of the place-names suggesting former pottery production have been investigated by written enquiries to respective landowners and local historical societies concerning topography, local traditions and pottery scatters. Despite helpful replies, the responses have seldom yielded conclusive information even from sites where there is strong circumstantial evidence from personal-names and place-names. This demonstrates the elusive nature of the archaeological record. Indeed, several preliminary enquiries have been followed by site visits, but there are numerous instances, particularly in the Weald, where the clay lands have remained under pasture or wood for many years. Possible kiln sites are therefore located in the very areas which are least suited to effective archaeological fieldwork. While woodland can help to preserve field monuments as shown in Hampshire (Schadla-Hall 1977, 61) and by the Lordship Wood survey in East Sussex (Mrs G.Jones pers. comm. 1982), conditions are generally unfavourable for the recovery of evidence for pottery production. The land-use map (Fig. 2.5) highlights regional variations in the extent of disturbed arable land and demonstrates that extensive geophysical surveys would be required for an adequate assessment of many place-names in the Weald. As in north Lancashire (White 1977, 121) new evidence is unlikely to come from the normal course of agriculture.

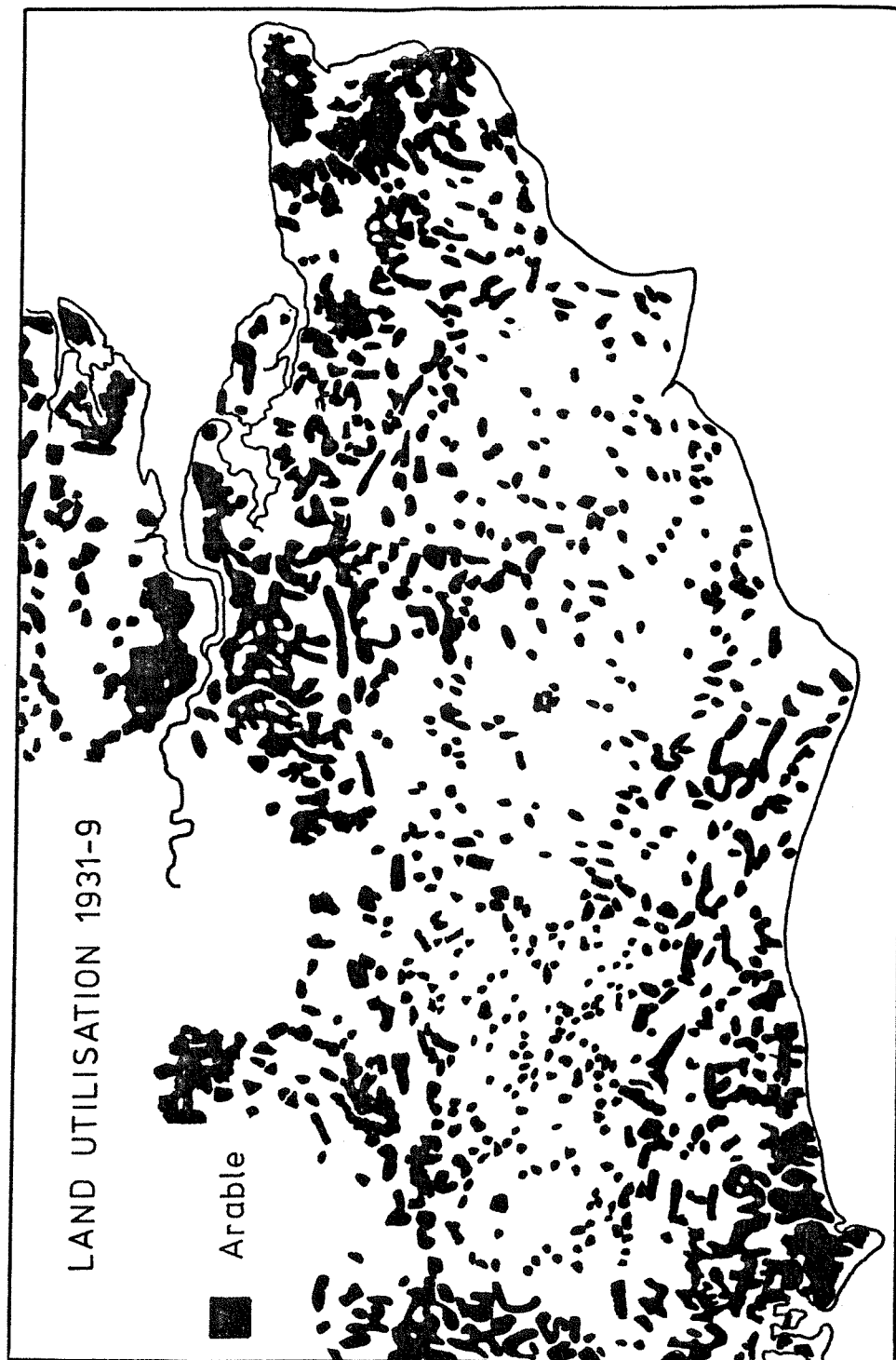


Fig. 2.5 South-East England. Land utilisation as a constraint on archaeological fieldwork: arable land use 1931-1939

The difficulties of distinguishing between 'wasters' and 'seconds' introduce yet further problems for the identification of medieval and later potteries. Evidence from Essex, shows that tile wasters were sometimes carted away for use as building materials (Drury & Pratt 1975, 156-7). Likewise, in 1786 Henry Richardson, potter of Brede, received 2s 6d a load for carrying '14 loads of potsherds' to repair roads in the parish (Baines 1980, 57). Excavations in Lambeth have shown that wasters were dumped where land was available. Thus, it is not always possible to relate archaeological discoveries to particular kilns (Bloice & Thorn 1969a, 59).

There is no specific evidence for the transport of medieval pottery waste in South-East England but the identification of some 'wasters' is questionable. The medieval jug from Sutton, for example, may be a 'second' rather than a 'waster' (Jope 1950-1, 84; Section 9.1.2, no. 89). At Ringmer, too, it is difficult to distinguish between small pottery scatters from occupation sites in the village and those which denote the presence of a kiln, yet such distinctions are fundamental to an understanding of medieval land use (see Section 9.1.6, nos. 484-497). Elsewhere, however, isolated finds can be identified with greater certainty as 'seconds'. As at Broadfield, Herts. (Kingelhofer 1974, 48), a badly warped vessel from Minnis Bay, Birchington (Powell-Cotton Museum, med 24.6) probably indicates a trade in low-quality pottery rather than the presence of a kiln nearby.

The problems of distinguishing between 'wasters' and 'seconds' are particularly acute among the hard-fired earthenwares of the sixteenth- and seventeenth centuries. Warping and splitting occurred frequently and there are at least two instances - at Roughway, Plaxtol (Section 9.1.4, no. 232) and at Little Forge, Buxted (Section 9.1.6, no. 397) - where the evidence for pottery manufacture remains possible but inconclusive. Larger post-medieval potteries can be recognised more easily from their extensive waster heaps.

It remains to consider briefly the evidence from marketed vessels which can assist with identifying centres of medieval pottery manufacture. Under favourable circumstances distinctive mineral inclusions such as those in the Malvernian wares described by Vince (1977, 258-262) can suggest possible correlations between known archaeological distributions and documentary evidence for pottery manufacture. Such an approach is less reliable, however, for locally-

produced ceramics in areas of sedimentary geology where diagnostic inclusions are rare. So-called Winchelsea blackware identified by Barton (1979, 118-121) illustrates the problem because the documentary evidence for production at Winchelsea is no more than circumstantial and visually similar reduced fabrics occur over a wide area in this part of Sussex. The source must therefore remain a matter for speculation until wasters are found in the town (see Section 9.1.6).

The definition of regional ceramic types will be examined more fully in Section 5.9. Meanwhile, it is necessary to consider the potential and limitations of documentary evidence for the location and organisation of medieval and later pottery production.

2.4.3 Documentary sources

The distinction between documentary evidence and personal-names or place-names should be emphasised. Specific references to the occupation of earthenware potter, to pottery kilns, or to the clay rent provide conclusive evidence for pottery manufacture, but personal-names and place-names do not necessarily reflect occupations (Emery 1952). Moreover, it is also important to consider the variable scope of documentary evidence. Two categories can be identified:

- i) Geographical evidence from which the existence of potter(s) in a given area can be inferred
- ii) Evidence which includes additional information about organisation of the industry, such as the payment of rents or sale of the wares.

Thus, record of the occupation alone may be significant, but without definition of location the evidence for organisation of the industry is of limited value. Indeed, there are instances such as Linton in Cambridgeshire where the identification of medieval place-names has led to confusion (see Section 9.1.4).

Much of the documentary evidence for medieval pottery manufacture comes from the period after c.1270 when manorial record-keeping reached its zenith before the general decline of demesne farming in the fourteenth century. Potters occur intermittently in the three principal classes of manorial record: Surveys (including custumals and extents); Accounts; and Court Rolls. Unlike tilers and their wares, potters are seldom mentioned in building accounts, and the history of manorial record-keeping therefore imposes a chronological bias on the available evidence. There are no known references to potters in manorial documents before the twelfth century

(Le Patourel 1968, 104) and most of the early examples occur in monastic records (*ibid.*, 106).

Potters are sometimes known on account of their misdemeanours. Three potters from Hatfield, for example, are mentioned in the King's Bench proceedings for 1491 (PRO: KB 27/918 m 46), while in the post-medieval period one of the Graffham potters is noted in the Churchwarden's Presentments for 1624 as having 'spued in our church most beastly in the tyme of divine service' (Johnstone 1947-8, 126). Compared with the medieval period, occupations are also recorded more frequently in post-medieval documents such as wills and certain classes of taxation return.

Medieval potters can usually be identified by specific references to their occupation and to their wares or raw materials. Le Patourel (1968, 112), however, has discussed the problems of terminology. There can be no doubt, for example, that the rural potters recorded at Ringmer between 1312 and 1530 were earthenware-makers (VCH Sussex 1907, 251), but several urban 'potters' are known to have been metalworkers (Salzman 1923, 171), especially in London (Riley 1868, 61) where many bell-founders were also called potters (Reaney 1967, 189). The problem of distinguishing between earthenware potters and metalworkers is exemplified by the case of a 'potter' who came into conflict with an armourer at Southwark in 1317-18 (Lewis 1894, 87). It is tempting to speculate that he or one of his descendants may have been associated with the earthenware manufacture inferred from medieval wasters found in Southwark, yet the conflict with an armourer leaves a strong suspicion that this potter, too, was a metalworker (see Section 9.1.2, no. 67). To judge from his craft, however, a 'pottery payntour' recorded at Canterbury in 1430 was almost certainly associated with ceramic production (Salzman 1923, 173), while in York Johannes Potter and Johannes de Mede were each described as an 'erdepotter' in 1456-7 (Freemen of York, 177-8).

Confusion between earthenware potters and metalworkers persisted into the post-medieval period. One Robert Blake, a 'potter' of Battle, for example, appears in the Quarter Sessions records for 13th July 1650 in connection with the purchase of lead. It is not clear, however, whether the lead was to have been used for making metal vessels or for the glaze on earthenware pots (see Section 9.1.6, no. 384). Likewise, Michael Pickenden of Ashburnham was described as a 'potter' in 1665, but three years earlier he had been mentioned as a 'potfounder' (see Section 9.1.6, no. 382). Indeed, to add further

confusion, 'potters' occurring in Lincolnshire inventories of the early eighteenth century were pot-sellers and not pot-makers at all (White 1979, 290).

Medieval craftsmen in rural areas included the dischere, bolour and urnere but even occurring as occupations rather than as surnames, these terms do not constitute unequivocal evidence for pottery manufacture. In woodland areas such as the Weald, the dischere and bolour is more likely to have been a woodworker than a potter (Birrell 1969). It would appear, however, that the terms crocker and figulus or figulator were restricted to the clay potter. 'Potters' at Platt who paid their manorial rents in pots were undoubtedly engaged in earthenware manufacture (see Section 9.1.4, no. 226).

There is no standard medieval terminology for a pottery kiln. Indeed, in view of the archaeological evidence for enterprises engaged in both pottery and tile manufacture it seems unlikely that clear distinctions can be made between the two types of kiln when they appear in the documentary sources. At Mayfield, for example, the thorale made no profit in 1461 because all the tiles fired there were used on the estate (VCH Sussex 1907, 252). At Battle Abbey, too, the Cellarers' Accounts record the purchase of a torale in 1373-4 (Searle & Ross 1967, 68). Identification of these as tile kilns, however, relies upon description of the products rather than upon precise terminology. Furnum, rogus, turnellum, hocum and domus ignea seem to have been used variously to describe pottery and tile kilns, although a 'fire-house' sometimes referred also to other types of kiln such as a malting oven. At Battle, however, lime kilns were distinguished as putei calcis in 1373-4 (Searle & Ross 1967, 70). Thus problems can arise with interpretation of the medieval documents owing to unspecific terminology used both for the craftsmen and for their kilns.

Recorded licences and rents on the other hand sometimes contain a more specific indication of occupations. Moreover, these documents are useful for understanding the relationship between the Lord of the Manor and rural craftsmen such as the potter. The Lord usually retained rights over the extraction of clay, whether on his own land or that of his tenants (Le Patourel 1968, 113). Terminology for the payments varied. The vicar of Graffham, for example, had a 'composition' (commoditatem) of 12d from the men who made pots (olla lutea), while at Midhurst, pottersgavel of 36s 8d was paid in 1283

(VCH Sussex 1907, 251-2). Claygavel of 4s 6d was owed to the Lord of the Manor of Brill (VCH Buckinghamshire 1908, 115), and Le Patourel 1968, 104) has argued that the archaic form -gavel indicates that the rights to dig clay at both Midhurst and Brill may already have been of some antiquity when they were exercised during the thirteenth- and fourteenth centuries.

Rents were also owed for the right to gather fuel. Unlike the clay-rent, however, payments for fuel are less likely to imply that someone with the surname 'potter' was necessarily engaged in potting. In Surrey, for example, William the Potter of La Fryth paid 12d for underwood in 1257. The same year Roger the potter of Broxhead also paid 12d, while Roger the Potter of Hawkley paid 2s for underwood (Lyne & Jefferies 1974, 25; 46)

These mid-thirteenth-century surnames probably denote the occupation of earthenware potter, but despite an association with fuel the evidence for pottery manufacture is not unequivocal. At Wadhurst, for example, the existence of a potter's workshop remains unlikely despite a similar connection between a later 'potter' surname and payments for fuel. Thus it is important to retain a clear distinction between documentary evidence and the information derived from likely occupational surnames.

Archaeological evidence can sometimes assist with the interpretation of personal names, thereby conferring upon them the status of 'documentary' evidence. Topographical information, however, seldom occurs in sufficient detail to facilitate the definitive identifications. Nevertheless, an incident recorded at Kingsley, ~~Hants.~~ in 1302 is a notable exception which has enabled Lyne and Jefferies (1974, 40) to attribute with some certainty the ownership of a known kiln site to one Peter the Crokkere (see Section 9.1.3, no. 135). At Binsted, West Sussex on the other hand, the connection implied by Barton (1979, 172) between personal names and the medieval pottery kiln would appear to be more ^uten_uous (see Section 9.1.7, no. 623). Moreover, Percy (1970, 111) has not distinguished between the personal names and more specific documentary evidence occurring in the manorial records at Limpsfield (see Section 9.1.5, no. 349).

Occupations mentioned in wills provide more information about the location of pottery manufacture in the sixteenth and seventeenth centuries than at any earlier period. Henry Moynes of Purleigh, Essex was described specifically as an 'Earthen potter' in 1646 (Brears 1971a, 184) but occupations are seldom recorded so

precisely. William Dean and others in Greenwich were merely noted as 'potters' (see Section 9.1.2, no. 20), while in 1544 the will of Clement Monger of Ash, Surrey described him as a 'pottmaker', (see Section 9.1.5, no. 281). In view of archaeological evidence for pottery manufacture at Ash he was probably an earthenware potter (VCH Surrey 1905, 283). At Wrotham, on the other hand, the wills of certain potters such as George Richardson in 1687 can assist with the identification of initials on the distinctive slip-decorated earthenwares (Kiddell 1954, 108-9).

It should not be assumed, however, that for a medieval or post-medieval potter his living and working place were necessarily always the same. One John Rogers who held land at Yateley, Hants. in 1648 was described as being 'of Farnborough' (Holling 1971a, 62). Likewise, Edwards (1974, 4) has noted the presence of Peter Wilbert, potter at Kennington, Lambeth in 1586 and 1591 but there can be no certainty that he had a workshop at Kennington (see Section 9.1.2, no. 36). Thus, despite the amount of information available from post-medieval sources its significance can be difficult to assess. Moreover, taxation returns usually record only the principal occupations. Many potters who earned their living mainly by farming may therefore have escaped notice, and at Woolwich it seems that even glass-makers may have been omitted from the Hearth Tax returns. They are mentioned in the Parish Registers between 1670 and 1682 yet they do not appear in the Hearth Tax returns of 1684 (Erwood 1950, 50). It would be unwise to assume automatically that they had moved away between 1682 and 1684.

With the exception of the leading post-medieval stoneware and t in-glazed earthenware makers, most potters found themselves among the lesser ranks of society. Their appearance in written records both during the medieval period and later is therefore the exception rather than the rule (Le Patourel 1968, 103). Even the evidence of personal names in taxation returns is unlikely to be comprehensive because the possessions of many potters were probably valued below the minimum of 1s at which movable wealth was taxed in 1297 (Beresford 1963, 3).

2.4.4 Personal names and occupations

Occupational surnames are undoubtedly significant for the study of medieval industries (Keene 1981, 152), but the information requires careful evaluation. Birrell (1969, 91-107), for example, has

exploited the potential of medieval craft surnames occurring in woodland areas. A similar approach, taking into account the availability of natural resources when assessing the significance of the names, is also applicable to the study of medieval pottery manufacture. It is important therefore that the personal names should be evaluated in conjunction with other evidence.

As we have seen (Section 2.4.3) the occupation of potter can be denoted by several different names. These can also occur as surnames. In practice, however, Le Patourel (1968, 102) has found that crocker, figulus and figulator are more likely to refer to earthenware potters than pottarius, ollarius and ollator which can denote makers of either pottery or metal vessels. Thus Edulf, Godwin, and Wilmund le Poter of Hackington, Kent recorded in the Feet of Fines for 1214-15 (Churchill et. al. 1956, 53) were almost certainly earthenware potters, probably exploiting the outcrops of London Clay which attracted tile-makers to Tyler Hill (see Section 9.4.4, no. 199). Likewise, there is no reason to doubt that Thomas Figul' and Ralph Poterne, both recorded at Ringmer in 1285 (Redwood & Wilson 1958, 127; 129; 101; 105), were earthenware potters working in the village where both kilns and extensive waster scatters have been found.

Medieval occupational surnames have been assessed by Emery (1952; 1954). Before c.1200 the link between surname and occupation is generally reliable (Le Patourel 1968, 102) and during the thirteenth century, too, surnames accompanied by the element 'le' are likely to indicate occupations. The same is probably true during the early fourteenth century, but by c.1350 it is less certain. By the end of the century the evidence is most unreliable (Fransson 1935, 29). Thus, in the fifteenth century William Pottere of Sevenoaks is known to have been a clerk (Owen 1968, 73; 75); another clerk by the name of William Pottere held lands at Roughey, Horsham in 1436-7 (Salzman 1916, 250 no. 3011); and one John Pottere a leather-worker of London appears in the Feet of Fines for 1402-3 (ibid., 216 no. 2743). Other craft surnames had also become hereditary. In 1436-7, for example, we hear of one 'Nicholas Smyth, otherwise called clerk, of Egham' (Chertsey Cantularies II, 49 no. 734). He may have been a descendant of William le Smyth, clerk recorded at Egham in 1342 (Toms 1954, 134 no. 1305).

Among craftsmen who were likely to inherit their father's skills, some occupational surnames persisted well into the fourteenth century and later. 'John Potter of Chayham' was a potter at Cheam in

1373 (Lambert 1912, 129) and in Cornwall as late as 1462-3, one Richard Crocker of St. Germans supplied ridge tiles for Launceston Castle (Douch 1969, 42). At Hatfield, too, Renn (1964, 8) has noted practising potters with occupational surnames in the fifteenth and even in the seventeenth century. Crocker's pottery at Bideford, reputed to have been established in 1668, was still selling wares stamped 'W.H. Crocker, Bideford' in the 1870s (Brears 1971a, 176). Certainly at long-established potting centres such as Toynton, Lincs. occupational 'potter' surnames persisted longer than they might have done elsewhere (Le Patourel 1968, 111).

The context of early occupational surnames should always be considered when evaluating their significance. The social status of an individual or the level of his taxation assessment sometimes casts doubt upon the significance of an occupational surname. One such example occurs at Chichester in the early thirteenth century (see Section 9.1.7, no. 560). It also seems improbable that 'John Crockere de Romne' was a potter because he was assessed at the high figure of 10s in the 1332 Lay Subsidy rolls (see Section 9.1.4, no. 222). Likewise, an association with pottery manufacture is unlikely both for Walter le Crockere who was a juror at an inquest at St. Martin's le Grand, London in 1318 (see Section 9.1.2, no. 10) and for Robert Crock who gave land in Carshalton to the Prior and Convent of Merton Priory in 1239-48 (Heales 1888). Moreover, Walter and Richard le Potter, who both made wills at London in 1280, are known to have been wealthy merchants living in Cheapside with a shop in Bury St. Edmunds and land at Boston and Winchester (Reaney 1967, 188). Like the recorded occupation of potter itself, 'potter' surnames occurring in towns should also be regarded with circumspection because, as we have seen, many urban 'potters' were metalworkers (Harvey 1975, 25). Thus although the surnames recorded at Shoreham, Sussex include numerous occupations (Cheal 1921, 98) the name 'Pottere' is unlikely to denote pottery manufacture in the town (see Section 9.1.7, no. 614), especially as John le Pottere owned a large stone house in the High Street.

Confusion can also arise from topographical surnames. 'John de Crokest', for example, witnessed the grant of Itford Church and other property to Lewes Priory c.1100 (Salzman 1934, 37). His name may be derived from Crux Easton in Hampshire, yet there is no connection with pottery manufacture because - like numerous other Croc-place-names in Hampshire - this is attributed to Croc the Huntsman who held land there in the eleventh century (VCH Hampshire 1903, 209;

1911, 353; 391; 393; 533). The case of James de Poterne recorded at Baisingstoke in 1205-6 (Baigent & Millard 1889, 361) is more interesting, however, because this confirms the existence of a place called Poterne (pot-house) before the first decade of the thirteenth century. James may have moved from Potterne in Wiltshire (see Section 9.1.3, no. 99).

Similar problems of interpretation arise with personal names which can be confused with occupational surnames. Le Patourel (1968, 121) notes in particular the Poteria family living in Hampshire whose name was derived from abroad. Matthew de Poteria, for example, paid scutage in 1160-1 (VCH Hampshire 1912, 304). Likewise, the place-name Crockers at Northiam, East Sussex appears to be a corruption of the personal name Creuker, presumably derived from Crevecoeur (see Section 9.1.6, nos. 474-5). Abbreviations compound the problem. Thus 'Pott' is a diminutive form of Philipot and the name Potman can originate from either Pot or Philipot (Reaney 1967, 151; 186). John Potter of Cheam, however, is recorded in abbreviated latin as Joh(ann)i Pott(ere) de Chayh(a)m (Lambert 1912, 352). Not all Pott surnames can therefore be disregarded.

In view of the numerous problems of interpretation, including above all the heredity of personal names, Emery (1952; 1954) expressed concern about the quality of data from occupational surnames being used as the basis of historical generalisation. Nevertheless, the potential evidence available from these surnames is too important to be dismissed altogether. Each case should be evaluated on its own merits.

The rate at which those bearing 'Potter' and 'Crocker' surnames were assessed in the Lay Subsidy rolls for known potting villages provides a useful standard with which to compare other names possibly associated with pottery production occurring in medieval taxation returns. At Brede, Sussex for example Walto Pottere paid 6d in 1327; Hamon Potter paid 6d in 1327 and 8d in 1332; and Stepho Potter paid 1s in 1332 (Hudson 1910, 211; 322). Assessments at Ringmer were slightly higher. Richard Poterus paid 2s 6d in 1327 and 2s 11d in 1332, while John le Potter paid 2s 1d in 1332 (*ibid.*, 197; 309). The figures for Ringmer are broadly comparable with the 2s 2d paid by Richard le Crocker at East Clandon, Surrey (Willard & Johnson 1932, 49) where neither documentary nor archaeological evidence for pottery production has yet been recorded (see Section 9.1.5, nos. 305-6). There can be little doubt, however, that Richard was a potter.

In addition to the evidence from rates of assessment in the Lay Subsidy rolls, combinations of different craft surnames occurring at the same place may also indicate former production centres. As we have seen, for example, the names Poterne and Figul' are to be found at Ringmer, while Nicholas le Potter and Willelmo le Crocker were assessed at 8d and 1s respectively in the Lay Subsidy rolls for Farnham in 1332 (Willard & Johnson 1932, 57; 11). In both cases, the existence of a contemporary pottery is attested by archaeological evidence. At Coldwaltham, West Sussex, however, the names of Trewe le Potir and Godwin Crockere mentioned in a mid-thirteenth-century custumal (Peckham 1925, 59) suggest the presence of a hitherto unsuspected workshop (see Section 9.1.7, no. 562). A similar combination of pot- and crock- surnames occurs in Kent under the Hundred of Blackheath (Hanley & Chalklin 1964, 137-8) and, although it is impossible to identify a specific location, the two different craft names suggest a possible association with pottery manufacture. There may have been medieval potters working in the Woolwich area where later kilns have been found (see Section 9.1.2, no. 23) and where there are documentary references to medieval tile manufacture (VCH Kent 1932, 393-4).

At some places such as Brede, East Sussex, the number of pot- surnames would be sufficient to identify this as a potting village without corroborative archaeological evidence. It is instructive, therefore, to compare the occurrence of pot- and crock- surnames in medieval taxation returns for the counties of Kent, Surrey and Sussex (Fig. 2.6). This visual method of presenting the information assists with the identification of villages where further documentary research and fieldwork might be worthwhile. Dycheres would not necessarily have been earthenware potters, and it is significant that there are considerably fewer of these names than the pot- and crock- surnames. If the dycheres really were makers of dishes then those in Canterbury and Southwark may have been metalworkers while those in rural areas might have worked in wood (Fig. 2.6).

Combinations of pot- and crock- surnames occurring at the same place but in different documents are sometimes fortuitous. Examples of this have been noted at Beckenham (Section 9.1.2, no. 2), Angmering (Section 9.1.7, no. 535) and Chichester (Section 9.1.7, no. 560). In the majority of cases, however, personal names suggesting a possible connection with pottery manufacture are confined to isolated examples which must be assessed on their own merits. Poteman surnames

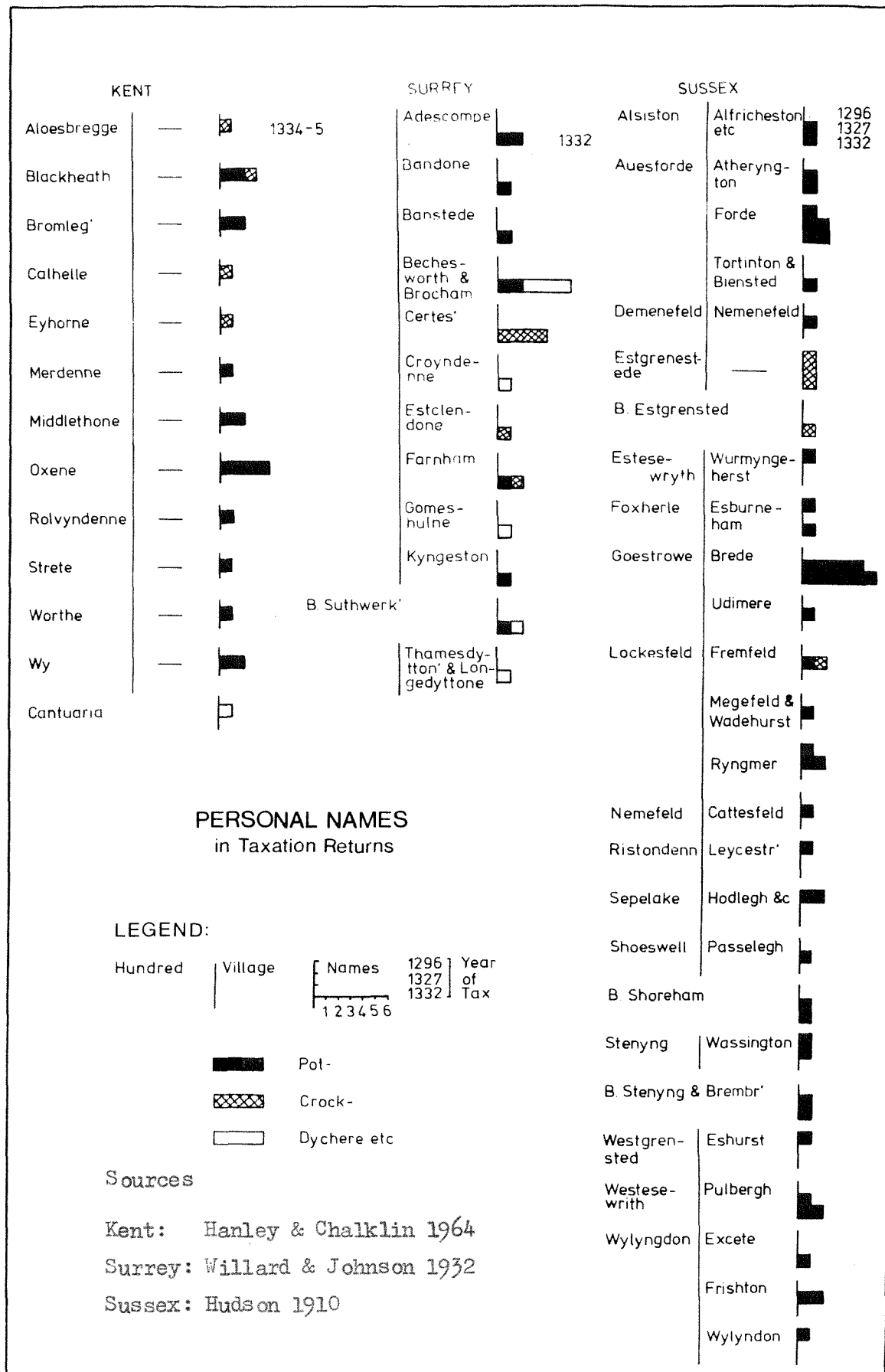


Fig. 2.6 Kent, Surrey and Sussex. Occupational(?) surnames in medieval taxation returns

are less likely to be significant than 'potter' names accompanied by the element 'le'. Nevertheless, there are several cases where the surname Poteman occurs at places where there is independent evidence for pottery production. All pot- names have therefore been included in the gazetteer (Section 9.1).

Like the more specific documentary references to pottery production it is sometimes impossible to identify precisely the geographical location to which a medieval personal name should be attributed. One John le Puttere, for example, is mentioned in the Custumal of Boxgrove Priory among the miscellaneous tenants outside the manor (Fleming 1960, 196). Similar problems arise with the identification of land held by individuals bearing the names 'Potteres' and 'le Potteres' on Laughton Manor in East Sussex (see Section 9.1.6, no. 466).

Even when the administrative district is recorded in medieval taxation returns, Holden (1963, 61-2) has demonstrated the difficulties of assigning individuals to specific villages. In Kent, the problem is exacerbated because it was the Hundred rather than the vill which formed the unit of taxation for the 1332 Lay Subsidy returns. One William Pottere is recorded under the Hundred of Wye (Hanley & Chalklin 1964, 93) and it is tempting to speculate that there may have been a connection with the medieval tileries at Naccolt, near Wye, yet this is incapable of proof (see Section 9.4.4, nos. 86-7).

There are several instances in the post-medieval period when potters are known to have moved considerable distances, sometimes to continue their craft elsewhere and sometimes to take up new occupations. Despite manorial ties this may have occurred in the medieval period as well. Individuals are certainly mentioned in connection with land well away from the place where they were living, and Leeson (1970, 407) has traced instances of migration. In Sussex, for example, he has noted that one John Franklin appears in the Lay Subsidy returns for Patching in 1296, then apparently the same John Franklin is recorded under Ferring in 1327 and 1332.

In Surrey alone, there are at least three instances where the link between apparently occupational surnames and geographical locations is unclear. Robert le Crockere of Frimley was mentioned in connection with land at Chobham in 1344 (Toms 1954, 160 no. 1526); Richard le Crocker took an oath at Leatherhead concerning land at Horley (Chertsey Cartularies II, 236 no. 1084); and Roger le Pottere

at Lingfield may have been connected with potters on the parent manor of Limpsfield (Leveson Gower 1870, 358-9). In these and similar cases, occupational surnames do not constitute an entirely reliable guide to the location of medieval pottery manufacture.

Nevertheless, craft names are an important source of evidence for medieval economic history. Their significance is enhanced in the case of crafts which leave little trace in the archaeological record. Thus Henry le Botelyr who held a stall at Midhurst in 1338 was probably a maker and seller of leather bottles (Dibben 1960, 6). Thomas le Botiller at Nyetimber and Thomas le Botelir at South Bersted may have been one and the same. This was the only surname accompanied by the element 'le' among the names listed in the thirteenth-century Custumal and Rental for the Bailiwick of Pagham (Fleming 1949, xli-xlii; xliv) and an association with leatherworking therefore seems probable. Likewise, Simon le Butiller doubtless pursued the same occupation at Walkingstead near Godstone in 1327 (Lewis 1894, 97).

The jugs produced by a medieval potter would have performed a similar function to the vessels made by a bottle-maker. In the case of woodworking, however, the functional distinction between ceramic and wooden vessels appears to be more clearly defined.

Pottery cooking bowls encrusted with soot are unlikely to have been used for drinking but some pottery vessels, like their wooden counterparts, may have been used for this purpose. Medieval platters, however, would generally have been of wood as opposed to either metal or earthenware. Woodworkers, like leatherworkers, are attested by occupational surnames. William le Bolur of Hadlow is mentioned in the Feet of Fines for 1271 (Churchill^{et al.} 1956, 390). Like Thomas le Bolur at Atherington in 1327, he was probably a woodworker (Hudson 1910, 134). The surname le Tournour was certainly derived from woodworking and this may have been the occupation of Nicholas le Tournour who witnessed a grant of land at Ewell in 1357 (Gollancz 1968, 79). Like the potter, the turner had modest holdings. William le Turnur at Amberley, for example, is recorded in the Rents of Assize, Customs and Services for the Manor of Ashford as holding one acre for which he rendered 4d and owed suit at 'Lagheday' (Peckham 1925, 54).

Thus the evidence of occupational surnames is applicable both to the study of pottery production and to similar crafts. In the case of potters, however, more precise assessments concerning the

heredity of pot- and crock- surnames can be made in the light of raw materials which would have been available for pottery manufacture. Fourteenth-century pot- surnames occurring at villages situated on the chalk are unlikely to denote the occupation of earthenware potter. As we have seen, however, it is more difficult to assess late medieval surnames occurring at known centres of pottery manufacture.

Using the Lay Subsidy returns of the fourteenth and sixteenth centuries, Leeson (1970, 407) has noted significant continuity of surnames in a sample area of West Sussex. Thus it is not clear whether Alexander Pottere and Mabil Potterus recorded at Limpsfield in 1398 were practising potters or whether their surnames had become hereditary (Percy 1970, 111). Certainly at Ashtead, Lowther (1952) observed that the name Tyler lingered on in the Manorial Accounts after the tilery had gone out of use. Tyler had ceased to be an occupational surname by the fifteenth century. Likewise, members of the Potten family at Rye, whose surname might once have been associated with local pottery manufacture, are recorded as fishermen during the sixteenth century (Hamilton Hall 1901, 10).

The criteria for precise evaluation of medieval craft surnames will be discussed in Section 2.4.7. First, however, it is appropriate to consider the analogous evidence of medieval and later place-names.

2.4.5 Place-name evidence

With the exception of isolated references in medieval documents to lost names, most place-names can be located with some precision. Thus pot- and crock- place-names are a potential guide to areas where fieldwork might yield evidence of former ceramic production. Like personal names they can be subjected to a more comprehensive method of study than would be feasible for identifying scattered documentary references in manorial and other records.

Place-names associated with pottery manufacture have sometimes been noted in conjunction with archaeological evidence (eg. Copley 1958, 225) but there have been few regional studies. A comprehensive list of all place-names containing pot-, crock- or similar elements is the essential starting-point for such a survey (Fig. 2.7). The sources consulted for South-East England are noted in Section 9.1.1, and the place-names themselves are listed by county in the gazetteers of production sites (Sections 9.1 & 9.4). Only by examining the full range of evidence is it possible to evaluate the



Fig. 2.7 Kent, Surrey and Sussex. Place-name evidence for pottery production

significance of individual names.

Difficulties of assimilating the massive amount of available information have always imposed limitations on place-name studies. Minor field-names are often more relevant than village or hamlet names for the identification of former kiln sites, but comprehensive county indexes have yet to be compiled for South-East England. Cox (1892, 364), working in Derbyshire, expressed the problem succinctly:-

'I began to study the field names as marked on the parish or tithe commutation maps. I made the ambitious resolve to take out the whole of the field names of the county. But after I had accomplished rather more than a third of the county, giving much of the leisure of two years to the question, I found that considerations of time and expence prohibited my following up the scheme in its entirety...'

Thus, it is most unlikely that all the minor pot- and crock- place-names in South-East England have been identified, but accessible sources have been consulted wherever possible.

Under favourable circumstances, medieval pot- and crock- place-names can help to pinpoint the holdings of a craftsman with an occupational surname. 'Potter' and 'crocker' are just two among numerous craft names such as smith, baker and shoemaker from which place-, street- and field-names are derived (Ekwall 1933, 84-5). Significant place-name elements are -crocc OE (crook; earthen vessel) or -crokkere ME (potter), and -pot(t) late OE (pot; earthen vessel) or -pottere OE (pot-maker), although place-names incorporating types of earthenware vessel may also indicate former pottery production sites. The evidence is frequently confusing, however, because even pot- and crock- names of proven antiquity may be derived from -potte ME (pit; deep hole) or -croc OE (crook) (Smith 1956, 1, 112; 2, 72). Glover (1976, 52) has also suggested that some crock- place-names may be derived from a combination of the British word cruc (hill) and -hyrst OE (wood).

In some respects, therefore, the study of place-names is beset by even greater problems than the identification of occupational surnames. It is reasonably certain, for example, that Crockers Hatch Corner, Speldhurst and Crockhurst Street, Capel, both in Kent, are topographical place-names unconnected with pottery manufacture. Indeed, the elements -crocc and -hyrst occur repeatedly in association, as at Durrington and Horsham in West Sussex, which also

implies a topographical origin (Wallenburg 1934, 173). Some place-names are derived, as we have seen, from family names such as Croc in Hampshire (VCH Hampshire 1911, 393) and Crevecoeur in Sussex (Mawer & Stenton 1929, 524). These, too, have no connection with pottery production.

Many pot- names are also of topographical origin. Field (1972, 172) cites examples such as Pothook Mount (sloping field shaped like a pot-hook) and Potlids (land characterised by shallow mounds shaped like pot lids), to which can be added from South-East England the names Potwell (spring in a pit) and la Potte (pit). Personal names, too, can have misleading corruptions. Pottery Drove and Pottery Field at Over Wallop are probably 'commemorating one of the early Lords of the Manor, Matthew de Poteria' (VCH Hampshire 1911, 530) and Pottery Farm, West Wellow probably has a similar derivation (ibid., 535), although the possibility of an association with post-medieval pottery manufacture cannot be ruled out.

Some pot- and crock- place-names originate from post-medieval surnames and investigation of local families can assist with the elimination of place-names which are unlikely to be associated with pottery manufacture. Potter's Barn, Thakeham is one such example (Mawer & Stenton 1929, 182), and at Walmer, Kent there may be a connection between the surname Potter and the field-name Potters Shot, both of which are mentioned in the Tithe Award (see section 9.1.4, nos. 255-6). At Horsham, Potters Croft is probably connected with the Potter family recorded as early as the fifteenth century. Nevertheless, there is no proof even at this date that they were practising potters (see Section 9.1.7, nos. 591-2).

Sometimes, however, the evidence is less clear-cut. It is not entirely certain, for example, whether the settlement of Potters Corner near Ashford takes its name from a local seventeenth-century family (Wallenburg 1934, 404) or whether it derives from the medieval pottery industry known from archaeological excavation (Grove & Warhurst 1952). Likewise it is uncertain whether the potter- place-names at Benenden, Kent are derived from a local surname or from an eighteenth-century potter who is known to have worked in the area (Haslewood 1889, 120). Similar problems of interpretation have been encountered at Dallington, East Sussex (see Section 9.1.6, nos. 412-4).

Another potentially misleading type of place-name includes those which are derived from visible scatters of pottery indicating

the presence of former settlements etc. Crocksherd Farm, Wingham, for example, is recorded in 1254 and probably takes its name from pottery on the site of a Roman villa nearby (Wallenberg 1934, 538). Likewise, there is no stream near Crockesford at Willesborough, Ashford and this, too, may be a corruption of -croscerd OE (potsherd). Similar topographical associations have been noted at Crock Field, Newington (ibid., 260) and at Crockle Hill, Hampshire which marks the site of Romano-British pottery kilns in the New Forest (VCH Hampshire 1900, 326; 344).

Field names including the word 'kiln' can seldom be attributed to pottery manufacture unless specifically identified as a pot or crock kiln. As at High Halden, Kent, many of these names relate to post-medieval potteries (see Section 9.1.4, nos. 208-9) but some such as Crock Kiln Wood, Waldron are of uncertain antiquity (see Section 9.1.6, no. 523). Generally, however, an unspecified 'kiln' name is more likely to relate to a brick- or lime-kiln than to a pottery-kiln (Field 1972, 275-9), but the possibility of corruptions cannot be discounted. Kilndown in Kent is shown as Gilden Downe on an Estate Map of 1622 (Local History Exhibition, Kilndown 1978) which suggests that in this case the element 'kiln' is a corruption of 'Gilden'. Wallenberg (1934, 310), however, cites the spelling 'Kelnedowne' in 1391, suggesting that this was indeed a 'hill with a kiln', though not necessarily thereby a pot- or tile-kiln.

Variations in spelling occur frequently. The manor of Puttenden in Surrey appears both as 'Potynden' and 'Podynden' (Meekings 1946, 72). Clearly there is no association with pottery manufacture but the pot- element could be misleading. Likewise, there is a plot of land at Eastbourne, East Sussex for which the alternative spellings 'Potland' and 'Portland' are known (see Section 9.1.6, no. 416). Many of the pot- and crock- place-names in South-East England can therefore be eliminated rapidly from the search for pottery production sites. Others, however, require careful evaluation.

Several place-names occurring on twentieth-century maps are clearly derived from medieval surnames, some of which may denote occupations. At Leafield, Oxon, for example, Potters Hill is more likely to be derived from medieval craftsmen bearing the surname le Potter, than from the post-medieval pottery industry which was revived on a new site in the eighteenth century (Stebbing et. al. 1981). Circumstances there are similar to those at Brede, East Sussex where several pot- field-names occur in an area where medieval wasters have

been found, while the post-medieval potteries were situated elsewhere in the parish (see Section 9.1.6, no. 391). The combination of place-names and medieval surnames can sometimes indicate the location of former potteries for which archaeological evidence is elusive.

Crockery Lane at East Clandon, Surrey is clearly associated with the surname 'le Crocker' which is recorded extensively in the parish during the fourteenth century (see Section 9.1.5, nos. 305-6). As we have seen (Section 2.4.4) the rates of tax assessment suggest that 'le Crocker' was an occupational surname at East Clandon.

Le Patourel (1968, 103) has maintained that the coincidence of medieval personal names and place-names offers a reliable indication of former pottery manufacture. It should be stressed, however, that place-names are only significant when the personal names are known to denote occupations. Mere coincidence of the two types of evidence does not constitute positive proof of identification. Thus, there is probably an association between Potters Wood, Lingfield and one Roger le Pottere (see Section 9.1.5, nos. 350-1); between Crockers Wood, Horne and Richard le Crocker (see Section 9.1.5, nos. 336-7); and between Crockersland, Dorking and William Croker (see Section 9.1.5, nos. 301 & 304). In all of these cases, however, assessment of the place-name depends on upon interpretation of the personal name. Indeed, there is reason to question whether Roger le Pottere and Richard le Crocker necessarily worked at Lingfield and Horley (see Section 2.4.4), and the surname Crocker may have become hereditary by 1384 when William Croker is recorded. The association with pottery manufacture therefore remains unproven.

Sometimes it is also difficult to establish precise geographical links between medieval surnames and modern place-names. Crockers Bank and Crockshed Wood near East Grinstead may be associated with the surname Crocker recorded in the Lay Subsidy rolls for the borough during the fourteenth century, yet the place-names occur some distance outside the town (see Sections 9.1.6, no. 429 and 9.1.7, no. 567). Potters Green, Hoathly is more likely to represent former pottery production, especially as the name 'Green' - like 'End' - denotes the type of encroachment on waste land where medieval potters would probably have worked (Roberts 1977, 171). Nevertheless, the link with one Miche le Pottere remains inconclusive (see Section 9.1.6, nos. 419-420).

There are several different classes of pot- and crock- place-names even among those names which are definitely associated

with medieval and later potters. Some denote the site of an individual workshop, while others refer to entire potting villages. Field-names can relate to the extraction of raw materials rather than to the site of a kiln. Road names, too, are sometimes derived from the routes frequented by potters either to obtain raw materials or to sell their wares. These names do not therefore necessarily indicate where pottery was made. Likewise, street names in towns may be derived from the position of potters' stalls in the market, rather than from the location of their workshops.

Among the field-names likely to denote individual holdings are 'ye potteris crofts' at East Worldham, Hants. mentioned in 1290 (Macray 1891, 73), and 'Crockerislond' at Liss, Hants. which occurs in the fourteenth century (VCH Hampshire 1911, 84). The evidence for an association with pottery manufacture is less certain, however, for later names such as Crokkesdyke, Sutton at Seaford, East Sussex recorded in 1407 (Chapman 1977, 41) and Potters Croft at Bletchingley, Surrey recorded in 1522 (Lambert 1921, 597-8).

None of the large potting villages in South-East England such as Ringmer, East Sussex or Limpsfield, Surrey acquired a potter- prefix to their place-names, but Tyler Hill at Hackington, Kent attests the importance of tile-making in that area. Crockerhill, Fareham, Hants. and Potters Corner, Ashford, Kent represent similar minor settlements whose names would appear on the basis of archaeological evidence to be derived from ceramic production (see Section 9.1.3, no. 120 and Section 9.1.4, nos. 417 & 419). Likewise, derivation of the name 'Crockerhill' at Eynsford, Kent probably implies the existence of so far undiscovered medieval potteries (see Section 9.1.4, no. 182) and local geology would favour a similar interpretation for 'Crockerhill' at Boxgrove, West Sussex (see Section 9.1.7, no. 543).

Minor place-names which may denote the extraction of raw materials rather than the manufacture of pottery include 'Crokkes Forlang' at Kingston (see Section 9.1.2, no. 33). The element 'furlong' as opposed to 'croft' implies a landholding rather than the site of a workshop. In some cases, however, these names may represent the agricultural holdings of a potter-farmer. On the other hand, there can be little doubt that road-names such as Potters Lane, Banstead indicate the routes frequented by craftsmen engaged in pottery manufacture (Ellaby 1982, 174). Turner (1974, 50) has suggested that this particular route may have been associated with the

transport of white-firing clay from the Reading Beds near Cheam (see Section 9.1.2, no. 284).

The significance of urban street-names is less clear. Some such as the now lost 'Crocker Lane' in London are of considerable antiquity (Ekwall 1933, 114; 1954, 49-50) and do not necessarily reflect occupations in later periods. Moreover, as with 'potter' personal names, the distinction between urban earthenware potters and metalworkers is not always apparent from their names alone. Thus, although Potter's Row, Coventry probably denotes the street where earthenwares were sold (Chatwin 1955, 88-9), it is possible that this name was derived either from the manufacture or sale of metal vessels. Outside London, few medieval towns in South-East England have yielded potter- and crocker- street-names. Potter's Lane, Southover at Lewes, East Sussex is probably derived from a post-medieval surname (see Section 9.1.6, no. 468), but Crocker's Lane, Canterbury may denote the former sale or manufacture of earthenwares in this part of the city (see Section 9.1.4, no. 172).

Several post-medieval potteries in South-East England are marked on eighteenth- and nineteenth-century maps. Rocque (1746), for example, showed several of the Lambeth potteries on his maps of London (see Section 9.1.2, nos. 52-54). Likewise, potters' workshops, kilns and claypits are shown on nineteenth-century Tithe Maps and their accompanying Awards. The detail on the High Halden Tithe Map is particularly instructive (Fig. 9.36), but not all known potteries were marked in this way. At Farnborough, Hants., for example, potteries which are known from independent evidence to have been working in c.1840 are not identified on the Tithe Map (see Section 9.1.3, no. 126).

Owing to the often complex relationship between place-names, personal names and documentary evidence for medieval and later pottery manufacture, it would be unrealistic to confine data collection to specific periods. Without information about local post-medieval surnames, for example, it would be impossible to assess the significance of potter- field-names. Indeed, an instance of the difficulties encountered when distinguishing between the medieval and post-medieval evidence occurs at Buxted, East Sussex (see Section 9.1.6, nos. 398-402). Moreover, it is important to identify centres of post-medieval as well as medieval ceramic production because the presence of post-medieval potteries can confirm the availability of suitable raw materials in areas where there is incidental evidence for

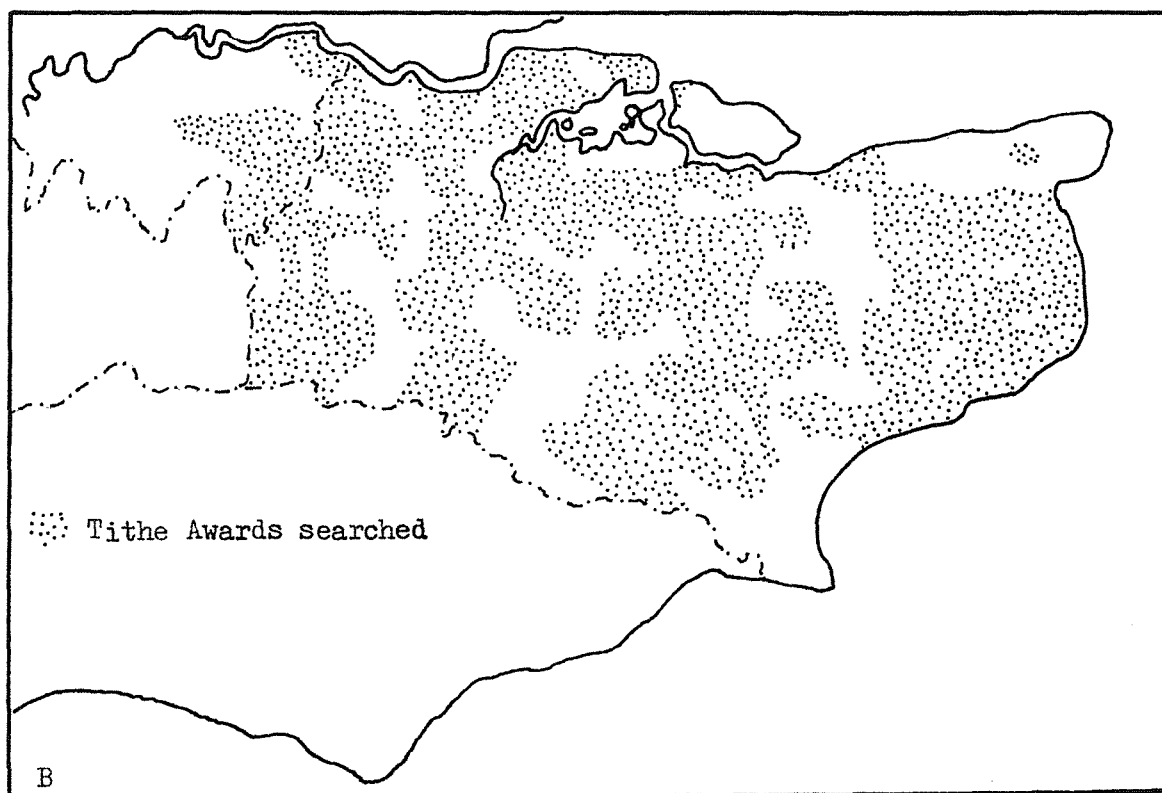
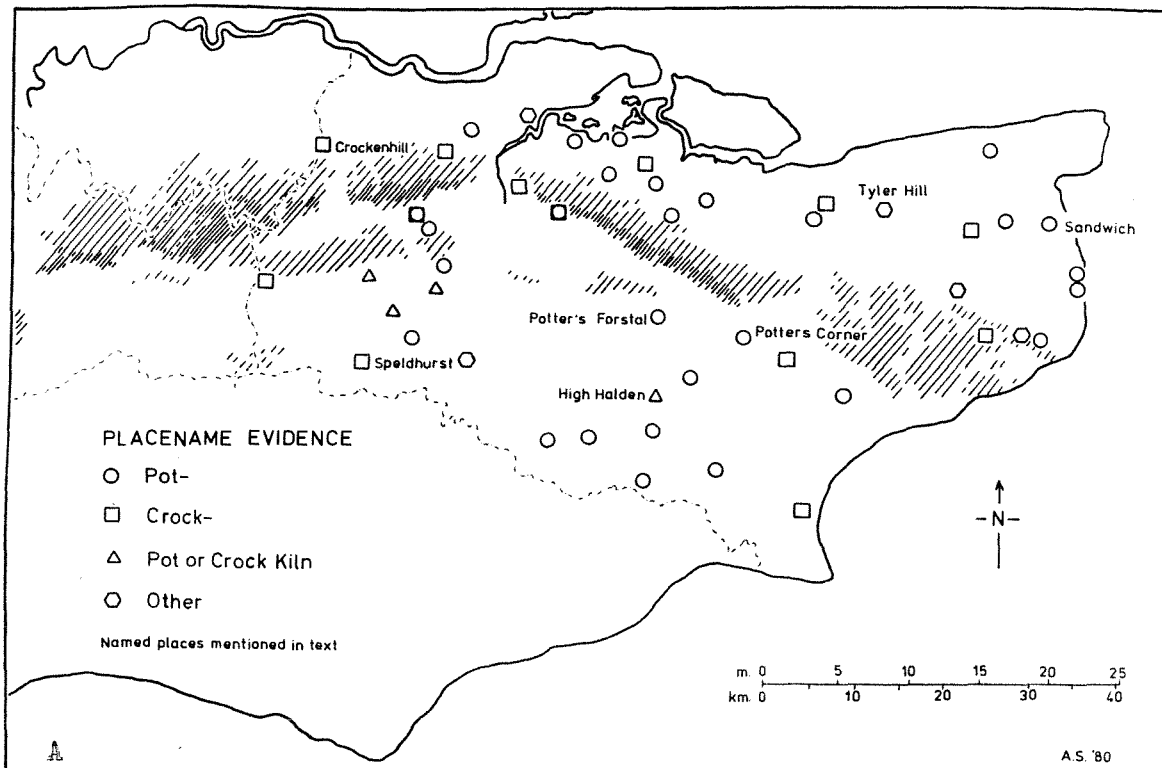


Fig. 2.8 Kent: A. Place-name evidence for pottery production. B. Parishes for which Tithe Award transcripts have been searched

medieval potters.

Fig. 2.8 shows the density of pot- and crock- place-names, irrespective of date, which have been identified in Kent. Many of the field-names are derived from nineteenth-century Tithe Awards, and variation in the density of examples partly reflects the availability of Tithe Award transcripts in 1977 when the map was compiled (Fig. 2.8). Nevertheless, this demonstrates the amount of evidence which can be expected from such a survey. Several of the place-names are irrelevant to the identification of pottery production centres, but there are many instances which would merit careful monitoring of the archaeological evidence if the ground becomes disturbed. As with the evaluation of personal names, the coincidence of pot- and crock- elements is particularly significant. Thus the occurrence of Potters Forstal and Crockney Hill Road in close proximity to one another at Egerton, Kent implies a likely association with pottery manufacture (see Section 9.1.4, nos. 180-181).

As we have seen (Section 1.3.2), field-names can also assist with identifying sources of raw materials used in the production of medieval and later ceramics. At Ightham, Kent, for example, 'Clay pit field' recorded in a rent roll of 1839 (Bennett 1917, 55) may indicate a former source of clay for the local crafts of pottery-, brick- and tile-making (see Section 9.1.4, no. 211 and Section 9.4.4, no. 74). Names such as 'Clay Pit' and 'Sand Hole' have been omitted from the general survey (Fig. 2.8) but known examples have been considered where relevant in the gazetteers of production sites (Sections 9.1 and 9.4). A few names which are clearly not associated with pottery manufacture have also been omitted. These include Penny Pot Field at Hythe (Tithe Award no. 503), Tinker Pot Shaw at Kingsdown, and Potlid Field at Chiddingstone (Tithe Award no. 327a). Place-names including the elements honey- and crock- have been included, however, because there are instances where the combination of honey- meaning soft or sticky ground and crock- apparently denoting an earthen vessel may suggest the presence of raw materials for pottery manufacture. Nevertheless, these examples can only be evaluated in the context of other place-names or different types of evidence.

2.4.6 Recording the information

The amount of information concerning medieval and later pottery production which has been derived from the search for

Fig. 2.9 Data sheet used to record the historical and archaeological evidence for pottery production in South-East England

archaeological and documentary evidence, personal names and place-names necessitates systematic recording. Pre-printed data sheets have therefore been used as a means of storing the information used to compile period and thematic maps. These sheets are intended either to summarise the evidence for a whole parish (Fig. 2.9) or to record details of specific kilns at a particular centre of manufacture. For convenience, however, detailed assessment of the archaeological evidence for sites dated after c.1600 has not been attempted.

Side one of the form provides a chronological summary of the information together with details of location and published sources. On the basis of the chronological summary an 'evaluation' is recorded for each period (see Section 2.4.7). Side two includes all relevant personal names and place-names together with a summary of local geology. Distances from the nearest contemporary market and church are also recorded for identified medieval kilns and nucleated industries. This information is relevant to the study of ceramic marketing (see Section 6.5).

In its present form, the information has been designed, however, in a format to which a system of microcomputer retrieval could be applied. This would certainly be a prerequisite for any survey covering a larger area than the present study region.

2.4.7 Evaluation of the evidence

Any assessment of the evidence for pottery manufacture derived from personal names and place-names must remain provisional subject to the gradual accumulation of additional information. Initial assessments made in 1977-8 have been revised in the light of subsequent research and there are several instances where yet more detailed local investigation could doubtless refine present evaluations. Nevertheless, it is important to establish criteria for assessing the likely significance of the evidence available for each location.

Information used to identify medieval potteries is set out in order of its potential significance in Fig. 2.10. Definite identifications can be derived from either archaeological or documentary evidence (1). The coincidence of two different occupational surnames at the same place also offers fairly reliable evidence for the existence of a workshop (2). Thereafter, the personal names and place-names must be assessed on grounds of their

Evidence for the Medieval Pottery Industry

1. a. Archaeological
 - i Structure
 - ii Wasters
- b. Documentary
 - i Occupation
 - ii Licences, rents etc
 - iii Marketing
2. Combination of different personal names pre-1350
3. Personal name pre-1350
 - i Potter(rural); crocker; figulus
 - ii Potter(urban); dischere; bolour; urnere

Medieval place- or field-name [no suspect element]

4. Placename indicating pottery manufacture but no dating evidence

Personal name 1350-1400

Any relevant medieval placename

5. Relevant placename on O.S. map
6. Relevant field-name in post-medieval source
7. Place- or field-name possibly derived from local post-medieval surname
8. Evidence relating to post-medieval pottery manufacture or other topographical descriptions

Fig. 2.10 Evidence for the medieval pottery industry

date and etymology (3-4). Names known only from post-medieval sources (5-6) are less likely to be significant than those of proven antiquity. The possibility of an association with medieval pottery manufacture becomes remote when post-medieval surnames containing a similar element occur in the same area as the place-name (7), and those place-names which are known to be associated with post-medieval potteries can be ruled out altogether (8).

Taken as a whole, the evidence for medieval and later pottery production can be divided into five categories, of which some are applicable only to the medieval period. 'Positive' identifications comprise all valid archaeological evidence, whether from wasters or from kiln structures, together with specific documentary references to the occupation of potter or clay rents associated with earthenware manufacture. These places may also have medieval personal names or place-names which would otherwise be treated with more circumspection if they occurred in isolation. 'Probable' centres include places with a combination of two or more occupational medieval surnames, while 'likely' evidence comes from personal names of proven antiquity which do not contain a doubtful element. 'Possible' sites may be indicated by place-names such as 'Crock Kiln' which are of unproven antiquity but which are nevertheless likely to be associated with pottery production. The fifth group of 'improbable' sites comprises place-names containing a doubtful element, or surnames which are thought to have ceased to describe the occupation of the bearer. To these should be added a sixth group of sites hitherto classed as possible medieval potteries but for which the evidence is uncertain.

These categories can be subdivided as follows:

A. Positive identifications

Group Ai Kiln structures (to early 17th century)

Mid-/late 11th century

Early/mid-12th century

Late 12th-/early 13th century

Mid-13th/mid-14th century

Late 14th-/mid-15th century

Late 15th-/early-mid-16th century

Late 16th-/early 17th century

Group Aii Wasters only (to early 17th century)

Early/mid-12th century

Late 12th-/early 13th century

Mid-13th-/mid-14th century

Late 14th-/mid-15th century

Late 15th-/early-mid-16th century

Late 16th-/early 17th century

Group Aiii Documentary evidence only

Mid-13th-/mid-14th century

Late 14th-/mid-15th century

Late 15th-/early-mid-16th century

Late 16th-/early 17th century

Group Aiv Later post-medieval potteries

Mid-/late 17th century

c.1700-1750

c.1750-1800

c.1800-1850

c.1850-1900

c.1900-1940

B. Probable medieval potteries

Group Bi Combination of two or more different
occupational surnames pre-1350

C. Likely medieval potteries

Group Ci Occupational surnames with element 'le', pre
1350

Group Cii Occupational surnames pre 1350, occurring in
areas of favourable geology

Group Ciii Place-names without doubtful element, pre 1350

D. Possible potteries of uncertain date

Group Di Place-name incorporating the element -kiln, but
not related to known potteries

Group Dii Other possible place-names not discounted on grounds of etymology or association with non-occupational surnames

pre-1550

post-1550

Group Diii Place-name referring to lane, road, etc

pre-1550

post-1550

E. Improbable evidence for pottery manufacture

Group Ei 'Occupational' surnames pre-1350 discounted on grounds of geology, location or wealth

Group Eii 'Likely' personal names, but occurring 1350-1550

Group Eiii Personal names with doubtful element, pre-1350

Group Eiv Doubtful medieval place-names pre-1350

Group Ev Place-names almost certainly linked with a personal name post-1350

Group Evi Place-names post-1350 with a doubtful element, or doubtful associations

F. Sites hitherto classed as possible medieval potteries but for which the evidence is uncertain

Group Fi Kilns and wasters

Group Fii Personal names, place-names and 'documentary' evidence

Using these criteria, each of the entries in the gazetteer of pottery production sites in South-East England has been assigned to an appropriate group in the accompanying tables (Fig. 2.11A-H). Reference can be made to the gazetteer using the number shown against each place listed under the groups.

Evidence for medieval pottery manufacture (thirteenth- to fifteenth centuries) is summarised on Fig. 2.12. 'Possible' and 'improbable' sites have been omitted from the map, but there is a striking density of 'likely' centres situated on the clay subsoils at the fringes of the Weald. The contrast between Kent and Sussex,

EVIDENCE FOR POTTERY MANUFACTURE			
A. Positive identifications			
Group Ai Kiln structures (to early 17th century)			
Mid/late 11th century			
WEST SUSSEX			
556	Chichester		
557	Chichester		
Early/mid-12th century			
KENT			
233	Rochester		
Late 12th/early 13th century			
EAST SUSSEX		WEST SUSSEX	
483	Ringmer	554	Chichester
Mid-13th/mid-14th century			
GREATER LONDON		EAST SUSSEX	
25	Kingston-upon-Thames	502	Rye
648	Kingston-upon-Thames	514	Streat
HAMPSHIRE		WEST SUSSEX	
103	Binsted	551	Chichester
124	Farnborough	559	Chichester (?)
KENT		587	Heyshott (?)
215	Maidstone	623	Binsted, Tortington
SURREY			
319	Farnham		
338	Limpsfield		
340	Limpsfield		
342	Limpsfield		
343	Limpsfield		
344	Limpsfield		
366	Earlswood, Reigate		
Late 14th/mid-15th century			
GREATER LONDON		WEST SUSSEX	
85	Cheam, Sutton	623	Binsted, Tortington
Late 15th/early-mid-16th century			
GREATER LONDON		KENT	
84	Cheam, Sutton	158	Biddenden
HAMPSHIRE		EAST SUSSEX	
122	Farnborough	443	Hartfield
		524	Wartling
Late 16th/early 17th century			
HAMPSHIRE		EAST SUSSEX	
122	Farnborough	528	Westfield
Group Aii Wasters only (to early 17th century)			
Mid/late 11th century			
KENT			
649	Hackington		
Early/mid-12th century			
None			
Late 12th/early 13th century			
WEST SUSSEX			
553	Chichester		
Mid-13th/mid-14th century			
GREATER LONDON		SURREY	
26	Kingston-upon-Thames	283	Ash
67	Southwark	-	Guildford (?)
89	Sutton (?)	339	Limpsfield
HAMPSHIRE		341	Limpsfield
94	Aldershot (?)	345	Limpsfield
105	Boarhunt	346	Limpsfield
134	Kingsley	364	Reigate (?)
142	Wickham	365	Reigate
		371	Seale (?)

Fig. 2.11A South-East England. Evaluation of the evidence for pottery manufacture

<u>Mid-13th/mid-14th century (contd)</u>			
KENT		EAST SUSSEX	
147	Potter's Corner, Ashford	381	Arlington
160	Blean	386	Brede
189	Hackington	444	Hastings
190	Hackington	445	Hastings
191	Hackington	446	Hastings
192	Hackington	484-494	Ringmer
193	Hackington	529	Wilmington
194	Hackington		
195	Hackington	WEST SUSSEX	
196	Hackington	552	Chichester
197	Hackington	555	Chichester
198	Hackington	588	Heyshott (?)
257	Westerham	610	Rogate (?)
263	Whitstable	624	Binsted, Tortington
<u>Late 14th/mid-15th century</u>			
GREATER LONDON		WEST SUSSEX	
82	Cheam, Sutton	571	East Lavington
83	Cheam, Sutton	572	East Lavington
86	Cheam, Sutton	577	Graffham
<u>Late 15th/early-mid-16th century</u>			
GREATER LONDON		WEST SUSSEX	
23	Woolwich, Greenwich	571	East Lavington
27	Kingston-upon-Thames	572	East Lavington
41	Lambeth		
HAMPSHIRE			
123	Farnborough		
<u>Late 16th/early 17th century</u>			
GREATER LONDON		EAST SUSSEX	
4	Aldgate, London	397	Buxted (?)
5	Mitre Square, London	462	Horam (?)
41	Lambeth	518	Uckfield
75	Southwark		
KENT		WEST SUSSEX	
162	Borough Green	572	East Lavington
232	Plaxtol	578	Graffham
SURREY			
277	Ash		
357	Pirbright		
<u>Group Aiii Documentary evidence only (to early 17th century)</u>			
<u>Mid/late 11th century</u>			
None			
<u>Early/mid-12th century</u>			
None			
<u>Late 12th/early 13th century</u>			
None			
<u>Mid-13th/mid-14th century</u>			
KENT		WEST SUSSEX	
170	Canterbury (?)	1283	Midhurst
226	Platt		
<u>Late 14th/mid-15th century</u>			
GREATER LONDON		KENT	
6	London	171	Canterbury
HAMPSHIRE		WEST SUSSEX	
125	Farnborough	596	Lindfield
<u>Late 15th/early-mid-16th century</u>			
GREATER LONDON		SURREY	
19	Greenwich	281	Ash
24	Woolwich, Greenwich	326	Frimley
KENT		EAST SUSSEX	
167	Brasted	532	Worth (?)

Fig. 2.11B South-East England. Evaluation of the evidence for pottery manufacture

<u>Late 16th/early 17th century</u>		
GREATER LONDON	SURREY	
8 Moorfields, London	372 Seale & Tongham (?)	
20 Greenwich		
36 Kennington, Lambeth (?)	EAST SUSSEX	
55 South Lambeth, Lambeth (?)	398 Buxted	
56 Stockwell, Lambeth (?)	407 Chailey	
73 Southwark	469 Newick	
76 Southwark		
125 Farnborough	WEST SUSSEX	
	596 Lindfield	
KENT	532 Worth	
204 Hernhill (?)		
216 Maidstone		
237 Sandwich		
<u>Group Aiv Later post-medieval potteries</u>		
<u>Mid/late 17th century</u>		
GREATER LONDON	KENT	
20 Greenwich	211 Ightham	
21 Greenwich	226 Piatt	
24 Woolwich, Greenwich	272 Wrotham	
38;46 Lambeth		
40;48 Lambeth	SURREY	
42;50 Lambeth	278 Ash	
43 Lambeth	279 Ash	
58 Deptford	280 Ash (?)	
62 Rotherhithe, Southwark	300 Dorking	
63 Rotherhithe, Southwark	358,359 Pirbright	
69;73 Southwark		
70 Southwark	EAST SUSSEX	
72 Southwark	382 Ashburnham	
74;75 Southwark	384 Battle (?)	
76 Southwark	412 Dallington	
77 Southwark		
91 Putney, Wandsworth	WEST SUSSEX	
	558 Chichester	
HAMPSHIRE		
107 Cove		
108 Cove		
109 Cove		
125 Farnborough		
130 Hawley		
<u>c.1700-1750</u>		
GREATER LONDON	KENT	
20 Greenwich	272 Wrotham	
37 Lambeth		
39 Lambeth	SURREY	
40 Lambeth	281 Ash	
42 Lambeth	299 Dorking	
45 Lambeth		
47 Lambeth		
58 Deptford, Lewisham		
60 Mortlake, Richmond		
68 Southwark		
69;73 Southwark		
71 Southwark		
72 Southwark		
76 Southwark		
78 Southwark		
144 Yateley (Cove?)		
<u>c.1750-1800</u>		
GREATER LONDON	EAST SUSSEX	
20 Greenwich	388 Brede	
22 Plumstead, Greenwich	408 Chailey	
42 Lambeth	448 Hastings	
44 Lambeth	452 Hellingly	
49 Lambeth	453 Hellingly	
60 Mortlake, Richmond	519 Uckfield	
	530 Wilmington	
HAMPSHIRE		
118 Fareham	WEST SUSSEX	
144 Yateley (Cove?)	589 Horsham	
KENT		
152 Benenden		
206 High Halden		
SURREY		
317 Ewell		
361 Pirbright		
<u>c.1800-1850</u>		
GREATER LONDON	EAST SUSSEX	
20 Greenwich	388 Brede	
42 Lambeth	408 Chailey	
51 Lambeth	409 Chailey	
88 Cheam, Sutton	415 Ditchling	
	448 Hastings	
HAMPSHIRE	449 Hastings	
95 Aldershot	454 Hellingly	
96 Aldershot	455 Hellingly	
102 Beauworth	457-8 Herstmonceux	

Fig. 2.11C South-East England. Evaluation of the evidence for pottery manufacture

HAMPSHIRE (CONT)		EAST SUSSEX (CONT)	
111	Cove	464	Iden
112	Cove	465	Laughton
113	Cove	479	Piddinghoe
115	Crookham	503	Rye
118	Fareham	519	Uckfield
126	Farnborough	525	Wartling
142	Swanmore		
KENT		WEST SUSSEX	
200	Hadlow	545	Burgess Hill
206	High Halden	546	Burgess Hill
		547	Burgess Hill
SURREY		548	Burgess Hill
324	Frensham	616	Nutbourne, Southbourne
327	Frimley	633	Racton, Westbourne
329	Frimley	635	West Grinstead
353	Milton		
356;363	Pirbright		
369	Reigate		
c. 1850-1900			
GREATER LONDON		EAST SUSSEX	
42	Lambeth	388	Brede
90	Nine Elms, Wandsworth	408	Chailey
		409	Chailey
HAMPSHIRE		410	Crowborough
116	Droxford	415	Ditchling
118	Fareham	437	Hailsham
119	Fareham	449	Hastings
127	Emsworth, Havant	450	Hastings
KENT		465	Laughton
148	Ashford	503	Rye
-	Frittenden (?)	504	Rye
186	Gravesend	518	Uckfield
200	Hadlow	519	Uckfield
206	High Halden		
219	Nettlestead	WEST SUSSEX	
223	Pembury	537	Ardingly
249	Tonbridge	545	Burgess Hill
252	Tunbridge Wells	546	Burgess Hill
266-267	Wittesham	547	Burgess Hill
		548	Burgess Hill
SURREY		565	East Grinstead
282	Ash	573	East Lavington
312	Elstead	594	Hurstpierpoint
314	Epsom	597	Lower Beeding
321	Farnham	613	Rustington
324	Frensham	635	West Grinstead
359	Pirbright	636	West Grinstead
c. 1900-1940			
KENT		WEST SUSSEX	
164	Boughton-under-Blean	545	Burgess Hill
177	Deal	546	Burgess Hill
223	Pembury	547	Burgess Hill
SURREY		548	Burgess Hill
298	Cranleigh	565	East Grinstead
EAST SUSSEX			
408	Chailey		
454	Hellingly		
504	Rye		
519	Uckfield		
Post-medieval, not dated			
GREATER LONDON		SURREY	
13	Croydon	291	Bramley
15	Norwood, Croydon		
HAMPSHIRE		WEST SUSSEX	
114	Crandall	463	Horsted Keynes
KENT			
224	Platt		
225	Platt		
B. Probable medieval potteries			
Group Bi Combination of two or more different occupational surnames pre 1350			
GREATER LONDON		WEST SUSSEX	
-	?Woolwich, Greenwich	562	Coldwaltham
EAST SUSSEX			
431	Framfield		

Fig. 2.11D South-East England. Evaluation of the evidence for pottery manufacture

C. Likely medieval potteries

Group Cii Occupational surnames with element 'le', pre 1350

GREATER LONDON		EAST SUSSEX	
35	Surbiton, Kingston	418	Willingdon, Eastbourne
80	Deddington, Sutton	420	East Hoathly
		466	Laughton (?)
HAMPSHIRE		478	Pevensey
129	Hawkley		
132	Headley	WEST SUSSEX	
SURREY		569	East Grinstead
306	East Clandon	631	Warnham
330	Frimley	632	Washington
337	Horne		
351	Lingfield		

Group Cii Occupational surnames pre 1350, occurring in areas of favourable geology

KENT		EAST SUSSEX	
231	Platt	401	Buxted
276	Wye	425	Fletching
		517	Ticehurst
SURREY		WEST SUSSEX	
296	Chobham	538	Ashington (?)

Group Ciii Place-names without doubtful element pre 1350, in favourable areas

HAMPSHIRE		EAST SUSSEX	
117	East Worldham	480	Playden
119	Fareham		
137	Liss	WEST SUSSEX	
		543	Boxgrove
SURREY			
297	Cobham (?)		
323	Fetcham		
334	Headley		

D. Possible potteries of uncertain date

Group Di Place-name incorporating the element -kiln, but not related to known potteries

GREATER LONDON		EAST SUSSEX	
16	Sanderstead, Croydon	456	Hellingly (?)
		523	Waldron
KENT			
239	Seal		
250	Tonbridge		

Group Dii Other possible place-names not discounted on grounds of etymology or association with non-occupational surnames

Pre-1550

GREATER LONDON		EAST SUSSEX	
12	Coulsdon, Croydon	421	Ewhurst
33	Norbiton, Kingston	424	Fletching
		430	Framfield
KENT		438	Hailsham
172	Canterbury	513	Sutton, Seaford
182	Eynsford	515	Ticehurst
SURREY			
288	Bletchingley		
293	Chertsey (?)		
301	Dorking (?)		
335	Holmwood (?)		
350	Lingfield		

Post-1550

GREATER LONDON		SURREY	
1	Bexley	303	Dorking
		305	East Clandon
HAMPSHIRE		336	Horne
106	Chawton	368	Reigate
128	Havant		
KENT		EAST SUSSEX	
161	Borden	389	Brede
163	Boughton-under-Blean	390	Brede
165	Boxley	395	Burwash
169	Burham	399	Buxted
178	Dunkirk	400	Buxted
180	Egerton	417	East Hoathly
181	Egerton	429	Forest Row
184	Gillingham	522	Waldron
202	Hartlip	531	Wilmington
205	Hernhill		
217	Meopham	WEST SUSSEX	
227	Platt	533	Albourne
228	Platt	567	East Grinstead
229	platt	600	Milland
230	platt	645	Goring, Worthing
251	Trottiscliffe		
254	Upchurch		
258	Westerham		

Fig. 2.11E South-East England. Evaluation of the evidence for pottery manufacture

KENT (CONT)	
260	West Peckham
261	Westwell
274	Wrotham
275	Wrotham
<u>Group Diii Place-name referring to lane, road, etc</u>	
<u>Pre-1550</u>	
GREATER LONDON	
17	Sanderstead, Croydon
61	Dulwich, Southwark
SURREY	
284	Banstead
360	Pirbright
WEST SUSSEX	
580	Harting
<u>Post-1550</u>	
GREATER LONDON	
57	Streatham, Lambeth
SURREY	
373	Send
<u>E. Improbable evidence for pottery manufacture</u>	
<u>Group Eii 'Occupational' surnames pre-1350 discounted on grounds of geology, location or wealth</u>	
GREATER LONDON	
10	London
65	Southwark
KENT	
222	New Romney
SURREY	
333	Guildford
WEST SUSSEX	
614	Shoreham
<u>Group Eiii 'Likely' personal names, but occurring 1350-1550</u>	
GREATER LONDON	
14	Croydon
81	Carshalton, Sutton
HAMPSHIRE	
100	Basingstoke
KENT	
240	Seal
SURREY	
304	Dorking
352	Lingfield
378	Walton-on-Thames
EAST SUSSEX	
385	Beckley
396	Burwash
432	Frant
509	Rye
521	Wadhurst
WEST SUSSEX	
536	Angmering
598	Madehurst
602	North Stoke
620	Storrington
<u>Group Eiii Personal names with doubtful element pre-1350</u>	
GREATER LONDON	
2	Beckenham, Bromley
11	Addiscombe, Croydon
66	Southwark
99	Basingstoke
KENT	
173	Canterbury
236	St Nicholas at Wade
242	Sellindge
243	Snodland
245	Speldhurst
269	Wittersham
SURREY	
286	Banstead
287	Betchworth
289	Bletchingley
294	Chertsey
311	Egham
316	Epsom
374	Shere
375	Thames Ditton
EAST SUSSEX	
380	Alfriston
383	Ashburnham
417	Eastbourne
427	Folkington
428	Folkington
433	Friston
435	Guestling
471	Ninfield
475	Northiam
508	Rye
520	Udimore
526	Westdean
WEST SUSSEX	
535	Angmering
539	Ashurst
541	Billingshurst
561	Climping
569	East Grinstead
576	Ford
583	Harting
590	Horsham
595	Lavant
607	Pulborough
619	Steyning
625	Binsted, Tortington
646	Salvington, Worthing
647	Yapton
<u>Group Eiv Doubtful medieval place-names pre-1350</u>	
GREATER LONDON	
9	London
59	Mitcham, Merton
HAMPSHIRE	
138	Odiham
139	Sherborne St John
SURREY	
292	Chertsey
309	Egham
310	Egham
EAST SUSSEX	
505	Rye

Fig. 2.11F South-East England. Evaluation of the evidence for pottery manufacture

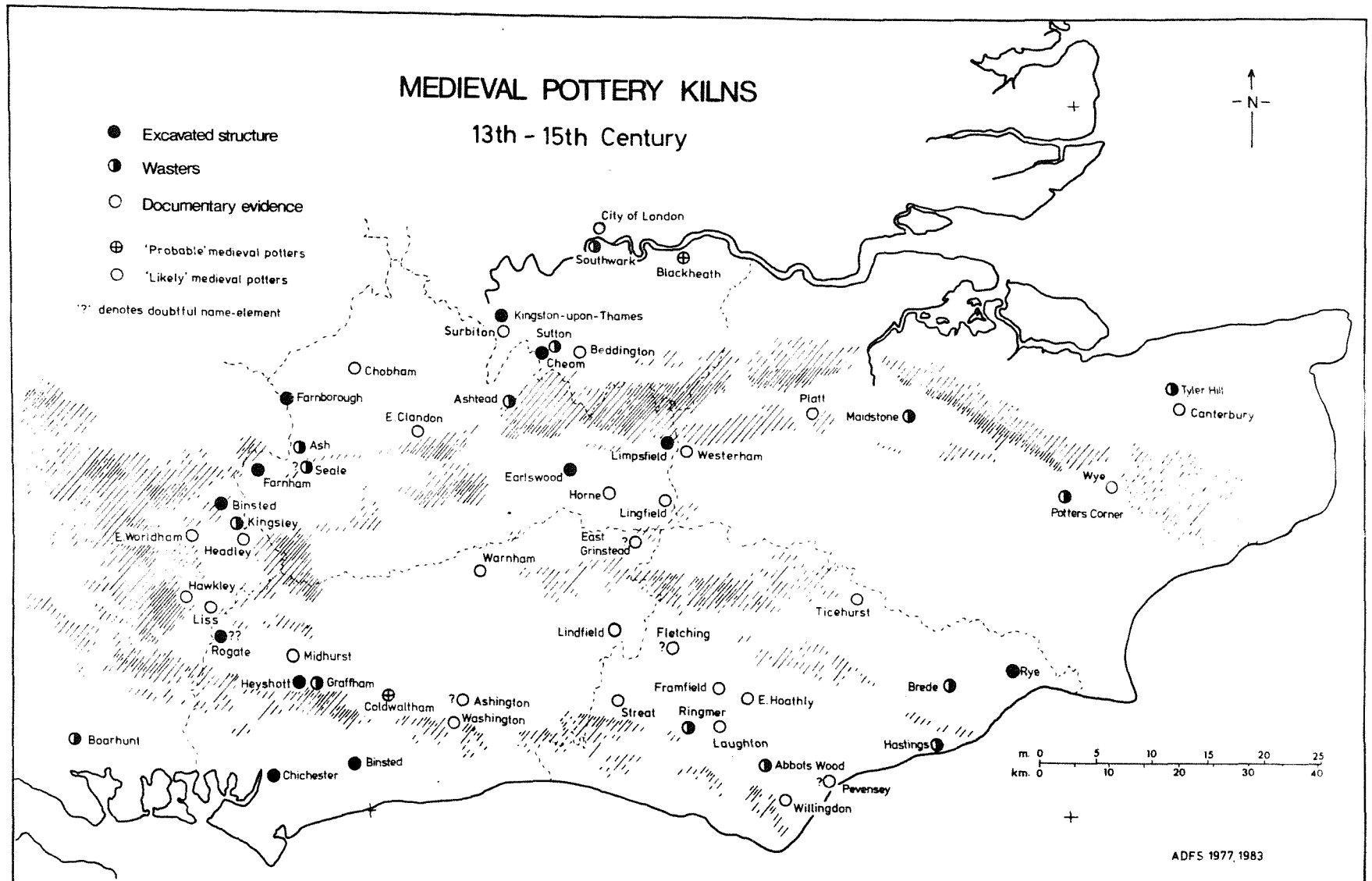
Group Eiv Doubtful medieval place-names pre-1350 (cont)			
KENT		WEST SUSSEX	
174	Capel	604	Pulborough
244	Speldhurst		
265	Wingham		
Group Ev Place-names almost certainly linked with a personal name post-1350			
KENT		WEST SUSSEX	
153;154	Benenden	568	East Grinstead
157	Bethersden	591	Horsham
253	Tunbridge Wells	611	Rusper
255-6	Walmer	622	Thakeham
		640	Wisborough Green
		642	Wiston
SURREY			
301	Dorking (?)		
335	Holmwood (?)		
EAST SUSSEX			
403	Catsfield		
404	Catsfield		
414	Dallington		
440	Hailsham		
461	Herstmonceux		
511	Salehurst		
Group Evi Place-names post-1350 with a doubtful element			
GREATER LONDON		SURREY	
3	St Mary Cray, Bromley	285	Banstead
18	Eltham, Greenwich	295	Chobham
34	Norbiton, Kingston	302	Dorking
92	Southfields, Wandsworth	307	East Horsley
93	Tooting Bec, Wandsworth	308	Effingham
		313	Elstead
HAMPSHIRE		315	Epsom
97	Basing	318	Ewhurst
98	Basingstoke	332	Great Bookham
133	Heckfield	335	Holmwood
140	Southwick	354	Ockley
143	Winchfield	355	Ockley
		370	Reigate
KENT		376	Titsey
145	Appledore	377	Titsey
146	Ash		
150	Willesborough, Ashford	EAST SUSSEX	
155	Bethersden	393	Patcham, Brighton
156	Bethersden	411	Crowhurst
159	Bilsington	416	Eastbourne
166	Boxley	434	Guestling
168	Brenchley	436	Hadlow Down
175	Capel	439	Hailsham
176	Cobham	451	Heathfield
179	East Malling	468	Lewes
183	Frindsbury	470	Ninfield
185	Gillingham	473	Northiam
187	Gravesend	476	Pevensey
188	Guston	477	Pevensey
203	Hawkhurst	516	Ticehurst
210	Hoo		
212	Lydden	WEST SUSSEX	
213	Lympne	534	Angmering
214	Lynsted	540	Billingshurst
218	Milstead	563	Cowfold
220	Newington	564	East Dean
221	New Romney	566	East Grinstead
235	St Nicholas at Wade	575	Fittleworth
241	Sellindge	581	Harting
247	Stockbury	582	Harting
248	Tenterden	585	Henfield
262	Whitfield	601	Northchapel
264	Wingham	604	Pulborough
268	Wittersham	606	Pulborough
273	Wrotham	615	Slinfold
		627	Trotton
		628	Walberton
		637	West Grinstead
		638	West Grinstead
		639	West Grinstead
		644	Worthing, Durrington
F. Sites hitherto classed as possible medieval potteries but for which the evidence is uncertain			
Group Fi Kilns and wasters			
SURREY		WEST SUSSEX	
-	Ewhurst	550	Bury
-	Mickleham	-	Horsham
		597	Lower Beeding
EAST SUSSEX			
447	Hastings		
467	Lewes		
Group Fii Personal names, place-names and 'documentary' evidence			
EAST SUSSEX			
-	Piddinghoe		
-	Winchelsea		
-	Poynings		

Fig. 2.11G South-East England. Evaluation of the evidence for pottery manufacture

Group Eiv Doubtful medieval place-names pre-1350 (cont)			
KENT		WEST SUSSEX	
174	Capel	604	Pulborough
244	Speldhurst		
265	Wingham		
Group Ev Place-names almost certainly linked with a personal name post-1350			
KENT		WEST SUSSEX	
153; 154	Benenden	568	East Grinstead
157	Bethersden	591	Horsham
253	Tunbridge Wells	611	Rusper
255-6	Walmer	622	Thakeham
		640	Wisborough Green
		642	Wiston
SURREY			
301	Dorking (?)		
335	Holmwood (?)		
EAST SUSSEX			
403	Catsfield		
404	Catsfield		
414	Dallington		
440	Hailsham		
461	Herstmonceux		
511	Salehurst		
Group Evi Place-names post-1350 with a doubtful element			
GREATER LONDON		SURREY	
3	St Mary Cray, Bromley	285	Banstead
18	Eltham, Greenwich	295	Chobham
34	Norbiton, Kingston	302	Dorking
92	Southfields, Wandsworth	307	East Horsley
93	Tooting Bec, Wandsworth	308	Effingham
		313	Elstead
HAMPSHIRE		315	Epsom
97	Basing	318	Ewhurst
98	Basingstoke	332	Great Bookham
133	Heckfield	335	Holmwood
140	Southwick	354	Ockley
143	Winchfield	355	Ockley
		370	Reigate
KENT		376	Titsey
145	Appledore	377	Titsey
146	Ash		
150	Willesborough, Ashford	EAST SUSSEX	
155	Bethersden	393	Patcham, Brighton
156	Bethersden	411	Crowhurst
159	Bilsington	416	Eastbourne
166	Boxley	434	Guestling
168	Brenchley	436	Hadlow Down
175	Capel	439	Hailsham
176	Cobham	451	Heathfield
179	East Malling	468	Lewes
183	Frindsbury	470	Ninfield
185	Gillingham	473	Northiam
187	Gravesend	476	Pevensay
188	Guston	477	Pevensay
203	Hawkhurst	516	Ticehurst
210	Hoo		
212	Lydden	WEST SUSSEX	
213	Lympne	534	Angmering
214	Lynsted	540	Billingshurst
218	Milstead	563	Cowfold
220	Newington	564	East Dean
221	New Romney	566	East Grinstead
235	St Nicholas at Wade	575	Pittleworth
241	Sellindge	581	Harting
247	Stockbury	582	Harting
248	Tenterden	585	Henfield
262	Whitfield	601	Northchapel
264	Wingham	604	Pulborough
268	Wittersham	606	Pulborough
273	Wrotham	615	Slinfold
		627	Trotton
		628	Walberton
		637	West Grinstead
		638	West Grinstead
		639	West Grinstead
		644	Worthing, Durrington
F. Sites hitherto classed as possible medieval potteries but for which the evidence is uncertain			
Group Fi Kilns and wasters			
SURREY		WEST SUSSEX	
-	Ewhurst	550	Bury
-	Mickleham	-	Horsham
		597	Lower Beeding
EAST SUSSEX			
447	Hastings		
467	Lewes		
Group Fii Personal names, place-names and 'documentary' evidence			
EAST SUSSEX			
-	Piddinghoe		
-	Winchelsea		
-	Poynings		

Fig. 2.11H South-East England. Evaluation of the evidence for pottery manufacture

Fig. 2.12 South-East England. Medieval pottery manufacture (13th to 15th century)



however, reflects the availability of published documentary sources, of which there are few for Kent. Numerous field names have been noted in Kentish Tithe Awards, but few are of proven antiquity and they can be classed as no more than 'possible' sites until substantiated by further research. As the evidence from Platt, Kent suggests (see Section 9.1.4, no. 226), there may well be medieval potteries, as yet unlocated, on the fringes of the Kentish Weald, comparable with those which have been found in Surrey and Sussex.

2.4.8 Recording and analysis of waster assemblages

Evidence derived from documentary sources, personal names and place-names provides the basis for systematic fieldwalking to locate medieval and later kiln sites. Once a site has been found - whether by chance or as a result of fieldwalking - it is necessary to establish the date of the material; the extent of the production area; and the range of forms represented. Questions concerning kiln technology and layout of the workshop can only be answered by excavation.

Conventional practices of fieldwalking are suitable for kiln sites as well as for the identification of settlements (Le Patourel 1980, 17-18). A system of fieldwalking based upon grid lines proved successful, for example, at Ringmer in 1977 when it was found that the best results were achieved after the ploughsoil had been exposed to the weather for some 2-3 months (D. Freke, pers. comm., 1977). Even one waster heap, however, can yield a daunting surface collection of pottery. Sampling is therefore essential in most cases. It is best undertaken at two levels. Firstly it is necessary to sample the area using grid lines or squares; and secondly the assemblage itself must be sampled, if the quantity is large.

Fieldwalking on the site where medieval pottery waste had been found at Jack-O-Toole's Row, Boarhunt, Hants was undertaken on a 5-metre grid, followed by sample excavation of 14 sq. m. Wasters were then plotted by weight per 25 sq. m. using isolines to illustrate spatial variations in the concentration (Whinney 1981, 43 fig. 2). Similar results could be achieved using the grid-line as opposed to grid-square method of surface collection although there would be a risk of missing significant concentrations if the lines were spaced too far apart. Collection from 2-metre strips based upon grid-lines at 10-metre intervals offers an effective minimum coverage of dense waster scatters. Whether sampled by line or by square, however, sherd

weight is certainly the most appropriate method of quantifying spatial trends.

Analysis of the assemblage itself requires far more sophisticated recording. As with pottery from consumer sites (see Section 2.5), 'vessel equivalents' are more reliable than either sherd weights, sherd counts or estimates of minimum vessel numbers, and these statistics can certainly be recorded more easily than sherd density (Hinton 1977b, 231-235). In order to assess spatial patterns it is usually necessary to examine material from all of the sampled areas. Nevertheless, where discrete concentrations have been identified, it may be appropriate to select fewer sampled sectors for more detailed analysis to represent the principal spatial trends. 'Vessel equivalents' are suitable for the quantification of both forms and fabrics.

The practical problems of analysing pottery from production sites are exacerbated by excavation. Nevertheless, Freke and Craddock (1979, 87-89; 1980, 15-17) have shown that even large assemblages can be sampled relatively rapidly. This involves both careful selection of the excavated contexts to be examined and the choice of a minimum sample size capable of yielding the information required. Experience has demonstrated the importance of achieving total recovery in order to identify rare or exotic items among an assemblage, but reliable estimates for the proportion of different forms can be determined by rigorous sampling. At Lower Parrock, Hartfield, for example, broad trends were established by recording the 'vessel equivalent' statistics for less than 1000 rim sherds (Freke & Craddock 1980, 15).

Once a type-series has been established for a particular workshop, the task of recording can be undertaken rapidly. The material from a surface scatter of probable wasters at 17 Acre Field, Brede, East Sussex, for example, has been classified into broad fabric groups, quantified by sherd counts (see Section 12.2.5). The analysis of forms, however, necessitates more sophisticated quantification using 'vessel equivalents'. These methods have been used to record the pottery associated with a medieval tile kiln at Little Hall Farm, Tyler Hill, Kent (see Section 9.1.4, no. 195). Both the overall quantity and the average sherd size were small, but 'vessel equivalents' have proved to be a viable means of establishing the ratio of forms among a limited range of medieval vessel types. Results of this analysis will appear elsewhere.

Owing to the greater diversity of forms it is more

difficult in the first instance to establish a type-series for the output of a post-medieval workshop. Nevertheless, both the range of vessel types and the technical and stylistic traits adopted by post-medieval potters offer considerable scope not only for identifying marketed vessels but also for comparing regional variations in ceramic output. Having completed initial sorting of the material, the first stage in assessing the range of forms represented among the products of the High Lankhurst potter(s) at Westfield, East Sussex (see Section 9.1.6, no. 528) was therefore to isolate about 20 different rim-types, related where possible to the principal vessel forms. The diameter and percentage of rim present was then recorded for each sherd to provide data for assessing vessel sizes and the proportion of different types represented.

Although there was a considerable amount of pottery from excavation of the High Lankhurst kiln, the quantity was not unmanageable, and it came from a restricted area of the site. Some success has therefore been achieved in reconstructing individual vessels. After preliminary sorting by members of the Hastings Area Archaeological Research Group, painstaking recording by Mr J. Bell of rim types and sizes has assisted with the reconstruction of vessel profiles. Thus, although sampling would be essential for a larger assemblage, in this instance detailed analysis of all the excavated material has provided more comprehensive information about the range of shapes than would be derived from statistical analysis of rim forms alone.

A similar approach might be adopted for specific groups even among larger ceramic assemblages. Moreover, the task of reconstructing vessel profiles is undoubtedly an instance where voluntary effort can be put to a worthwhile cause. Reconstruction is extremely time-consuming, but selected assemblages from kiln sites certainly merit more attention than the majority of ceramic groups from consumer sites in order to establish the range of forms characteristic of specific industries.

The analysis and publication of late medieval pottery from the High Street kiln at Cheam (see Section 9.1.2, no. 84) serves as an example of the effective combination of voluntary effort and professional expertise (Orton 1982a). Computer analysis of data derived from quantification of forms and assessments of fragmentation etc. has assisted with the evaluation of chronological trends and variations in output. In any project like this, identification and

recording takes a long time. Providing that accuracy can be monitored, there is considerable scope, therefore, for enlisting voluntary assistance. Moreover, with access to the necessary expertise, archaeological societies are often in a good position to undertake detailed studies of local pottery fabrics within a limited area (Breen 1984).

2.5 'CONSUMER' SITES AND THE EVIDENCE FOR CERAMIC DISTRIBUTION

2.5.1 The evidence and its limitations

Documentary sources offer both direct and indirect evidence of the various ways in which a medieval pot might have found its way from the potter who made it to the place where it has been found on an archaeological excavation (Moorhouse 1983, 49-78). While it is useful to be aware of the possible methods of distribution, the documentary evidence is scarce and insufficient to give a comprehensive impression of national or regional, let alone local, trends. For these it is necessary to rely upon interpretation of the archaeological evidence from medieval settlements. Nevertheless, distribution maps of medieval ceramics cannot be interpreted without knowledge of the complex processes from which they have been derived (Moorhouse 1978a, 4).

The methods of distribution and the ways in which they might manifest themselves in the archaeological record will be discussed in Section 6.2. Fundamental to any assessment of the archaeological evidence for ceramic distribution, however, is an assumption that the quantity of a particular type of pottery represented in the archaeological record bears some relation to the amount used at a given period and that this in turn is a reflection of the consumer's needs and the ease with which the pots could be obtained. The likelihood of a potter securing a sale for his wares would be determined, therefore, by distance from his customers; by the network of communications; by the organisation of trade including markets and middlemen; and by the needs and personal preferences of producer and customer alike. It is the task of the ceramic archaeologist to assess the extent to which these assumptions are valid for individual case studies.

Regional and local trends can be identified by making comparisons between ceramic assemblages from consumer sites. The validity of the conclusions drawn from these comparisons, however, depends upon the extent to which the archaeological record at each place represents similar social and economic conditions. Thus pottery carried some distance from its source by an itinerant household is more likely to be found on a seigneurial site than at a deserted medieval village; patterns of rubbish disposal will be different in town and country; and, above all there are the problems of establishing the contemporaneity of assemblages (Blake 1980, 6-8).

In order to define distribution patterns, it is necessary to evaluate the ceramic assemblages from numerous sites. The evidence which they offer, however, is of variable significance, especially when chronology is uncertain. Stratified groups are clearly important for establishing chronological trends, but these groups alone would be insufficient to define geographical distributions. Spatial trends can only be identified by mapping the evidence derived from fieldwalking and small excavations occurring over a wide area.

The availability of assemblages for analysis is determined both by the density of medieval settlement (see Section 1.4.2) and by the intensity of archaeological fieldwork (see Section 2.2). Thus, significant surface scatters of medieval pottery have been found, for example, on downland farm sites near Lewes (Biggar 1977-8, 152), but fieldwalking in the Wadhurst area of the High Weald has yielded no more than a dozen or so sherds of medieval pottery (D.Freke, pers. comm. 1978). Ceramic distributions should not therefore be assessed in isolation, and it is unfortunate that practical considerations have discouraged others from preparing the type of distribution maps pioneered by Jope (1952b, 75 fig. 11) which showed both the presence and absence of particular wares (Davey & Hodges 1983, 6). The recording and evaluation of ceramic groups in South-East England is intended as the basis for such an approach.

2.5.2 Groups, sequences and collections

Compilation of a comprehensive gazetteer and numbered base maps forms the starting point for interpretation. Data from Kent and Sussex have been drawn from published sources, museums and private collections, whereas the coverage of Surrey is more restricted. Known collections, however small, have been included and the list of finds for the three counties now runs to well over 1800 entries. A 'site' can vary from the findspot of an individual vessel or a small group of sherds to a well-stratified sequence derived from a large excavation. In parts of the area even small groups can be of considerable geographical significance for the definition of fabric regions.

Collections of medieval pottery have accumulated by various means. Many of the early museum acquisitions were casual finds whose provenance was not always recorded. Sometimes, as in the case of finds 'from the Cray Valley' at Dartford Museum (Box 40-1) there is only a general indication of their source. Some unprovenanced material in museum collections has also been acquired by purchase. In

such cases, even a recorded provenance must be treated with circumspection.

Records of material salvaged from destruction are usually more reliable. At Minnis Bay, Birchington, Kent, for example, groups of medieval pottery were salvaged from eroded wells on the foreshore between 1949 and 1970. All this material has been deposited and recorded at the Powell-Cotton Museum. Pottery recovered from fieldwalking is also to be found among several museum collections in the region. Locations or national grid references are recorded for most of the material collected during the 1950s and 1960s, and some groups recovered subsequently have been recorded more thoroughly in relation to fieldwalking grids.

The largest collections of medieval pottery come from excavations. The usefulness of these groups depends upon the nature of the site and the quality of the recording. Small and unstratified groups from excavations may be more prolific than sherds found during fieldwalking, but the information derived from them concerning ceramic chronology is of limited significance. The small sherds from Maison Dieu, Arundel are typical of the material found on sites of this nature (Worthing Museum 68/1185; 68/1186). Nevertheless, generalised quantification of these groups can contribute to the understanding of ceramic distributions.

Standards adopted for the publication of medieval ceramics in South-East England have also varied. Sometimes, the discovery of pottery has received no more than a brief mention in the literature, but even these notes may help with the identification of provenances for museum collections. The majority of published excavation reports, however, contain illustrations and a catalogue which may or may not include stratigraphic information. In the majority of reports on medieval ceramics, however, the material is arranged either by type or by stratigraphic group. Among the reports published before the 1970s, the account of work at Hangleton is unusual in containing a table of artifact associations relating to the excavated structures (Smith & Hurst 1963, 142-3).

Illustrated pottery catalogues are usually adequate for identifying distinctive wares and they can be used for making general estimates of quantity. For more detailed information, however, it is necessary to re-examine the material itself. The viability of this exercise depends, however, upon the care with which the finds have been arranged for storage. In several cases, re-evaluation for the

purpose of quantification would be impractical owing to deficiencies in labelling of the material. Published groups of pottery from Eastgate, Rochester, however, illustrate the possibilities for further research where the material has been stored carefully. These groups have now been quantified by weight and sherd count, and samples of the principal fabrics have been thin-sectioned (see Section 12.3).

Few reports on medieval ceramics from consumer sites in South-East England contain quantified data. General estimates were included for the fabrics at Eynsford Castle (Rigold 1971, 152, 156 etc.) and tabulated data have appeared for the excavations at Bramber Castle (Barton & Holden 1977, 56) and in certain Sussex towns (e.g. Freke 1977-78a, 195). The selection of key groups for dating and quantification, however, has proved a worthwhile approach for studying the material from small excavations. Sheppard (in Canham 1978, 89-90), for example, has summarised medieval and later assemblages from Brentford using three-dimensional histograms to illustrate the proportion of different wares present in significant groups. If applied more widely, this approach would offer useful data for mapping ceramic distributions.

In addition to reports on excavated assemblages, published summaries of certain pottery types contain information relevant to the interpretation of regional distribution patterns. Several sites, especially in Kent and Sussex, for example, were included in Dunning's (1968) survey of medieval pottery imports, while a more recent appraisal of continental imports in Sussex has been published by Hurst (1980). Although Barton (1979) has concentrated particularly on the dating and development of medieval ceramics in Sussex, he, too, has published useful summaries of selected regional distributions. Latterly, work undertaken by the Museum of London, Department of Urban Archaeology has included mapping the occurrence of certain ceramic types in the London region (e.g. Pearce et. al. 1982). It is seldom possible in surveys of this kind, however, to assess the ratio of regional and continental imports to locally-produced wares. Such assessments can only be made when quantified data are available for each assemblage.

2.5.3 Quantification

The subject of quantification has generated a substantial methodological literature (Solheim 1960; Evans 1973; Hulthen 1974; Orton 1975; Millett 1979). The range of possible methods summarised

by Blake and Davey (1983, 24) includes:-

- i) Sherd count
- ii) Weight
- iii) Vessel numbers (e.g. minimum number of vessels, rim counts etc.)
- iv) Vessel equivalents
- v) Volume
- vi) Surface area

Although each method has its protagonists, 'vessel equivalents' offer the greatest versatility for estimating the proportions of both forms and fabrics in large assemblages (Orton 1975, 31). It takes some time, however, to record the information, and it is therefore essential that only the most significant groups are selected for comprehensive analysis. This method of quantification would certainly be unsuitable for a regional survey.

Practical considerations dictate that a quick and simple approach should be adopted for a regional survey when the data are required for mapping rather than for statistical manipulation. Sherd counts offer a rapid means of quantifying assemblages irrespective of their size. Moreover, it is an important consideration that this can be undertaken without cumbersome equipment in the often cramped conditions of a museum basement. The deficiencies of sherd counts must be acknowledged, but the method is adequate for the purpose of classifying assemblages according to the broad 25% divisions needed for mapping.

More detailed comparisons can be made between selected groups using both weight and sherd count. These two methods of quantification have been adopted for instance to compare the proportion of different fabrics among 'Dissolution' assemblages dated to the second quarter of the sixteenth century at Bayham Abbey and Battle Abbey in East Sussex (Streeten 1983a, 104-5; forthcoming a). Research involving functional comparisons, however, would necessitate quantification using vessel equivalents. Indeed, this is also relevant to studies of distribution because an assemblage of culinary wares would not necessarily contain jugs, even if these vessels were available in the area. As more wares are identified by their fabrics and forms, so the need is likely to arise for more detailed quantification of sample groups to identify variations in the marketing of different forms.

2.5.4 Recording the information

As with the evidence for pottery production, data sheets are being used to record the information about consumer sites in predetermined categories (Fig. 2.13). Details of the sites themselves, recorded on side one of the form, are similar to the information contained in the Medieval Pottery Research Group Bibliography, but the nature of the dating evidence; the type of site; and the evaluation of the information have all been subdivided according to date. This takes account of changes in the nature of a site over time and can be used, for example, to indicate the changing function of monastic buildings before and after the Dissolution.

Chronological divisions are the same as those adopted for the survey of production centres. Thus, assemblages from consumer sites can be plotted in relation to contemporary kilns (Figs. 2.14-22). Evaluation of the information will be discussed in Section 2.5.5, but reliable groups from consumer sites provide evidence for plotting the presence and absence of regional types or the products of known kilns. Combining the contemporary evidence for both production and distribution on the same map offers a reliable basis both for studying known distributions and for re-assessing the assemblages when the products of hitherto unknown kilns are identified.

Details relevant to specific ceramic types are recorded on side two of the data sheet (Fig. 2.13). Coarsewares have been classified according to their principal inclusions, and there is space to record the general traits of manufacture and decoration for jugs and table-wares etc. Other entries on the form include those for kiln products, regional types, regional imports, continental imports and vessel types, each of them recorded by their respective common names.

Where the material has been examined, an unquantified presence is denoted by '*' and one or two sherds amounting to less than 5% are shown as 'O'. Larger quantities measured by sherd count are indicated in 25% divisions by filling quadrants of the relevant box. Moving in a clockwise direction, therefore, the first quadrant represents up to 25%, the second up to 50% and the third up to 75%. Where specific figures are available from a published report or more sophisticated quantification of an important group, the proportion of a particular ware is expressed as a percentage of the contemporary material.

[illegible]

Fig. 2.13 Data sheet used to record the archaeological evidence for medieval pottery distribution derived from 'consumer' sites in South-East England

2.5.5 Evaluation of the evidence

Reliability of the statistical information derived from an individual group depends upon the size of the assemblage. Following the criteria adopted by Hodder (1974b, 72), 'reliable' groups comprise 30 or more contemporary sherds. Although this is not a valid statistical sample, 30 sherds is sufficient to reflect the general nature of the ceramic assemblage at a given site. The qualification 'contemporary' is taken to imply sherds which are assigned on the basis of their form and fabric to the same chronological division on the data sheet. Difficulties of identification have probably resulted in disproportionate attributions to the mid-13th-/mid-14th century.

The value of a particular group for dating depends upon the nature of its associations, as shown in Section IV of the form.

'Independent' dating is confined to contexts containing coins or other datable artifacts and to stratigraphic associations dated either by documentary or architectural evidence. There are relatively few such cases where the evidence is unequivocal. Dating based upon 'stratigraphy' alone includes groups assigned to one of the periods on the basis of their position in a stratigraphic sequence but for which there is no independent evidence for an absolute chronology. This category also includes stratified groups containing diagnostic wares, but it should be stressed that the value of so-called 'type-fossils' has been diminished by ceramic research which shows that many of these types had a longer period of ascendancy than had been inferred previously.

Information concerning ceramic distributions derived from consumer sites has therefore been classified as follows (Figs. 2.14-22):-

- i) Stratified groups (1: examined)
- ii) Stratified groups (2: published, not examined)
- iii) Reliable groups (1: examined)
- iv) Reliable groups (2: published, not examined)
- v) Small groups; casual finds
- vi) Unpublished material, not examined

Where necessary, both 'stratified' and 'reliable' groups which have been examined can be used to indicate the absence of a particular ware. This may be supplemented by recently published material which has not been examined. 'Absence' is a statement of present knowledge rather than a claim of statistical significance, but a repeated pattern of absences, even among the smaller groups, helps to define

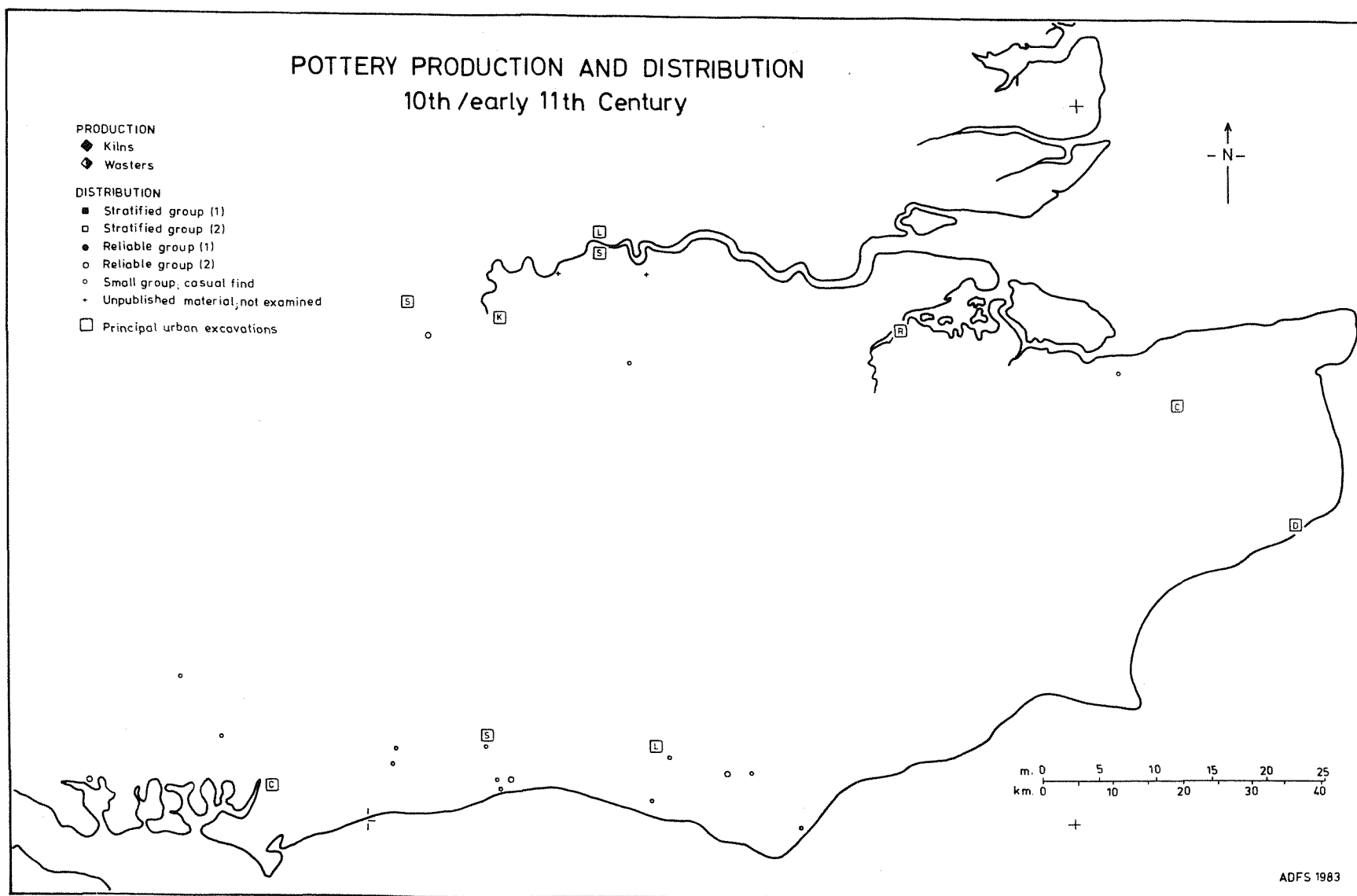
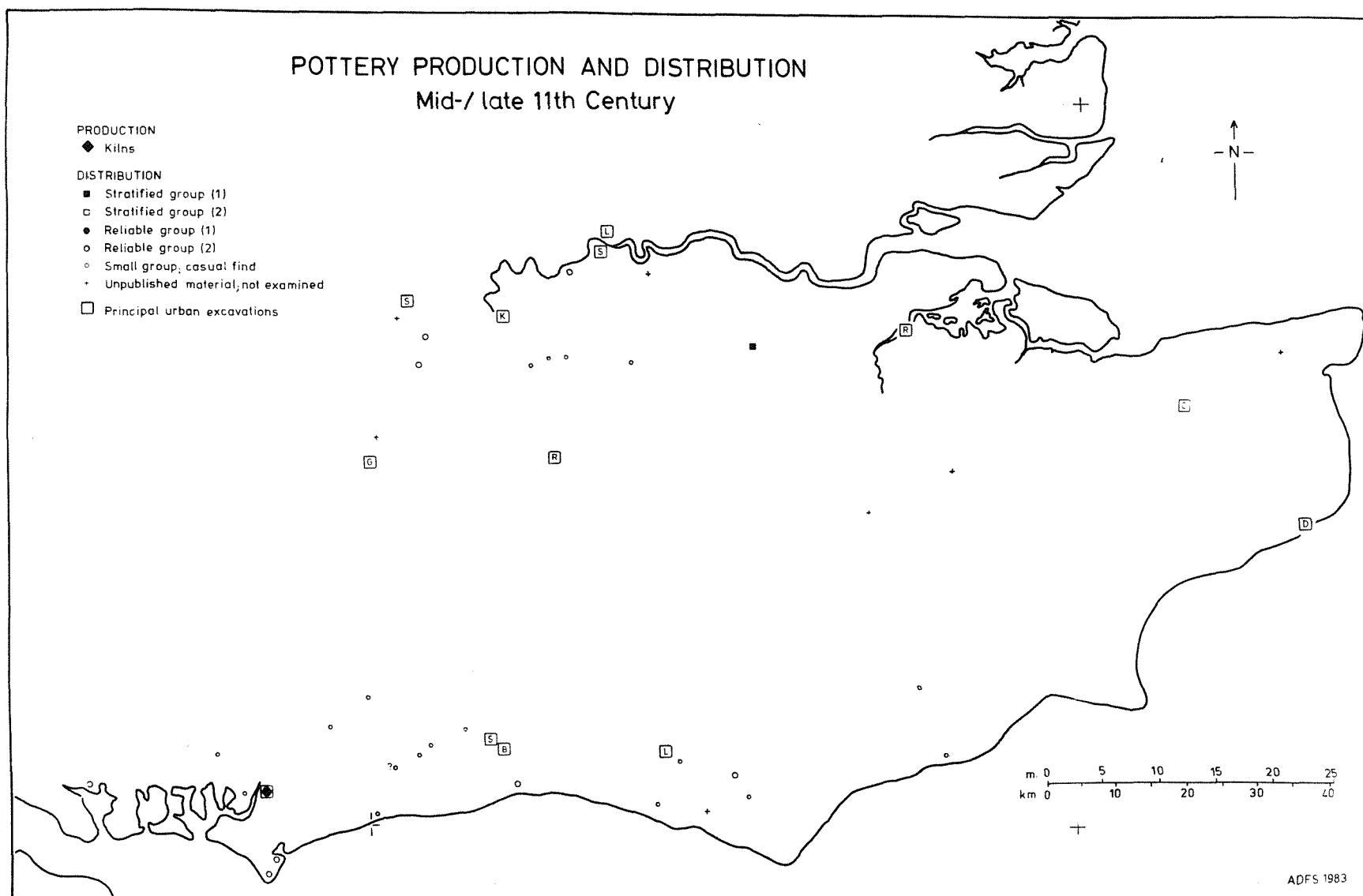


Fig. 2.14 Kent, Surrey, and Sussex. Pottery groups: 10th to early 11th century

Fig. 2.15 Kent, Surrey, and Sussex. Pottery groups: mid-to late 11th century



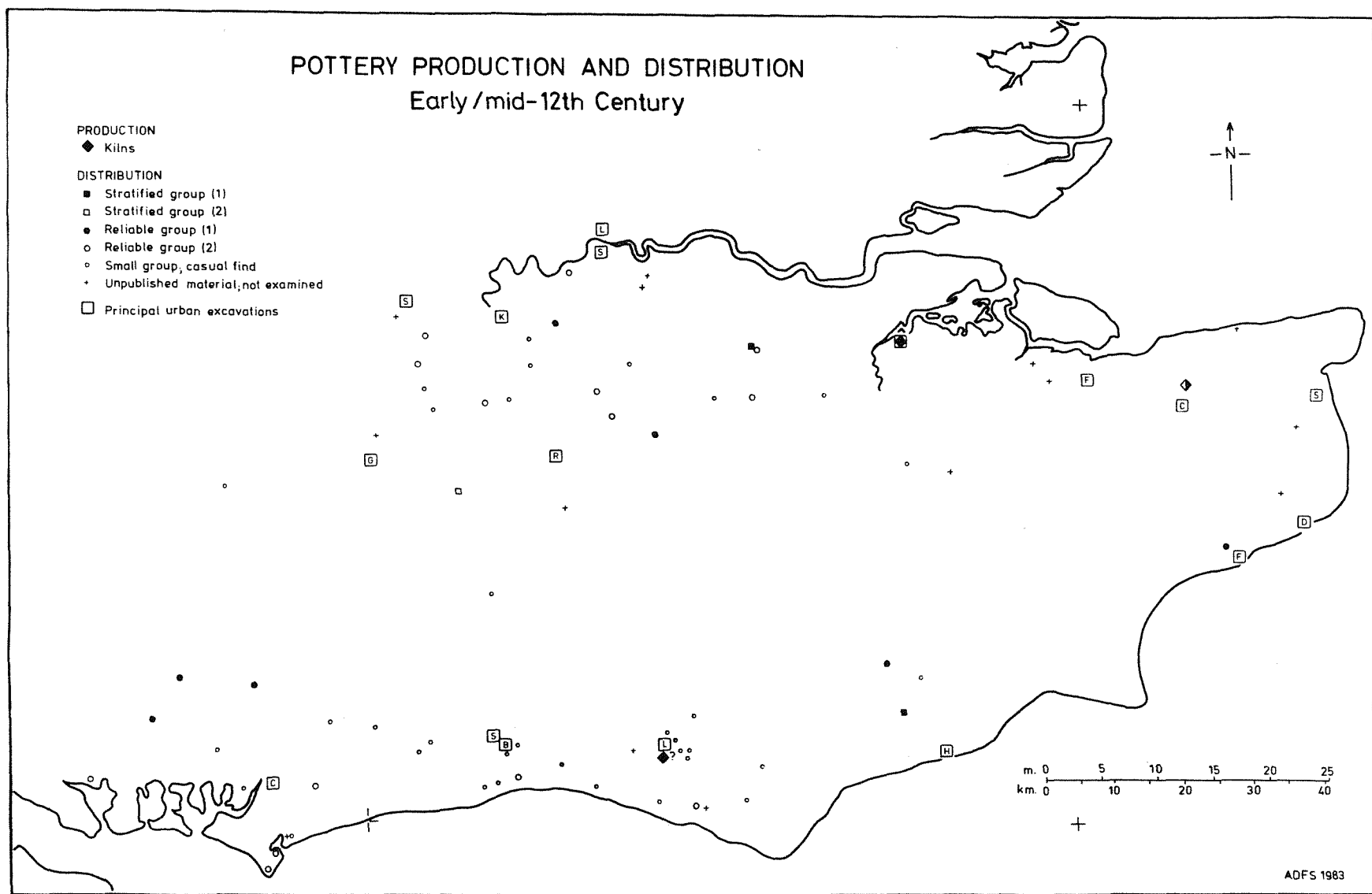


Fig. 2.16 Kent, Surrey, and Sussex. Pottery groups: early to mid-12th century

Fig. 2.17 Kent, Surrey, and Sussex. Pottery groups: late 12th to early 13th century

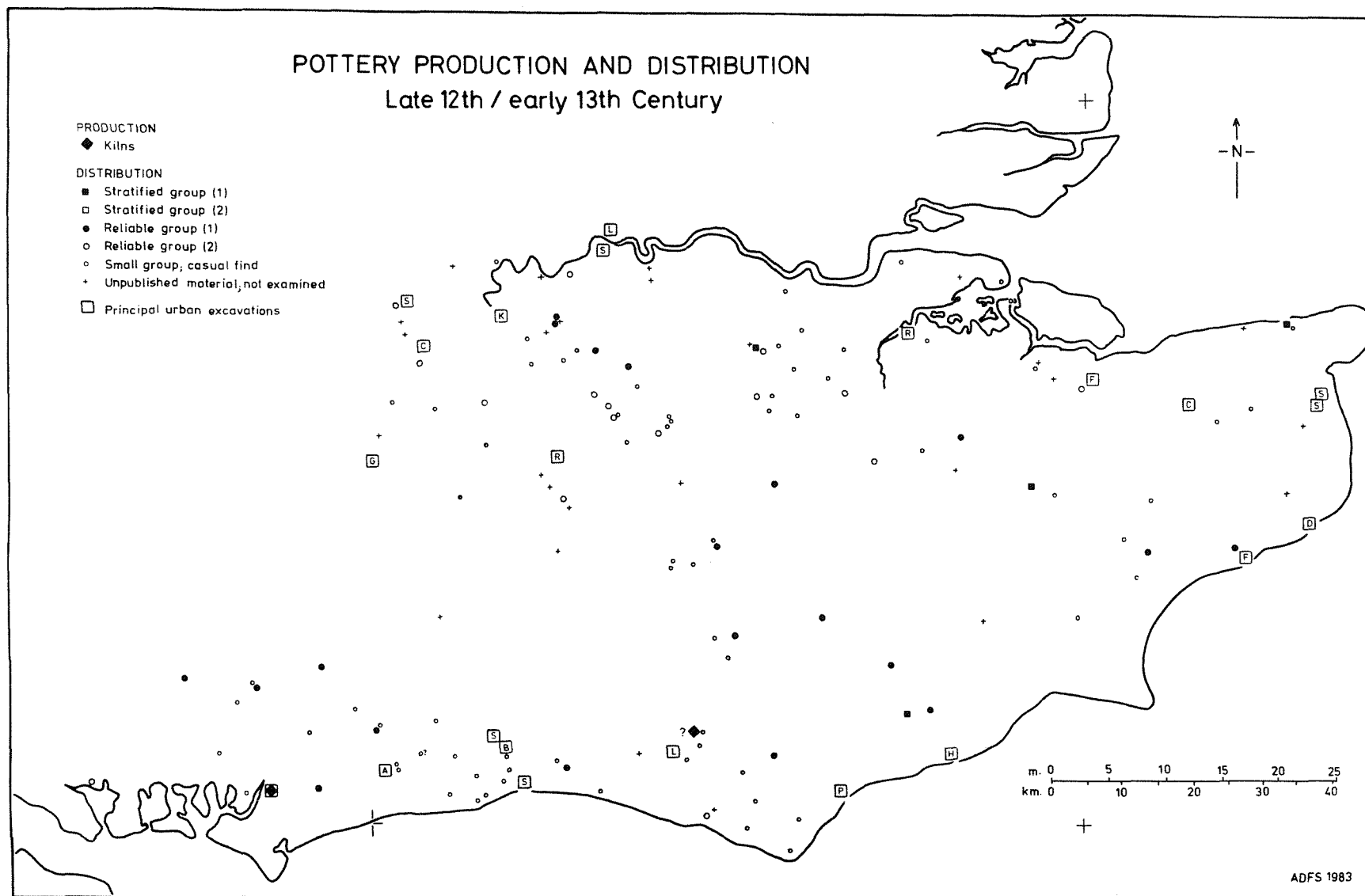


Fig. 2.18 Kent, Surrey, and Sussex. Pottery groups: mid-13th to mid-14th century

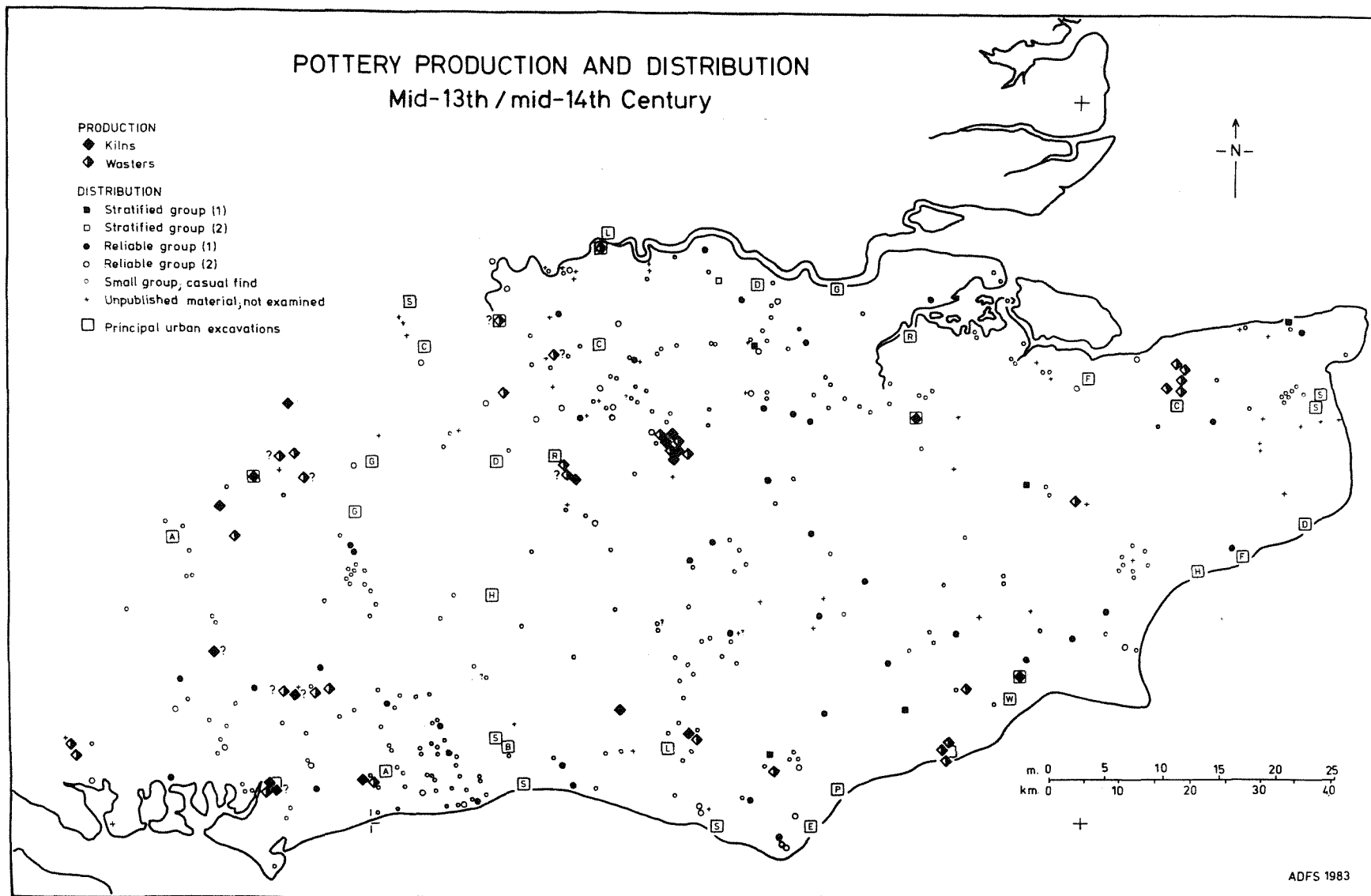
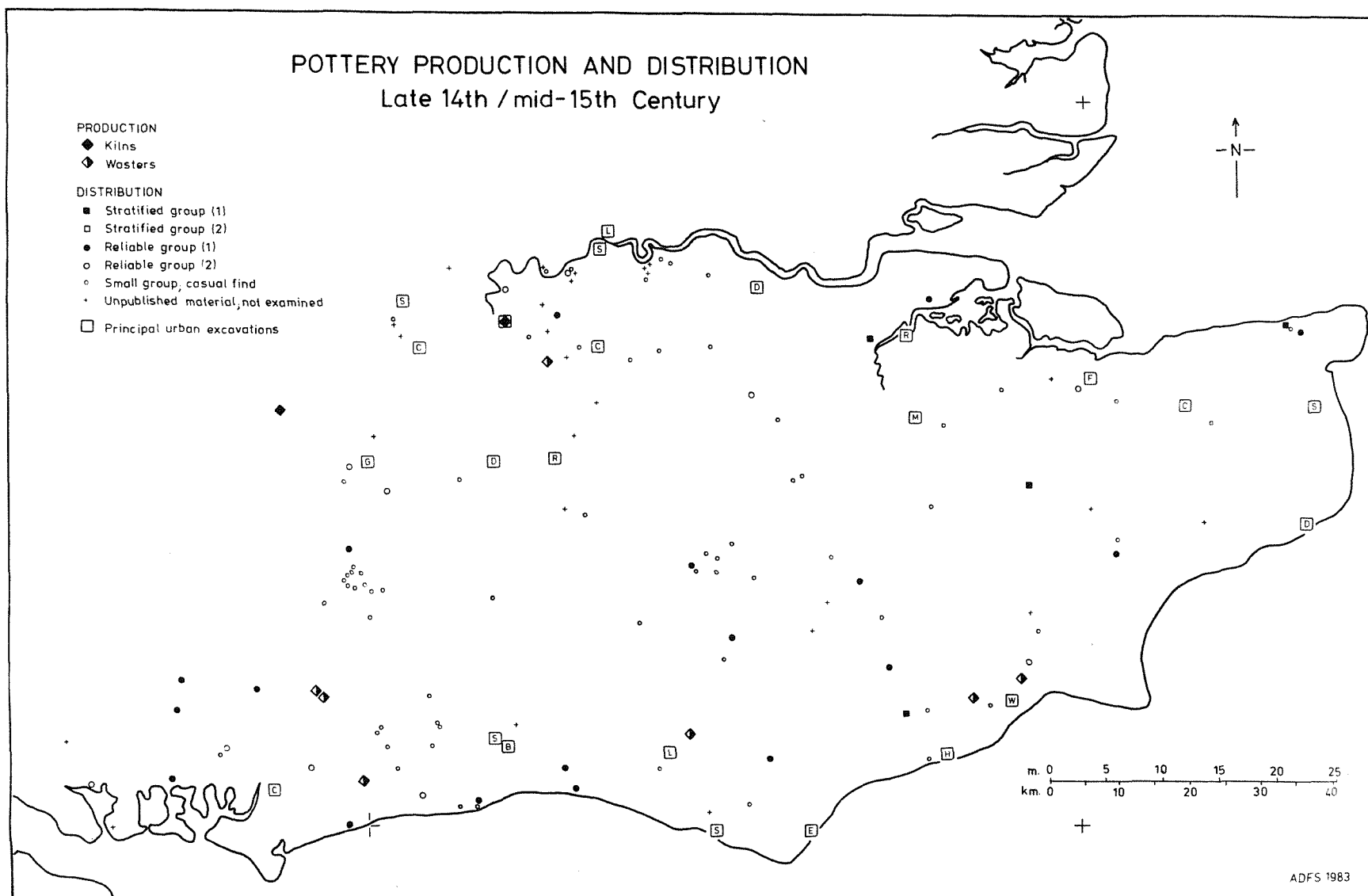


Fig. 2.19 Kent, Surrey, and Sussex. Pottery groups: late 14th to mid-15th century



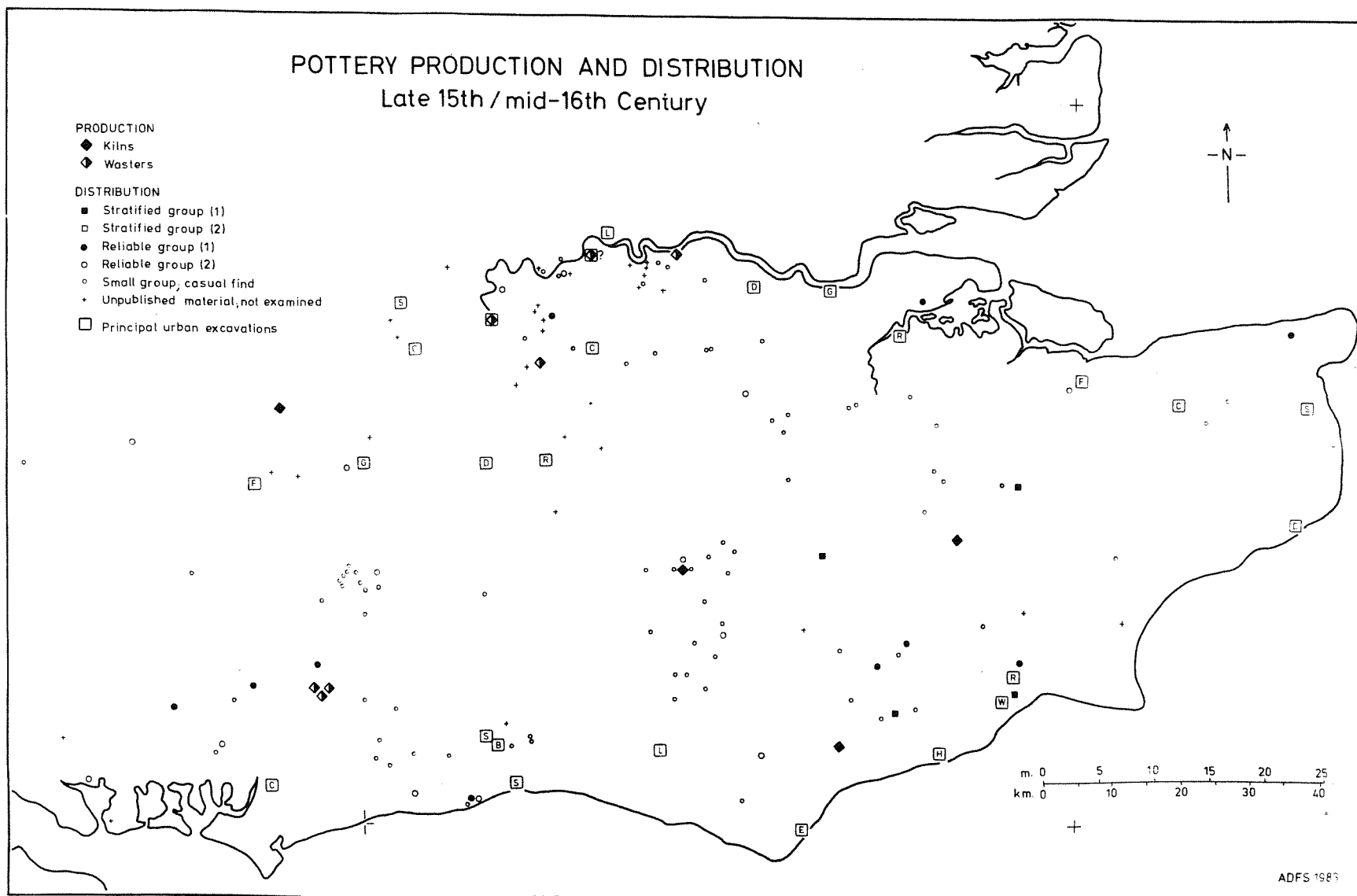


Fig. 2.20 Kent, Surrey, and Sussex. Pottery groups: late 15th to mid-16th century

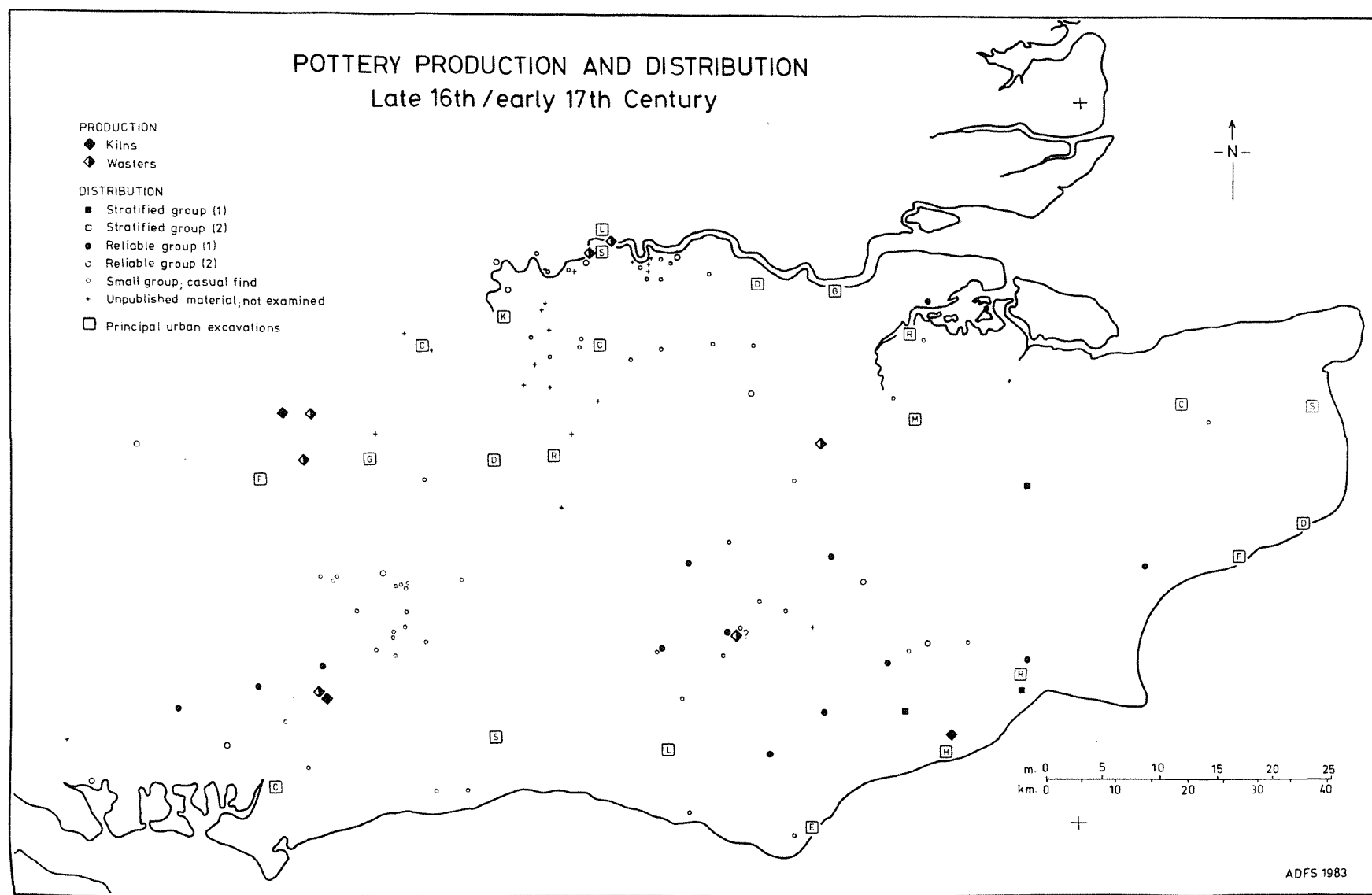


Fig. 2.21 Kent, Surrey, and Sussex. Pottery groups: late 16th to early 17th century

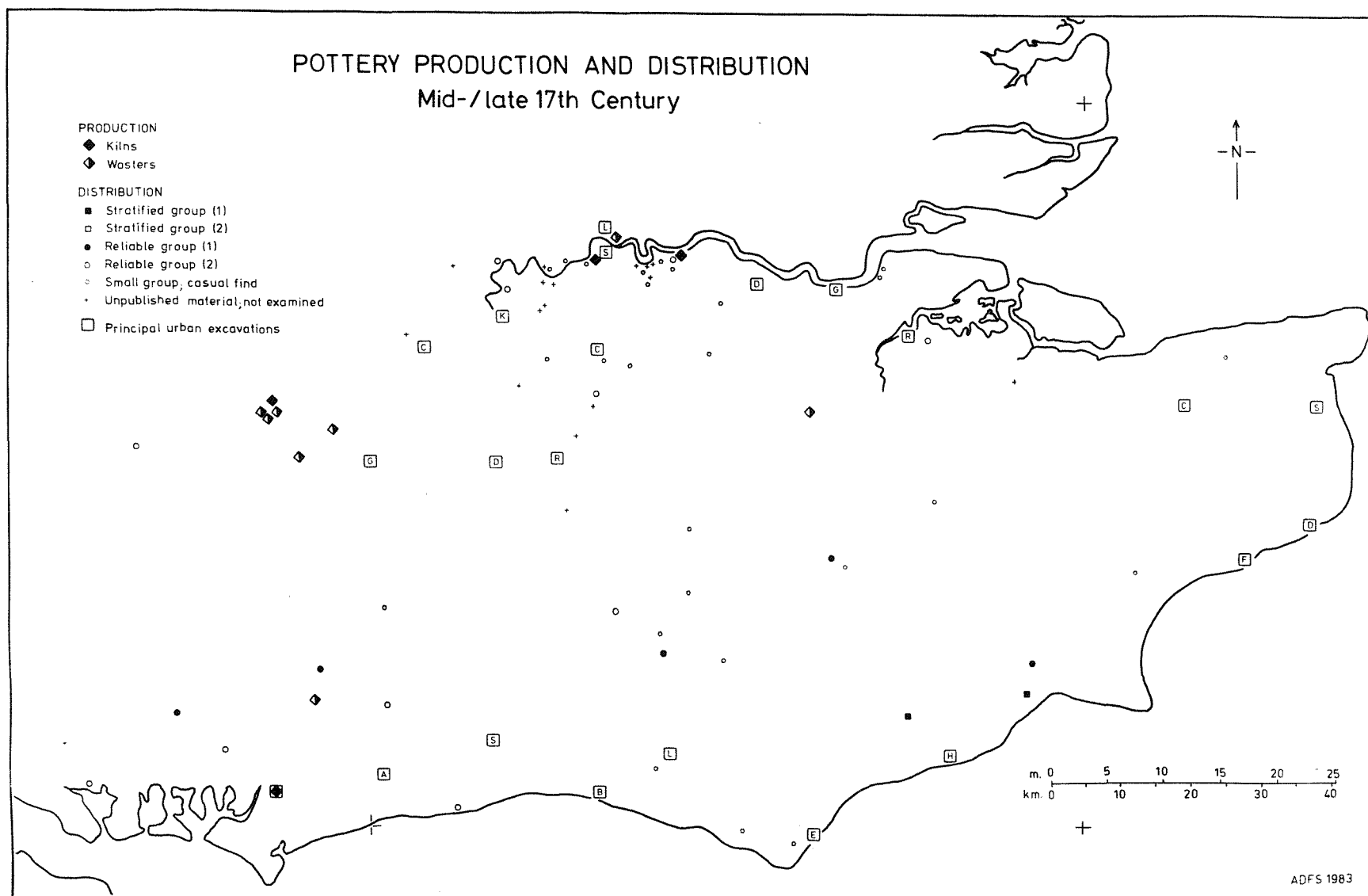


Fig. 2.22 Kent, Surrey, and Sussex. Pottery groups: mid- to late 17th century

the limits of a distribution.

'Small groups' and 'casual finds' may yield isolated examples of a particular ware, but their value as more general indicators is limited. The size of these groups does not permit quantification. 'Unpublished material' comprises all collections for which a final report has yet to appear. These and collections which have not been examined must be considered in order to assess the extent to which distribution maps take account of the available evidence.

Used in conjunction with the gazetteer of medieval settlements, the classification of ceramic assemblages offers a powerful means of extrapolating geographical trends in ceramic distributions (see Section 6.5). Moreover, this provides a framework within which future excavations could be undertaken to evaluate the preliminary conclusions.

2.5.6 Recording and analysis of ceramic assemblages from 'consumer' sites

The methods of recording groups of medieval pottery must be determined in relation both to available resources and to the aims of research. It is essential therefore to select a level of recording appropriate to the quality of the information. Thus, as we have seen (Section 2.5.3), the use of vessel equivalents would be an inappropriate method of quantification simply for mapping small ceramic assemblages. The application of microcomputers to the handling of artifact data increases the potential scope of analysis, but it also places a responsibility upon ceramicists to ensure that resources are used effectively.

While it is laudable to assert that when recording ceramic data 'it is better to err on the side of too much detail than too little' (Blake & Davey 1983, 27), experience has shown, for example, that an abbreviated system is preferable to the IRGMA standards for recording pottery which consume an unacceptable amount of specialists' time for compilation (Jefferies 1977, 8). Moreover, it would be unrealistic to expect that data from all sites can be analysed on a computer.

The finds from the Department of the Environment excavations at Battle Abbey, for example, were processed without access to a computer by a small team of volunteers working for 2-3 weeks each season in 1980 and 1981. As well as preliminary sorting

and cataloguing of the material, volunteers who had been given basic instruction in the techniques of identification were also responsible for classification and recording of the pottery and ceramic building materials. Uniformity was maintained by rigorous reference to type-sherds, and identifications were checked as far as possible while the sorting was in progress. This proved to be a quick and efficient method of processing and recording a large quantity of material.

Quantification was based upon body sherds as well as rim sherds because some phases comprised only small groups of pottery. This was justified because even some of the smallest groups came from significant stratified contexts which have contributed to the establishment of a ceramic chronology for the region. Simple measures of weight and sherd count were therefore adopted in preference to more sophisticated quantification using vessel equivalents. As a control, however, an estimated minimum number of vessels was calculated for each phase and fabric. These figures were derived from an assessment of all sherds within each context, but, apart from obvious joins, it was not possible to take account of different pieces from the same vessel which might have been found on different parts of the site.

Although this method of quantification does not enable comparisons to be made between the proportion of different vessel types represented in each phase, it has proved to be a viable means of rapidly identifying broad trends in the ceramic sequence. These can be illustrated effectively on an incidence matrix showing quantities by both weight and sherd count (Fig. 4.13).

Visual representation of ceramic data is particularly important where the sequence includes well-defined groups illustrating the contrasts between different periods. An incidence matrix is not capable of conveying the relative size of the assemblages, but proportional circles - divided by fabric type - provide a convenient means of assessing the quantities of pottery attributed to each stratigraphic phase (Fig. 4.12). As more wares are identified, so the need arises for charts to record the occurrence and associations of each type in the stratigraphic sequence. Examples such as the charts published for material from the Castle Ditch, Newcastle-upon-Tyne demonstrate the way in which a substantial amount of data can be summarised briefly (Ellison 1981, 96-7).

Ceramic research, like the study of animal bones (Maltby 1979, 94), suffers from a lack of standardised recording procedures. While national guidelines can demonstrate the merits and deficiencies

of particular methods (Blake & Davey 1983, 24-28), practical circumstances as well as the need for compatibility with established procedures will inevitably result in the selection of different methods for different excavations. Where investment of effort can be justified and where resources permit, quantification using vessel equivalents is to be recommended. For more extensive regional surveys, however, estimates of weight and sherd count are equally acceptable. Indeed, providing the material is stored in an accessible form, it would be quite feasible for more detailed recording to be undertaken on specific groups when statistical information is required for case studies.

Specialist contributions accompanying excavation reports should not necessarily be regarded as definitive statements. There must be scope for expansion of the archives as further research is undertaken.

3. METHODOLOGY (2): CHARACTERISATION

3. METHODOLOGY (2): CHARACTERISATION

3.1 INTRODUCTION

Growing interest in the archaeology of trade has focused attention on the potential of artifact distributions, but practical problems of characterisation have introduced a new bias into the evidence. The most easily identifiable objects are frequently the high-status exceptions, and, even in the case of coarse pottery, pioneer studies have quite naturally concentrated on those areas where geological conditions permit the identification of specific clay sources.

The considerable amount of evidence for pottery production in Medieval England has great potential for studying the archaeological record of marketed vessels within a known historical framework, but the difficulties of distinguishing between different groups among the widespread sand-tempered coarse wares have thwarted progress in certain areas of the country. It is ironical that South-East England is one of the richest regions for kiln survival, yet the sedimentary geology has hitherto rendered it difficult to identify specific products. In response to these problems therefore, a technique of analysis has been developed which is not only particularly well suited to the study of marketed vessels from known kilns, but which is also applicable to the identification of sand-tempered ceramics in general.

It is important to stress that ceramic analysis should be seen as a means to an end, rather than an end in itself.

'There are far too many scientists willing to analyse pottery without reference to the archaeological aspects of the material they are considering ... The outcome is often an interesting, and frustrating, contribution to methodology which adds virtually nothing to our knowledge of pottery and the past' (Peacock 1982, 173).

In practical terms, therefore, the Ancient Monuments Board (1978, 17) has identified a need for problem-orientated research as well as routine analysis offered as a service to excavators. This is applicable to archaeological science in general and to ceramic studies in particular.

There are five principal applications of scientific analysis to ceramic research (Blake & Davey 1983, 13):-

- i) Definition of fabrics
- ii) Identification and characterisation of kiln sources
- iii) Identification of geological and geographical sources of raw materials
- iv) Elucidation of manufacturing techniques
- v) Dating

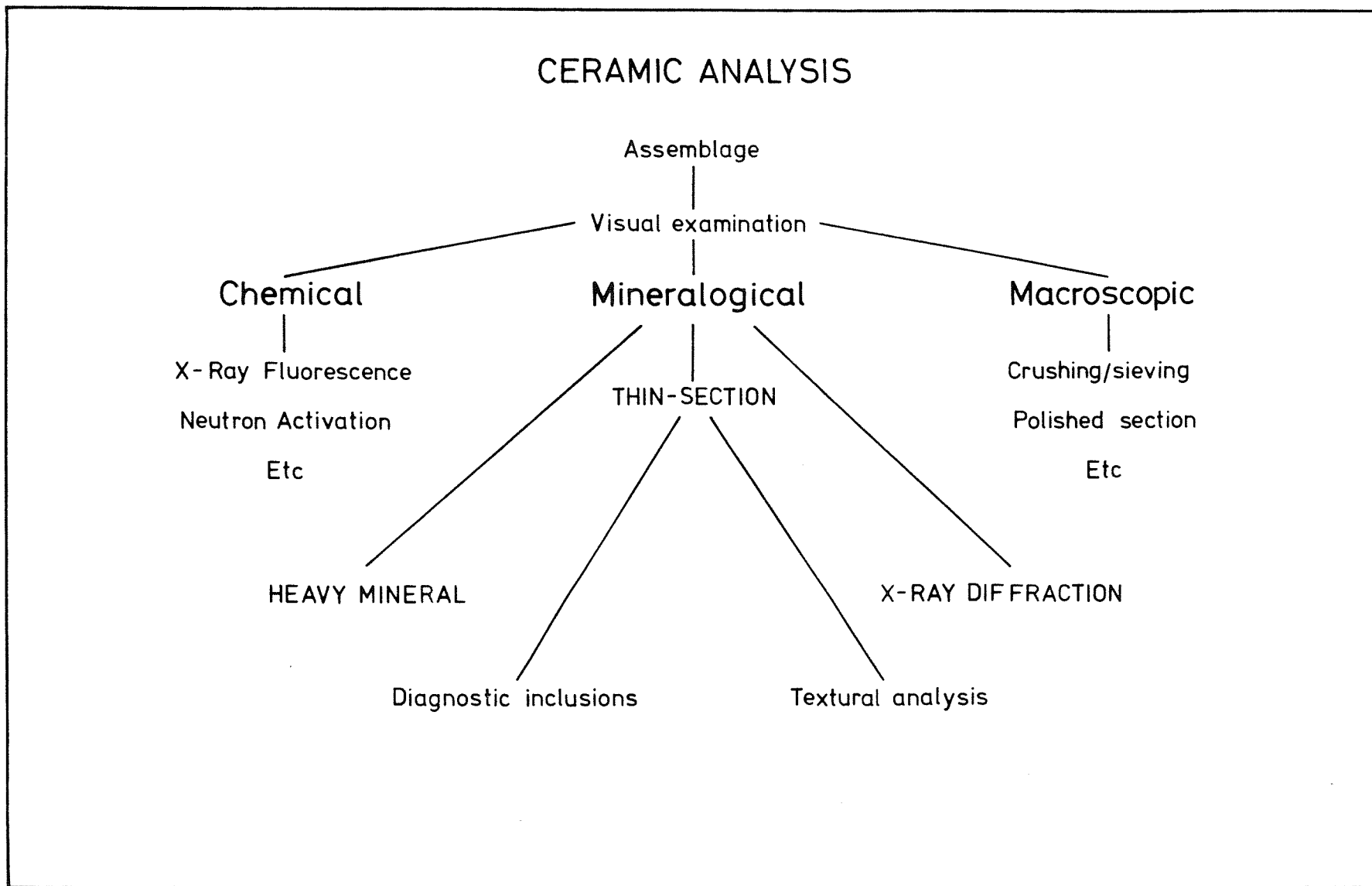
Among these, the first three are especially relevant to the economic aspects of production and distribution.

Most questions can be answered by visual examination of a ceramic assemblage. Indeed, it would be quite impractical to expect that all identifications for the purposes of quantification could be based upon the results of specialist analysis. The analysis of pottery fabrics is therefore undertaken principally as a means of objective verification for the groups identified by eye.

Three principal methods of scientific analysis are appropriate for the characterisation of pottery fabrics (Fig. 3.1). Examination of trace-element composition using either X-ray fluorescence, atomic absorption, optical emission spectography or neutron activation analysis, linked with statistical manipulation of the data, has proved to be an effective method of identifying ceramic and other raw materials (Shotton & Hendry 1979). As an alternative to chemical analysis, however, pottery fabrics can also be identified on the basis of their mineral inclusions (Peacock 1970, 379-81; Williams 1979, 74-5). The mineral composition of both the clay matrix and the inclusions can be characterised using X-ray diffraction; suites of heavy minerals are sometimes distinctive of particular sands, whether added by the potter or occurring naturally within the clay; and thin-sections are suitable both for petrological identification and for assessing the textural parameters of the inclusions. The third type of ceramic analysis includes macroscopic examination of the fabrics either in a polished section or by extracting the coarse inclusions for identification using either a pestle and mortar to crush the clay matrix or a chemical solution to dissolve it (Hamilton 1976, 2-12; 1977, 84-88).

The choice of method is determined not only by the nature of the academic questions, but also by the time available; by access to data and to equipment; and by the availability of scientific expertise. It became clear at the outset that meaningful results for a study of medieval ceramics in South-East England could only be obtained from examination of a large number of samples taken both from

Fig. 3.1 Ceramic analysis: procedure and methods



kiln wasters and from marketed vessels. There were definite advantages, therefore, in selection of a technique which would not rely to an unreasonable degree upon good-will for access to either specialist equipment or expertise. For these reasons, trace element characterisation did not appear suited to the particular requirements. Both Mossbauer spectroscopy (Cousins & Dharmawardena 1969) and neutron activation analysis (Aspinall 1975; 1977; Kilmurry 1980, 208-218; 1982, 106) have indeed been applied to the study of English medieval kiln material; and X-ray fluorescence has been used both to assess visual identification of post-medieval foreign imports (Poole & Finch 1972) and to identify the sources of clay used in the manufacture of Nottingham clay tobacco pipes (Alvey & Laxton 1978). However, there were few limitations on the availability of sherds for study in South-East England and the small samples required for trace element analysis would therefore be of little advantage.

Owing to the sedimentary geology of the region, it seemed unlikely that diagnostic inclusions would be found in the fabrics of locally produced ceramics. Moreover, earlier attempts to indicate sources of manufacture had met with only common minerals seen in thin-sections prepared from earthenwares found in London (Thorn 1970, 126) and elsewhere (Williams in Ogilvie 1977, 188-120). On the other hand, both grain-size analysis (Peacock 1971) and heavy mineral separation (Peacock 1977) had already been used successfully in the region. Because of limited time, however, it proved necessary to select just one technique which could be applied uniformly. Grain-size analysis was therefore adopted in preference to heavy mineral separation because the study could rely upon comparison of pottery fabrics rather than upon the identification of clay or sand sources.

Different approaches to source identification are summarised on Fig. 3.2. The feasibility of comparing different types of pottery with both clay samples and kiln products is assessed in terms of the time needed for analysis. Thus, in favourable circumstances, coarsewares containing diagnostic inclusions can be compared effectively with both clay samples and wasters, using either macroscopic identification or thin-section analysis. Reliable comparisons can seldom be made, however, between clay samples and fabrics containing common inclusions, other than by heavy mineral analysis. Likewise, the range of quartz grain-sizes can be used for comparisons with local kilns, but the reliability of textural analysis for studies of long-distance trade is questionable (see Section

APPROACHES TO SOURCE IDENTIFICATION








































SAMPLE	COMPARATIVE MATERIAL											
	Clay				Kiln products							
	Analysis time: 				Analysis time: 				Analysis time: 			
					LOCALISED TRADE				LONG-DISTANCE TRADE			
	Macroscopic examination	Thin section identification	Textural analysis	Heavy mineral frequency	Macroscopic examination	Thin section identification	Textural analysis	Heavy mineral frequency	Macroscopic examination	Thin section identification	Textural analysis	Heavy mineral frequency
Diagnostic inclusions												
Common inclusions												
Fine wares [Chemical analysis required]												

Fig. 3.2 Ceramic characterisation: approaches to source identification

3.2.1). The characterisation of fine wares invariably necessitates chemical analysis.

Heavy mineral analysis can be even more time-consuming than the measurement of sample quartz grains (Peacock 1970, 379). Moreover, experience has shown that this method can be impractical owing to the presence of iron ores which flood the residues (Peacock 1971, 256). Thus, as shown on Fig. 3.2, textural analysis offers an effective means of characterisation in areas of sedimentary geology, especially for the medieval period when provenanced wasters are available for comparison with marketed wares. This technique is particularly suited to the identification of local distribution patterns which are also a significant feature of ceramic marketing in the middle ages.

3.2 TEXTURAL ANALYSIS: AN APPROACH TO THE CHARACTERISATION OF SAND-TEMPERED CERAMICS

3.2.1 Application of grain-size analysis to archaeological data

Principles of quartz grain-size analysis were used as early as the 1930s to distinguish between the Carolingian and post-Carolingian bricks in the structure of some German churches (cited by Parsons 1977, 186), but recent interest in the application to ceramic vessels owes its inception to the pioneer work by Peacock (1971). Techniques and formulae devised by sedimentologists to examine the depositional sequence of fluvial deposits were adapted for characterisation of Romano-British sand-tempered pottery found at Fishbourne. The size intervals used for measurement of the grains were determined from the phi scale recommended by Krumbein (1938), and parameters of mean size, sorting, skewness and kurtosis were calculated using the formulae of Folk and Ward (1957), which had been deemed more precise than conventional arithmetical measures. These results, together with the estimated percentage of inclusions and a numerical code for roundness and sphericity obtained by reference to visual charts, were presented in tabulated form.

Peacock's analysis of pottery samples from Fishbourne enabled products of different unknown kilns to be distinguished, but the procedure for determining mean size, skewness and kurtosis of the quartz grain frequency is time-consuming. Wade (1973) employed the same technique, using a larger sample of measured grains, but found that different variables were statistically significant for each of the Saxo-Norman kilns in East Anglia which he compared. The method was modified by Hodder (1974a; b) who adopted variables such as the ratio of quartz to clay matrix in order to discriminate Romano-British coarsewares both from the Rowlands Castle kilns near Chichester and from the Savernake industry in north Wiltshire.

These methods of textural analysis have since been applied to different groups of pottery and ceramic building materials, particularly by other workers in the Department of Archaeology at Southampton University. Kilmurry (1982, 105), for example, used textural parameters as well as neutron activation analysis for the characterisation of Stamford ware. The problem of sample sizes and the optimum number of measured grains required for analysis were tackled by Wandibba (1982) in connection with his work on iron age pottery in Hampshire. Other applications to the study of medieval

ceramics include analysis of medieval coarsewares from Surrey (Russell & Saaler 1983, microfiche) and work by Williams and Tomber (1982) which has demonstrated the potential of textural analysis combined with the identification of other inclusions as a means of characterising Scarborough ware and distinguishing these products from those of Nottingham and other medieval production centres.

Russell (1982) has demonstrated that textural analysis offers a more precise means of comparing Saxon pottery fabrics than the mere presence or absence of mineral inclusions seen in thin-sections. Diverse case studies published by Darvill and Timby (1982), however, draw attention to the limitations of textural analysis. They stress that meaningful results can only be achieved when variations in texture among products from a given centre of manufacture are less than the variability represented among the combined output from several different centres. This reinforces the significance of textural analysis for discriminating local rather than long-distance distributions, and the importance of using this method of analysis in conjunction with the identification of ceramic traits visible to the naked eye should also be stressed.

The size of the sample used for attributing pottery and ceramic building materials to a suggested source of manufacture is very small indeed, especially when measured by weight. Consequently, Betts (1982, 63) has expressed concern for the statistical validity of grain-size analysis and has stressed the need for uniformity in the sampling strategy adopted for different projects. Ideally, more than one sample should be taken from each item. Practical considerations, however, necessitate a more flexible approach, and experience has shown that similar results are obtained from different samples taken from the same vessel. Even without a standard method for all projects, textural analysis fulfils the statistical requirement of being both repeatable and reproducible, providing that the same procedure is adopted on each occasion by each operator.

3.2.2 Modified method

An attempt to group the samples from three early post-medieval kilns in South-East England on a three dimensional graph showing mean size, skewness and kurtosis for the quartz grain-size frequency produced a satisfactory visual impression of the results, but it is doubtful whether marketed vessels could be identified conclusively using this method (Fig. 3.3: Graph A). Neither this

method nor other measurements such as the ratio of quartz to clay matrix employed by Hodder (1974a, 87) provide a wholly satisfactory means of comparing both fine and coarse fabrics. Although visual grouping of samples can be achieved (Fig. 3.3: Graph B), the range of variation within a particular assemblage of wasters is not defined precisely enough for marketed vessels to be identified. This examination of medieval and later wares from South-East England has concentrated, therefore, on the characteristics of grain-size frequency rather than the percentage or shape of the inclusions. Attempts to reduce the time required for processing the results have also been incorporated in the revised methodology (Streeten 1982b)

The laborious measurement of selected grains using a point-counter and stage micrometer has been abandoned in favour of a projected image at x100 magnification on which the grains can be measured with a millimetre scale. The thin-section is checked first in polarised light under a petrological microscope for identification of any inclusions other than quartz, but the overwhelming predominance of quartz in medieval fabrics from South-East England offers sufficient justification for the actual measurements to be taken from a plain light image.

In practice, it has proved feasible to distinguish holes on the thin section by their shape, and isolated pieces of shell or flint appear sufficiently different even in plain light to be omitted from the sample of quartz grains. Available equipment, including a high-intensity light source and the optics of a Swift microscope, has been assembled to achieve the required magnification which is calibrated with a stage micrometer (Fig. 3.3: Graph C). More expensive devices sometimes used for teaching and capable of projecting a polarised image might be adapted for this purpose, in which case it would be possible to select quartz grains from samples containing other inclusions as well.

Random grains can be selected for measurement using a point-counter, but projection on to a gridded screen with 20mm intersections has proved much quicker and equally successful (Fig. 3.3: Graph D). Few grains fall precisely on the pre-determined points, and it is therefore convenient to measure the nearest grain - irrespective of size - in the north-east quadrant (Fig. 3.3: Graph E). In this way nearly every point yields a measurement, and the thin-section can be moved periodically until the required sample of grains has been achieved. It is important, however, that the same sampling procedure

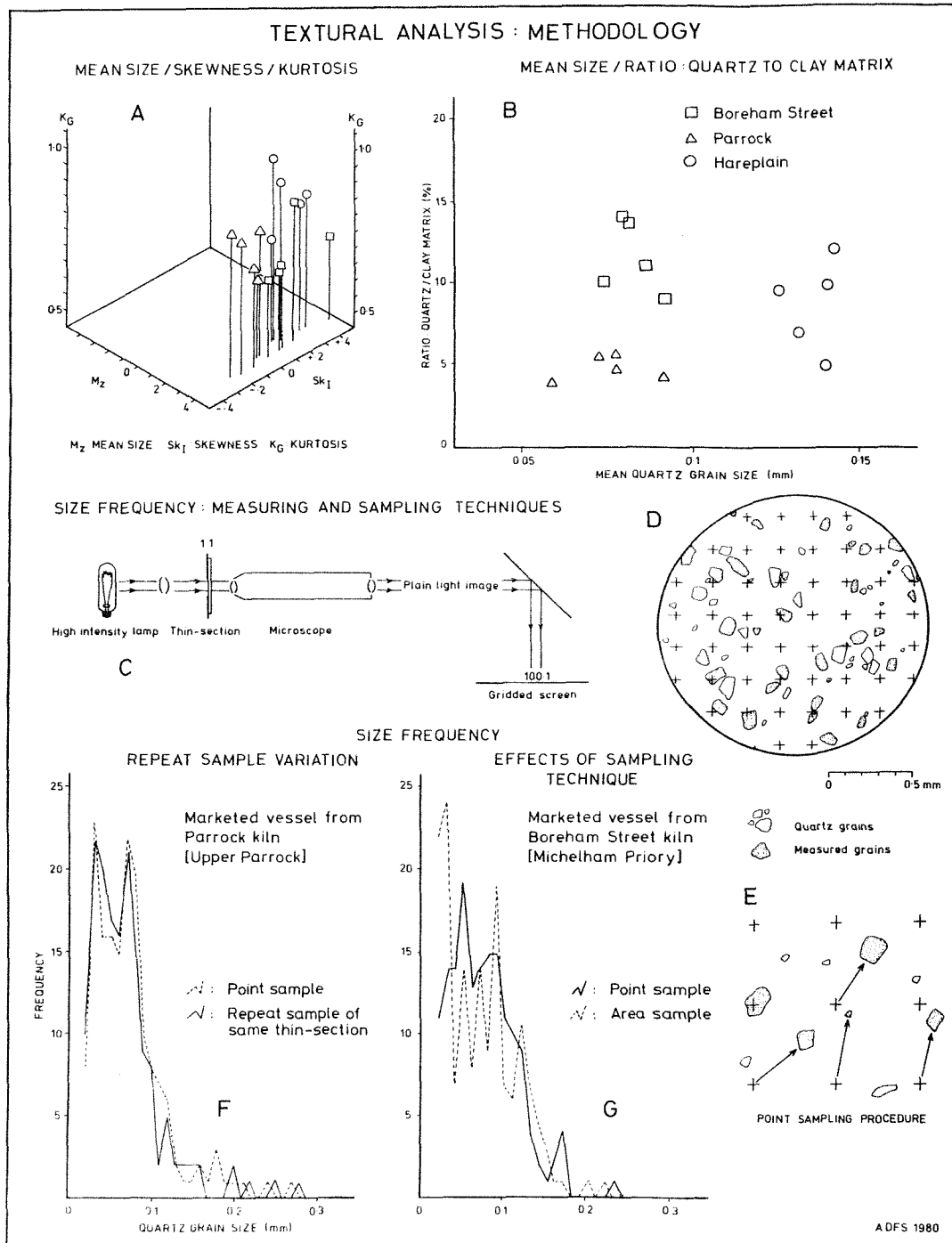


Fig. 3.3 Textural analysis. Methodology

is retained throughout (Fig. 3.3: Graphs F and G) and that measurements on the x100 image are taken to the nearest millimetre along the long axis of the quartz grain. With experience, approximately 160 grains can be measured in 20 minutes, but this pace cannot be sustained indefinitely.

These measurements form the basis either for characterisation of a kiln or for the identification of a marketed vessel. In both cases, however, a simple graphical plot of absolute grain-size frequency using a standard number of measurements has been adopted in preference to statistical measures of mean size, skewness and kurtosis. Results from a marketed vessel show the frequency of each 0.01mm size group as a single line, but data derived from five sherds representing each group of wasters are plotted with the mean frequency \pm one standard deviation for each size group. Examples illustrating both kilns and marketed vessels are shown on Fig. 3.4

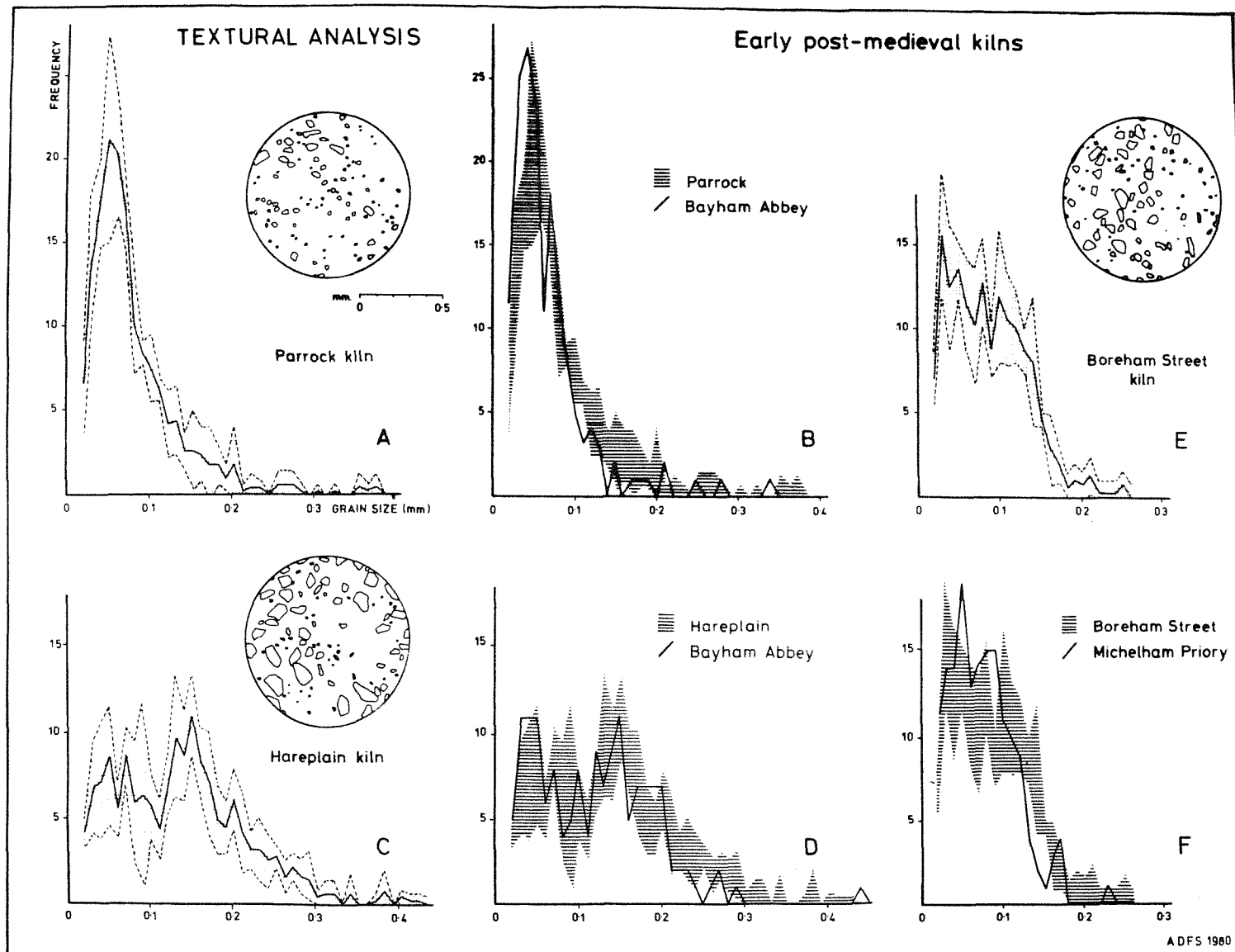
General characteristics of the curve and zone of variability provide an objective standard against which marketed vessels can be compared. Computation and plotting of these results takes rather longer than the process of actual measurement, but, although considerable time could be saved using a computer plot, it is doubtful whether the time required for input of the data would be substantially different. As in the case of projection equipment, results can be processed with the minimum of expense and without access to sophisticated facilities.

Overlays have been used for visual 'fitting' of similar frequency curves, and publication of selected examples in excavation reports enables readers to judge the validity of significant identifications. There is sufficient contrast between the curves to enable the products of medieval and later kilns in South-East England to be distinguished (Fig. 3.4).

Textural analysis involves monitoring not only the raw materials but also the technology of potters working within a particular 'industry'. It is therefore limited to providing a means of fabric comparison rather than the identification of clay sources. In the interests of speed and flexibility, the method has been kept as simple as possible, but, given access to more sophisticated equipment, several refinements could certainly be introduced.

Computerisation of the data would dispense with manual calculations and plotting, and frequencies could be converted to percentages as a matter of routine in order to permit comparison

Fig. 3.4 Textural analysis. Early post-medieval kilns in South-East England



between results based upon slightly different samples of measured grains. At the expense of reducing the impact of visual representation which is an important feature of the technique, it would also be possible to undertake more sophisticated statistical comparisons based upon cluster analysis. There is less scope for mechanisation of the measuring process, although the advantages of equipment capable of projecting a polarised image have been stressed. The selection of grains is a complex operation which could not be undertaken satisfactorily by a simple scanning and counting device. If based upon the same principles, any mechanised approach would need to be capable of distinguishing between quartz, holes in the thin-section and any other inclusions; of selecting the nearest grain to a specified point in a given direction; and of measuring that grain on its long axis. It seems unrealistic to hope that such a device would be available for regular archaeological use.

Almost any technique of characterisation has limitations, and the destruction of the sample required for preparation of a thin-section may not always be acceptable. The size of the section needed to achieve the specified number of measured grains for textural analysis is larger than that which is sometimes sufficient to glimpse a diagnostic inclusion in an important vessel. Textural analysis is also restricted to sand- or predominantly sand-tempered wares, and, although polarised projection would increase the potential, fabrics containing a range of inclusions may produce a frequency curve similar to those which contain different inclusions and were manufactured elsewhere. Textural analysis is capable of no more than providing an objective standard against which visual identifications can be tested.

3.2.3 Levels of analysis

Samples have been selected from museum collections and excavated finds with the intention of research into five major topics:

- i) Characterisation of kiln assemblages.
- ii) Identification of marketed vessels capable of being attributed to known kilns.
- iii) Assessment of fabric variability within recognised ware types, in order to clarify whether they came from one or more sources of manufacture.
- iv) Analysis of coarse wares from diverse locations to assess the significance of visual similarities.

- v) Selected site studies to trace the chronological development of certain fabrics and to assess the likely number of different manufacturing sources represented at given periods.

A minimum of five sherds has been used to characterise groups of wasters, but, in the case of marketed vessels, the fabrics identified at consumer sites are usually represented by only one thin-section. Thus the labour of preparing nearly 1100 thin-sections has been apportioned as 40% for kiln sites, 44% for miscellaneous consumer sites and 16% for specific site studies.

Because of the time involved in measurement of quartz grains for textural analysis, this level of identification has been reserved for the characterisation of wasters; for the attribution of marketed vessels to known kilns; and for the assessment of recognised ware types. Other samples have been examined by comparing the thin-sections one with another.

The concept of visual comparison charts for estimating the percentage of inclusions seen under a petrological microscope (Folk 1951; Terry & Chillingar 1955) has been modified for the grouping of pottery fabrics. A projected plain light image of the thin-section is traced on to paper at a magnification of x50. The outline of the grains is then compared with the view through the microscope, and any groundmass of small grains which did not appear on the projected image can be added freehand. Conventional symbols are used to indicate inclusions other than quartz, such as flint, shell and ironstone.

This method of comparison is both quicker and cheaper than the preparation of photomicrographs. Greater refinement could be achieved by using equipment capable of projecting a polarised image, but sketches drawn from a plain light projection have proved to be a satisfactory means of conveying on paper the grain size criteria used to define a particular fabric (Streeten 1982d, 27-29).

Sketches illustrating the fabric groups identified among medieval ceramics from South-East England are reproduced in Section 12.1. As an example, however, Fig. 3.5 shows the application of this method to groups of oxidised sand-tempered wares found in west Kent and east Surrey. Visual comparison charts are combined with a graph representing the quartz grain size frequency for one group of white-slipped redwares. These so-called 'London area' jugs can be distinguished from Mill Green ware and from other groups from unknown sources on the basis of the grain sizes shown by the sketches. It

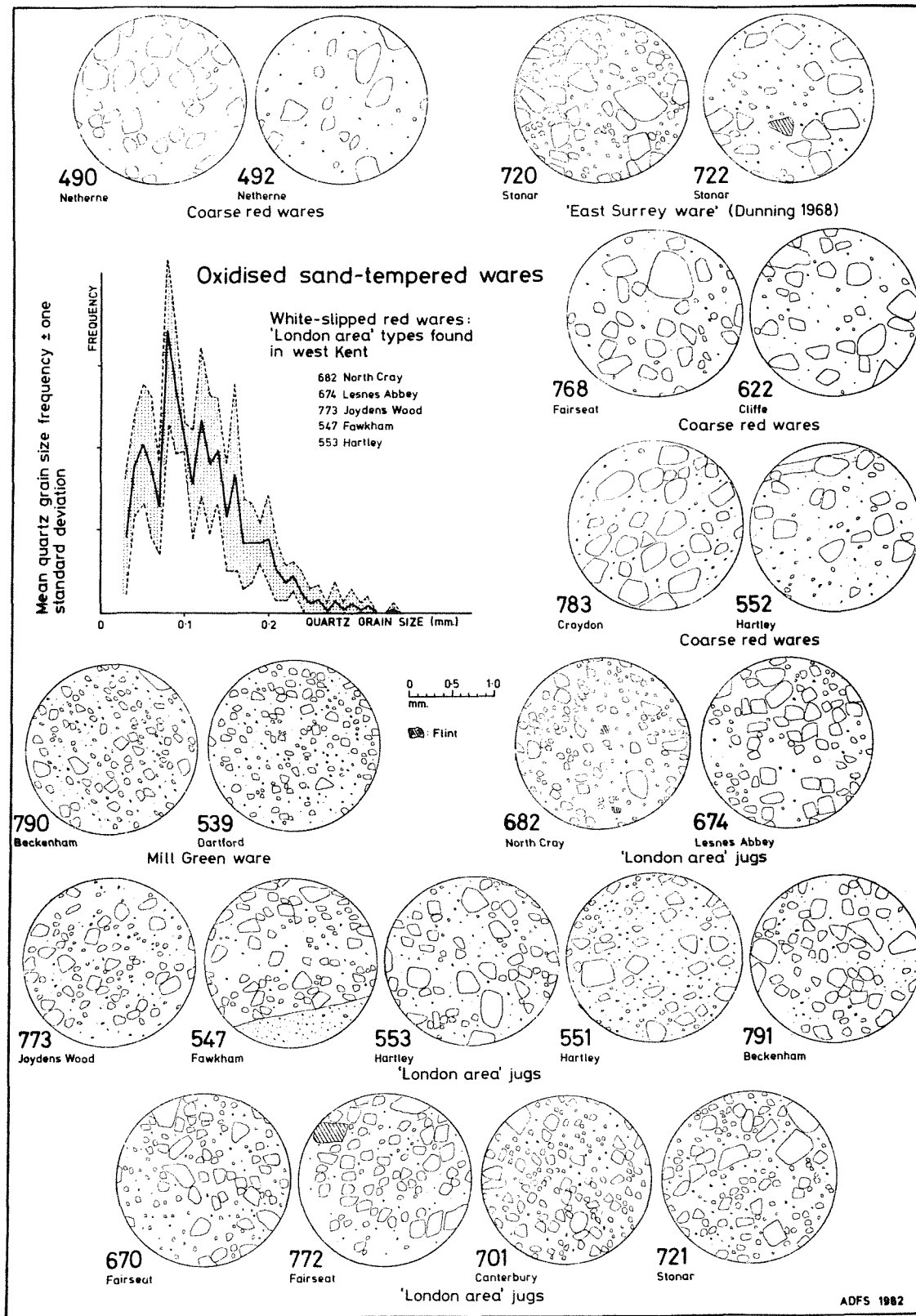


Fig. 3.5 Representation of thin-section data. Textural analysis and images representing quartz grain sizes in selected oxidised sand-tempered fabrics from west Kent and east Surrey

should be emphasised, however, that this method might prove less appropriate in areas other than South-East England, where pottery fabrics contain a very limited range of inclusions.

3.3 TEXTURAL ANALYSIS: DETAILS OF THE METHODOLOGY

3.3.1 Preparation of thin-sections

Thin-sections of medieval ceramics from South-East England were prepared in the department of Archaeology at Southampton University, using methods similar to those described by Cornwall (1958, 141), Peacock (1970, 397) and Tite (1972, 215).

Some of the coarse sandy wares were impregnated with microcrystalline wax and mounted on glass slides using araldite; sherds which had not been impregnated were mounted with Lakeside 70 resin. In both cases, grinding was done on a Cutrock vertical wheel and finished using carborundum powder on a glass plate. The glass cover-slips were mounted with Canada Balsam over a fixing coat of Durofix mixed with acetone.

Owing to their coarse sandy texture, difficulties are often encountered in the preparation of thin-sections from medieval fabrics. In many cases, large quartz grains did not adhere to the glass slides during grinding, while in other instances there was a tendency - even among sherds which had been impregnated with wax - for these grains to 'tear' adjacent parts of the clay matrix while they were being ground down to the required thickness. Some badly mutilated areas of the thin-sections could not therefore be used for sampling. It was quite possible, however, to identify from their shape those places where large grains had merely fallen away from the section.

Analysis based upon grain size reinforces the need to maintain a constant thickness of 30 microns for all thin-sections. It was necessary, therefore, to compensate for minor discrepancies in the alignment of the vertical wheel during the final grinding with carborundum powder. Care was also taken during analysis to ensure that any areas of the section which had been ground too thin were not included in the sample of measured grains.

The need for such adjustments during sampling emphasises the difficulties which would be encountered in any attempt to mechanise the sampling procedure. Greater uniformity among the sections could be achieved if all sherds were placed in a vacuum impregnator and if the grinding was undertaken using Logitech equipment. However, these facilities were not available for the project, and it is unlikely that any significant saving of time could be effected by using a more sophisticated method of preparing the thin-sections.

3.3.2 Selection of the variables

The choice of grain size as the basis for textural analysis of medieval and later wares in South-East England was determined both by the nature of the material and as a result of experiments using other variables.

Following results achieved by Hodder (1974a; b), a pilot study was conducted with two variables: mean quartz grain size and the ratio of quartz to clay matrix. Hard-fired early post-medieval wares from kilns at Lower Parrock, East Sussex, Hareplain, Kent and Boreham Street, East Sussex yielded reliable data (Fig. 3.6). Mean grain sizes for each kiln, however, lie within a narrow range of between 0.05 and 0.15mm, and the ratio of quartz to clay matrix varies by more than 5% among the wasters from Hareplain alone. Thus, although the graph provides a convenient illustration of textural contrasts between the fabrics represented at these three kilns, the pattern would probably be obscured if wasters from more kilns were analysed.

Hard-fired, fine-textured wares present few practical problems for the preparation of thin-sections. As noted above, however, coarser medieval fabrics usually require impregnation. Significant differences are therefore to be expected in the ratio of quartz to clay matrix for sherds which have been impregnated and those which have not. This has been verified by comparison of samples from the same sherd subjected to different treatments.

Pairs of samples - one impregnated, the other not - were prepared for each sherd selected from the medieval wasters found at Binsted, Tortington, West Sussex; Brede, East Sussex; and Watt's Hill and Searn Bank at Limpsfield, Surrey. Point-counting under a petrological microscope produced a consistently higher ratio of quartz to clay matrix for the impregnated sherds because fewer grains had been lost during grinding. In view of these unpredictable conditions, therefore, the ratio of quartz to clay matrix was considered unsuitable for wider application in the regional survey. Use of this variable would certainly have necessitated vacuum impregnation of all sherds.

Earlier work on textural analysis had stressed the significance of statistical measures such as mean size, skewness and kurtosis as a means of expressing the frequency curve of quartz grain sizes. Experiments were therefore conducted with the same early post-medieval wasters which had been used for assessing the ratio of quartz to clay matrix. It was hoped that three-dimensional plotting of the

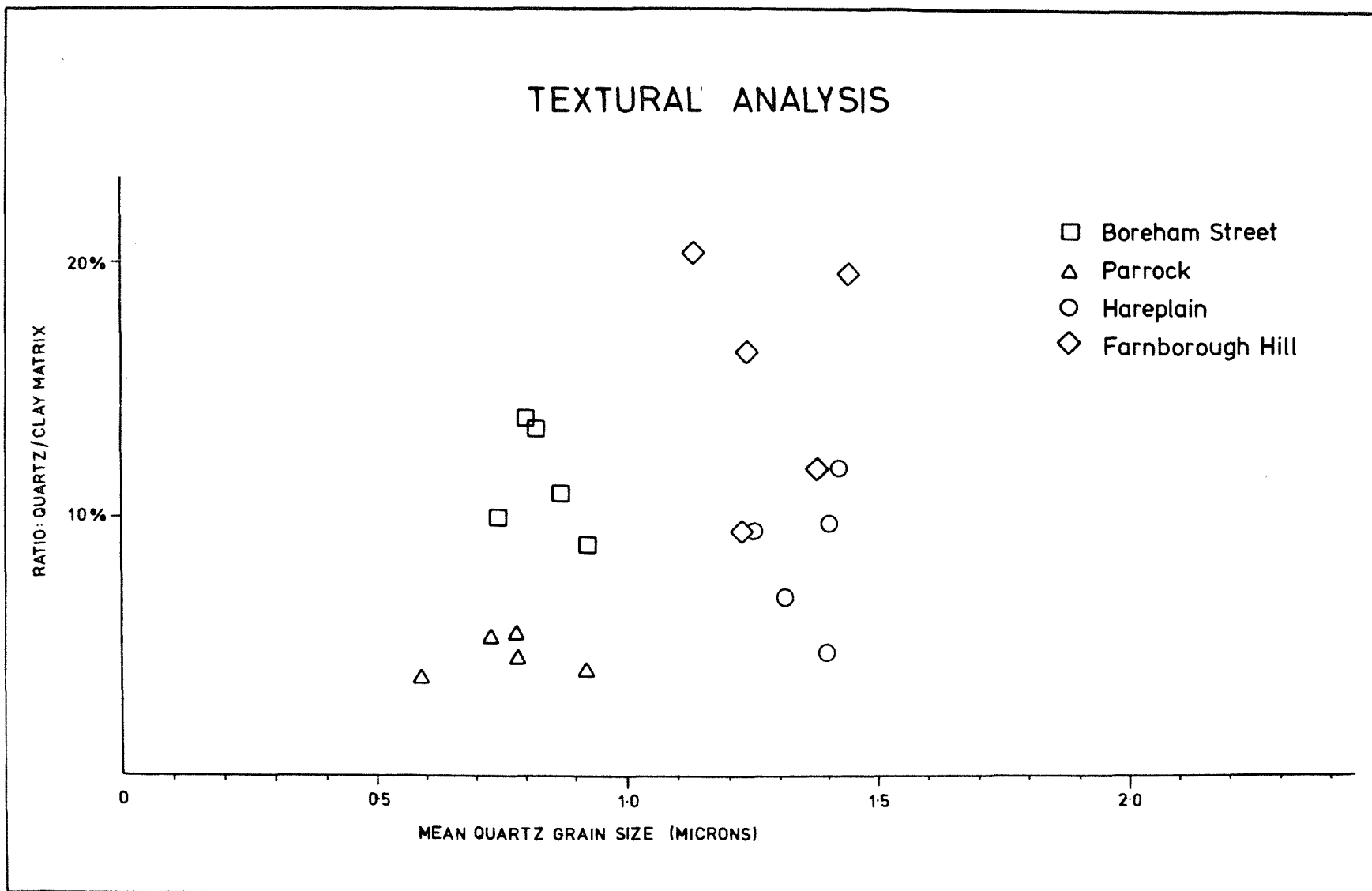


Fig. 3.6 Textural analysis. Early post-medieval kilns: mean quartz grain size/ratio of quartz to clay matrix

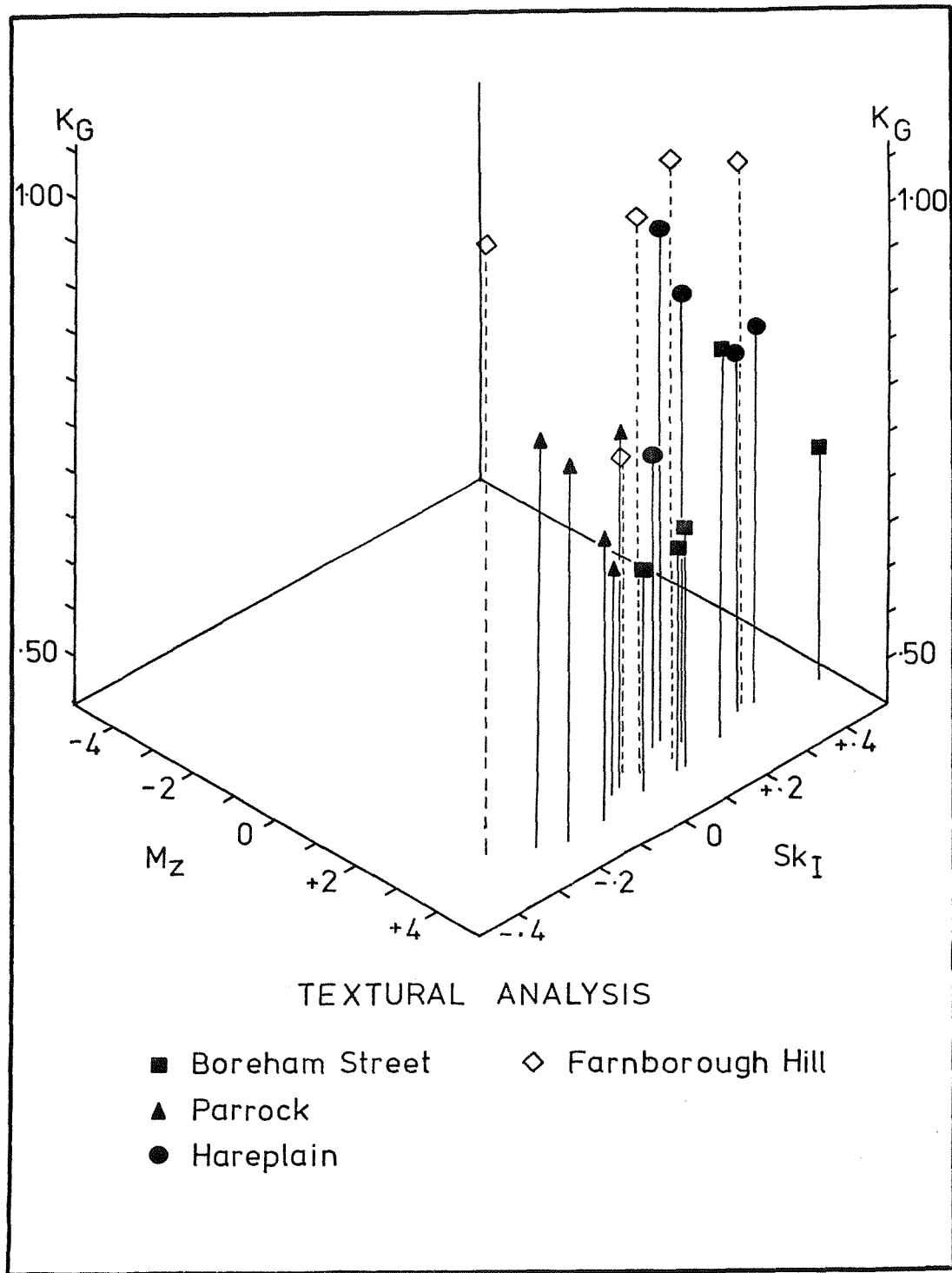


Fig. 3.7 Textural analysis. Early post-medieval wares: mean quartz grain size/skewness/kurtosis

coordinates for each of the three variables might provide an effective means of illustrating the ceramic groups defined by textural analysis.

These statistics might indeed have proved significant for computer cluster analysis, but the effectiveness of visual presentation was limited (Fig. 3.7). It seemed that statistical differentiation of certain fine-textured wares with a narrow range of quartz grain sizes would be hindered by the statistical divisions of the phi scale required for calculation of the variables used in the comparison (Folk & Ward 1957, 3). Moreover, the time required to examine each sample using a point counter and petrological microscope was unacceptable for application at a regional level.

It was as a result of these experiments that the modified method outlined in Section 3.2.2 was devised and adopted.

3.3.3 Sampling and quartz grain measurements

Tests described in Section 3.3.5 confirm that the sample sizes adopted both for the number of sherds used to characterise wasters and for the number of measured quartz grains in each sample are adequate for textural analysis of medieval and later wares in South-East England.

It is now thought that the sample of 50 grains used initially by Peacock (1971, 257) was probably inadequate. Darvill (1979, 318) and Darvill and Timby (1982, 74) measured at least 100 quartz grains in each sample, while Betts (1982, 66) has found that a sample of 150 grains is needed to characterise Roman and medieval tiles in Yorkshire. In choosing this figure, he follows Williams (1977, 168) who favoured a sample of at least 150 identifications for the analysis of heavy mineral residues. An assessment published by Wandibba (1982, 75), however, suggests that a sample of 50 quartz grains would be adequate providing that they are selected by a method which ensures that they are well dispersed across the thin-section. There is general agreement that samples in excess of 200 measured grains are unnecessary, and the figure of 160 adopted for this survey has proved viable.

The method of selecting grains for measurement using a x100 projection on a 20mm grid is shown in detail for a sample of Boreham Street ware found at Michelham Priory, East Sussex (Fig. 3.8). The projected image can only be seen clearly on white paper in complete darkness. After experiments with several different methods of illumination a slide projector was found to offer the most

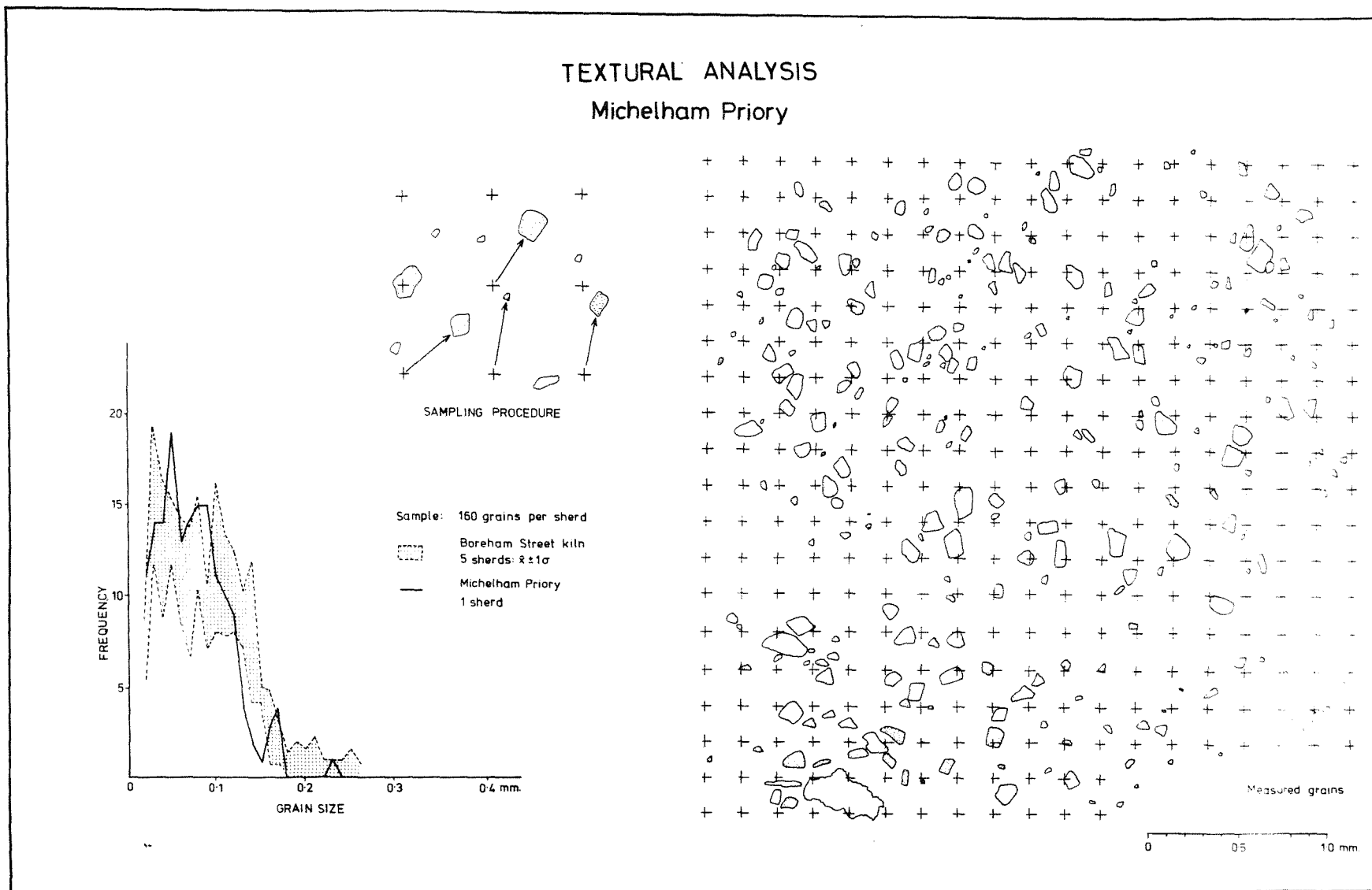


Fig. 3.8 Textural analysis. Michelham Priory: quartz grain sampling strategy

satisfactory light source. Good illumination is essential to show up the small grains which must be selected rigorously to ensure that the full range of sizes is represented accurately in the sample. Moreover, it is important to avoid overlooking the smallest grains when selecting the nearest quartz grain in the north-east quadrant of each grid intersection.

Measurements have been taken to the nearest millimetre on the projected (x100) magnifications. Finer discrimination would have been both unreliable and unnecessary. Experiments were undertaken using several methods of recording the measurements. The easiest and most reliable was simply to note each measurement in columns until the required number of sampled grains had been achieved. Manipulation of the data would have been quicker using cumulative recording for each size group. Nevertheless, a record of all the measurements taken provides a valuable data base for future assessment of the reliability of smaller sample sizes.

3.3.4 Manipulation and presentation of the data

Results from the analysis of single sherds can be plotted directly onto a graph showing the frequency of each quartz grain size group (Fig. 3.8). However, another stage of data processing is required for measurements derived from five or more sherds used to characterise wasters from a known source, or marketed vessels belonging to a recognised fabric type. For these, it is necessary to calculate the mean and standard deviation for each size group.

For convenience, these statistics have been obtained using an electronic calculator but given access to a microcomputer this stage of the analysis could be undertaken more quickly. Plotting of the results is similar to that for individual samples. The mean is shown as a solid line, while broken lines define a shaded zone representing \pm one standard deviation for each size group (Fig. 3.9). In this way, a 'finger print' can be provided for each group of wasters and for recognised fabric types, against which other samples can then be compared.

It would be unrealistic to expect that the results of all textural analyses should be published in detail. Nevertheless, selective publication of significant identifications is certainly justified. Graphs illustrating the results for provenanced assemblages of wasters are particularly important as the basis for future identifications. Providing that the procedure outlined above

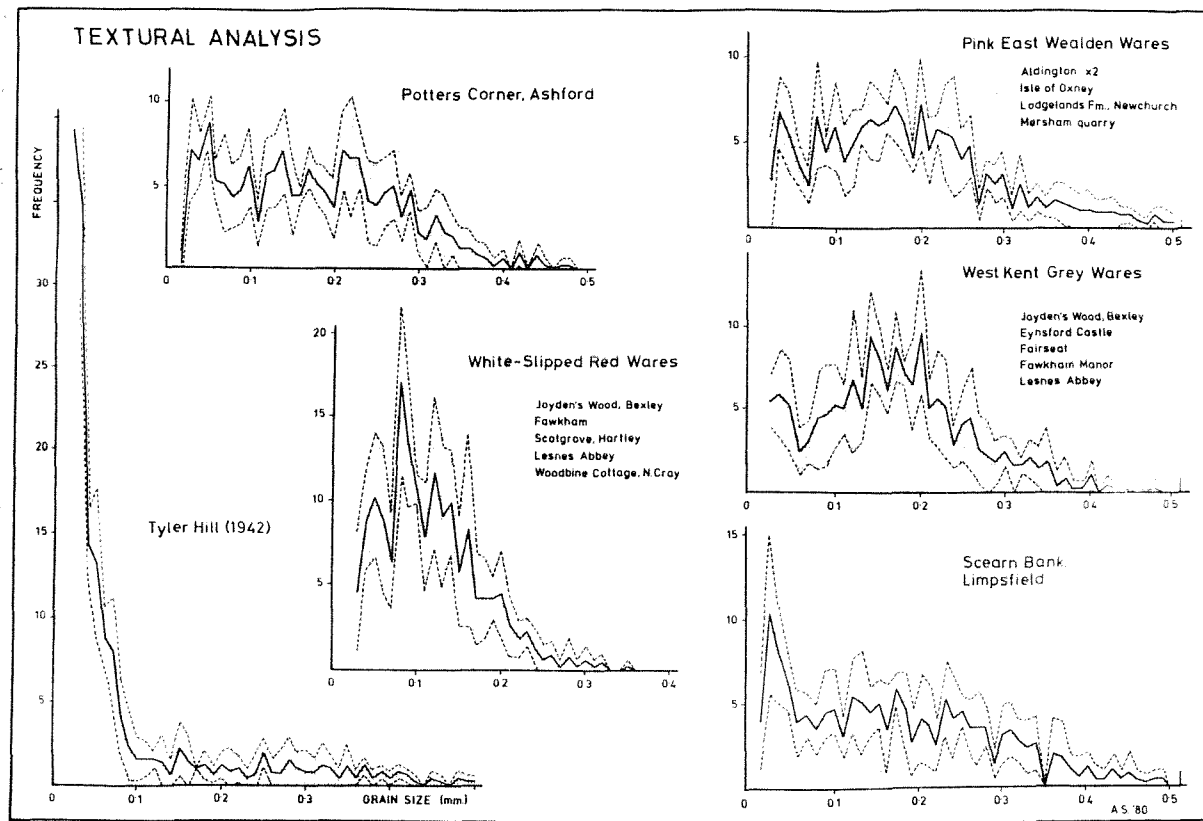


Fig. 3.9 Textural analysis. Data publication: medieval wasters from Kent and other types from unknown sources

is followed precisely, it would be possible to use published graphs for comparison with analyses undertaken in the future.

3.3.5 Practical tests of the sampling strategy

Several tests have been undertaken in order to evaluate the methods described above. Reliability of the results depends upon:

- i) Adequate sample of measured grains for each thin-section.
- ii) Validity of the data derived from each sherd as representative of a particular fabric.
- iii) Consistency of the sampling procedure.
- iv) Adequate sample of sherds to characterise wasters and identifiable ceramic types.

Each of these problems will therefore be examined in turn.

Tests have been carried out on wasters from the post-medieval kiln at High Lankhurst, Westfield, East Sussex with a variety of different sample sizes ranging from 25 to 200 measured grains. Frequencies have been converted into a percentage of the total to permit comparison of the results taken from five sherds. The large standard deviation for samples of 25 and 50 grains demonstrates the inadequacy of these low figures (Fig. 3.10: Graphs A and B). A narrower range is obtained from 100 grains (Fig. 3.10: Graph C), and in this instance, there is little difference between a sample of 150 and 200 (Fig. 3.10: Graphs D and E). The optimum number depends to a certain extent upon the sorting of the grain sizes, but a minimum sample of 150 is recommended to ensure that the sparse large grains in the coarser fabrics are adequately represented.

Sherds have been examined from three medieval kilns at Tyler Hill, Hackington, Kent in order to assess the reliability of different samples used to characterise similar fabrics. Graphs derived from wasters representing the three different kilns display a remarkable degree of uniformity (Fig. 3.11), which suggests that identifications are unlikely to be obscured by minor variations in fabric texture. Compatibility of fifteen sherds analysed in order to characterise the output of one 'industry' justifies confidence in the use of a smaller number of samples.

Consistency of the sampling procedure is essential because variation could result in a misleading identification. It is worth noting, therefore, that one thin-section was sampled twice, and yielded a similar frequency curve of quartz grain sizes on each

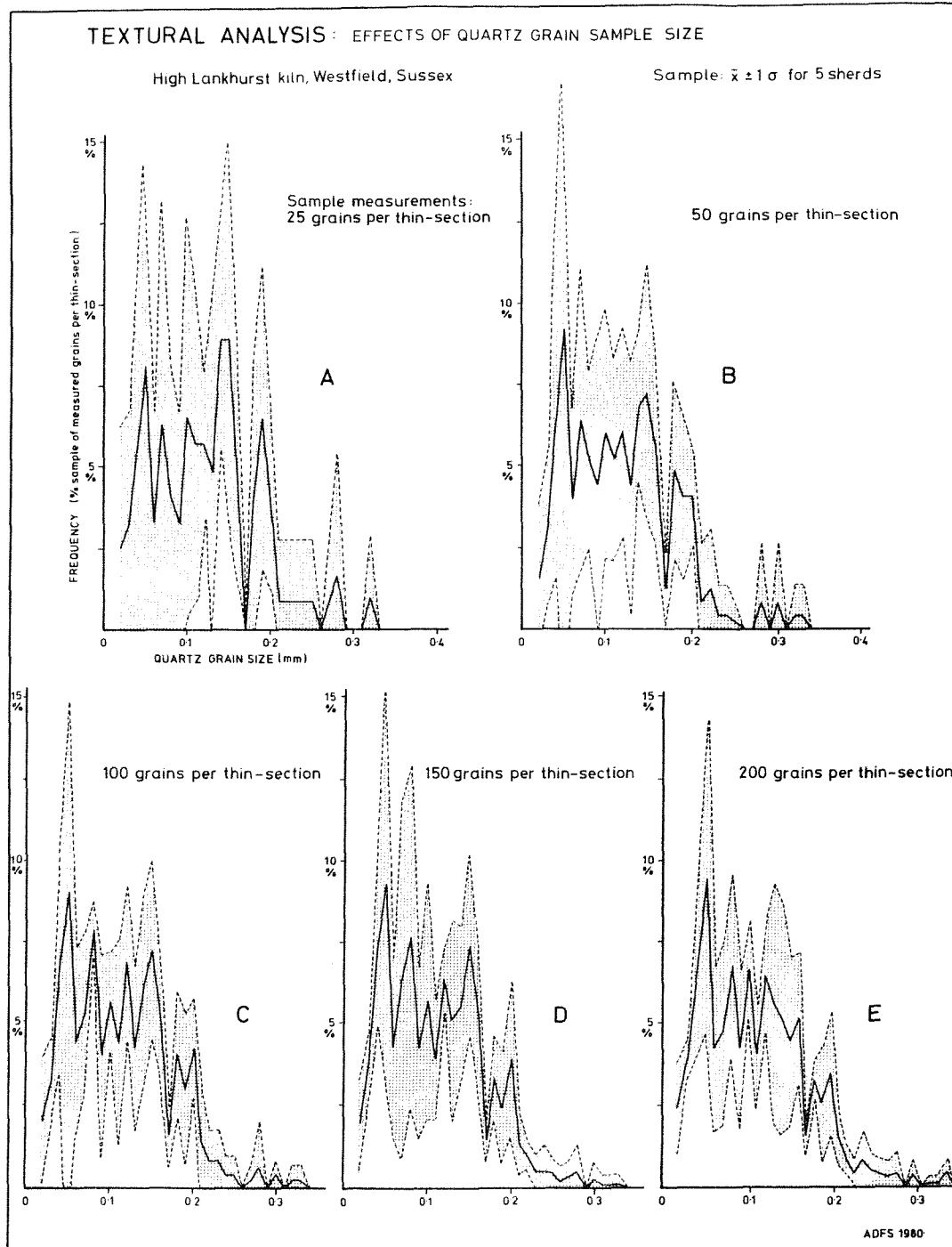


Fig. 3.10 Textural analysis. High Lankhurst: effects of the quartz grain sample size

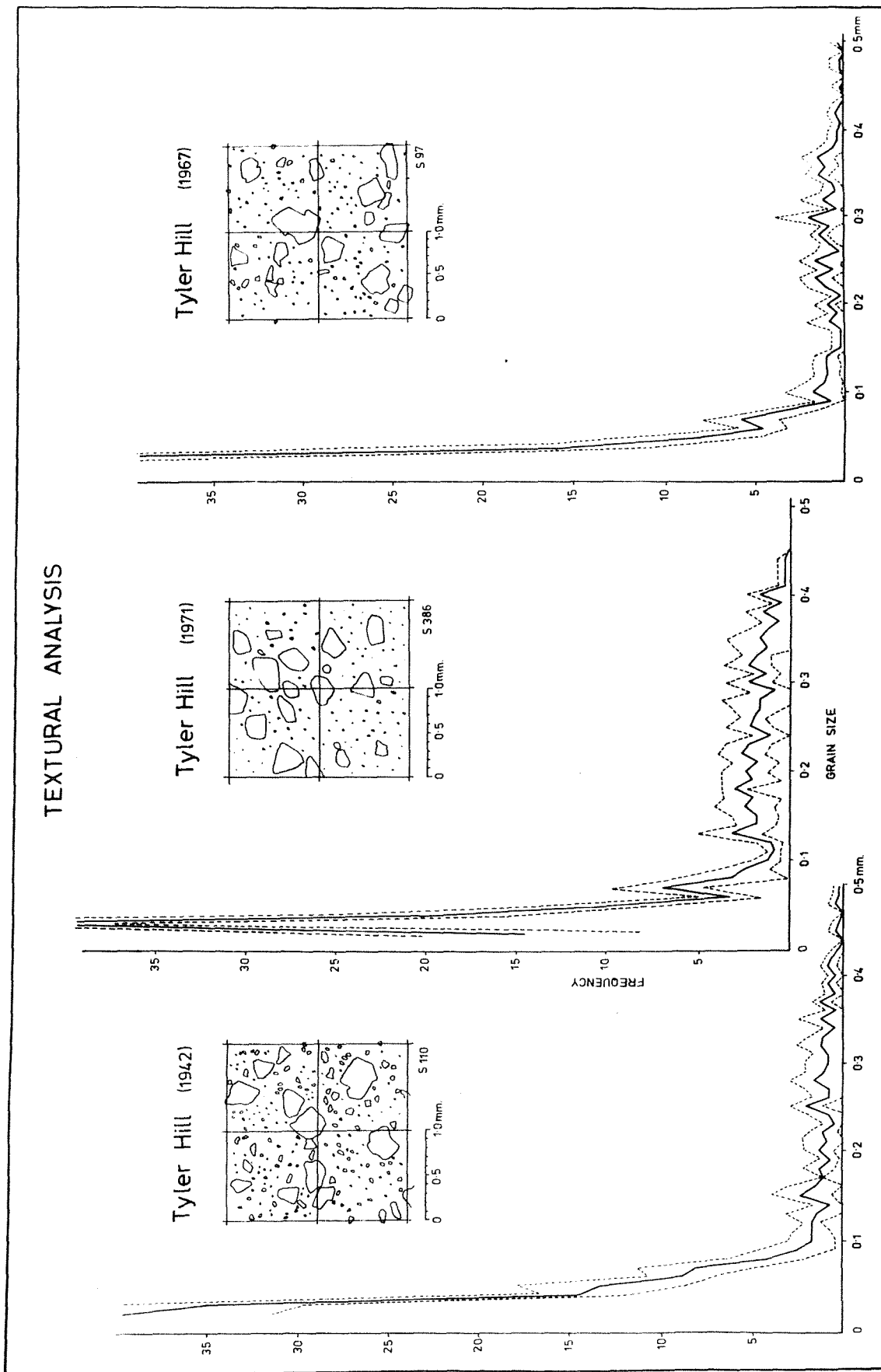


Fig. 3.11 Textural analysis. Tyler Hill: variation between different groups of wasters in the same area

occasion (Fig. 3.12: Graph A). Experiments using an area rather than point sampling procedure have tended to over-emphasise the number of smaller grains. Results derived from different methods are certainly not compatible (Fig. 3.12: Graph B).

The effects of enlarging the measurement intervals for each grain size group from 0.01mm to 0.02mm are shown on Fig. 3.13. These graphs are derived from sampling of a projected image magnified x50 instead of x100. Subtleties of the frequency curve have been obscured and, like the area sample, results obtained at this magnification are not compatible with measurements taken from a projected image magnified x100 (Fig. 3.11).

The number of thin-sections chosen to characterise groups of wasters is based upon practical rather than statistical criteria. Although quicker than earlier methods of textural analysis, this technique remains time-consuming, and from the outset it did not seem practical to examine more than five sherds from each of the thirty or more kilns in the region. Additional samples have been taken, however, where vessels were being produced in more than one fabric.

Experiments with sand-tempered wares from the medieval kiln at Binsted, Sussex show that the frequency curve produced by just three sherds is little altered by subsequent additions to the sample (Fig. 3.14). However, more comprehensive tests have been conducted on the same group of post-medieval wasters from Westfield, East Sussex which was used to assess the validity of the grain sample. Three separate groups of five sherds from the same kiln show some variation, but the general profile of the curves is the same, and can be differentiated from that produced by wares which to the naked eye appear similar (Fig. 3.15: Graphs A-C). Results from all three groups have been amalgamated to provide a graph based upon fifteen sherds (Fig. 3.15: Graph D). In several cases a wide range of variation around the mean frequency of the smaller grains has been noted, but it is the skewness of the size distribution rather than the absolute frequency of individual sizes which consistently proves to be the distinguishing feature of different kilns.

TEXTURAL ANALYSIS

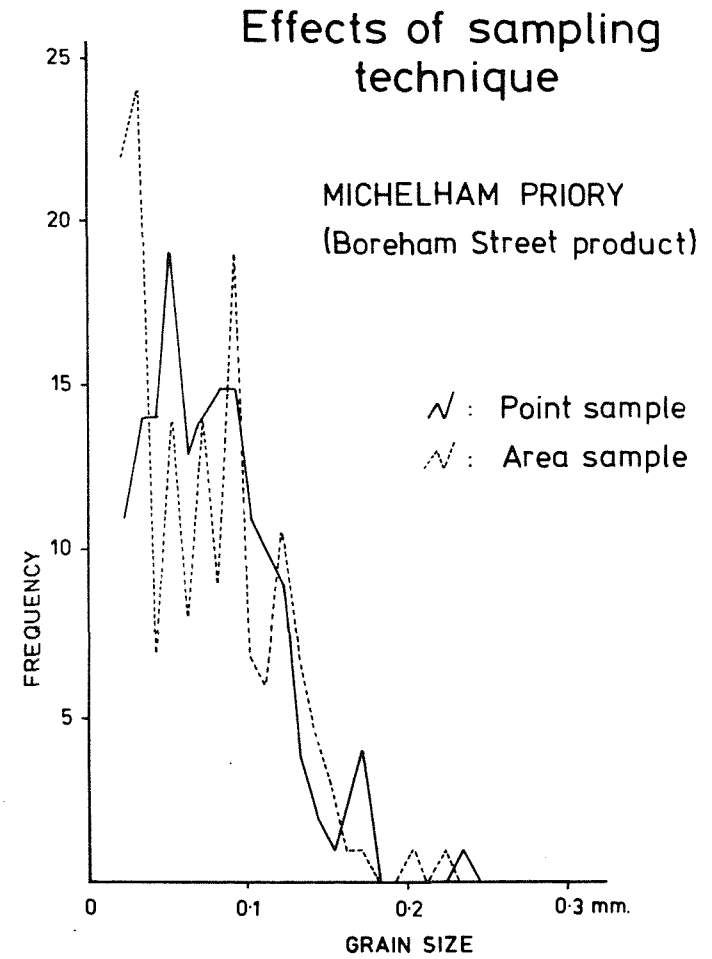
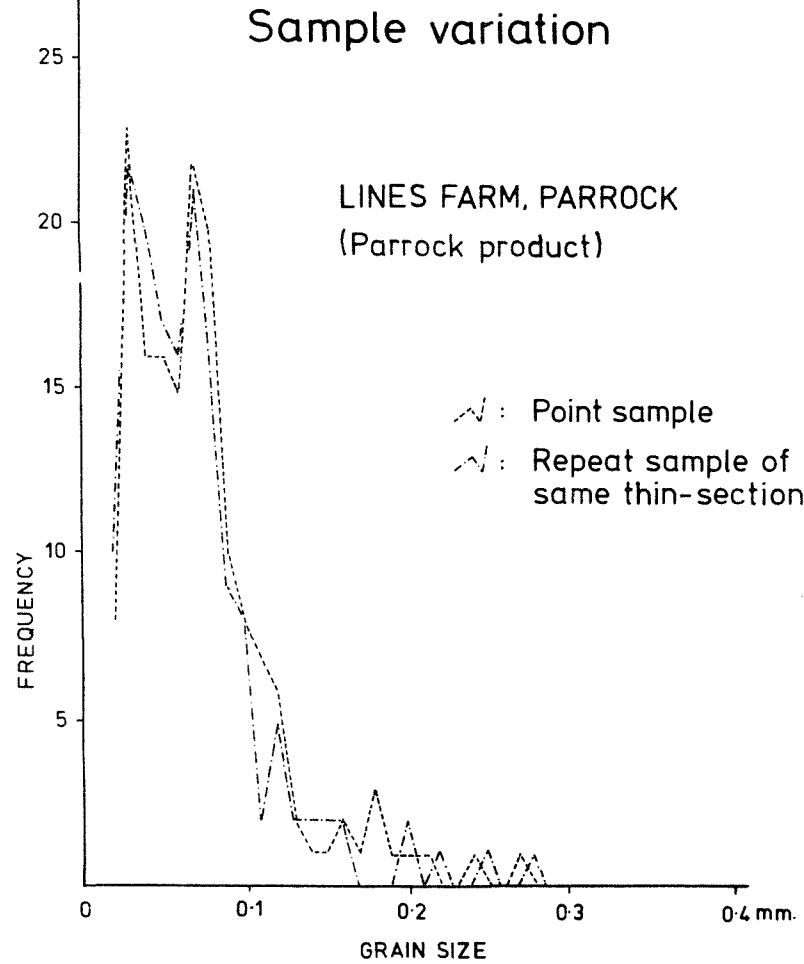


Fig. 3.12 Textural analysis. A. Hartfield: variation derived from repeat sampling of the same thin-section. B. Michelham Priory: variation derived from different methods of sampling the same thin section

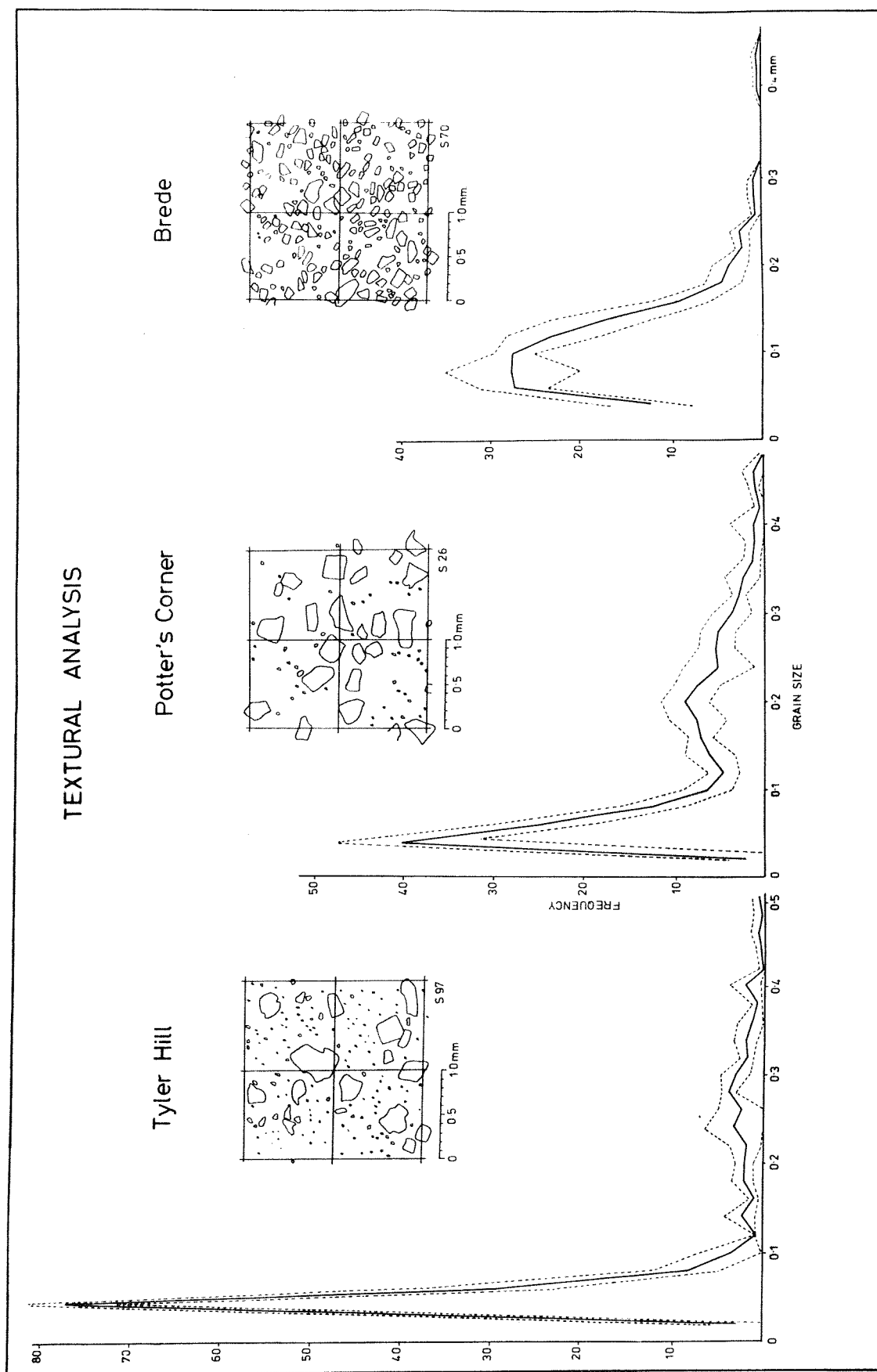


Fig. 3.13 Textural analysis. Tyler Hill, Potters Corner and Brede: variation derived from enlarging grain-size measurement intervals

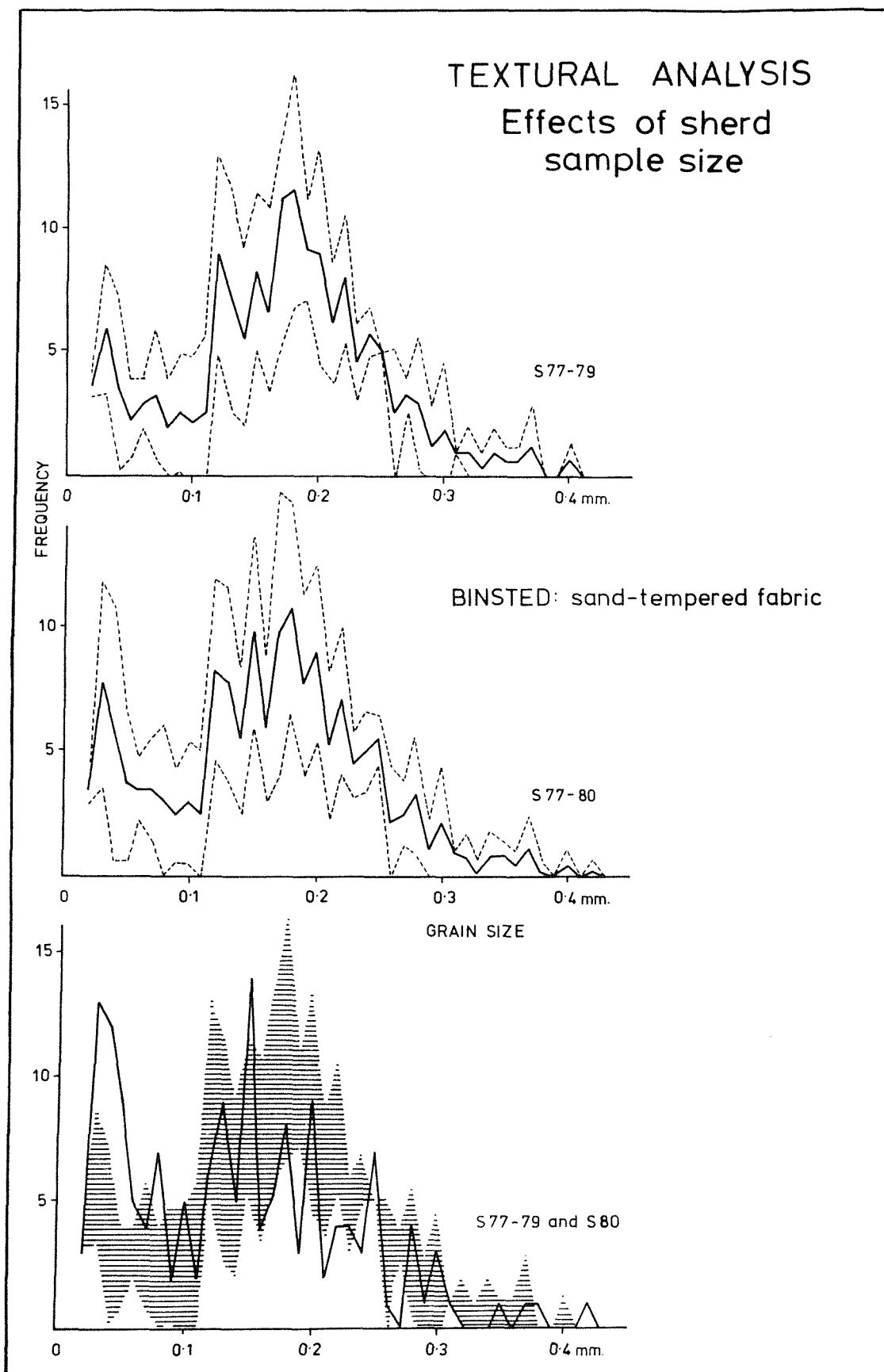


Fig. 3.14 Textural analysis. Binsted: effects of the sherd sample size

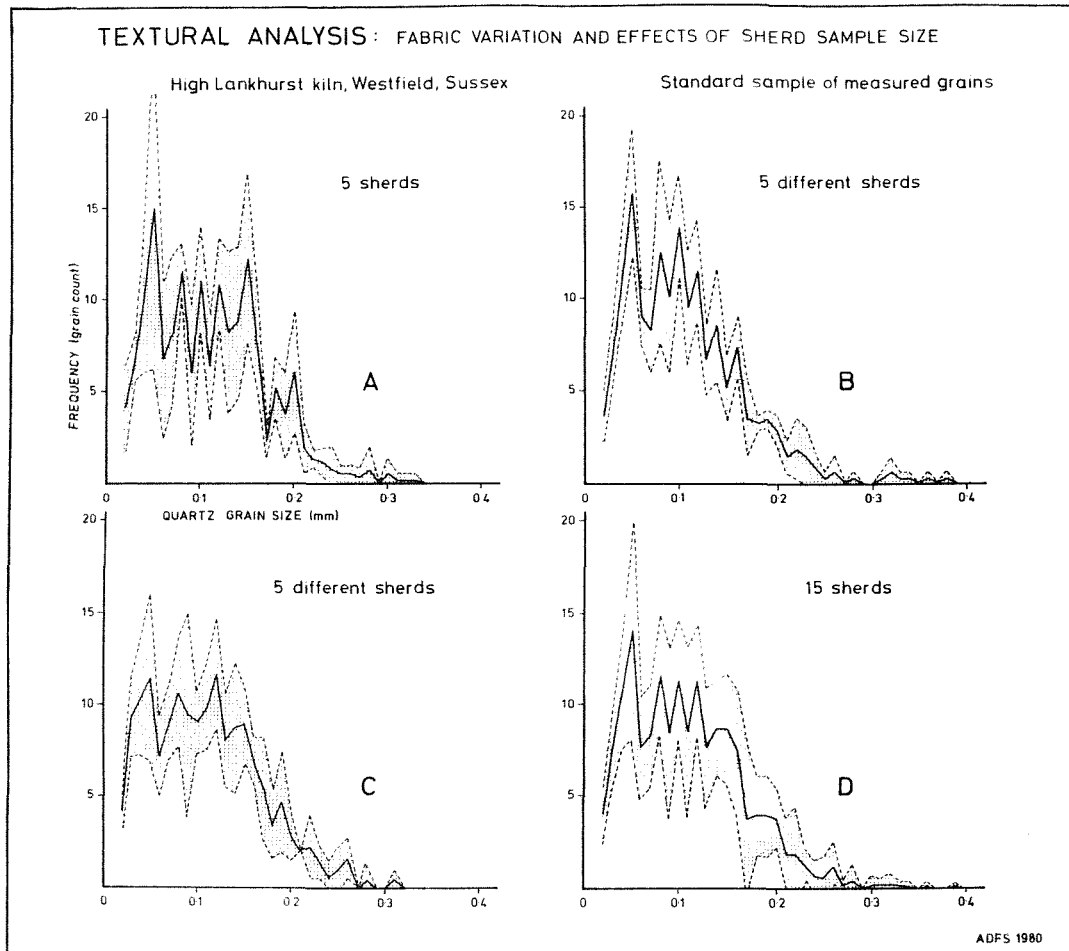


Fig. 3.15 Textural analysis. High Lankhurst: fabric variation and effects of the sherd sample size

3.4 TEXTURAL ANALYSIS: APPLICATIONS AND THE POTENTIAL

3.4.1 Excavated assemblages and the definition of fabrics

Several different themes can be investigated using textural analysis as a means of discriminating between the pottery fabrics represented in an excavated assemblage. Discrete fabric groups can give a broad indication of the number of sources represented at different phases in the stratigraphic sequence. Moreover, specific sources can then be identified when comparative data from waster samples are also available. Analysis of traded vessels found in stratified contexts may indeed assist with defining the date range of the output from known production centres.

Results derived from comprehensive sampling of the fabrics defined initially by eye among the pottery from Bayham Abbey and Battle Abbey, East Sussex, are summarised in Section 4.3 (Streeten 1983a, 92-104; forthcoming a). A similar approach has been applied to a smaller group of material found at Michelham Priory, East Sussex (Figs. 3.16 and 3.17; Streeten forthcoming b). These case studies demonstrate the type of conclusions which can be drawn from textural analysis of medieval and later wares.

Thin-sections have been prepared, where appropriate, from sample type-sherds representing each fabric. These provide a means of comparing the range of quartz grain sizes with material found elsewhere in the region. In the case of Michelham Priory (Fig. 3.16 A-C) seven of the fabrics can be attributed to five known production centres. Discussion accompanying the fabric descriptions indicates the way in which these identifications have been made, and graphs representing the analysis of selected sherds from Michelham Priory are shown on Fig. 3.17.

Similar identifications have been made at Bayham Abbey, but a smaller proportion of these numerous fabrics can be attributed to known production centres. Of particular interest, however, was the evidence that vessels from at least twenty different sources were discarded in the reredorter when the monastic community was dissolved in 1525 (Streeten 1983a, 104).

Faced with the task of examining an excavated pottery assemblage, selection from the wide range of characterisation techniques now available is a daunting task. Moreover, the funding of contemporary British archaeology is such that the ad hoc requirements of an excavator for individual identifications can seldom be

MEDIEVAL AND LATER POTTERY FROM MICHELHAM PRIORY

A small quantity of sherds was found on floor levels and in other contexts associated with occupation of the hall situated on the south side of the moated enclosure; the remaining residual medieval pottery came from layers containing later wares. Hard-fired fabrics form the bulk of the assemblage (Fig. 3.17: Graph H), and stratified sherds of this type were associated with both a U-shaped hearth and ash layers, presumably derived from secondary industrial activity. Later post-medieval wares came from robber trenches for the north wall, and from other superficial deposits.

Fabric descriptions

Descriptions follow the conventions recommended by Peacock (1977); thin-section numbers relate to the reference collection of medieval and later samples from South-East England (see Section 12.1); and the classified pottery has been deposited at Michelham Priory.

A Medieval flint-/sand-tempered wares

- i Red-pink core and surfaces. Soft, harsh texture with rough fracture. Abundant medium/coarse white (and some black) angular flint. Sparse ill-sorted pellets of red ironstone.
- ii Dark grey core with brown margin and grey surfaces. Soft, harsh texture with rough fracture. Abundant medium/coarse white and black angular flint. Thin-section no. 374. Abbots Wood.
- iii Dark grey core with red-brown surfaces. Fairly hard, harsh texture with rough fracture. Moderate medium-sized angular white flint and sparse fragments of black flint. Thin-section no. 363.
- iv Grey core and grey or black surfaces, sometimes with brown margins. Hard fairly smooth surface with rough fracture. Abundant fine quartz and very sparse ill-sorted fragments of medium-sized white flint. Thin-section no. 364. Ringmer.
- v Buff-pink core and surfaces, sometimes with a buff margin. Hard, fairly smooth texture with rough fracture. Moderate fine quartz and rare, ill-sorted, fragments of white and black flint. Thin-section no. 365.

B Medieval sand-tempered wares

- i Grey core with red or red-brown surfaces. Hard, slightly harsh surface texture with rough fracture. Abundant medium/fine quartz. Thin section no. 366.
- ii Red core and surfaces. Hard, smooth texture with rough fracture. Moderate fine quartz. Thin section no. 367. Possibly Rye.
- iii Red-pink core and surfaces. Hard, smooth texture with fairly smooth fracture. Sparse fine quartz. Thin section no. 368. Rye.
- iv Grey core and surfaces. Hard, harsh texture with rough fracture. Abundant medium/fine quartz. Thin section no. 369.
- v Pale grey core and surfaces. Hard fairly smooth texture with rough fracture. Abundant fine quartz. Thin section no. 370. Possibly Rye.

C Late medieval/early post-medieval wares

- i Red core with grey surfaces sometimes shading to red. Very hard, smooth texture. Sparse very fine quartz. Thin section no. 174. Boreham Street.
- ii Red-pink core and surfaces, sometimes shading to buff. Similar texture and composition to Fabric C i. Thin section no. 371. Boreham Street.
- iii Brown core, grey margins and brown surfaces. Similar texture and composition to Fabric C i. Thin section no. 372. ? Boreham Street.

D Post-medieval wares

- i Lead-glazed red earthenware.
- ii White-buff core and surfaces. Hard, smooth texture with rough fracture. Moderate fine quartz. Internal pale green glaze. Thin section no. 373. Hampshire/Surrey white ware.
- iii Tin-glazed earthenwares.
- iv Cream/white china.
- v Cream-buff core and brown external surface. Hard, smooth texture with rough fracture. Sparse fine quartz. Internal brown glaze.

E Stonewares

- i Pale grey core and external surface. Shiny very smooth texture.
- ii Grey core with mottled brown external surface. Uneven external texture.
- iii Grey-buff core and surfaces. Smooth texture.
- iv Cream core with shiny cream surfaces.

Fig. 3.16A Michelham Priory: pottery descriptions and identifications

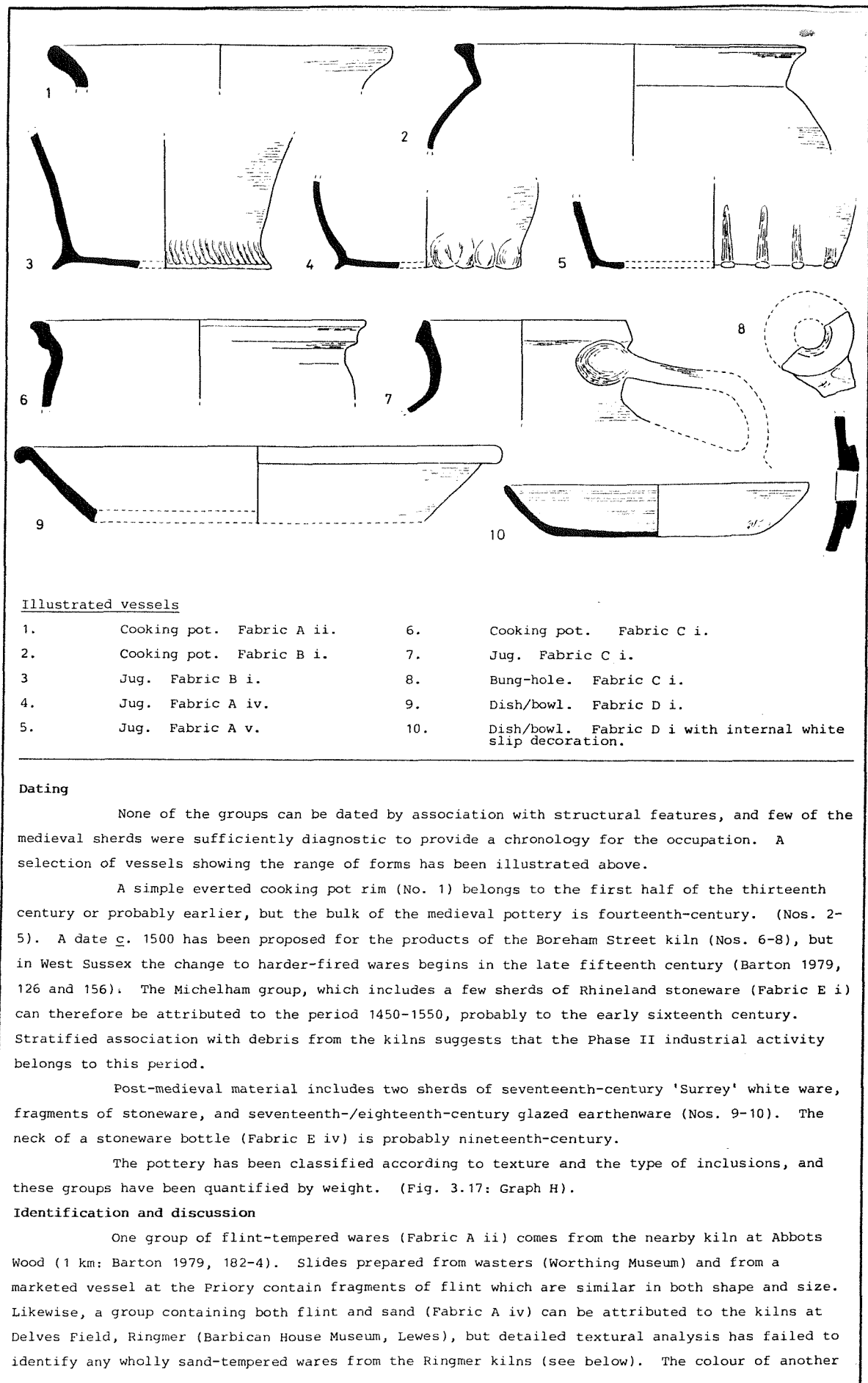


Fig. 3.16B Michelham Priory: pottery descriptions and identifications

vessel (Fabric A v) is similar to pottery manufactured from the Reading Beds clay in West Sussex. A nearer outcrop to Michelham occurs in the vicinity of Newhaven, but there is no evidence of a medieval pottery industry here, and the source of this fabric remains unknown.

The grey sandy coarsewares from Michelham are similar to fabrics represented at Ringmer, but reduced wares occur over a wide area of West Kent and East Sussex (Crossley 1975c, 48). Identification of Ringmer products is not confirmed by microscopic analysis (Fig. 3.17: Graphs B and C). A peak of small quartz grains in samples from Delves Field, Ringmer, is found in neither Fabric B i or B iv at Michelham, although the overall range of sizes is closer to the Ringmer graph than to the frequency curve for another local industry producing sand-tempered wares at Broadland Wood, Brede (Fig. 3.17: Graph A). The contrast with both is sufficient to suggest that the Michelham vessels probably came from yet another unknown source. One of the sand-tempered types (Fabric B ii), however, is from the same source as a group of sherds found at Batsford Mill (Batsford fabric C ii; thin section no. 391: Streeten 1980c), and these are probably products of the kilns at Rye.

The fine-textured jugs (Fabric B iii) are similar to fragments found during earlier excavations on the site (Barton and Holden 1967a, 11) and these can certainly be attributed to the Rye potters (38 km: Vidler 1936). The fabric of the wasters (Barbican House Museum, Lewes) shows some variation, but the graph derived from analysis of a sample at Michelham (Fig. 3.17 Graphs D and E) is similar to that plotted from ten sherds representing both stamped and slipped vessels from Rye (Barton 1979, 191-254). In this instance, visual identification is confirmed by textural analysis, but, under less favourable conditions, the technique would also be capable of isolating marketed vessels from the Rye kilns, even when the distinctive stamped decoration is not present in a ceramic assemblage. Jugs from Rye form only a small proportion of the material recovered during these excavations at Michelham, and the quantity of medieval imports is even smaller, comprising a single sherd of white ware probably from South-West France.

Both the fabric and the range of forms in later hard-fired earthenwares (Fabric C) is identical to the products of the Boreham Street kiln (11 km). The Michelham assemblage has a higher proportion of vessels with oxidised surfaces (Fabric C ii) than is to be seen among the small collection of wasters from the kiln (Barbican House Museum, Lewes), but a sample (Fabric C i) confirms the identification of Boreham Street products, and comparative analysis of a sherd from the contemporary kiln at Hareplain, Biddenden, Kent (Kelly 1972) demonstrates the contrast between these two superficially similar fabrics (Fig 3.17: Graphs F and G). Imports of this period include shreds of the ubiquitous Rhineland stoneware (Fabric E i).

At least one vessel (Fabric D ii) can be attributed to the seventeenth-century white ware kilns of the Hampshire/Surrey border area (Holling 1971a, 70-82), but the bulk of post-medieval material comprises lead-glazed redwares (Fabric D i). Many are common local products, but it is sometimes difficult to distinguish between these and certain continental fabrics. The dish with internal bands of white slip (No. 10) may be from the Low Countries, although neither the form nor the glaze is typical of these imports.

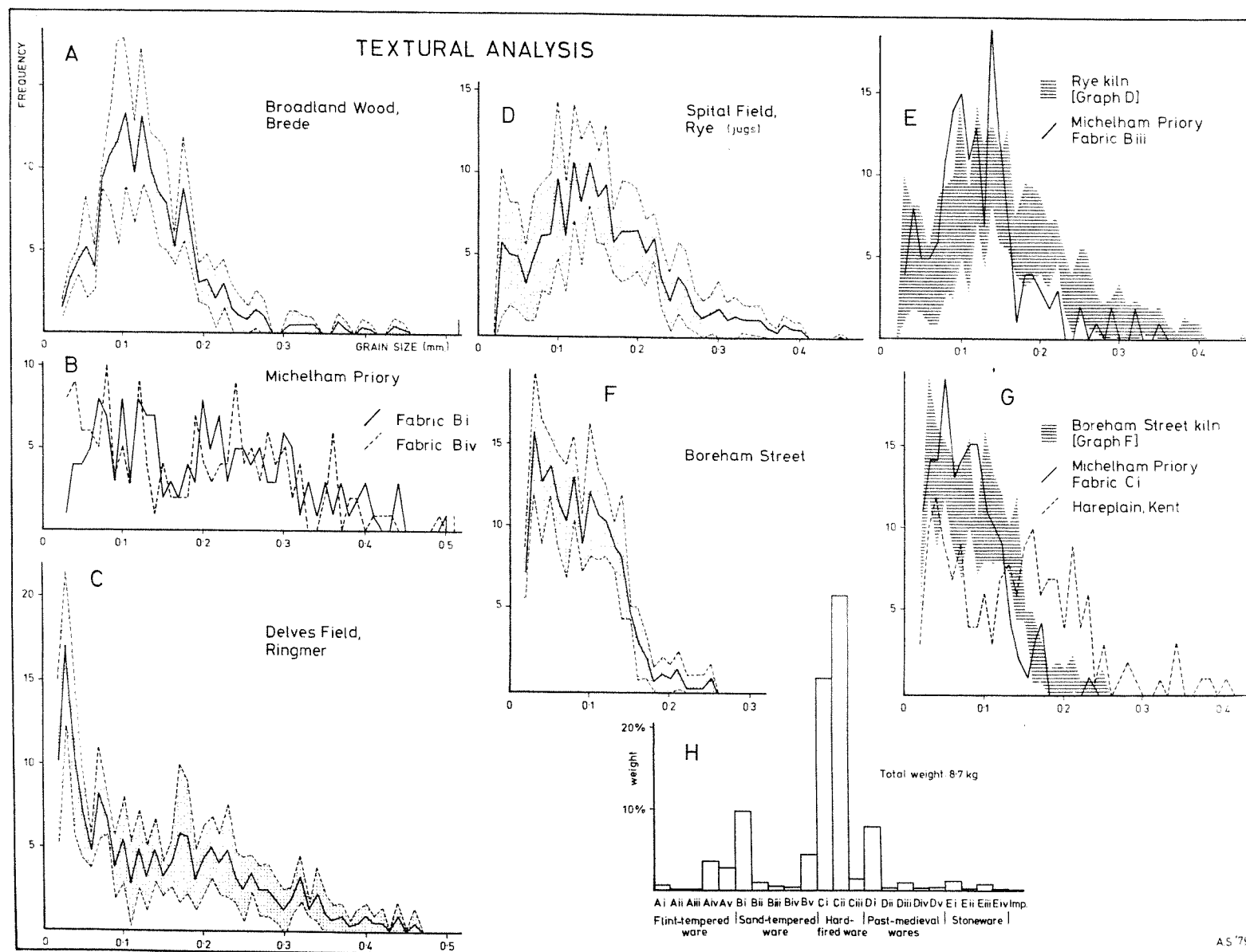
Conclusion

This comparatively small assemblage of pottery yields important evidence for the marketing of local ceramics, and thin-section analysis enables the products of local kilns to be identified with greater confidence than has been possible hitherto. Wares from the nearby medieval kiln at Abbots Wood are not so numerous as vessels from this source found in earlier excavations. At least one fabric can be attributed to the kilns at Ringmer, but thin-section analysis indicates the likelihood of more yet undiscovered kilns in the area. A small number of jugs reached the Priory from further afield at Rye, and this may also have been the source of some finer-textured culinary wares. Despite proximity to the south-coast ports, only one imported vessel has been identified.

By the sixteenth century, pottery was supplied from a small local workshop at Boreham Street. Documentary sources attest continued production at Ringmer during the early sixteenth century, but some of the markets formerly supplied from there may have been lost to more local competition. This is in marked contrast to West Sussex, where the white-painted wares from Graffham dominated the market over a wide area (Streeten 1980a, fig. 41). By the seventeenth century, however, vessels from the Hampshire/Surrey border were reaching Michelham where they appear to have been used alongside the local earthenwares.

Fig. 3.16C Michelham Priory: pottery descriptions and identifications

Fig. 3.17 Textural analysis. Michelham Priory: fabrics and source identification



integrated into a co-ordinated programme of ceramic research. Successful application of textural analysis depends upon a wide range of comparative material, preferably from production sites. Now that samples have been examined from many medieval kilns in South-East England, this method of analysis provides a comparatively cheap and efficient means of characterising medieval sand-tempered ceramics in the region. Individual site studies can contribute to an understanding of regional patterns as well as yielding information concerning the sources from which domestic utensils were obtained.

3.4.2 Pottery types and ceramic regions

Examples from Kent and West Sussex will serve to demonstrate the application of textural analysis to regional ceramic research.

In Kent, the technique has been used to characterise regional fabric types and to identify outliers of the principal distributions (Streeten 1982a, 91-94). Products from the kilns at Potters Corner and Tyler Hill can be distinguished both by eye and in thin-section (Fig. 3.18: Graphs A and B). Another type with brighter pink surfaces was discovered at New Romney (Rigold 1964, 61) and is also known from other sites on Romney Marsh (Maidstone Museum, 9204). These so-called 'Pink East Wealden wares' are distinguished in thin-section by the higher proportion of large grains $<0.4\text{mm}$ (Fig. 3.9: Graph D) and the geographical distribution of these and Potters Corner vessels (Fig 3.18: Graph B) indicates a localised market in places which could not be supplied economically from the much larger industry at Tyler Hill.

In contrast to the red fabrics of east Kent, contemporary coarsewares found in western parts of the county are predominantly reduced. Grey wares found initially at Joyden's Wood, Bexley (Tester and Caiger 1958, 37) and at Lesnes Abbey (Dunning 1961, 3) were thought originally to have come from the kilns at Limpsfield in Surrey. The large assemblage from Eynsford Castle, however, revealed significant differences (Rigold 1971, 158), and textural analysis here and at other nearby sites demonstrates the contrast with wasters from Scearn Bank, Limpsfield (Prendergast 1974) (Fig. 3.9: Graphs E & F). An isolated vessel which appears similar in thin-section (Fig. 3.18: Graph D) reached Dover Castle (Cook et al. 1969, 100), but west Kent finds form part of a wide distribution of grey wares probably made at several kilns during the thirteenth and fourteenth centuries.

Some jugs in this area are in the same grey sandy fabric,

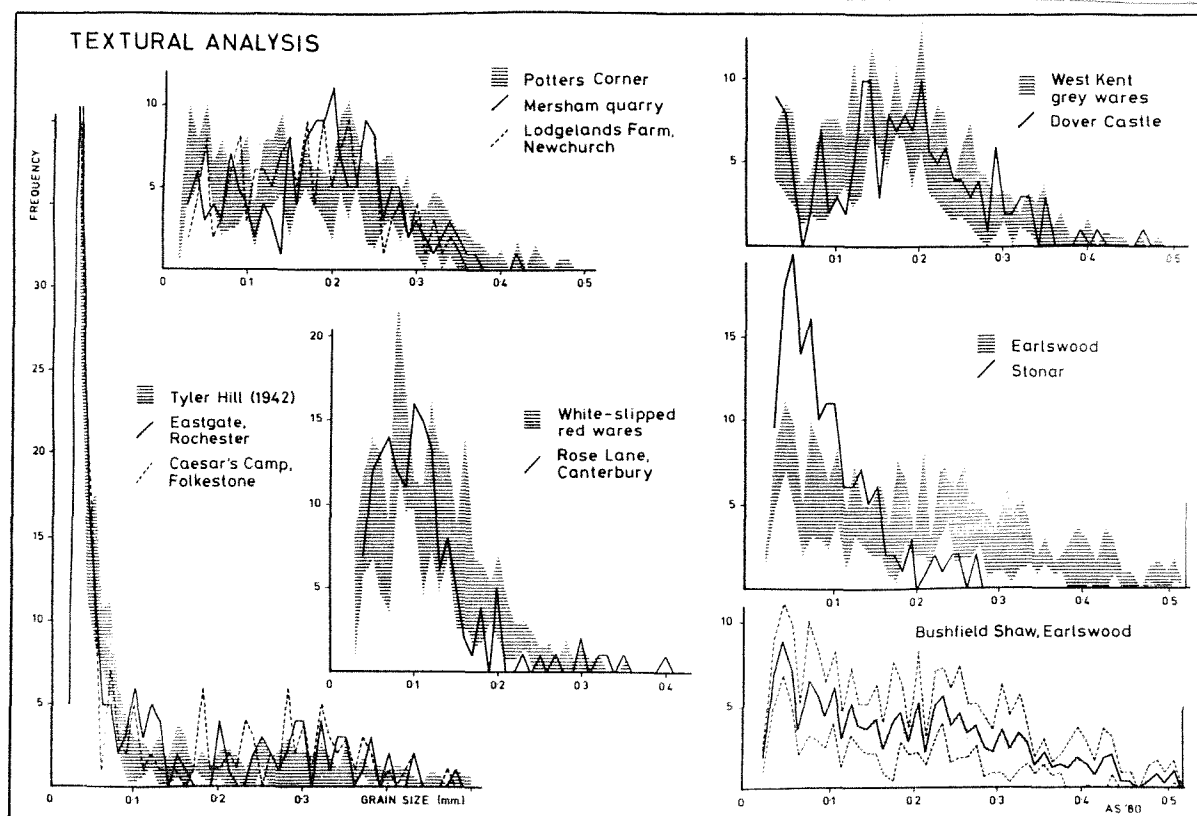


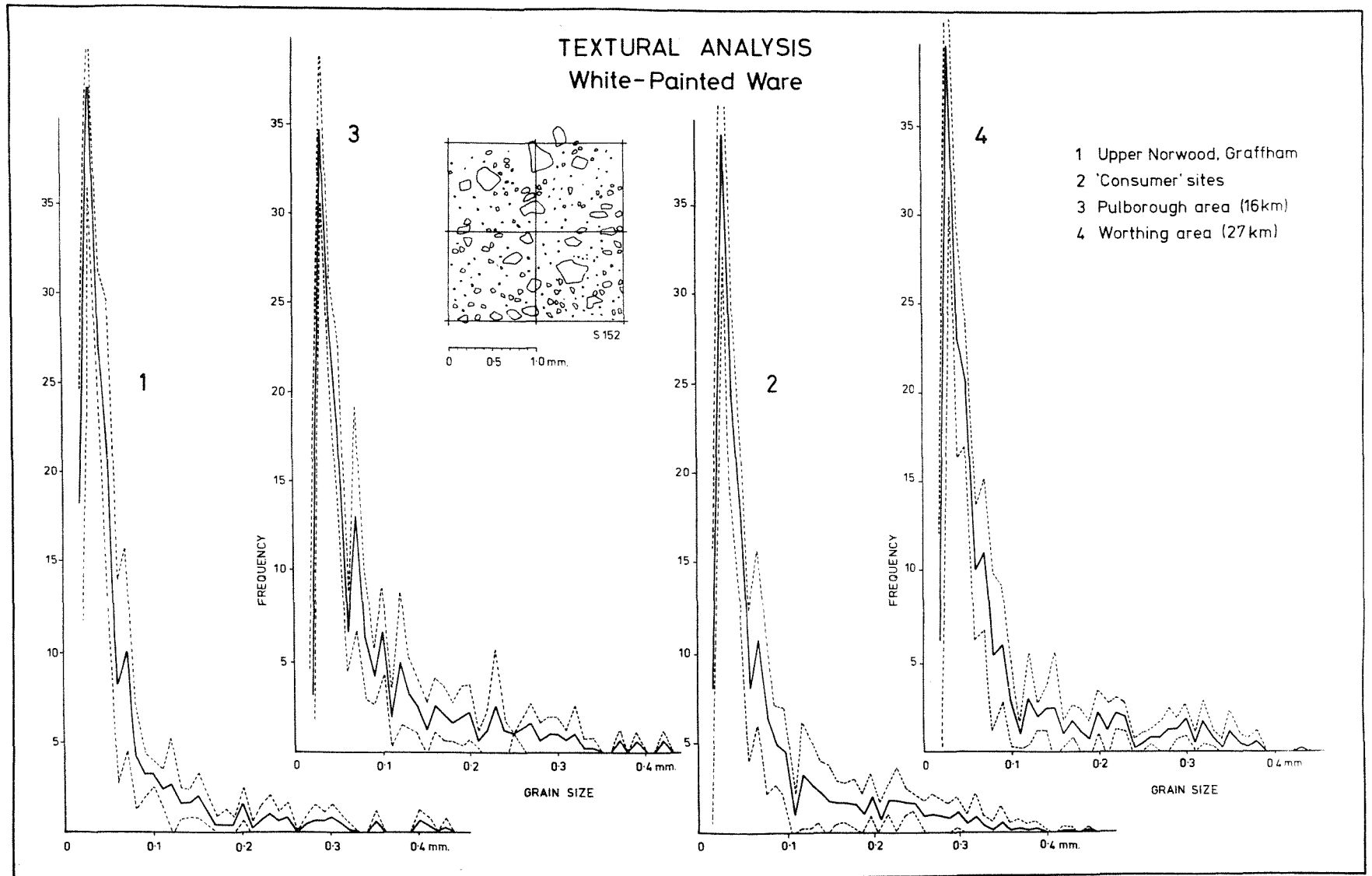
Fig. 3.18 Textural analysis. Kent: characterisation and the definition of ceramic regions

but others are of a finer, frequently white-slipped, red ware. A vessel found at Canterbury and attributed by the excavator to the London area (Frere 1954, 135 fig. 20 no. 44) produces a very similar pattern of grain-size frequency to samples taken from slipped sherds found in west Kent (Fig. 3.18: Graph C). The source of the 'London area' jugs is not known but the fine white-slipped wares previously called 'West Kent' types are now known to have been made at Mill Green, Essex (Pearce et al. 1982). Both of these are distinguishable from the coarser fabric of the white-slipped red wares from Earlswood, Surrey (Turner 1974) (Fig. 3.18: Graph F). However, textural analysis of samples from Stonar compared with wasters from Earlswood does not yet confirm the suggestion made by Dunning (1968, 52 fig. 30) that pottery manufactured in east Surrey reached this part of Kent.

Thus it will be apparent that ceramic regions can be defined using textural analysis of selected samples from traded vessels found at sites over a wide geographical area. The same principles apply to the identification of superficially similar wares from different sources. Indeed, white-painted wares in West Sussex demonstrate the potential application of textural analysis to the definition of specific ceramic distributions.

The technique has been used to isolate late fifteenth- or early sixteenth-century products of the kilns at Graffham and East Lavington from a wider tradition of distinctive white-painted decoration (Streeten 1980a, 108-113). Results from analysis of over twenty marketed vessels have been plotted to show the mean quartz grain-size frequency \pm one standard deviation, which permits comparison with the pattern derived from wasters (Fig. 3.19). Samples from single sites or groups of sites from a specific area have also been examined separately to test the validity of individual elements in the larger sample. This study has shown that wares found over wide areas of West Sussex and the Hampshire border, which were hitherto thought to have been made at several centres, are in fact from a single source. Moreover, they can be distinguished from other types with similar decoration. Samples of white-painted ware from Pivington, Kent and from the group of late medieval wasters found at 17 Acre Field, Brede, East Sussex have yielded quite different frequency curves for the range of quartz grain sizes (Fig. 3.20). The innovation of white-painted decoration coincides with changes in the pattern of ceramic marketing in West Sussex, and textural analysis provides corroborative evidence that by c.1500 the Graffham potters

Fig. 3.19 Textural analysis. White-painted ware: source identification



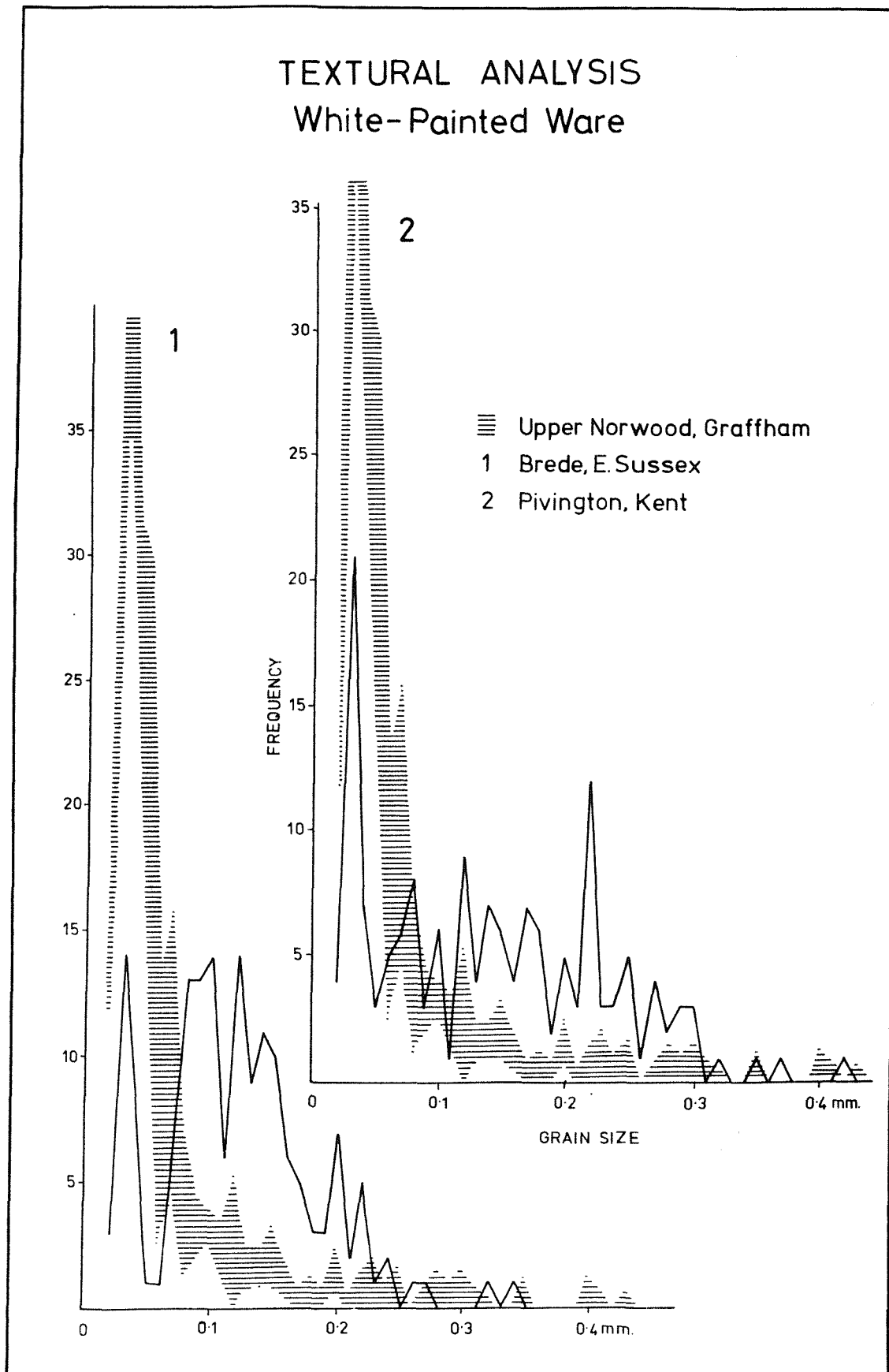


Fig. 3.20 Textural analysis. White-painted wares: characterisation and the definition of ceramic regions

had captured the markets formerly served from several different medieval kilns (see Section 6.7.1).

3.4.3 Kilns and marketing

The objective attribution of visually similar wares to specific kilns assists with the identification of regional variations in marketing. However, these patterns can only be established by painstaking analysis to answer specific questions.

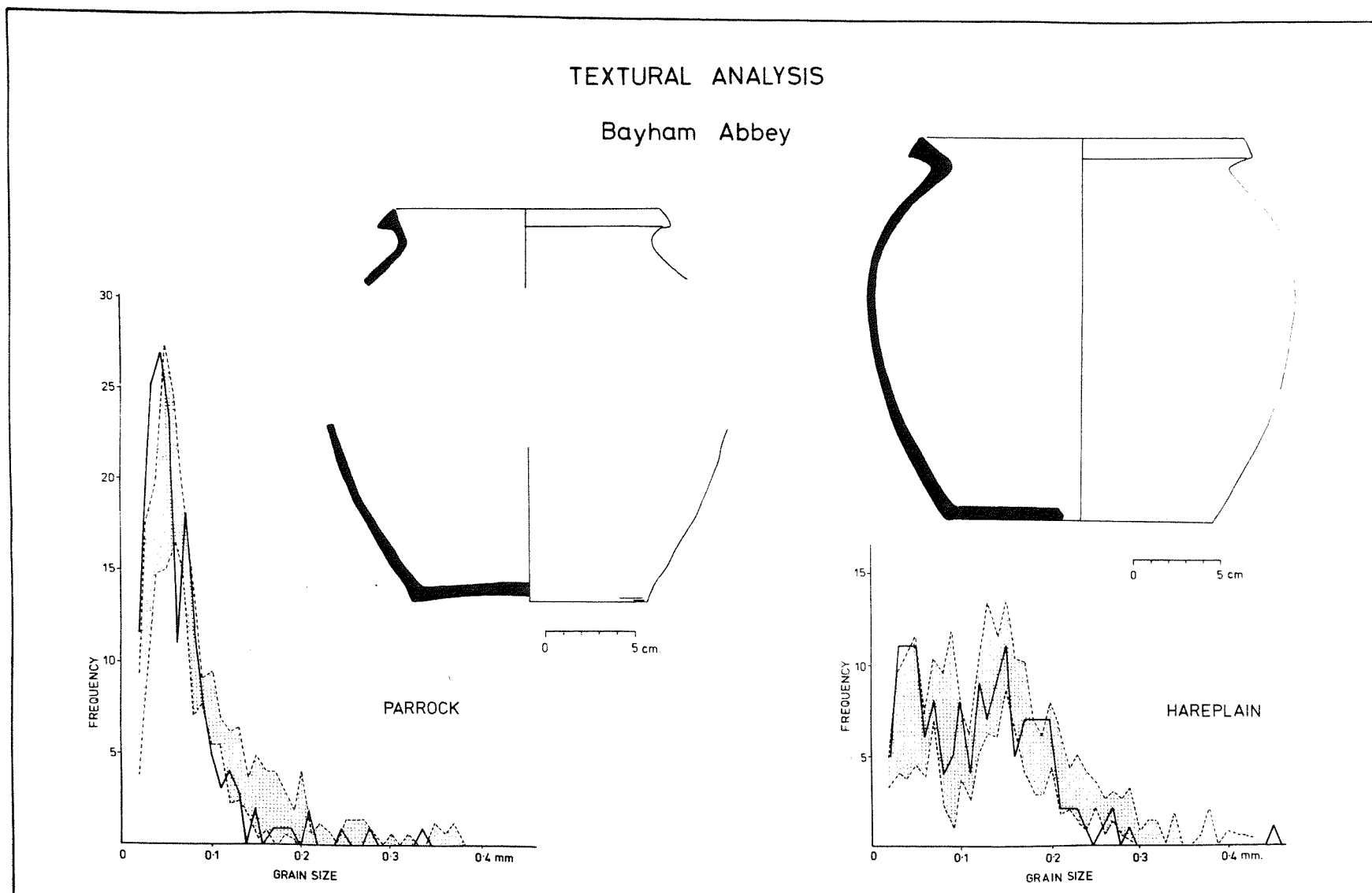
Such work has demonstrated that the kilns at Hareplain, Biddenden, Kent and Lower Parrock, Hartfield, East Sussex were among the twenty or so sources from which pottery had been obtained by the monastic community at Bayham Abbey before 1525 (Streeten 1983a, 104). Thin-sections have been prepared from the two vessels illustrated on Fig. 3.21. The results of grain-size analysis conform closely with the pattern derived from wasters at the respective kilns. Indeed, without this type of analysis it would have been impossible to identify the source of such common forms as the cooking pot manufactured in a ubiquitous hard-fired earthenware. As a result of textural analysis, therefore the multiplicity of suppliers implied by the pottery fabrics shows that ceramics sold in the Weald of Kent and East Sussex probably came from a variety of small workshops, in contrast to the contemporary potters at Graffham, West Sussex who seem to have dominated the market over a wide area (see Section 6.7).

Validity of the distinction between products of different kilns is borne out by comparing the possible wasters found at Little Forge, Buxted, East Sussex with those from the known kilns at Boreham Street and Lower Parrock respectively some 24km (15 miles) and 10km (6 miles) away. Although similar in appearance - even if not precisely contemporary - the fabric of the material from Little Forge can certainly be distinguished in thin-section from the two known kilns (Fig. 3.22). This does not prove that the sherds from Little Forge are wasters (see Section 9.1.6, no. 397), but it does reinforce the impression that demand for pottery in this part of the Weald was met from several different sources during the early post-medieval period.

3.4.4 Fabric analysis and ceramic chronologies

In addition to the evidence for ceramic marketing, pottery found in the reredorter at Bayham Abbey also demonstrates the chronological significance of objective identifications among ceramics in datable archaeological contexts. Occurrence of Cheam wares in the

Fig. 3.21 Textural analysis. Bayham Abbey: source identification



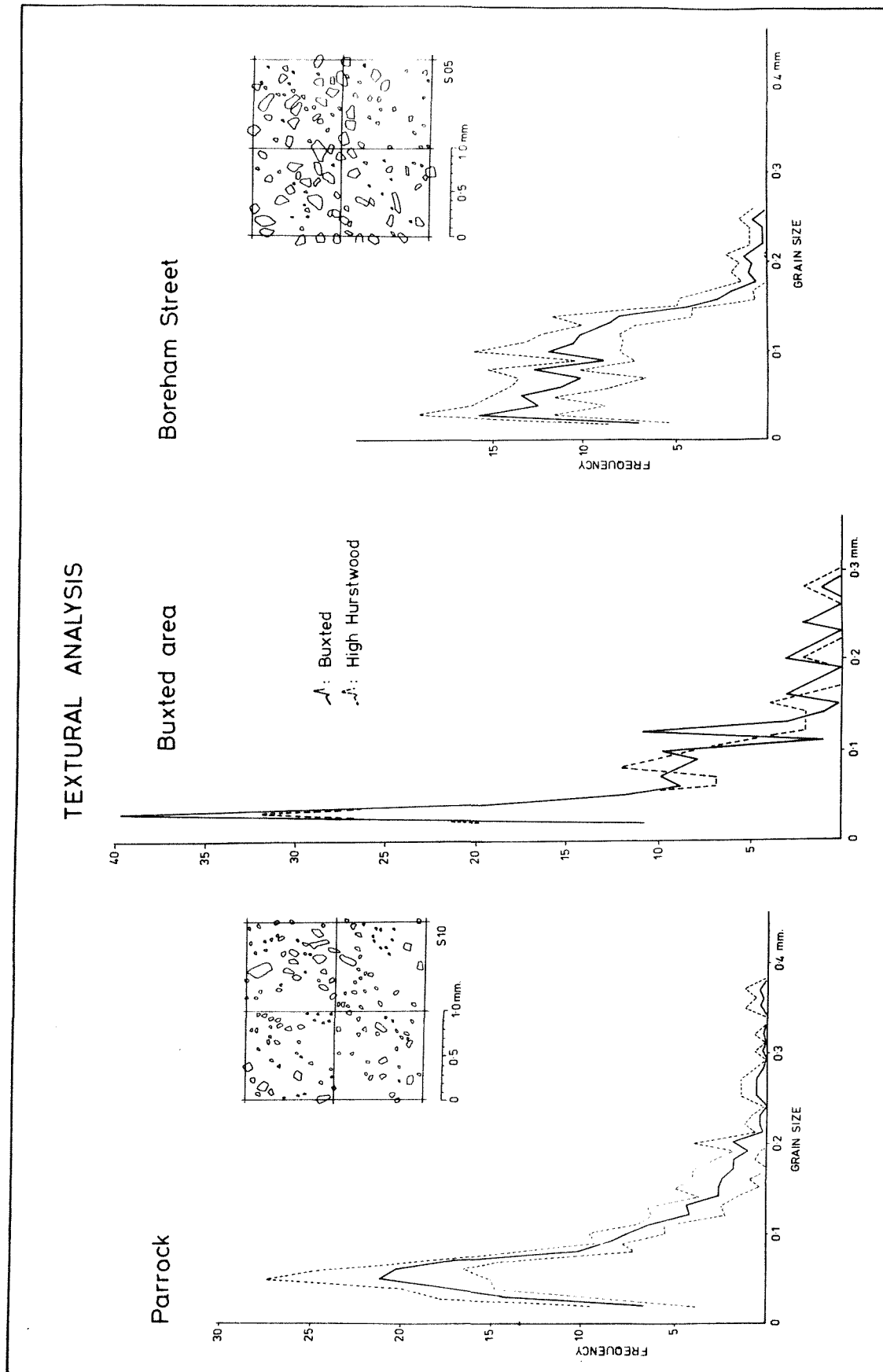


Fig. 3.22 Textural analysis. Early post-medieval wares in East Sussex: tests for source identification and the definition of distributions

same context as locally-produced vessels from Hareplain and Lower Parrock offers significant information concerning the output of these three workshops (Streeten 1983a, 104).

Dating of the Surrey white wares has been refined in the light of evidence from well-stratified groups found at London waterfront sites. Biconical Cheam jugs similar to those from Bayham first appeared c.1365 at Trig Lane, but examples were also found in a large deposit at Baynards Castle dated c.1480 (Orton 1979a, 303). Associated finds from Bayham, however, suggest that the terminal date for this type can be no earlier than c.1500 even if the monastic community possessed a valued 'set' of jugs already of some age when discarded in 1525. A longer life-span for the white-ware jugs could account for the unexpected occurrence of culinary wares from the Lower Parrock and Hareplain kilns in the same deposit as the marketed vessels from Cheam.

Results from archaeomagnetic tests on the Hareplain kiln were poor, but they would be compatible with the excavator's suggested range of c.1500-1520 (Hawley 1972). At Lower Parrock, however, an archaeomagnetic date in the second quarter of the sixteenth century has been inferred (Clark 1979). In both instances, it is assumed that the potters were working for only a short period. Given these and other assumptions about the circumstances in which the pottery found at Bayham was discarded, one of the cooking pots, and indeed the short-lived activities of the Lower Parrock potter(s), can be dated with unusual precision to within a very few years of 1525.

Once again, it should be stressed that these conclusions could not be drawn with conviction were it not for the objective identifications offered by textural analysis. Indeed, similar significance can be attached to the chronological evidence from Battle Abbey concerning output of the kilns at Ringmer and Rye.

Several of the coarse sandy wares represented at Battle are superficially similar to oxidised wasters from Ringmer, and in one instance the thin-section contains a distinctive groundmass of small quartz grains which is characteristic of the Ringmer wares. At the time of discovery, however, attribution to this source seemed unlikely because these fabrics were represented in contexts appreciably earlier than the date then conventionally ascribed to the Ringmer kilns. Scepticism, however, was unfounded owing to the subsequent publication of radiocarbon determinations for samples of charcoal associated with the kiln excavated at Barnett's Mead, Ringmer, in 1979 (see Section

9.1.6, no. 483). Textural analysis of the samples from Battle therefore offers corroborative - if not entirely conclusive - evidence that production had probably commenced at Ringmer before the early thirteenth century (Streeten forthcoming a).

Sherds attributed to the Rye kilns are securely stratified in mid-thirteenth-century contexts at Battle. Some of these vessels are therefore earlier than the stylistic evidence from the wasters would suggest. Barton (1979, 219), however, places the origins of the Rye industry 'no earlier than about AD 1300'. Nevertheless, textural analysis shows that at least part of the repertoire, if not the full range of forms, must have been established at least half a century earlier than has been supposed hitherto.

Thus, in the absence of extensive excavation and absolute dating of the kilns, fabric analysis of marketed wares from securely stratified contexts can help to define the date range of particular industries. This principle has also been used successfully to suggest an early origin for pottery manufacture in the Tyler Hill area of Hackington, near Canterbury. Samples taken from twelfth-century wares pre-dating construction of the 'Aula Nova' at Canterbury Cathedral Priory are remarkably similar to the later wasters from Tyler Hill. In this way, therefore, thin-section analysis has demonstrated continuity of a distinctive clay technology, and it can be inferred that twelfth-century wares from a hitherto unknown source were probably manufactured from the same raw materials, if not made at precisely the same place as the later wares. Indeed, kiln debris and pottery discovered near Brittancourt Farm since the analysis was undertaken includes rims and spouts from pitchers with rouletted decoration (N. Macpherson-Grant, pers. comm. 1984). These traits suggest a date in the mid-twelfth century, thus providing welcome confirmation that pottery production at Tyler Hill had indeed commenced before the thirteenth century.

3.4.5 Clay technology

The ability to link marketed vessels to their source of production remains the single most important application of any ceramic characterisation technique, but comparison of pottery with fired clay samples can also give an insight into the technology of the potter's raw materials.

Evidence for the layout of potters' workshops is frequently scanty, even when an extensive area has been excavated, and

interpretation of the processes of production represented in the archaeological record is often difficult. Fabric analysis therefore offers a means of elucidating processes which leave little tangible evidence.

Dumps of prepared clay were found near two post-medieval kilns in Sussex - one at Lower Parrock, Hartfield (Freke 1979); the other at Crane Street, Chichester (Down 1981, 197). It was assumed that textural analysis of fired samples would compare closely with the wasters found nearby, but, in both instances, the quartz grains in the clay were appreciably finer than those in the pottery (see Section 5.6.4). The clay dumps must therefore represent a stage prior to addition of sand temper. Thus, under more favourable conditions where a larger area had been excavated, it might be hoped that analysis of samples from different clay heaps would offer some clue to the layout not just of the potters' buildings but of the production processes themselves.

Study of medieval wasters from Tyler Hill, Kent, on the other hand, has made possible identification of the ingredients from which the distinctive fabric of these wares was produced. The industry is centred on a large outcrop of London Clay which was evidently exploited for the manufacture of a variety of ceramic products, including roof- and floor-tiles, over a long period. Analysis of samples from the London Clay, however, did not compare favourably with the pottery wasters, and certain sand beds exposed on the surface contained much coarser grains than those which characterised the fabric. Addition of brickearth from another exposure, however, provided closely matching graphs, and it can be inferred that these drift deposits were used by the medieval potters at Tyler Hill as a fine sand temper for the London Clay.

These results from South-East England illustrate the potential of textural analysis for defining pottery distributions; for suggesting the minimum number of sources represented in an assemblage; and for demonstrating the continuity and characteristics of certain clay technologies. The principles of grain-size analysis have been adopted for a number of characterisation projects, but increasing interest shown by archaeologists from a variety of different academic backgrounds emphasises the need for concise visual representation of the results in preference to protracted technical descriptions. This need can be met to a considerable extent by the methods outlined here.

3.5 ADDENDUM: A FURTHER EVALUATION OF THE METHODOLOGY FOR
TEXTURAL ANALYSIS

The methodology described in Sections 3.2.2 and 3.3 is intended to provide a means of representing visually the criteria adopted for the routine laboratory exercise of grouping thin sections according to fabric types, as shown for this regional study by sketches illustrating the texture of quartz grains in medieval and post-medieval fabrics (see Section 3.2.3 and Section 12). Nevertheless, the sample grain size measurements which have been used for simple graphical representation could also be used for statistical manipulation in order to validate comparisons and to define precise parameters within which identifications can be made. This note has therefore been added to illustrate how some of the possible developments of the technique outlined in Section 3.2.2 might be achieved. It should be stressed, however, that the results are not intended as a test of statistical significance.

Four case studies have been selected to illustrate possible approaches. These are as follows:

- i Fig.3.12 Lines Farm, Upper Parrock
Repeat sampling of the same thin section.
Sample no. 144
- ii Fig.3.4, Graph B Lower Parrock and Bayham Abbey
Comparison of a marketed vessel with sixteenth-century wasters.
Sample nos. 6-10 and no. 95
- iii Fig.3.8 Boreham Street and Michelham Priory
Comparison of a marketed vessel with sixteenth-century wasters. This sherd was used to illustrate the method of selecting sample grains for measurement.
Sample nos. 1-5 and no. 174
- iv Fig.5.18 Crane Street, Chichester and Ochre Pits Copse, Graffham
Comparison between two waster assemblages representing post-medieval industries which served the same market area.
Sample nos. 329-334 and nos. 87-91

Three exercises have been undertaken for each study:

- i Plot of grain size data as a cumulative percentage
- ii Measurement of the maximum difference between the cumulative frequency curves
- iii Calculation of statistical expressions for the character of the frequency curve, comprising mean, standard deviation, skewness and kurtosis

The methods adopted for each calculation will be considered in turn.

Cumulative frequency

The effects of converting the measurements used for plotting absolute frequency within the sample of 160 grains are shown on Figs. 3.23 and 3.24, representing the results from five sherds taken respectively from the Lower Parrock and Boreham Street kilns. Minor irregularities in the profile of the curves can be attributed to the sampling procedure. These can be 'smoothed' by plotting from a smaller number of points determined conventionally either as the square root of the number of observations or as a number no greater than $5 \times \log$ number of observations. For the purpose of these studies twelve classes are appropriate to the sample of 160 measured grains.

Results for the four case studies are shown on Figs. 3.25 - 28, where the frequency curves for the kilns at Lower Parrock; Boreham Street; Crane Street, Chichester and Ochre Pits Copse, Graffham are derived from mean values for the five samples examined from each kiln.

Calculation of the class intervals has been undertaken using a geometric progression for the curvilinear relationship between rank value and absolute value assuming twelve grain size classes. Class intervals have been calculated for the measurements taken from each thin-section within the maximum range between the largest and the smallest grain size represented. Largest grain sizes are identical for graphs derived from repeat sampling of the same thin-section from Lines Farm, Upper Parrock (Fig 3.25) and likewise in the case of comparison between the sherd from Michelham Priory and the wasters found at Boreham Street (Fig. 3.27). When comparing the two kilns in West Sussex, however, the range of grain sizes is different for each frequency curve. In this instance, the largest grain size represented among all of the samples from either kiln has been used to define the range within

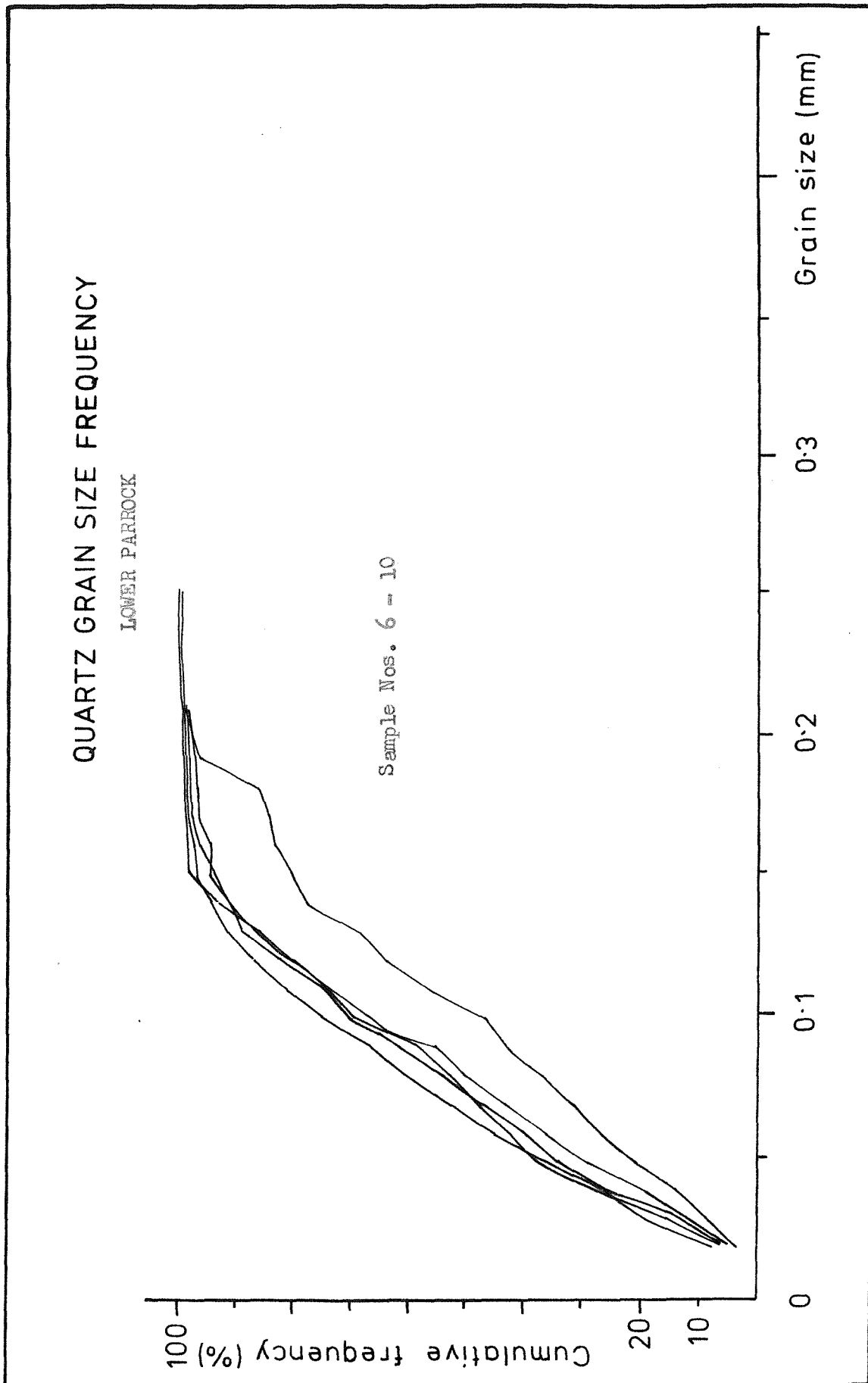


Fig. 3.23 Textural analysis : Lower Parrock. Grain sizes plotted as a cumulative frequency, based on a sample of 160 measured grains in each sherd

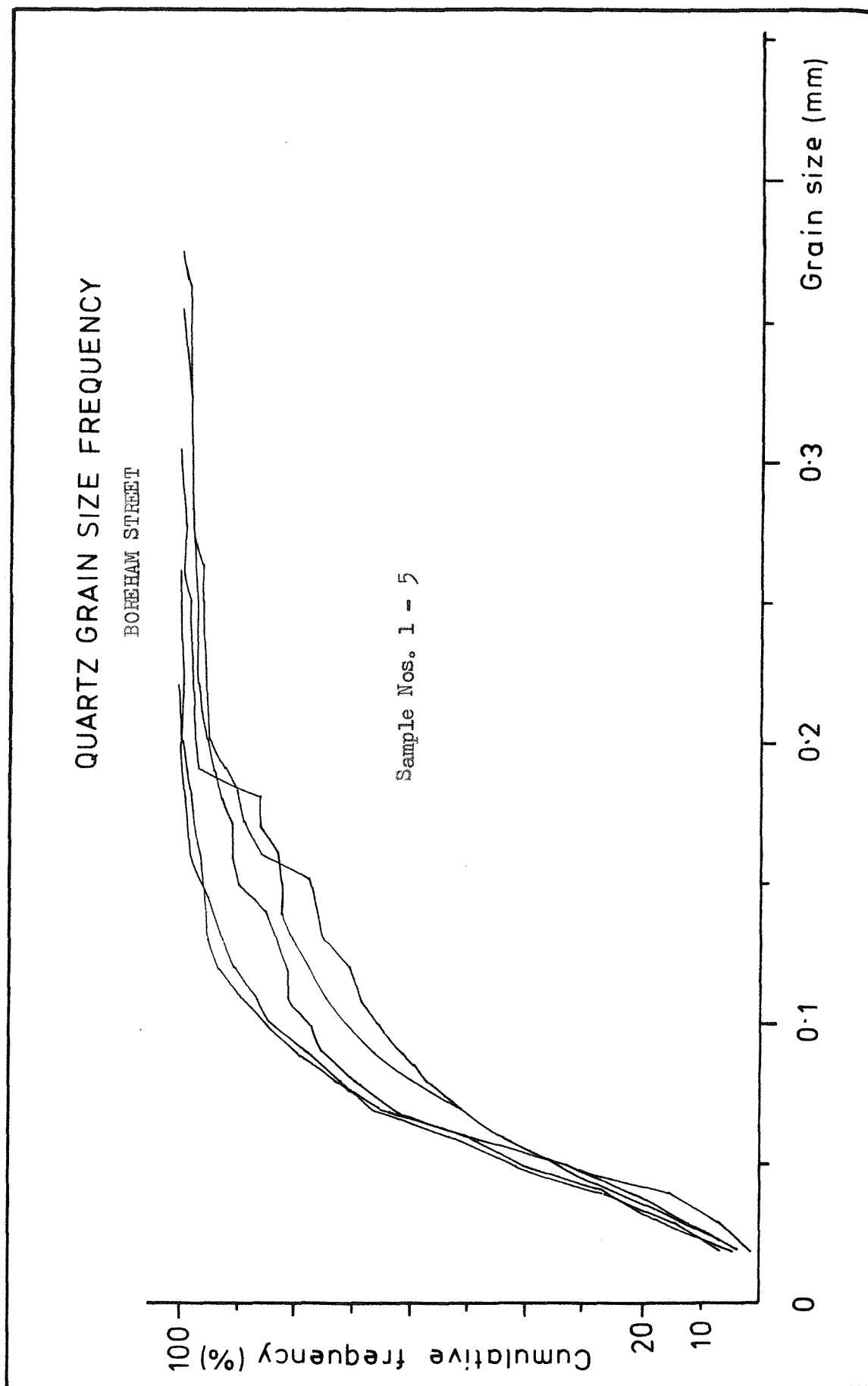
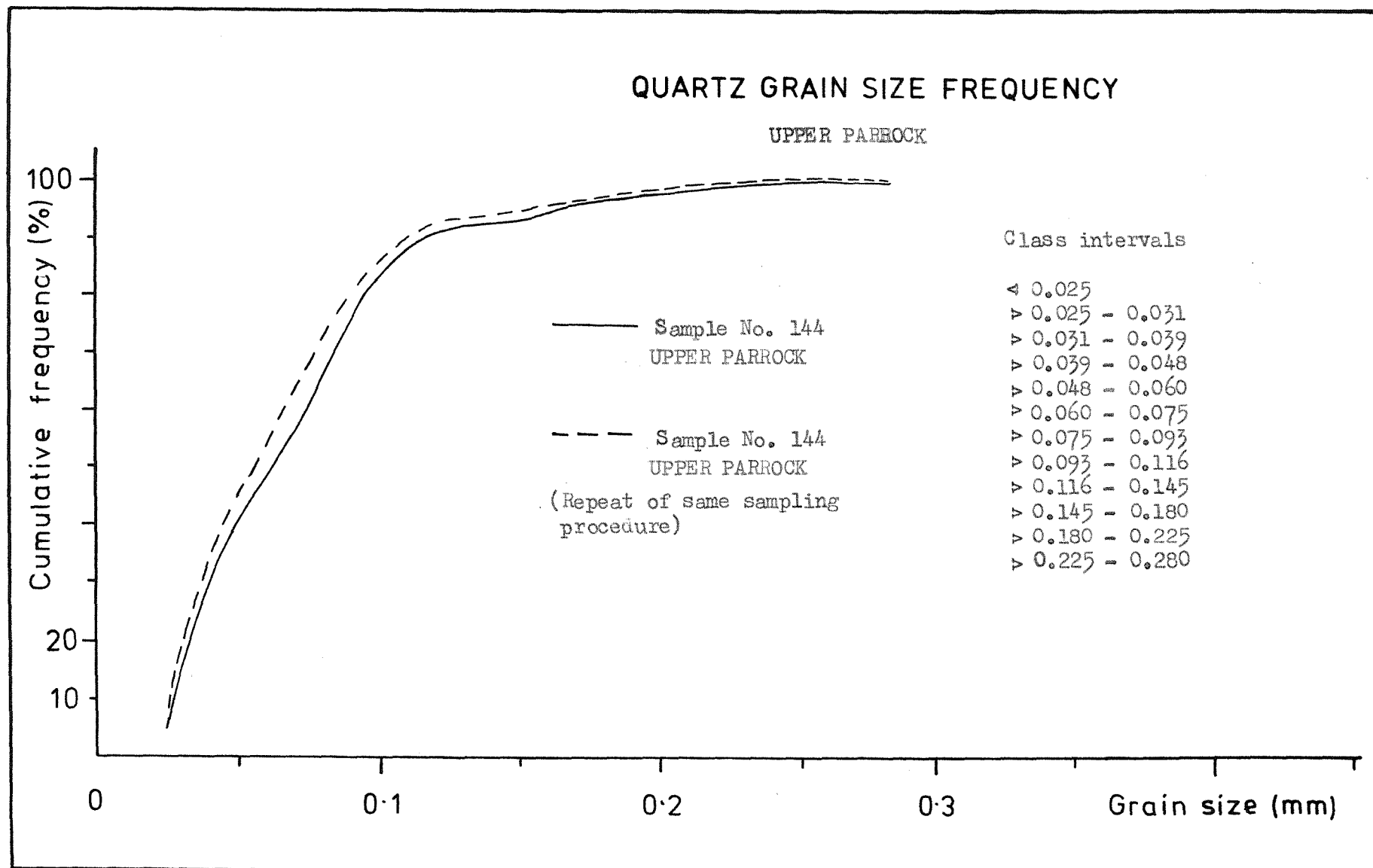


Fig. 3.24 Textural analysis : Boreham Street. Grain sizes plotted as a cumulative frequency, based on a sample of 160 measured grains in each sherd

Fig. 3.25 Textural analysis: Upper Parrock. Grain sizes plotted as a cumulative frequency, based on a sample of 160 measured grains in each sherd



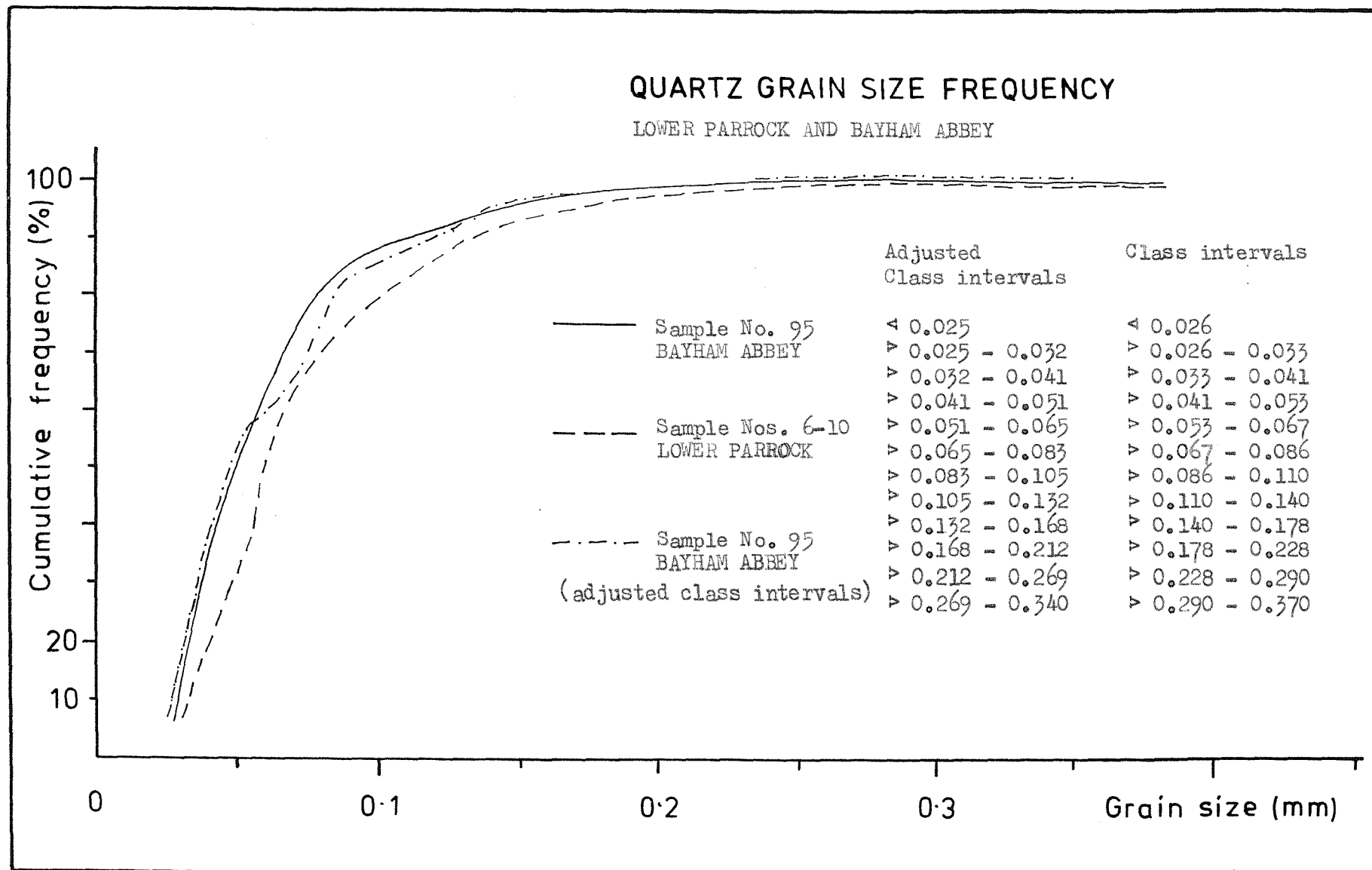


Fig. 3.26 Textural analysis : Lower Parrock and Bayham Abbey.
Grain sizes plotted as a cumulative (mean) frequency based on a
sample of 160 measured grains in each sherd

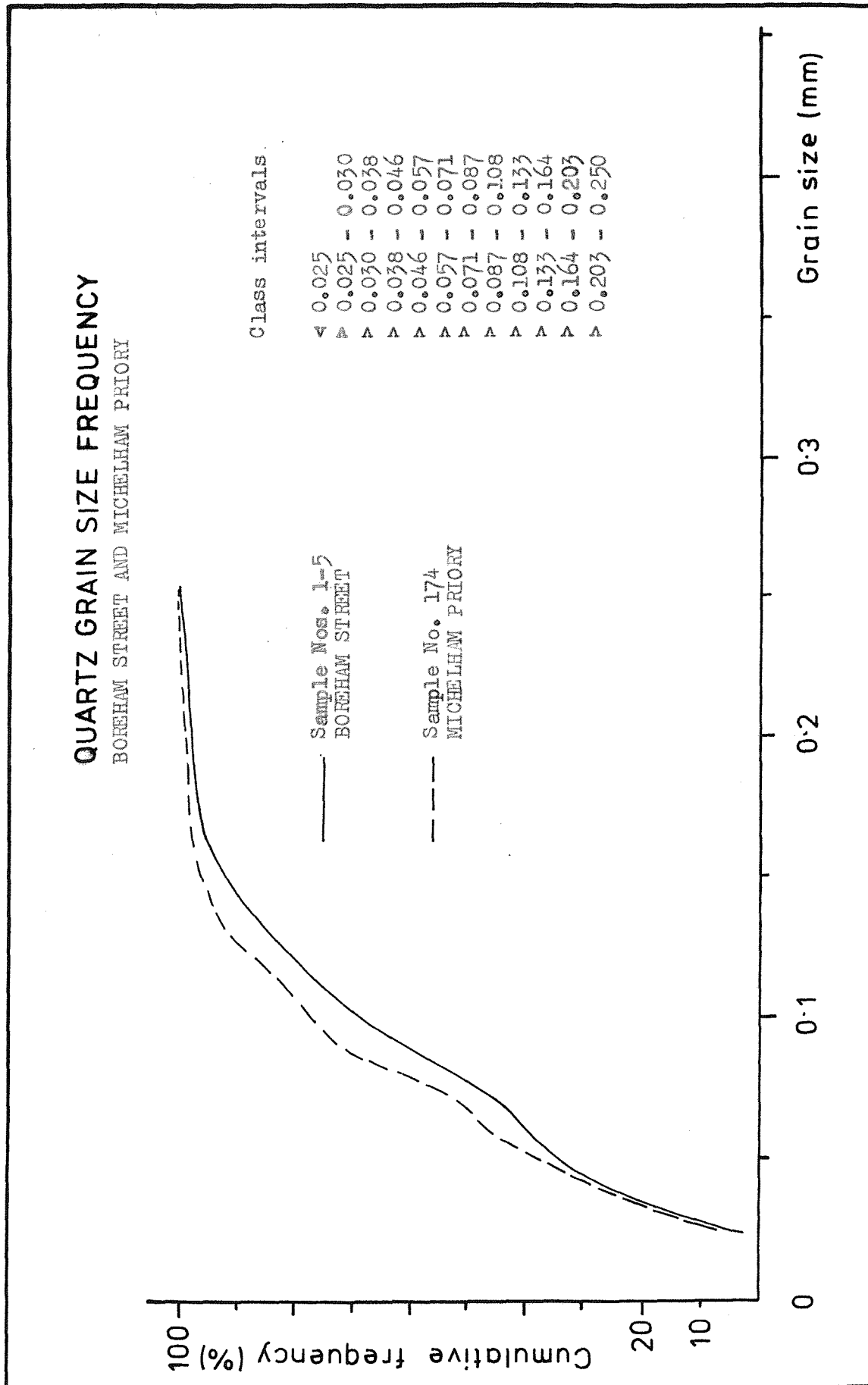
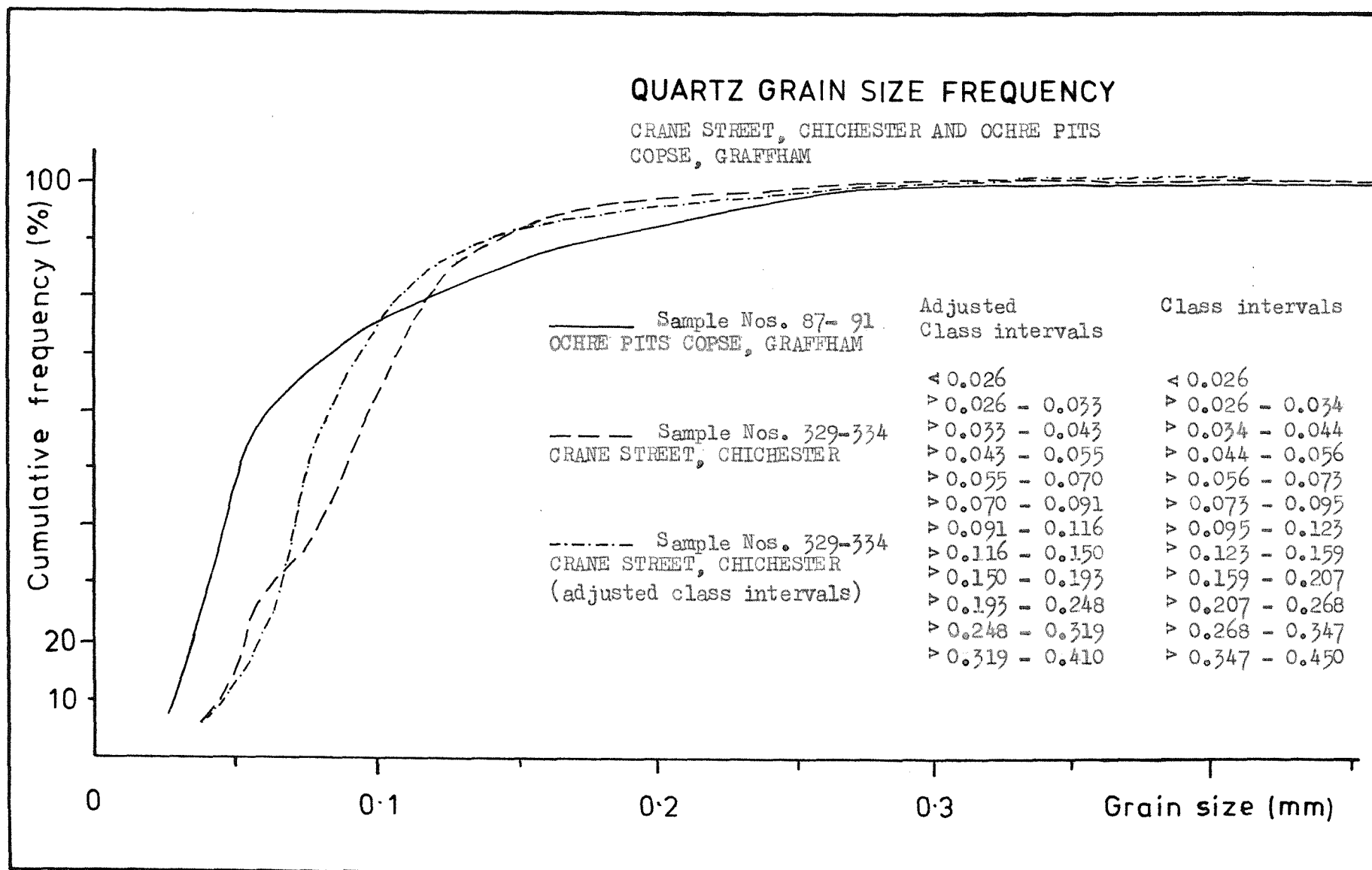


Fig. 3.27 Textural analysis : Boreham Street and Michelham Priory. Grain sizes plotted as a cumulative (mean) frequency based on a sample of 160 measured grains in each sherd

Fig. 3.28 Textural analysis : Crane Street, Chichester and Ochre Pits Copse, Graffham. Grain sizes plotted as a cumulative (mean) frequency based on a sample of 160 measured grains in each sherd



which the class intervals are calculated. However, it is instructive to compare the different curves derived from the Crane Street samples when they are based on class intervals which are consistent with those for Graffham and when the intervals are defined for the Crane Street samples themselves (Fig. 3.28). Similar comparisons have been made with the results from Lower Parrock and Bayham Abbey (Fig. 3.26)

Greater consistency could be achieved by omitting the sparse coarser grains from the analysis, but care would be needed to ensure that this did not undermine the validity of the number of class intervals selected on the basis of 160 observations. Moreover, variations in the frequency of coarse grains among the medieval wares, such as the Potters Corner and East Wealden types in Kent (Fig. 3.9), are more significant than the sparse occurrence of coarse grains in predominantly fine-textured post-medieval earthenwares.

Difference between curves

The maximum distance between cumulative frequency curves offers a convenient means of comparison. Irregularities in the raw data plotted on Fig. 3.23 and 3.24 yield differences of 22% and 28% respectively among five samples from the same kiln. The maximum distance between the two most different samples represented at the Lower Parrock and Boreham Street kilns is 38%. Taking the mean frequency curves for each kiln plotted from twelve class intervals, however, the maximum distance is reduced to 29%. This is similar to the figure of 31% derived from comparison of the Chichester and Graffham wasters based on the same class intervals for each kiln. When the class intervals are adjusted for the smaller range of grain sizes in the Chichester samples, the difference is increased to 38%. Thus, among the four post-medieval kilns examined here, minor differences in texture between the pairs of visually similar wares are around 30% or more. If the maximum distance between curves is a useful index of comparison, then lower figures should be anticipated for matching marketed vessels with groups of wasters.

Repeat sampling of the same thin-section from Lines Farm, Upper Parrock shows that variation of at least 7% can be expected from the method adopted for selecting the measured grains. Comparison of the sherds from Bayham Abbey and Michelham Priory with the wasters at Lower Parrock and Boreham Street shows

differences of 19% and 12% respectively. In the case of Bayham Abbey and Lower Parrock, adjusted class intervals for the Bayham sample do not affect the figure of 19%.

These figures are appreciably less than those for the distance between cumulative frequency curves derived from different kilns, but were the possible sampling factor of 7% to be added to (rather than subtracted from) the results for the Bayham sherd, this would give a difference of 26%. Such a figure is barely distinguishable from the difference of 29% between the Lower Parrock wasters and those from the Boreham Street kiln. For this reason, it is clear that maximum distance alone is not a sufficiently precise criterion for comparing grain size frequency curves. It is therefore necessary to consider other statistical measures which express the shape of the curves.

Characteristics of curves

Measures of mean size, standard deviation, skewness and kurtosis are the most commonly used parameters adopted for the characterisation of frequency curves. In order to use the formulae recommended by Folk and Ward (1957), it is necessary to convert the 0.01 mm grain size intervals into phi units. For the present purpose, phi readings have been extrapolated from the linear scale, but if the phi scale were to be adopted for all calculations time could be saved by calibrating the sample measurements themselves in phi units. It is necessary to measure in half-phi units in order to detect subtleties in the frequency of sizes especially below 0.25 mm.

The results from calculation of these parameters are shown in tabulated form on Fig. 3.29. Mean grain sizes (M_z) for all the post-medieval samples included in this analysis fall within a narrow range of $+ \phi 0.258$ and $- \phi 0.367$ around a mean of $\phi 4.109$ (data from adjusted class intervals excluded), illustrating the general similarity between these fine-textured earthenwares (see also Fig. 3.6). Likewise, the standard deviations (σ_I) fall within the range of values between 0.50 and 1.0 which are characteristic of moderate sorting. With the exception of the slightly higher reading for the degree of sorting at Graffham compared with Chichester (0.1) and for Boreham Street compared with Lower Parrock (0.05), neither the mean size nor the standard deviation therefore offers a particularly effective means of discrimination among these broadly similar textures.

Measures of skewness (Sk_I) and kurtosis (K_G) are

Sample	Site Name	M_z	G_I	Sk_I	K_G
144	Upper Parrock	4.193	0.75	+0.10	+0.79
144	Upper Parrock	4.283	0.75	+0.20	+0.74
6-10	Lower Parrock	4.100	0.80	+0.30	+0.92
95	Bayham Abbey	4.367	0.72	+0.40	+1.11
95	Bayham Abbey (Class intervals adjusted)	4.333	0.78	+0.47	+0.97
1-5	Boreham Street	3.942	0.85	-0.10	+0.66
174	Michelham Priory	4.103	0.79	+0.02	+0.69
87-91	Ochre Pits Copse, Graffham	4.145	0.95	+0.60	+0.83
329-334	Crane Street, Chichester	3.742	0.71	-0.20	+0.85
329-334	Crane Street, Chichester (Class intervals adjusted)	3.775	0.71	-0.13	+1.05

Fig. 3.29 Textural analysis : Post-medieval kilns and marketed vessels in Sussex.
Results of analysis using Phi units.

slightly more instructive. Within the parameters described by Folk and Ward (1957), the frequency curves for the Lower Parrock wasters and the marketed vessels from Lines Farm and Bayham Abbey are positively skewed, whereas curves for the Boreham Street kiln and the marketed vessel at Michelham Priory are nearly symmetrical. The Chichester graph is also nearly symmetrical while the Graffham curve is very positively skewed. Similar broad distinctions are apparent within the measurements of kurtosis. The frequency curves for the Lower Parrock kiln and for the marketed vessel found at Bayham Abbey are mesokurtic but the sample from Lines Farm, Upper Parrock has a platykurtic frequency distribution, like the kilns at Boreham Street, Chichester and Graffham. It should be noted, however, that the use of adjusted class intervals for measurements from the Chichester samples has yielded a mesokurtic frequency curve.

Like the assessment of maximum distances between the frequency curves, the repeat sampling of a sherd from Upper Parrock provides a useful index against which to assess the effects of the grain selection procedure. Variations of 0.1 and 0.05 have been recorded respectively for skewness and kurtosis. Moreover the choice of class intervals used for plotting the frequency curves has a significant effect on the values for skewness and kurtosis. Variations of 0.07 and 0.14 have been recorded for the skewness and kurtosis of the Bayham sample and equivalent readings for the Chichester wasters are 0.07 and 0.2 respectively. For the latter a curve plotted using class intervals related specifically to the range of grain sizes represented in the sample provides a clearer distinction from the Graffham data. The same is true for the closer correspondence between the kurtosis of the Bayham curve and the mean values for the Lower Parrock kiln, but the reverse is applicable to the measure of skewness which corresponds more closely when the class used to draw the curve are the same for both the wasters and the marketed vessel.

The problems of compatibility can be overcome by adopting rigid class intervals for the size analysis of all ceramics. The scale used extensively for analyses in the Department of Archaeology at Southampton University is as follows:

mm.	ϕ
2.00 - 1.41	-1.0 - -0.5
1.41 - 1.00	-0.5 - 0
1.00 - 0.71	0.0 - 0.5
0.71 - 0.50	0.5 - 1.0
0.50 - 0.35	1.0 - 1.5
0.35 - 0.25	1.5 - 2.0
0.25 - 0.18	2.0 - 2.5
0.18 - 0.13	2.5 - 3.0
0.13 - 0.09	3.0 - 3.5
0.09 - 0.06	3.5 - 4.0
0.06 - 0.05	4.0 - 4.5
0.05 - 0.03	4.5 - 5.0

In the case of the post-medieval wares described here, however, only eight out of the twelve class intervals are relevant. Using this method and measuring in half-phi units direct from the graticule of a petrological microscope the following parameters were defined, in 1978, for six samples from the Lower Parrock kiln, taking percentile measurements from a frequency curve plotted on probability graph paper:

Sample no.	M_z	G_I	Sk_I	K_G
006	3.752	0.91	+0.10	+0.71
007	3.802	0.88	+0.17	+0.84
008	3.895	0.85	+0.23	+0.95
009	4.133	0.66	+0.13	+0.78
010	4.028	0.63	+0.17	+0.79
Mean:	3.922 \pm 0.16	0.79 \pm 0.13	+0.16 \pm 0.05	0.81 \pm 0.09

Owing to the different methods of plotting the frequency curves, direct comparison with the statistics shown on Fig. 3.29 is not possible. Nevertheless, there is a general correlation between the values of the mean and standard deviation. The latter, however, are so close that results from different kilns would fall within ± 1 standard deviation of the mean derived from analysis of the five wasters. In attempting to match marketed vessels with data derived from the analysis of

kiln debris the values for skewness and kurtosis offer greater variation between kilns.

Conclusion

Statistical expressions for the shape of a frequency curve were developed long before significant advances in the computer handling of multivariate statistics. With access to appropriate facilities, greater use of the basic measurement data could therefore be made for the purposes of comparison. As evaluation of the measures such as mean size, skewness and kurtosis has shown, this is particularly important for the subtle discrimination which is needed to identify fine-textured post-medieval wares.

Visual comparison of the grain size frequency curves as shown on Figs. 3.25 - 3.28 provides an adequate means of assessing local ceramic distributions, but more sophisticated statistical analysis is preferable for testing long-distance identifications. In order to achieve the number of identifications needed to define competing market areas for different wares, however, the ceramic archaeologist will be striving to find ways of making quick and reliable, if subjective, comparisons, preferably in the hand specimen or failing that by rapid visual grouping of thin-sections. The methods outlined in Sections 3.2 and 3.3 and the data presented in Section 12 are intended to define the visual criteria applicable to the classification of medieval and later pottery fabrics in South East England.