

EAST ANGLIAN ARCHAEOLOGY

Ely Wares

by Paul Spoerry

with contributions by
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with Rebecca Casa Hatton

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photographs by
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Cover illustration

An Ely ware shouldered jug from Cambridge. Photo: Gwil Owen

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It is my sincere hope that I have forgotten no-one but in this, as in all other aspects of the work, any error is without doubt mine alone.

Paul Spoerry
February 2005

Abbreviations

NB abbreviations for relevant pottery fabrics appear in Table 1

CAM ARC Cambridgeshire Archaeology Field Unit
CAU Cambridge Archaeological Unit
CBM Ceramic building material
CCC AFU Cambridgeshire County Council
Archaeological Field Unit
CUMAA Cambridge University Museum of
Archaeology and Anthropology
ECB Event, Cambridgeshire
EH English Heritage
EMW Early Medieval ware
HDAG Haverhill and District Archaeological Group

HER Historic Environment Record (formerly
Sites and Monuments Record, SMR)
ICPS Inductively Coupled Plasma Spectroscopy
K Possible kiln structure identification number
LMT Late Medieval and Transitional ware
LMU Local Medieval Unglazed ware
MPRG Medieval Pottery Research Group
PMAG Peterborough Museum and Art Gallery
PSS Paul S. Spoerry
SHW Northants type shelly ware
T Tile identification number
V Vince identification number (used for ICPS
analysis *etc.*)
WFM Wisbech and Fenland Museum

Summary

This report provides the first typology for a group of newly recognised medieval pottery — Ely wares — in a research project conducted by CAM ARC (formerly Cambridgeshire County Council Archaeological Field Unit) and funded by English Heritage. Study of material currently held in excavated assemblages and museum collections has resulted in this fully illustrated vessel type series which spans the mid 12th to the 15th centuries. Much of the material was produced in Ely, 24km to the north of Cambridge, although other probable production

centres can now be identified. Related scientific analysis has sought to demonstrate the characteristics and provenance of the material, enhancing understanding of related distribution and trade networks. When combined, the results effectively close a substantial gap in knowledge for the pottery of the Cambridgeshire sub-region, where little substantial publication or synthesis was previously available for the medieval period. This is, however, by no means the definitive work on the subject and future research objectives can now be identified.

Résumé

Ce rapport fournit la première typologie s'appliquant à un groupe nouvellement reconnu de poteries médiévales qui porte le nom de Ely wares. Il s'intègre à un projet de recherches financé par l'English Heritage et dirigé par le CAM ARC qui n'est autre que l'ancien Cambridgeshire County Council Archaeological Field Unit. L'étude des matériaux, qui se trouvent habituellement dans des collections de musée ou dans des ensembles de pièces résultant de fouilles, a permis de constituer cette série richement illustrée de types de récipients qui s'étendent du milieu du douzième siècle au quinzième siècle. Une grande partie des matériaux provient d'Ely, situé à 24 km au nord de Cambridge, bien que d'autres centres de production probables puissent être désormais identifiés.

Des analyses scientifiques voisines ont tenté de démontrer les caractéristiques et la provenance des matériaux, ce qui a permis d'améliorer la compréhension des réseaux connexes de distribution et de commerce. La combinaison des résultats permet effectivement de combler un manque important dans la connaissance de la poterie dans la sous-région du Cambridgeshire, où un nombre restreint de synthèses ou de publications était jusqu'à présent disponible pour la période médiévale. Toutefois, il ne s'agit en aucun cas du travail définitif sur le sujet et il est maintenant possible d'identifier d'autres objectifs de recherche pour le futur.

(Traduction: Didier Don)

Zusammenfassung

Der vorliegende Bericht enthält die erste Typologie für eine Gruppe gerade anerkannter mittelalterlicher Tonwaren — die »Ely Wares« — aus einem von CAM ARC (vormals Cambridgeshire County Council Archaeological Field Unit) durchgeführten und von English Heritage finanzierten Forschungsprojekt. Die Untersuchung des derzeit in Grabungskomplexen und Museumssammlungen befindlichen Materials hat zu dieser umfangreich illustrierten Gefäßreihe aus der Zeit zwischen Mitte des 12. und dem 15. Jh. geführt. Ein Großteil des Materials wurde in Ely, 24 km nördlich von Cambridge, hergestellt, obwohl sich mittlerweile auch andere mögliche Produktionsstätten identifizieren lassen. Assoziierte wissenschaftliche Analysen haben versucht,

die Besonderheiten und Herkunft des Materials zu belegen, um ein besseres Verständnis der betreffenden Distributions- und Handelsnetze zu ermöglichen. Die kombinierten Forschungsergebnisse schließen eine erhebliche Lücke im Wissen über die Keramikgegenstände der Unterregion Cambridgeshire, da bislang kaum nennenswerte Publikationen oder Darstellungen zur mittelalterlichen Zeit dazu bestanden. Das vorliegende Werk ist jedoch nicht als definitiv zu betrachten, bildet es doch erst den Auftakt zur Formulierung künftiger Forschungsziele.

(Übersetzung: Gerlinde Krug)

General Introduction

I. A Brief History of Ely

by Rebecca Casa Hatton and Paul Sperry

The research contained in this volume focuses around the medieval city of Ely which lies 24km to the north of Cambridge. Documentary sources refer to the foundation by King Ethelbert of an Early Saxon religious house at *Cratendune*, some 1.5km to the south of the settlement. It was destroyed by the Mercian king Penda and re-founded as a monastery by St Etheldreda in c.AD 673. The monastery was again destroyed by the Danes in AD 870 and re-founded by King Edgar in AD 970, possibly on the same site as the later Norman foundation (Robinson 1994). By this time Ely was known as *Elge* (Bede, AD 750) and as *Elige* (Anglo-Saxon Chronicle, AD 900). The place-name derives from the Old English *el-ge* meaning 'eel-district' (Reaney 1943, 214) and reflects the economic prosperity of the abbey that benefited from payment of rent in eels. At the time of the Norman Conquest the religious foundation held extensive lands around the Isle of Ely (Pugh 1953, 33) and at this period Ely was a centre of Anglo-Saxon resistance under Hereward the Wake, who was ultimately subdued in 1071.

The economy of the community described in the Domesday Survey (1086) was predominantly agricultural, reflecting the high quality arable land of the Isle itself, and pastoral activity in the surrounding fenland. Throughout the medieval period, the fenland landscape provided major natural resources such as fish, wildfowl, salt, reeds, fuel in the form of turves and high quality seasonal pasture. Access to both upland and fenland resources provided substantial wealth for local landowners, principally the monastic and ecclesiastical authorities at Ely. The stimulus for the growth of the medieval city was, however, the combination of the presence of the Benedictine monastery and the construction of the Cathedral (initiated 1081), coupled with the deliberate re-routing of the River Ouse-Cam from its naturally sinuous course to the foot of the hill at Ely, and the cutting of the Ten Mile river thereby providing direct access to the sea at King's Lynn (Coles and Hall 1994). These works, whilst in the case of the former perhaps primarily carried out to enable stone to be unloaded close to the site of the Cathedral, enabled the emerging town to participate fully in the burgeoning waterborne trade that the great economic expansion of the 12th to 13th centuries engendered.

Thus by the time of a survey of episcopal properties in 1251 Ely had trebled in size. The variety of trades described indicates a settlement of mixed rural and urban economy with commercial growth focusing on the Market Place and along the hithes between Broad Street and the River Ouse (Owen 1993, *passim*). In 1334 taxation returns ranked Ely as the 29th wealthiest town in England (Patten 1978, 42).

The economic power of the abbey was based on control of water transport and the site at Potters Lane lies on the southern fringe of the riverside zone (see further details in Chapter 1.II; Figs 1 and 2). The religious authorities took an interest in the river and in the route system in general, promoting the development of the waterfront area for the needs of the religious household and officials (Owen 1993, *passim*). As already indicated, the present course of the River

Ouse was established by canalisation (Coles and Hall 1994), the first reference to which is contained in a document of 1210. Much traffic was stimulated by the fairs and all goods came by water to the hithes (*i.e.* from north to south, Broad Hithe, Monk Hithe and Castle Hithe), the available area being enlarged by tipping and embanking. The most intense development at this early period was along the track that ran at the foot of the hill below the monks' vineyard (later known as Broad Street or Castle Lane). During the 13th century the eastern side of Broad Street was also developed for commercial purposes by merchants and brewers. Early to mid 13th-century episcopal surveys and rentals show the increasing importance of the waterfront area where the original large plots along the riverfront were subdivided by lanes running between them. Later, 14th-century, sources refer to occupation on the island of Babylon (then known as *Ultra Aquam*) which was subdivided into a number of small tenements and linked to Ely by a ferry service.

The Black Death of 1349/50 affected the Priory severely and uncultivated land around the city was noted in 1350. The houses had been left tenantless by the plague and no monastic rent could be collected (Pugh 1953, 35). There were frequent floods in the waterfront area during the 15th century. Periodic flooding and recurrent epidemics would have hindered activities near the river, although documentary sources suggest that the waterfront area was still occupied and trading continued.

By 1525 Ely had declined to a point where it was not included in a list of the most prosperous 43 towns (Pugh 1953). This downturn may have been triggered by the epidemics and famine of the 14th century. The economic decline evident in the early 16th century was probably exacerbated by the Dissolution. At the beginning of the 17th century Speed's map (1610) depicts the waterfront area as being occupied, with a series of drains across the hithes to overcome flooding. As a whole, the map does not show any growth of the town. However, the increasing pace of drainage of the fen during the later part of the 17th and 18th centuries and the arrival of the railway in the 19th century promoted the role of Ely as a centre for the marketing and processing of agricultural produce (Jones 1993, 113–5).

II. About the Projects

This volume is in two parts. The first presents the results of a rapid excavation of medieval features at Potters Lane, Ely in 1995 by staff of Cambridgeshire County Council Archaeological Field Unit (now CAM ARC), and the pottery they were found to contain. Although in themselves these features are not of intrinsic significance, they are important at a local level as the first systematically recorded remains associated with the medieval ceramic industry at Ely. They contained significant ceramic assemblages with the potential to provide information about a newly-recognised medieval pottery production centre based on the city's waterfront. English Heritage agreed to fund analysis of the pottery assemblage and other evidence for ceramic manufacture, and Part I of this volume is the culmination of this process.

Prior to 1995 opportunities to excavate in medieval Ely had been limited, but the combined effects of local economics and *Planning Policy Guidance Note 16* resulted in a flurry of investigations from 1995 onwards. It quickly became apparent to the author and to Mr David Hall, both of whom are heavily involved in the study of medieval ceramics in Cambridgeshire, that the wasters from Potters Lane consisted of a fabric that could be broadly matched with the majority of post-Conquest utilitarian ceramics found in Ely and the southern fenland as a whole. Hall's opportunity to develop this theme further came with English Heritage's agreement to fund analysis of the medieval pottery from the Cambridge Archaeology Unit's (CAU) excavations at Forehill (Hall 2003), including thin section and Inductively Coupled Plasma Spectroscopy (ICPS) analysis. At around the same time agreement was reached for funding for the current author to study the Potters Lane assemblage.

The basis by which Part II of this volume came about is explained in more detail in Chapter 3. Essentially, following the work described above, the recognition of unprovenanced or mis-identified Ely-type products in published excavation reports from around the fenland, and in particular from King's Lynn, coupled with the huge increase in modern pottery assemblages from developer-funded excavations presented a problem to medieval pottery research in the region. A situation of inadequate knowledge and synthesis, combined with only moderate amounts of excavated material (as highlighted by the MPRG/English Heritage national survey; Mellor 1994) was quickly being replaced by the acquisition of too much data, with the same inadequate wider context and few opportunities to synthesize. One simple and effective step that could be taken relatively quickly was the characterisation and investigation of the newly-defined Medieval Ely ware, to provide a common definition and standard for the most abundant medieval pottery type in the southern fenland. It is to the great credit of Sarah Jennings, Chris Scull and Philip Walker at English Heritage that the current author's suggestion, and the subsequent Project Design, were so readily and generously supported. The end result of the concomitant process forms Part II of this volume.

Part I: Medieval Pottery Waster Groups from Potters Lane, Ely

The pottery recovered from Potters Lane has been studied using standard techniques of macroscopic fabric description and form analysis. In addition twenty-eight samples of pottery have been thin-sectioned to provide petrological fabric descriptions and these same sherds have been subjected to ICPS analysis to determine the chemical make-up of their fabric. These groups provide the first full fabric descriptions for a newly-recognised group of pottery types now called 'Ely wares'.

Two distinct periods of pottery production appear to be represented, the first in the 13th to 14th centuries, the second in the 15th century. The assemblage from Potters Lane has some similarities with others in the region and beyond, although no single production site elsewhere matches the forms and styles entirely. The thin sections confirm that the various Potters Lane fabrics are based on the same parent materials and that these appear to be local in origin. Chemical analysis includes comparison with sherds from excavations at Forehill Ely and suggests that, although much of the pottery from the two sites is closely

related, there are definite differences. This supports the suggestion that the two Potters Lane waster assemblages represent only two small parts of the wider phenomenon of Medieval (MEL: 1200–1350/1400) and Late Medieval (LMEL: 1400–1500) Ely ware production.

Part II: The Characterisation of Ely Wares and a Study of their Distribution

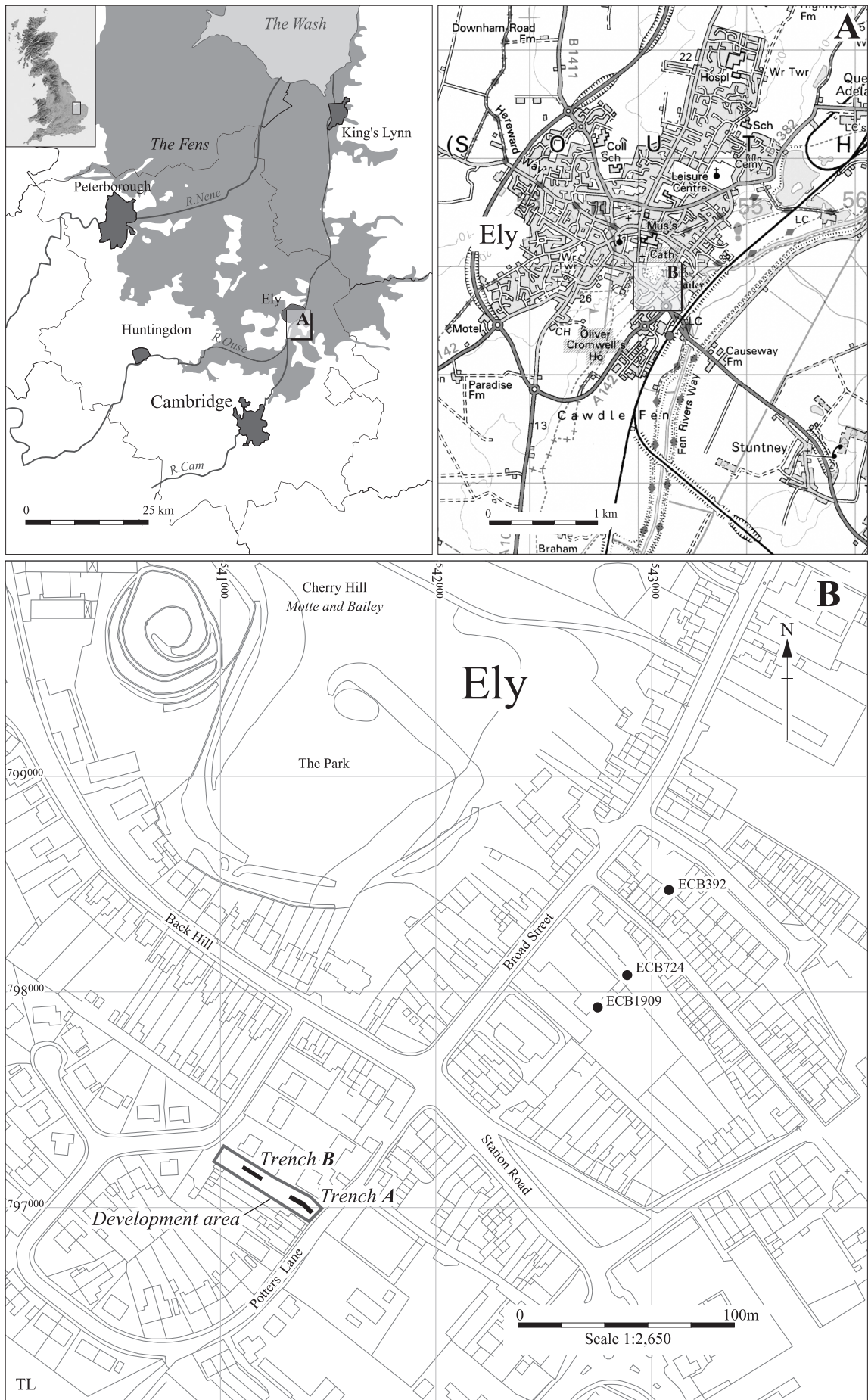
As part of this project, a review was conducted of all published and reported medieval excavations in the southern fenland and in some surrounding zones to determine the distribution of recognisable Ely wares and the possible presence of Ely-type wares. Thirty-seven sherds of pottery that were visually like Ely wares were chosen from excavated collections around the Cambridgeshire fenland along with five visually similar sherds of so-called 'Grimston Software' from King's Lynn in Norfolk: these act as comparanda with thin sections and ICPS analyses of previously investigated sherds of Ely wares from Potters Lane and Forehill in Ely. In addition five sherds each of visually similar fabrics from pottery production centres at Bourne and Baston in south Lincolnshire were also examined.

General petrological descriptions for the key Ely products were defined, with the temporal change from medieval to late medieval types being recognised as primarily one of changes in technology and form. Thin section data confirmed differences between the Ely products and sherds from Lincolnshire producers, also demonstrating that the great majority of Ely wares investigated from consumer sites were almost certainly made at Ely, although Fabric A from Forehill was distinct from all other Ely products and comparanda. 'Grimston Software' from King's Lynn was shown to have a similar composition and petrology to Medieval Ely ware and is probably an Ely product. Slight differences in composition between the Medieval Ely ware samples from different consumer sites suggested that the Ramsey samples came from a different source. Visual study of this Ely-type ware from the Huntingdonshire fenland suggested a less granular and less organic-rich fabric that is otherwise very like true Medieval Ely ware, may represent this chemically-distinct sub-type.

Study of Ely wares in excavated collections and also complete and near-complete vessels in museum collections, resulted in an initial fully illustrated vessel type series being established. Analysis of the industry provided outline statements on temporal developments in vessel and fabric type and technology, with Early Medieval ware being perhaps the most obvious precursor type, but with true Medieval Ely ware perhaps only appearing in the mid 12th century. The 'classic' MEL fabrics and forms developed through the 13th and 14th centuries, with Late Medieval Ely ware (LMEL) being present in the 15th century, if not some decades earlier. Distribution of the products of this industry appears to have been primarily riverine, focussed on the Isle of Ely and its hinterland in the southern fenland in general. An initial key market may have also existed downstream at Lynn in the 12th to 13th century which was later superseded in importance by Cambridge. Ely wares may be the most commonly found variant of a tradition of manufacture that included other as yet unlocated kilns in the southern fenland. At its widest, this tradition also included similar products from kiln sites at Colne, Cambridgeshire, Bourne Lincolnshire and perhaps elsewhere.

Part I
Medieval Pottery Waster Groups from Potters Lane, Ely

by Paul Spoerry with contributions by Carole Fletcher,
Ben Robinson and Alan Vince



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Figure 1 Location plan

Chapter 1. The Site Report

by Ben Robinson and Paul Spoerry

I. Introduction

The evaluation of an empty plot adjacent to No. 14 Potters Lane, Ely (TL 5410 7969), was carried out by Cambridgeshire County Council Archaeological Field Unit (now CAM ARC) on behalf of B&S Developments from 31 May to 2 June 1995 (Robinson 1995). The purpose of the evaluation, as defined by the County Archaeology Office's brief, was to characterise the archaeological potential of the site rapidly before construction of a single dwelling and garages.

II. Archaeological Background

(Figs 1 and 2)

The site lies at *c.* 7.0m OD on the fen edge at the foot of the Ely highland (Fig.1). The underlying geology is of Kimmeridge Clay, although Lower Greensand, Boulder Clay, and glacial sands and gravels cap the high ground to the north (British Geological Survey 1980, Sheet 173).

Ely's medieval origins are entirely bound up with the development and economic aspirations of its abbey (see General Introduction, above). Figure 2 provides a reconstruction of the historic street lines and their early names, based on work by Owen (1993) and Robinson (1993). The post-Conquest medieval town appears to have developed in two major zones; one around the market place immediately to the north of the abbey precinct and one between the monastery and the River Great Ouse. In both cases it was the monastic authorities that provided the template and plan for development, in the former by laying out the market place outside the north range gate, and in the latter by digging a new cut for the Great Ouse, thereby bringing it to the foot of the hill on which the abbey sat. Coles and Hall (1994) indicate that it is uncertain whether the date for this latter undertaking was pre- or post-Conquest, nor is it clear whether the primary reason for moving the river was to enable stone to be moved quickly to the abbey or to bring trade directly to the door, and under the control of the monastic authorities. Either way, both of these aims were achieved by the cutting of a new river channel and in subsequent centuries the settlement on the riverside developed into the economic heart of the main town of the peat Fen. Potters Lane lies on the southern periphery of this riverside zone, on the very edge of the settled area in the medieval period and a very appropriate location for anti-social industrial-type activities such as pottery manufacture.

Potters Lane is mentioned in medieval documents under its present name from the mid 13th century, when it is noted as containing four messuages (Owen 1993, 19; Reaney 1943, 215). By the early 15th century this lane, running south-west towards Caldewellefen from the Stuntney causeway (the main routeway off the island to the south-east) was well developed, containing sixteen tenements. One of these, on the east (downslope) side of the lane is noted as a site on which 'a potter's House was

sometime situated' (Calendar of Patent Rolls 4, Henry V, 1416, Mem 5-1). 'Stanks' (ponds or ditches) are a noted feature of the tenements on the west side of the lane at this time.

The recovery of pottery 100m to the east of the site (HER 07026) is a dim reflection of the medieval occupation of this area. The discovery of the footings of a bridge (the 'Stone Brigge' of medieval documents) off Castle Hithe, however (Hall 1996, 38), together with Speed's early 17th-century map confirm the preservation of medieval topography in the present street pattern. This has recently been investigated in the 'lower town' through excavations by the CAU and CAM ARC at Jubilee Terrace and Lisle Lane (ECB 64, 378, 773, 1211 and 2322), Broad Street (ECB 383, 392, 724, 772, 1059 and 1909) and Forehill (Alexander 2003; Hall 2003; ECB 1198).

Prehistoric and Roman settlement tends to be concentrated on the lighter soils of higher land on this part of the Ely highland and has not been noted in the immediate environs of the subject site. The apparent absence of evidence for any pre-medieval activity here, however, may simply reflect the masking effect of alluvial and colluvial deposits and medieval occupation debris which had accumulated at the foot of the slope.

III. Methodology

Trenches were machine excavated to the depth of secure archaeological deposits. Dump layers were sampled for artefacts (by trowel sorting) and removed to expose the tops of negative features. Two trenches 1.8m wide, totalling 23m in length, were examined (Fig.3). The first of these (Trench A) was sited to test for the presence of medieval street-front structures in the area proposed for house foundations. The second trench (Trench B) was sited to investigate the centre of the plot, the area on which garages were to be constructed. At the time of the evaluation the plot was undeveloped and covered in rubble, scrub and coarse vegetation (see Plate 1).

IV. The Archaeological Sequence

(Figs 3 and 4)

The remains investigated at this site fall into three periods, with the middle period representing an overlap in the pottery assemblages that categorise the early (13th to 14th century) and late (15th century) phases.

Natural deposits

Natural deposits were not encountered in Trench A which was dug to *c.* 0.9m below ground level. In Trench B the Kimmeridge Clay natural had an upper surface that was silty and oxidised to a yellowish-brown colour, but beyond 0.1m in depth this slowly changed to a grey clay. This deposit was encountered at 6.43m OD, 0.80m below ground level in this area.

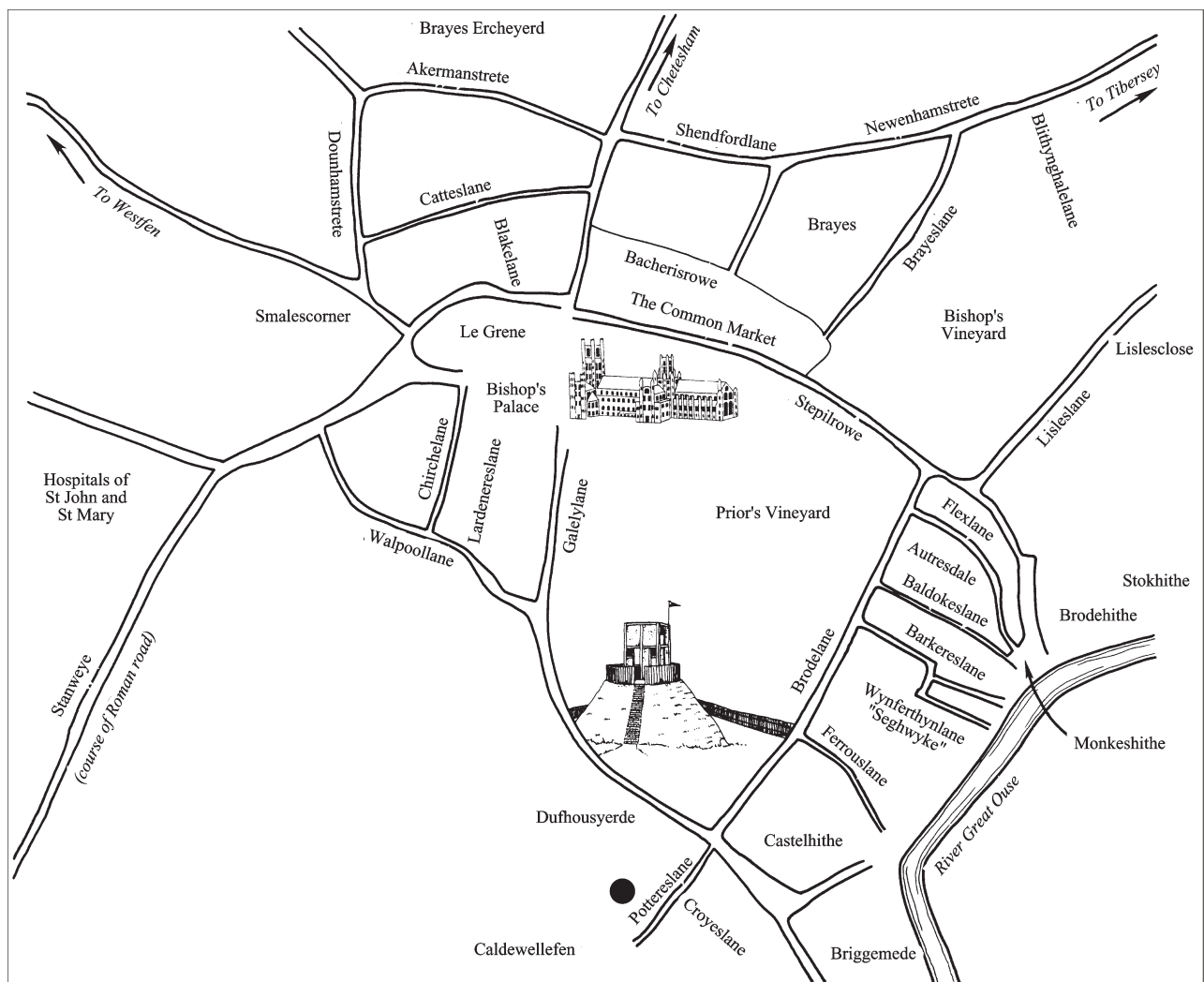


Figure 2 Historic street map of Ely using information from Owen 1993 and Robinson 1993. Not to scale

Period 1: 13th to 14th century

Phase 1: pits and other features

No features attributable to this phase were located in Trench A.

A dark grey clay deposit (116), overlying natural, covered the south-eastern half of Trench B, thinning out to the north-west and containing many large sherds of medieval pottery. Just to the north-west a shallow ovoid pit (117; measuring 0.85m x 1.0m, but only 0.15m deep) contained a single fill of sticky, dark grey clay silt (115) incorporating occasional mussel shells, bone and comparatively small sherds of 13th- to 14th-century pottery. Further west, the butt end of a shallow ditch (120) was 1.0m wide and up to 0.3m deep. Its primary fill of dark grey silty clay (119) contained no pottery. Its uppermost fill (114) was of similar consistency and contained mussel shell and bone.

At the north-western end of the trench a shallow (0.1m), flat-bottomed, 'L'-shaped beam slot (124) contained sticky, olive grey silty clay (113), incorporating pottery sherds of similar size and character to those from adjacent features. A portion of a circular or ovoid post-hole (upper fill 112) was exposed at the trench's western and northern sections, but not investigated further.

Phase 2: hillwash and other deposits

The surface of the earliest *in situ* deposit in Trench A (133) sloped towards the south-eastern end of the trench (at 5.79m OD), which gradually became filled with water during the course of the evaluation. This layer, a mottled, olive sandy clay silt, extended over most of trench to a depth of 0.15m. This may represent hillwash and the presence of thirty-five sherds of pottery, all dating to the 13th to 14th centuries, confirms this it was either contemporary with, or a slightly later downslope erosion deposit of, the pottery production phase represented by the remains (specifically layer 116) in Trench B. All the features recorded in Trench A were cut through this deposit which was not excavated.

Earlier features in Trench B were sealed by a dark greyish-brown clayey silt, c.0.35m thick (125), which merged horizontally with another deposit (121). This latter deposit, although similar in consistency to 125, became progressively more pottery-rich towards the south-eastern end of the trench where it sealed an earlier clay layer (116). Deposit 121, probably a cultivated garden soil, may have incorporated some material from the lower deposit.

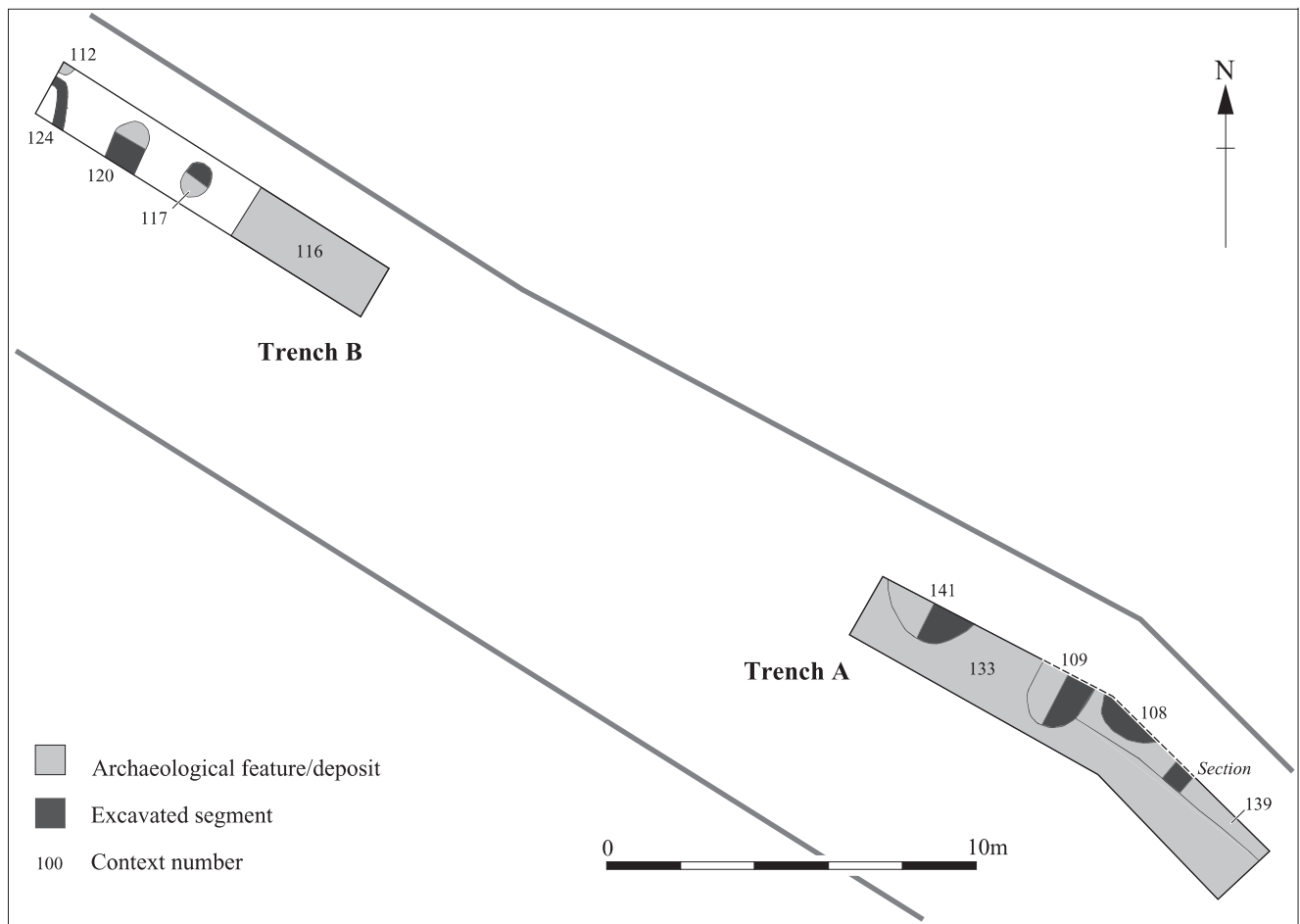


Figure 3 Potters Lane, trench plans. Scale 1:200



Plate 1 Trench A from the south-east showing the small scale of the investigations and the general context of the trenches

Period 2: 13th to 14th or 15th century

Phase 3: drainage gully/boundary marker

A narrow, c. 0.60m wide, gully with a 'U'-shaped profile (139; Trench A) was infilled with dark olive grey silt (103) which contained abundant medieval pottery. This feature is likely to have been a drainage gully and/or boundary; it was probably too wide to represent a sill beam slot for a timber structure. The majority of pottery recovered (more than 80%) is of 13th- to 14th-century date, although whether this was contemporary with the feature or residual is not certain. The gully is likely, however, to have been earlier than the other features within this trench, which appeared not to respect its position and were cut through its fills. The gully's alignment curved with the surviving property boundaries, perhaps indicating a common origin.

Phase 4: pitting

The fragmentary remains of a pit (199, its position in plan obscured by later features) indicate that it may have been clay-lined (142). Other fills (138 and 143; Fig. 3) were not investigated further. A subsequent rectangular or ovoid pit (131), perhaps 1.55m across its longest axis and surviving to a depth of 0.5m, had been lined with yellow clay to a thickness of about 0.2m (132=140) and may have served as a cistern or tank. Its second fill (130) was waterlogged and survived as a black silt which contained pieces of wood, branches and twigs that may represent accidental deposition into an open water-filled feature. This fill also



Plate 2 Late medieval pottery lying in deposit 102, cut 108, Trench A

included a large assemblage of pottery, of which more than 80% dates to the early production phase (although much of this may have been residual).

A further ovoid pit (109) was 1.5m wide, but again shallow at 0.3m deep. Its upper fill, an olive grey silty clay (104), contained abundant pottery, again of mixed date but including a large proportion (around 75%) of earlier material. It also contained sherds of a number of other wares, of 15th-century date at the latest, suggesting a possible domestic component in the pit assemblage.

Another pit (141) was isolated from the features described above, lying at the north-western end of the trench. It was similarly shallow at 0.3m deep, and oval with its widest axis at 2.4m. It was only stratigraphically associated with the other pits by virtue of it cutting through the same layer (133). Its fill (105) was an olive silty clay which again included much pottery; 90% of the sherds from this feature dated to the earlier production period, although again these may have been residual.

Period 3: 15th century

Phase 5: ?hillwash and pitting

During a possible period of lesser activity a layer of dark olive grey silty clay (136) was deposited by either human activity or through hillwash. This layer was eventually cut by a shallow (0.35m deep) ovoid feature (108), effectively re-cutting an earlier pit (131) but undoubtedly not of a similar primary function. The lower fill of the new pit (102) was a very sticky olive grey silty clay, but most of its bulk was composed of large, unabrased, pieces of late medieval/early post-medieval pottery and a little tile (Plate 2). It contained very little non-ceramic waste and may have been specifically dug to receive pottery. The pottery from its fill forms by far the largest context group

from the site and almost 90% of its sherds derived from the later medieval production period. Two upper fills were recorded (137 and possibly 135).

Period 4: post-medieval to modern

Phase 6: made ground and other deposits

Earlier features in Trench A were sealed by a made-ground deposit (101) containing abundant late medieval/post-medieval pottery, on which the brick-tiled and concrete floors of cottages demolished within the last fifteen years were laid (100). No other foundations were noted in the vicinity of Trench A, although a large modern pit was revealed at the south-eastern end of the trench (extending to the south-west).

In Trench B two subsoil deposits (122 and 111) both contained medieval pottery. These in turn were sealed by a root-riddled modern garden/cultivated soil c.0.45m deep which again contained large quantities of medieval pottery.

V. Interpretation and Discussion

The early beamslot and posthole recorded in Trench B may represent elements of a building, perhaps a potter's workshop and/or tenement, with an associated ditched enclosure and rubbish pit to the south-east. An adjacent clay layer (116) appeared to have been horizontally truncated. This deposit contained much of the medieval pottery waster assemblage from the site and it is tempting to view it as the remnants of stored raw material for pottery manufacture. Clay can be left out in the elements following the digging process as weathering sometimes enhances its plastic properties. Furthermore early modern records of pottery production in England refer to 'cleaning' through settling or levigation, prior to usage

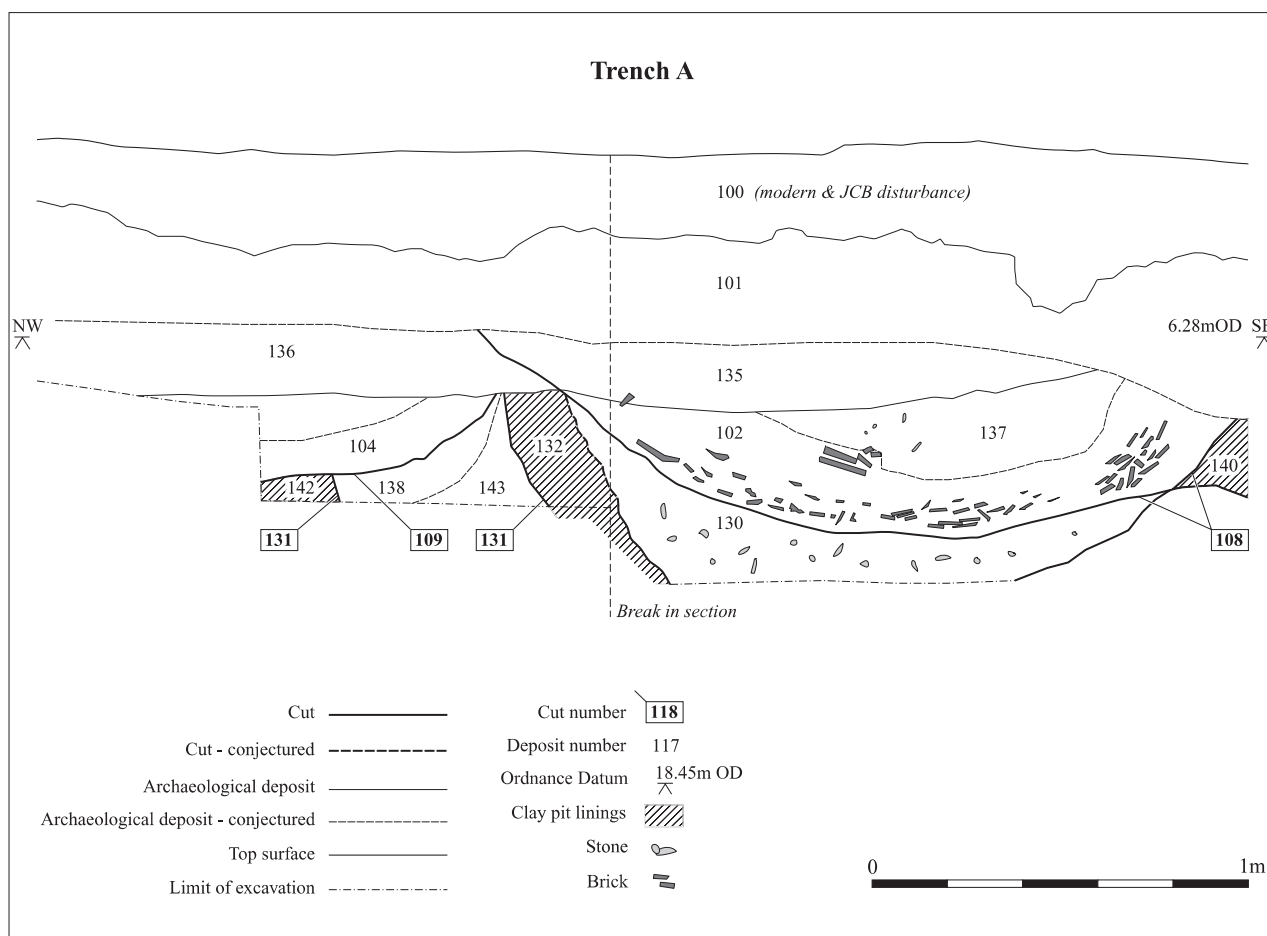


Figure 4 Potters Lane, section through features in the centre of Trench A. Scale 1:20

and possibly following months of raw storage following the digging season. The presence of wasters and other cultural material in this layer suggests that the remnants of this stored clay were later incorporated into general refuse disposal practice within the property, with wasters and rubbish dumped on top of it and subsequently trampled into the clay matrix. Unfortunately, later cultivation (as represented by layers 121 and 125) removed almost all associated surfaces: the clay layer itself may have only survived as a result of its resistance to later cultivation.

No features indicative of medieval street front buildings were revealed in Trench A, although a well-preserved sequence of medieval and post-medieval activity, relatively free of modern damage, was exposed. The sequence began with a hillwash deposit that may have developed during the lifetime of the pottery production phase represented by features noted above. A subsequent gully was cut down the slope, perhaps to aid drainage. This had been backfilled by the time that other features were dug here, and the vast majority of pottery from its fill is of 13th- to 14th-century date. The presence of later sherds does, however, suggest that this feature's disuse must have occurred during the 15th century.

A subsequent clay-lined pit (131) contained lower fills hinting at organic survival in lower-lying deposits, though the constraints of the evaluation did not permit the investigation of deposits below 0.9m. This pit may have

been a cistern or settling tank for a pottery workshop. It was one of a group of three pits, all of which produced pottery assemblages that were generally 13th- to 14th-century in date, but contained a few later sherds. Again these features fell into disuse in the later period, but their active life may have started in the 14th century. Alternatively they may have been backfilled with early material at the initiation of the later production phase.

The latest phase of activity related to pottery production is represented by a possible recut (108) of an earlier feature. Its fill was almost entirely composed of wasters of the later production phase and it is possible that this pit was purpose-dug to accommodate them. Whether this represents the levelling of the workshop at the end of its useful life, or whether it is contemporary with production is not known.

The later pottery from the site, dating to the medieval/post-medieval transition, is entirely from a production assemblage. The evaluation did not encounter kiln structures or, with the possible exception of clay-lined pit 131, features that could be definitely ascribed to some part of the production process. Similarly little dumped ash or charcoal was revealed, which might better betray the location of a kiln. Trench A did, however, become the recipient of waste material, which is often usefully employed during production, and which is never dumped further away from the kiln than is necessary.

VI. Conclusions

The longevity of pottery production somewhere within the close environs of the subject site is indicated by the documented street name and also, perhaps, by the ceramic assemblages that span two or three centuries. Remains of a potter's workshop dating to the 13th to 14th centuries may have been found, but this cannot be confirmed. The

workshop appears, however, to have become disused prior to the later medieval production phase. Further south, the clay-lined pit and other features also hint at ceramic production, but there is more uncertainty about the date of this activity; it may have been pre-15th century, although the fills include some later material. Finally it is clear that 15th-century pottery production took place in the vicinity and that a pit was probably dug specifically to receive a group of waster material.

Chapter 2. The Ceramic Assemblage: Characterisation of the Production of Ely Wares at Potters Lane

I. Background

It was immediately apparent during the excavation at Potters Lane that pottery kiln waste was present. The design brief from the County Archaeology Office had drawn attention to the possibility that such remains may lie in the vicinity (Butler 1995), based on medieval kiln waste noted in an adjacent SMR entry. Although this latter was not well substantiated, the street name had long been recognised as medieval in origin (Reaney 1943), whilst the general area of the riverside at Ely had produced evidence for post-medieval pottery production. This was believed to centre on the area of land immediately east of the river known historically as ‘Babylon’ which was identified in the 1980s as being a Cistercian-type ware production site (Hall 1996).

Excavations in Ely had been fitful over the decades until the 1990s, the most recently published sites being those from the ‘upper town’ at North Range (Holton-Krayenbuhl *et al* 1989) and the White Hart (Jones 1993). Nothing had been published from the ‘lower town’ close to the waterfront. The pottery reports in these publications, together with that produced for the large scale work at Denny Abbey, some miles south of the Isle of Ely (Coppack 1980), recognised various probably local quartz sand-tempered medieval pottery fabrics, in characteristic browns and oranges, often with a black core, but no further consideration of the provenance of this material was given.

Although half a decade since PPG16, the full effects of this planning document only began to be felt in Ely from 1995 onwards, when the first of a string of excavations associated with large-scale development were initiated. The Potters Lane trenching happened at this same time and it was easy to recognise that: a) there was a previously undefined local medieval ceramic product dominating all the newly excavated assemblages; and b) this same product was represented by waster groups at Potters Lane. The current author and David Hall at that point gave the newly recognised material the name ‘Ely ware’.

The site report presented in Chapter 1 demonstrates that the two excavation trenches produced pottery assemblages of rather different character: that from Trench A, mostly composed of an *in situ* kiln waste dump, was harder fired and of apparently later date than that from Trench B, which was often softer, of different form types and apparently derived from re-worked kiln waste. A general date of 13th/14th century was given for the Trench B assemblage and a 13th- to 14th/15th-century or 15th-century date for that from Trench A, based on comparison with other assemblages from the region.

The potential of the Potters Lane assemblages for providing a basis for better understanding of the increasing numbers of excavated groups from the town was recognised at an early stage. In addition the great dearth of published groups of excavated medieval pottery from Cambridgeshire, when compared to other counties, and a commensurate lack of understanding of the sub-regional assemblage had been highlighted by Mellor in her English Heritage sponsored MPRG national study (1994). It was within this context that the research programme sought to develop an understanding of the Potters Lane assemblage, thereby gaining a better appreciation of the Ely wares industry as a whole.

II. Methodology

The Potters Lane study was designed to develop site narrative, macroscopic fabric identification, assessment of fabric groupings (through use of thin section and ICPS data), and definition of form, technology and decoration. In addition each of the latter three areas needed to consider the significance of variation between the two episodes of manufacture represented. The pottery fabrics as defined and discussed below have been characterised and verified through macroscopic, microscopic and chemical study.

III. Pottery Fabrics

Potters Lane and Ely wares

This report provides description and definition of five fabrics that together represent the range of pottery represented in the two trench assemblages from Potters Lane (see Table 1). A total of 2331 sherds was studied (weighing 42.638kg), of which over 98% is of local origin. A breakdown of the fabric and phase contributions to this assemblage appears in Table 2. It was suggested earlier in the introduction to this volume that the terms Medieval Ely ware (MEL) and Late Medieval Ely ware (LMEL) should be adopted for the general products in the town of the periods 1200–1350/1400 and 1400–1500.

At Potters Lane, the earlier ceramic assemblage (largely Phases 1–3) is less homogenous in comparison to the later one (primarily Phase 5), in terms of the diversity of fabrics represented. This is no surprise since it derives from a greater range of features and appears to cover a wider timespan (the Trench A features probably post-date those in Trench B); this earlier assemblage may well incorporate material from domestic contexts as well as primary potting waste. It might therefore include Medieval Ely ware sherds that are products of several kilns in the vicinity, possibly incorporating material

manufactured over some considerable time period. Nonetheless this group provides a reasonably consistent range of types for a date in the period 13th to mid/late 14th century. In contrast most of the Late Medieval Ely ware (15th century) from Trench A (fill 102, within pit 108) may well represent the dumping of the waste from a single firing of one kiln.

Vince's ICPS study compares the Potters Lane samples with others in three fabrics from Forehill, Ely (see below). The Forehill fabric that is macroscopically most similar to Potters Lane sherds is also the most similar of the three in chemical composition, although differences can be found. This study firmly places the Potters Lane material in context as representing two 'snapshots' of a production tradition that spans more producers and a greater time period than that actually represented here.

It must be remembered that Ely wares represent a production tradition, rather than a single product: the Potters Lane assemblages form small groups of closely linked products within the wider tradition. It is quite possible that Ely wares (or Ely-type wares) were manufactured in places besides the waterfront at Ely, the material having been found all over the fenland (Spoerry 1998). Study of the material from Potters Lane has laid the foundations for the assessment of the wider assemblage of Ely wares, as found in many urban centres and in many excavation contexts across the region.

The thin section and ICPS reports are presented here as Appendix 1.

Fabric definition and macroscopic descriptions

by Carole Fletcher, Paul Spoerry and Alan Vince
The macroscopic fabric descriptions were completed by Carole Fletcher. Fresh breaks were studied using a low power (x20) binocular microscope, adopting a fabric description pro-forma based on that published by Orton, Tyers and Vince (1993). For each fabric the description represents the combination of detailed study of several sherds.

Prior to the thin section and ICPS studies, the Potters Lane assemblage had already been divided into two 'wares' (MEL and LMEL). These were then subdivided into five variants (Fabrics A–E), largely as a result of the presence of recognisably different inclusion types. Vince's study tends to confirm the validity of these divisions, although it also emphasises the homogeneous nature of the Potters Lane material when compared with some other Ely ware sherds. The thin section study does, however, identify one very coarse tempered sherd as significantly different. This sherd may be an example of a product from elsewhere in Ely, but nonetheless it has been included here as Fabric F. Vince's study did not tackle Fabrics B and E separately, these having already been recognised as variations in one product.

In routine spot-dating and quantification of assemblages from elsewhere it is suggested that the acronyms provided in Table 1 form the most accurate method for describing Ely ware. With large collections, however, where continued variation in the amount of calcareous temper is evident, it may be simpler and more efficient to define most material as simply MEL or LMEL.

There is an expectation that further thin section work on other sherds of Ely wares will produce further fabric variants, but that some of these may still be assimilated into the broader macroscopic ware classes.

<i>Fabric</i>	<i>Name</i>	<i>Fabric Identifier</i>
Medieval Ely ware (MEL; 13th to 14th century)		
Fabric A	Standard Medieval Ely ware	MELS
Fabric B	Calcareous Medieval Ely ware	MELC
Fabric E	Calcareous Medieval Ely ware	MELC
Fabric F	Coarse tempered Medieval Ely ware	MELCO
Late Medieval Ely ware (LMEL; 15th century)		
Fabric C	Calcareous Late Medieval Ely ware	LMELC
Fabric D	Standard Late Medieval Ely ware	LMELS

Table 1 Fabric identifiers

Medieval Ely ware (MEL)

Fabric A: Standard Medieval Ely ware (MELS)

Colour variation is present with oxidised sherds ranging from dull reddish orange, to orange and buff surfaces. Some sherds are fully oxidised, but most have a grey-black core. Glazed sherds are common but the glaze itself is sparse. In terms of Munsell colours the range of surface colours is 5YR 6/6 reddish yellow, 7.5YR, 7/4 pink, 10YR 6/4 light yellowish brown with cores mainly Gley chart 1 3/N. Reduced sherds have grey surfaces (Gley chart 2 6/5PB bluish black), black cores (Gley chart 1 3/N very dark grey), and often buff interior surfaces (10YR 7/4 very pale brown) especially where the sherd is glazed, otherwise the interior surfaces are also reduced.

Inclusions in the fabric are chalk and quartz in varying proportions as follows. The fabric surface in many sherds contains up to 20% of medium to fine (0.1–0.25mm, to 0.25–0.5mm) sub-rounded chalk fragments but the core of the fabric does not demonstrate this same high percentage of calcitic inclusions. Quartz sand is present as 20% fine grains (0.1–0.25mm) and 10% medium grains (0.25–0.5mm), both sub-square and sub-rounded in shape. Fine and medium chalk fragments are present, (0.1–0.25mm to 0.25–0.5mm), usually sub-oval and rounded. These make up less than 5% of the fabric, and this is apparently much reduced from the surface temper concentration. Black Iron Ore is present at less than 1%, the grains being fine (0.1–0.25mm), sub-spherical rounded. Some sherds also contain less than 1% very coarse (larger than 1mm), sub-oval and sub-rounded chalk inclusions. A variant of Fabric A (A1) contains medium quartz rather than fine and less than 1% of coarse (0.5–1mm) plate like sub-angular inclusions identified tentatively as clinker.

Fabric A corresponds to the fabric identified as 'Medieval Ely ware' by Alan Vince.

Petrological description

by Alan Vince

The six standard MEL samples are tempered with a fine sand with grains rarely more than 0.5mm across. Most of the grains are sub-rounded but some of the larger ones are rounded, as in the coarse fabric. The calcareous inclusions are less easy to study than in the coarse fabric as a number of grains have been altered during firing. Despite this, the clay matrix is very similar and highly birefringent, laminated and streaked with darker brown clay lens. Non-ferroan micrite, probably chalk was positively identified, as was nacreous non-ferroan bivalve shell and small fragments of sparry ferroan calcite. There are probably quantitative differences between the sands in the standard and coarse fabrics. The coarse fabric has a higher proportion of flint and opaque

inclusions, for example, furthermore, altered glauconite fragments are present in the standard fabric but were not noted in the coarse fabric. Nevertheless, it is possible that the two fabrics were produced from the same parent clay and that the sands are merely coarser and finer fractions of the same detrital sand.

Fabric B: Calcareous Medieval Ely ware (MELC) (incorporating former Fabric E)

This fabric is very similar to Fabric A and, as with Fabric A, colour variation is present with oxidised sherds from dull reddish orange, to orange and buff surfaces. Some sherds are fully oxidised, but most have a grey-black core. In terms of Munsell colours the range of surface colours is 5YR 5/6 (yellowish red) 7.5YR 7/4 (pink) 10YR 6/4 (light yellowish brown), 5YR 6/1 (grey) with core colours Gley chart 1 3/N (very dark grey) or 5/N (grey). Reduced sherds have grey surfaces (10YR 5/1 grey and 10YR 6/1 grey), black cores (Gley chart 2 4/5PB bluish black). Fabric B, however, demonstrates a greater percentage of chalk within the matrix than is found in Fabric A.

Inclusions: Quartz sand is present as follows; 15–20% fine grains (0.1–0.25mm), 10% medium grains (0.25–0.5mm) and sometimes 5% coarse grains (0.5–1mm). The grains are either sub-square or sub-rounded.

Chalk fragments are present in variable quantities and sizes, from less than 10% fine (0.1–0.25mm), and less than 5% medium (0.25–0.5mm) to 10% coarse (0.5–1mm) or medium (0.25–0.5mm) with some very coarse (larger than 1mm). The fragments can be sub-spherical, sub-oval, sub-rounded or rounded. Fine (0.1–0.25mm) red iron oxide is also present at less than 5%, the grains being sub-spherical or rounded. One sherd also contained less than 1% flint in sub-rectangular/ sub-angular pieces. This material is not often found or at least recognised in Ely fabrics. Fabric B is harder, more overfired than A.

Fabric B corresponds to the fabric identified as 'Calcareous Medieval Ely ware' by Alan Vince.

Petrological description

by Alan Vince

The seven samples of MELC are visually similar. Sparse splashed glaze was present on two samples and all had oxidized surfaces and margins and dark grey or black cores, except for one sample (V646) which has an oxidised core and margins but grey surfaces. All the samples appear to be from handmade vessels.

The fabric is tempered with moderate to abundant quantities of fine sand, visually similar to that in MELS ware, with sparse larger inclusions. The larger inclusions are mainly rounded chalk with lesser quantities of rounded flint, reddish iron-rich pellets or sparse, rounded 'greensand' quartz.

In thin-section, in addition to the chalk fragments (some of which have dolomite replacement) and rounded flint, fragments of silica-cemented sandstone (probably Cretaceous chert) and fine-grained sandstone with flat bivalve shell fragments (cf inoceramus) are present. The clay matrix is similar to that of the MELS fabrics but with perhaps slightly more finer, angular quartz. This may, however, be an illusion caused by the slightly lower quantity of sand present in this fabric.

As with MELS ware, the majority of inclusions which make up the sand temper of the fabric are likely to be of Cretaceous origin. The sandstone and chert inclusions, not noted in MELS samples, also probably have a Cretaceous origin. The clay matrix of the two wares is also similar. The main difference between the wares is the presence of the large sparse inclusions, which appear to have been a deliberate addition to the fabric, and are also derived from the Cretaceous.

Fabric F: Coarse tempered Medieval Ely ware (MELCO)

Fabric F is very similar to Fabric B, but demonstrates a greater percentage of quartz sand within the fabric of the sherds than is found in Fabric B.

Three sherds of Fabric F were examined. The fabric is hard-fired and there are oxidised and reduced examples.

The vessel forms represented include jars and jugs and bowls, both glazed and unglazed.

Colour variation is present with oxidised sherds from dull reddish orange, to orange and buff surfaces, some are fully oxidised, and some have a grey-black core. Glazed sherds are uncommon. In terms of Munsell colours the range of surface colours is 5YR 6/6 reddish yellow, 7.5Y 6/4 light brown and 10YR 5/2 greyish brown with cores Gley chart 1 3/N where the sherd is not fully oxidised. Reduced sherds have grey surfaces and core (5Y 5/1 grey).

Inclusions in the fabric are chalk and quartz in varying proportions: the fabric contains up to 25% quartz sand in very coarse to medium grains (sometimes larger but usually 0.5–1mm to 0.25–5mm) and 5% fine grains (0.1–0.25mm). All are sub-square and sub-rounded. Chalk fragments make up less than 5% of the fabric and are sometimes very coarse (larger than 1mm), and/or 10% coarse (0.5–1mm) and less than 5% fine (0.1–0.25mm). All are sub-oval or rounded. Sub-spherical or rounded red iron oxide/ore makes up less than 1% of the fabric, the grain size being medium (0.25–5mm). Fabric F corresponds to the fabric identified as V635 by Alan Vince.

Petrological description

by Alan Vince

In the hand specimen this sample is tempered with a coarse rounded sand. The sand grains consist mainly of quartz, much of which appears to originate in a Cretaceous greensand and some of which is iron-stained and iron-coated, coming from a ferruginous sandstone. Rounded flint fragments are the next most common inclusion followed by rounded reddish iron-rich grains with a matt finish. The clay matrix is laminated.

In thin-section some of the flint fragments can be seen to be heavily stained, and almost all show some signs of staining and patination, confirming that the flint is detrital. Rounded fragments of non-ferroan micrite, probably chalk, are present but sparse. In addition, sparse fragments of ferroan calcite up to 0.3mm across, a fragment of ferroan calcite echinoid shell up to 0.3mm across, a rounded reddish clay pellet containing microfossils with non-ferroan calcite tests and ferroan calcite filling their body cavities and sparse bone fragments up to 0.3mm long, probably from fish, were present.

The majority of these inclusions are from a sand composed of rocks and minerals originating in an area of Cretaceous rocks however, the clay matrix and some of the calcareous inclusions may be of Jurassic origin.

Late Medieval Ely ware (LMEL)

Fabric C: Calcareous Late Medieval Ely ware (LMELC)
A hard-fired fabric with a rough texture and a hackly fracture. Oxidised sherds have dull buff surfaces with black cores (10 YR 6/3 pale brown, core Gley chart 1 2.5/N Black); reduced sherds have a grey surface (10YR 5/1 or 10YR 4/1 grey and dark grey) and black core (Gley chart 1 3/N very dark grey). Inclusions in the fabric are quartz and chalk in varying degrees.

Inclusions: 15–20% fine quartz grains (0.1–0.25mm) and up to 5% medium quartz grains (0.25–0.5mm), all sub-square or sub-rounded. Chalk is present at up to 5% in the most calcitic sherds, and as little as less than 1% in the least. The fragments are fine (0.1–0.25mm) and very fine (0.1mm) and sub-spherical or rounded. Very little material except the quartz is visible on the surface but occasionally very coarse (larger than 1mm) fragments of flint (sub-rectangular/sub-angular) and small chalk fragments may occur on the surface of the pot. Sub-spherical or rounded medium (0.25–0.5mm) grains of black iron oxide occur to 1% in the matrix of the oxidised sherds.

Fabric C appears to correspond to the fabric identified as 'Calcareous Late Medieval Ely ware' by Alan Vince.

Petrological description

by Alan Vince

The seven samples of LMELC ware are very similar visually to the MELC samples. The sherds mostly come from handmade vessels with sparse splashed lead glaze. The exception is V632 which is definitely from a wheel-thrown vessel and has a glossy lead glaze. This sample contains very little calcareous material and might as easily be classed as LMEL ware. The samples have dark grey or black cores and light brown margins and surfaces.

The samples are tempered with a fine quartzose sand and sparse calcareous inclusions. These inclusions are both sparser and finer textured than in MELC ware.

In thin-section the samples can be seen to contain rounded and subrounded quartz sand, as in LMELS, rounded flint, rounded opaque grains and altered glauconite and a range of calcareous inclusions. These include rounded chalk grains, a rock composed of altered glauconite grains in a ferroan calcite cement and bivalve shell fragments.

The high proportion of altered glauconite and rounded opaque grains is comparable with LMELS which suggests that the two late medieval wares were produced using similar raw materials. Glauconite is found as detrital grains but is much softer than quartz and flint and tends to quickly become rare. Where glauconite occurs in moderate quantities, as in LMELS and LMELC, it is probable that either the glauconite was present in the parent clay or that the sand source is close to the outcrop of glauconite-bearing rocks. It is less certain than with MELC that the calcareous inclusions were deliberately added. Instead, it is possible that the sand used for LMELC ware was naturally calcareous.

Fabric D: Standard Late Medieval Ely ware (LMELS)

A hard-fired rough to the touch fabric with a hackly fracture. Sherds are mainly oxidised with red-orange 7.5YR 7/6 (reddish yellow) or buff-orange surfaces 2.5YR 6/6 (light red) or 2.5YR 6/5 (light red). Glazed and unglazed sherds have dark black-grey cores Gley chart 1 3/N (very dark grey).

Few inclusions are visible on the surface of the fabric, occasionally a coarse (0.5–1mm) chalk fragment will occur but mainly it is the quartz that is visible.

Inclusions: Fine (0.1–0.25mm), or very fine (0.1mm) quartz occurs to 20% of the fabric with coarse (0.5–1mm) quartz present to less than 5%. The grains are sub-square or sub-rounded. The chalk inclusions are mainly fine (0.1–0.25mm) and make up at maximum less than 5%, and minimum less than 1% of the fabric. The fragments are sub-spherical or rounded. Red iron oxide is also present but at less than 1%, the grains being medium (0.25–0.5mm) and spherical or rounded.

Fabric D appears to correspond to the fabric identified as 'Late Medieval Ely ware' by Alan Vince.

Petrological description

by Alan Vince

The seven samples of LMELS ware are all from wheel-thrown vessels, most of which have a glossy lead glaze (the exception is V651). Most of the samples have a black core.

The ware is tempered with abundant fine sand with sparse larger rounded inclusions. The fine sand is similar visually to that of MELC ware. The larger inclusions are mainly 'greensand' quartz and red iron-rich pellets but include rounded chalk fragments.

In thin-section the sand temper is similar to those of the MELC and MELC wares (subrounded quartz, some of which is iron-stained) but includes a higher proportion of glauconite, altered glauconite and rounded opaque grains and perhaps less rounded flint. The clay matrix is probably similar as well but in most samples the clay is isotropic or blackened through carbon enrichment, which makes it difficult to compare the fabric groups except in two cases, V648 and V652, which are identical to those seen in the earlier wares.

The occurrence of fabric types at Potters Lane

Simple statistics were calculated to provide a breakdown by phase of the pottery assemblage (Table 2). The figures are given as percentages of the total number of sherds, and total weight of pottery for each phase. Only Phase 2

produced too little pottery (thirty-six sherds) for these figures to be meaningful.

The only occurrence of Ely 'Babylon' ware is in Phase 6 (post-medieval to modern). As described by David Hall (1996, 38) this is an early post-medieval redware in the cistercian ware tradition, but not as hard fired as most cistercian wares. It is an earthenware rather than a semi-vitrified pseudo-stoneware like much cistercian ware from Yorkshire and the midlands. Babylon ware is likely to have a 16th- to early 17th-century date, on the basis of its similarity to both cistercian wares of the 16th century and black glazed earthenwares of the 17th.

The remaining pottery in the 'other' category is largely a mix of material, the dating of which is consistent with the phase. In Phases 1 to 4 Shelly Sandy ware, probably another fairly local product, is present, along with sherds of glazed jugs from Grimston in Norfolk, Sible Hedingham in Essex and the Lyveden-Stanion industry in Northamptonshire. By Phase 6 at Potters Lane there is a little post-medieval redware, another product that, following the CAU's recently published excavation on Broad Street (Cessford *et al* 2006) is now known to have been made at Ely.

For the sake of brevity, the text from this point onwards includes fabric and ware names and notations as defined in Table 1 above.

The key points of interest that are evident in the percentages in Table 2 are as follows:

1. Medieval Ely ware (principally Fabrics A and B) is dominant through all phases until the Late Medieval Ely ware wasters (Fabrics C and D) are deposited in Phase 5.
2. The small amount of LMEL in Phases 2 and 3 is probably intrusive, although by Phase 4 its occurrence with MEL may suggest a transitional period with LMEL production starting but MEL still in general use. This would seem to imply a partially domestic rather than wholly production origin for the Phase 4 assemblage. Alternatively the LMEL in Phase 4 is also intrusive.
3. The best dataset for the MEL assemblage comes from Phase 1 and suggests that Fabrics A and B were equally common at this production site, with Fabric F forming a very specialist type or accidental coarse-tempered variant (or products from another kiln or sub-phase at this kiln). This can only be resolved by investigating the presence of these fabrics in other assemblages from Ely.
4. Fabric C (LMELC), the late variant with more calcareous temper, is present in proportions of around ten to one with Fabric D (LMELS), the version with finer inclusions.

IV. Vessel Form, Technology and Decoration

A study of vessel form, technology and decoration requires analysis of both of the periods of production. This study is followed by a consideration of the developments from MEL to LMEL, and differences between the two assemblages. All form types are based on the MPRG classification system (MPRG 1998).

Table 3 shows the proportion of general vessel types amongst the medieval and late medieval wares, based on the number of observed vessels. It is quite striking that the proportion of jugs is the same in both cases. The key difference is that in the earlier period bowls make up a third of the assemblage, whereas in the later period there

<i>Phase</i>	<i>Fabric</i>	<i>Ware</i>	<i>As % of sherd count</i>	<i>As % of sherd weight</i>
1 (n=598) (w= 5.612kg)	A	MEL	54.7%	48%
	B	MEL	41.6%	40.1%
	E	MEL	1.3%	2.9%
	F	MEL	1%	2.1%
	C	LMEL	0.2%	0.1%
	D	LMEL	0	0
	Other		1.2%	6.8%
2 (n=36) (w=0.472kg)	A	MEL	30.6%	32.2%
	B	MEL	61.1%	61.4%
	E	MEL	0	0
	F	MEL	0	0
	C	LMEL	5.6%	3.8%
	D	LMEL	0	0
	Other		2.8%	2.5%
3 (n=108) (w=2.136kg)	A	MEL	16.7%	17.7%
	B	MEL	73.1%	73.5%
	E	MEL	0	0
	F	MEL	2.8%	3.6%
	C	LMEL	5.5%	4.3%
	D	LMEL	0	0
	Other		1.9%	1%
4 (n=364) (w=5.692kg)	A	MEL	17.9%	13.8%
	B	MEL	61%	65.8%
	E	MEL	0.8%	1.4%
	F	MEL	1.4%	1.9%
	C	LMEL	13.5%	11.9%
	D	LMEL	0.8%	0.3%
	Other		4.7%	4.8%
5 (n=690) (w=16.041kg)	A	MEL	1%	1.2%
	B	MEL	10.7%	8.9%
	E	MEL	0.4%	0.6%
	F	MEL	0.4%	0.5%
	C	LMEL	77.1%	80%
	D	LMEL	8%	5.9%
	Other		2.3%	2.9%
6 (n=260) (w=8.673kg)	A	MEL	12.3%	19%
	B	MEL	58.8%	50.4%
	E	MEL	2.3%	1.5%
	F	MEL	0.4%	0.1%
	C	LMEL	9.2%	6.1%
	D	LMEL	0.8%	2.1%
	'Babylon'		13.5%	16.6%
Other		2.7%	4.2%	
Unstratified (n=275) (w=3.986kg)				

Table 2 Contributions of fabric types to phase assemblages
(total number of sherds (n) is 2,331; total weight of pottery is 42.638kg)

<i>Vessel type</i>	<i>MEL no. of occurrences</i>	<i>% of total vessels for MEL</i>	<i>LMEL no. of occurrences</i>	<i>% of total vessels for LMEL</i>
Bowl or dish	74	34.3%	54	22%
Jar	9	4.2%	38	15.4%
Jug	132	61.1%	152	61.8%
other	1	0.4%	2	0.8%

Table 3 General vessel types in Medieval Ely ware and Late Medieval Ely ware

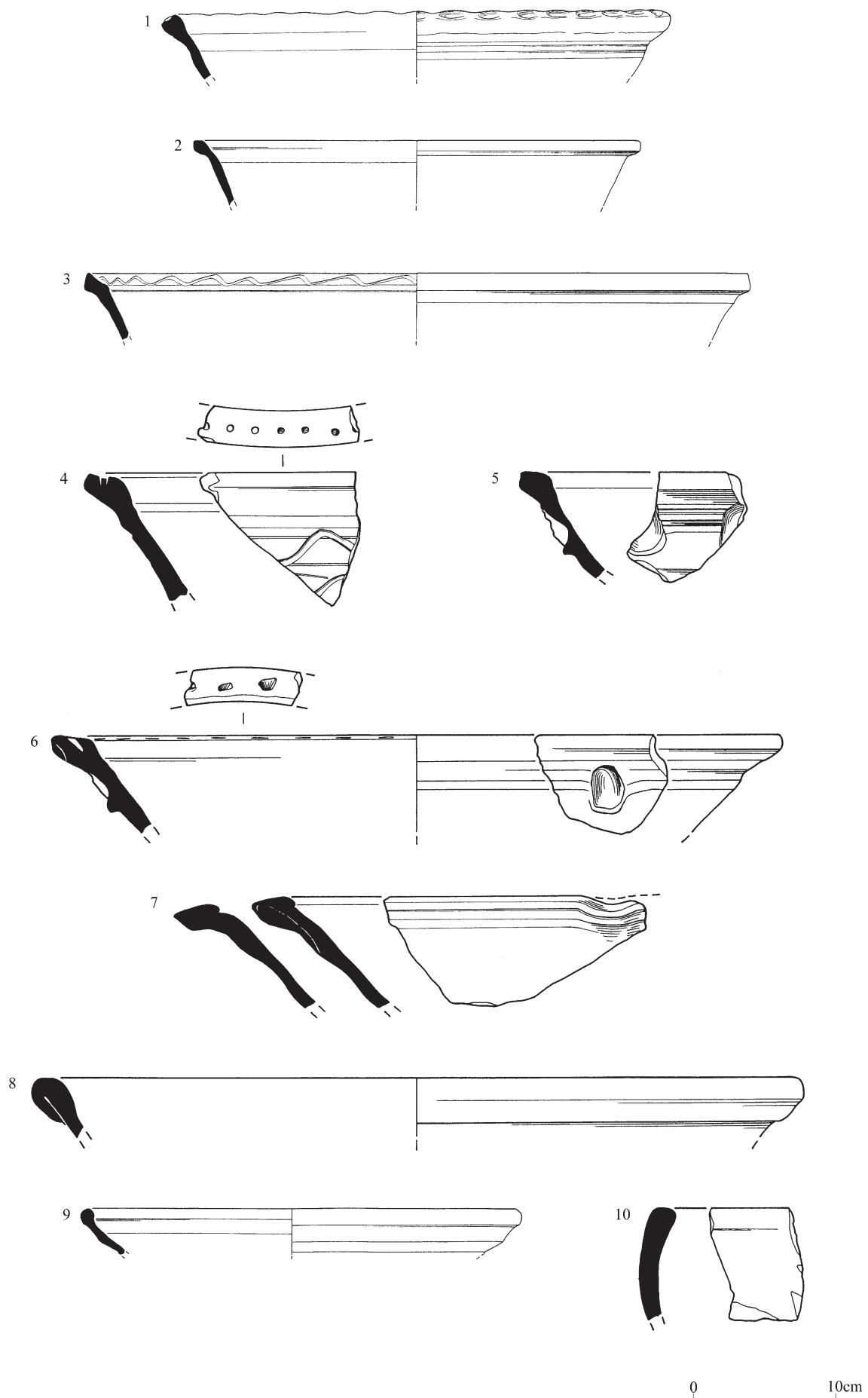


Figure 5 Potters Lane, Medieval Ely ware bowls (Nos 1–10). Scale 1:4

are only two thirds as many bowls (proportionally) with these replaced by an increased incidence of jars. Jars can be used both for cooking and for storage functions, whilst bowls also have a wide range of functions. There is thus little scope for analysis of the intended functional assemblage in this case.

If the figures from Table 3 are broken down by fabric type some further implications are evident, although the small numbers of vessels involved means that use of precise statistics must be avoided in favour of general observations. Bowls are present in all fabric types (A to F), whilst jars are only present in Fabrics B (MEL) and C (LMEL) to any great extent. Jugs are present in all fabric types. The coarsest examples of Fabric B are all in bowl forms.

Medieval Ely ware at Potters Lane (MEL)

by Carole Fletcher and Paul Sperry

Bowls

(Fig.5, Nos 1–10)

Bowls are present in all three fabrics. Most are concave sided or flared, or variations on these forms, but with the former most common. In Fabric A rims are usually thickened, either internally or externally. Fabric B rims can be everted and are sometimes squared off. Other Fabric B rims are externally thickened and usually thumbbed, either singly or continuously. Two examples in Fabrics A and F, have inturned rims. Rim diameters vary from 26cm to 56cm in Fabric A, but are usually in the bracket of 30cm to 40cm. All recorded bowl rims in other MEL fabrics are also within this last bracket. Most MEL bowls for which the method of manufacture is recognisable appear to be handmade, but, on the basis of rim shape and stress lines, finished on a turntable or wheel.

A few bowls have a partial external lead glaze: very occasionally there is an internal glaze. Other than one Fabric A example all bowls with glaze are in Fabric B, although none of the more coarse examples of Fabric B have glaze. Most Fabric A bowls have stabbing on the rim, whilst many of the Fabric B bowls do also. Some of the latter have thumbing instead. Some MEL bowls have incised lines around the vessel, whilst a few examples show combed wavy lines on the external surface or rim.

Rarities include a fragment of a possible spouted bowl which, if identified correctly, may suggest a rather earlier origin as this form is exclusively Late Saxon in date when found elsewhere.

Pottery fragment descriptions; bowls

(NB glazing is not shown)

Figures in brackets are context numbers

1. Rounded bowl with thumbbed, rounded, internally thickened rim in calcareous soft fabric, orange-brown surfaces and margins with black core. Probably handmade with the rim added/finished on a turntable. Fabric B. (116)
2. Angled bowl with externally thickened rim in soft buff-brown fabric throughout. Underfired, degraded lead glaze internally. Wheelmade in Fabric A. (115)
3. Simple internally bevelled rim from bowl, with wavy line decoration on upper surface. Buff surfaces, orange margins and core. Probably wheelmade Fabric A. (156)
4. Internally thickened, straight edge rim (flanged) of bowl, with stabbed decoration on upper surface. Orange-brown fabric throughout, hard fired and slightly sandy. Probably handmade with the rim added/finished on a turntable. Fabric A. (103)

5. Square rim (flanged) of bowl, brown surfaces, red-brown margins and grey core. Spots of glaze on surface. Appears to be handmade but wheel-finished. Fabric B. (105)
6. Externally thickened bowl rim (straight sided) with stabbed decoration on upper surface. Soft buff fabric throughout, finger-impressed decoration on body. Possibly handmade, Fabric A. (116)
7. Internally thickened slightly everted rim of an angled bowl with single pulled finger impression (partial) on top of rim, which may be a lip rather than decoration. Orange-brown fabric throughout, Probably handmade with the rim added/finished on a turntable. Fabric A. (111)
8. Externally thickened (folded) rounded bowl rim, red-brown surfaces, dark grey margins and core. Very large calcareous inclusions (chalk or shell) with no glaze. Handmade in Fabric B. (102)
9. Slightly inturned, internally thickened rim of a rounded bowl with a slight carination. Orange-brown surfaces and margins with grey core. Wheelmade in Fabric A. (102)
10. Slightly inturned, internally thickened rim of a rounded bowl. Probably handmade with the rim added/finished on a turntable. Mid grey fabric throughout. Fabric B. (100)

Jars

(Fig.6, Nos 11–13)

Jars are not common in the MEL fabrics. Those that are present appear generally to have everted rims, although one upright example in Fabric A is present. Rim diameters are from 14cm to 28cm. None of the jars recognised are glazed, although one in Fabric B has combed wavy lines externally.

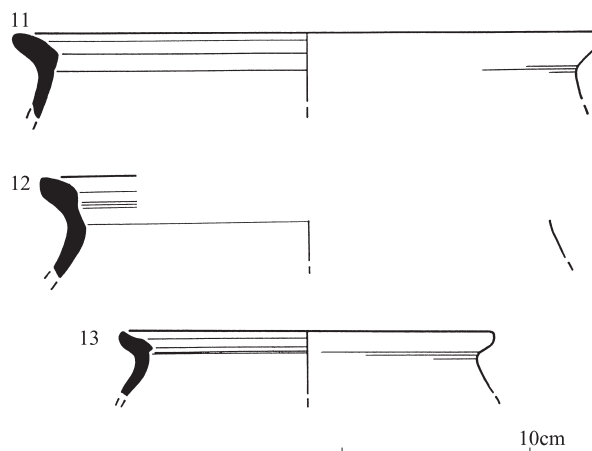


Figure 6 Potters Lane, Medieval Ely ware jars (Nos 11–13). Scale 1:4

Pottery fragment descriptions; jars

(NB glazing is not shown)

11. Everted, internally bevelled jar rim. Very calcareous fabric: large fragments of chalk, hard fired, brown surfaces, red-brown margins and grey core. Splashes of clear lead glaze internally, wheelmade in Fabric B. (102)
12. Jar with everted externally bevelled rim, spots overfired degraded glaze on exterior and possibly interior surface. Hard fired fabric with red-brown surfaces and margins with a grey core. Wheelmade in Fabric B. (106)
13. Everted collared (internal) rim from a small jar. Soft sandy fabric, buff-brown surfaces and margin with a grey core. Wheelmade in Fabric B. (110)

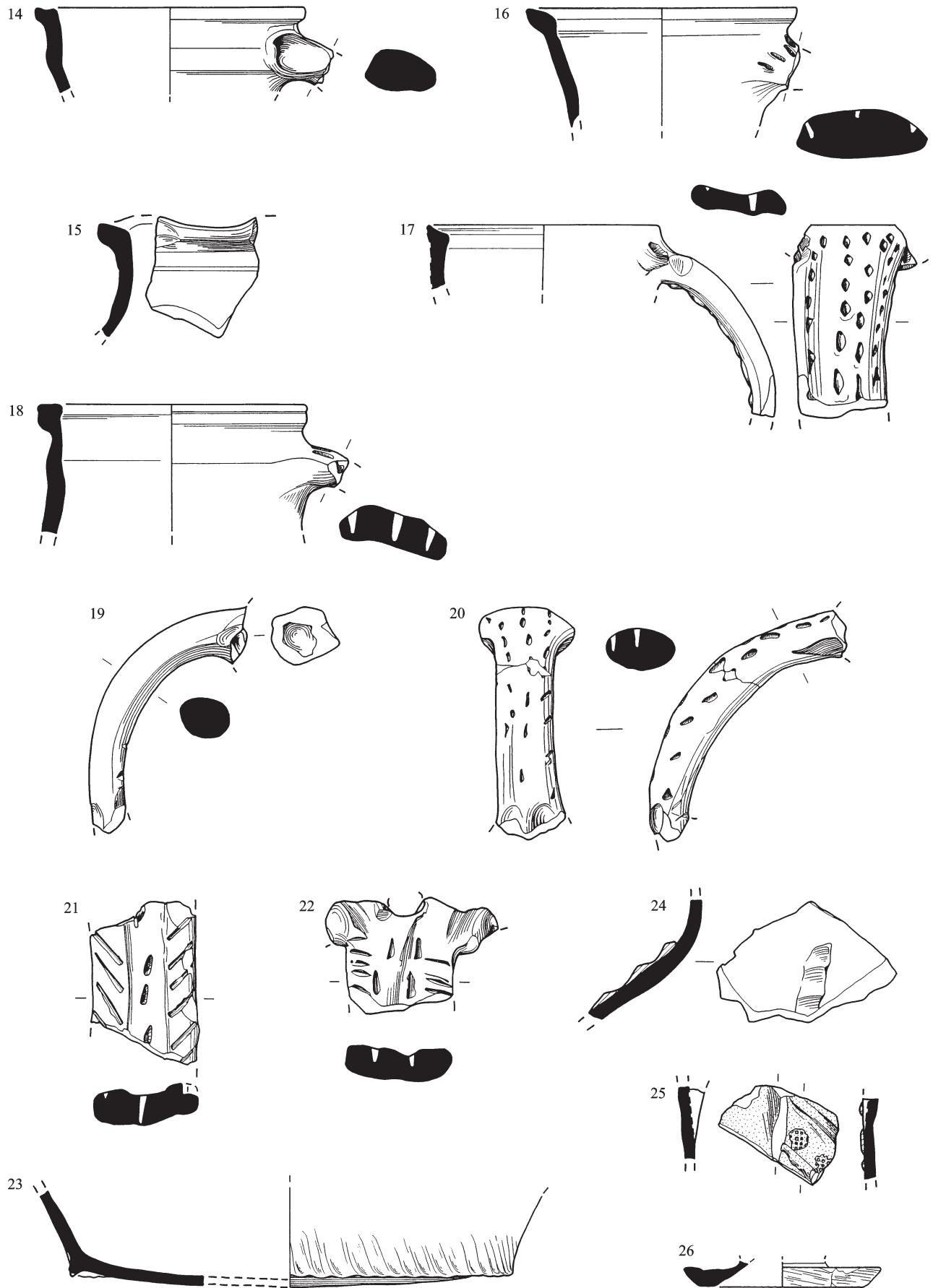


Figure 7 Potters Lane, Medieval Ely ware jugs (Nos 14–25) and lid / candlestick / lamp base (No. 26). Scale 1:4

Jugs

(Fig.7, Nos 14–25)

Jugs are the most common vessel type. In the MEL fabrics they usually have upright rims, although there are a range of variations with thickening, and occasional bevelling and squaring. Rim diameters are usually 10cm to 12cm, although some examples are as large as 16cm. Pulled and pinched lips are present. Around a third of examples in Fabric A show an external green glaze, compared with more than half of those in Fabric B. Where it is possible to determine body the vessels should be classified as *rounded jugs*. All vessels where method of manufacture can be determined (twenty-five) appear to be handmade, but there is good evidence that the rims were added or finished on a turntable or wheel.

Where recognisable, jug bases are convex and obtuse, or right-angled. Some have single thumb impressions, with others exhibiting thumbing around the base. One example has finger-nail impressions.

Of twenty jug handles in Fabric A, six are rod-like and the other fourteen are strap handles. Half of the rod handles have stabbed decoration as do ten of the strap handles, while the other four exhibit slashing. There are ten Fabric B rod handles, five of which are stabbed, and nineteen Fabric B strap handles, thirteen being stabbed and the other six slashed. Of two Fabric F handles one is stabbed and one has finger-impressed decoration. It is therefore apparent that handle form includes rod and strap, half of the former being slashed and half plain. Of the latter, two thirds are stabbed and the remainder slashed.

Pottery fragment descriptions: jugs

(NB glazing is not shown)

14. Upright square jug rim with oval sectioned handle attachment below. Handle luted onto outside of jug neck with single finger impressions either side. Slightly coarse fabric, some calcareous inclusions, red-brown core and margins with dark grey surfaces. Possibly handmade and wheel/turntable finished. Fabric B. (100)
15. Upright externally thickened, internally bevelled jug rim with pulled or pinched lip (partial). Soft, smooth fabric with some small calcareous inclusions, also patches of overfired lead glaze externally. Mid brown surfaces and margins with a grey core. Quite thick walled with some striations, possibly handmade and finished on a turntable. Fabric B. (110/116)
16. Upright externally thickened, internally bevelled rim of jug, with strap handle attachment beneath. Handle spring has stabbed decoration, internally there are finger impressions demonstrating the force applied to body when luting handle externally (then smoothed). Runs of overfired lead glaze show how vessel was dipped into glaze and then inverted. Soft fabric, buff to orange surfaces with black core and margins, probably handmade with the rim added/finished on a turntable. Fabric A. (116)
17. Externally thickened internally bevelled (slightly internally seated) jug rim and strap handle. The handle is decorated with four roughly executed rows of stabbing using a diamond shaped tool. Fabric mid brown surfaces and margin with dark grey core. Fabric A. (111)
18. Upright square, externally thickened rim with vertical loop strap handle. The handle is decorated with slashing/stabbing; internally there are also finger impressions demonstrating the force applied to body when luting on the handle. The fabric is slightly overfired, with some very coarse calcareous inclusions and splashes of overfired lead glaze on the external surfaces. Dark brown surfaces with orange-brown margins and core, handmade in Fabric B. (110/116)
19. A vertical loop handle, round sectioned rod form, from a jug. Orange-brown surfaces with grey margins and core, patches of

green glaze survive on the lower portion of the handle. The upper end of the handle, where it has broken away from the body of the jug retains a fragment of the vessel wall finger-impressed into the handle. Hand-formed Fabric A. (111)

20. A vertical loop handle, round sectioned rod form, from a jug. Slight pinching where the handle was attached to body of vessel. The handle is stabbed along its whole length with a narrow tool. Soft sandy fabric with occasional medium-coarse calcareous inclusions, Orange-brown surfaces with grey margins and core. Hand-formed Fabric A. (111)
21. Loop strap handle from jug, with a single line of vertical stabbing (through whole handle) and diagonal slashing. The fabric is moderately hard fired and fairly smooth with possibly traces of underfired glaze, buff-light grey surfaces and margins with a dark grey core. Hand-formed, the folding of the clay is visible in the broken section. Fabric A. (116/110)
22. Loop strap handle from jug, with two lines of vertical stabbing with triangular implement and horizontal slashing. The fabric is soft and calcareous red-brown surfaces and margins with a black core. Hand-formed Fabric A (116)
23. Nail-impressed slightly sagging jug base with glaze (overfired) on underside of vessel; the presence of glaze on this part of the vessel may be accidental. Fabric is orange-brown throughout and sandy. Wheelmade Fabric B. (111)
24. Body sherd from a thick walled, but probably wheelmade jug. Fabric soft and gritty with light grey external surface under a thin slightly underfired lead glaze. Internal surface is light brown with black margins and core. Decoration is in the form of externally applied strips with regular finger impressions. Fabric A. (111)
25. Body sherd from a highly decorated jug, possibly a waster. Decoration consists of applied strips and lattice stamped pellets, both in white clay, and white slip washed panels. Brown surface and margins with grey core, Fabric B. (104)

Other forms

One green glazed saucer-shaped lid, or possibly a lamp or candlestick base, in Fabric B was recorded (Fig. 7, No. 26).

26. Lid or lamp/candlestick base. Hard fired fabric with common medium-coarse calcareous inclusions, brown surfaces and margins with a dark grey core. Green glaze on upper surface (lead, speckled) and knife trimmed edges. Fabric B. (96)

Late Medieval Ely ware at Potters Lane (LMEL)

by Carole Fletcher and Paul Sperry

Bowls and dripping dishes

(Fig.8, Nos 27–37)

Bowls are less common in the later period of manufacture, making up 22% of identifiable vessels. Most LMEL bowls are in Fabric C. Bowl form undergoes a radical change between the earlier and later phase of manufacture, the later bowls being smaller (rim diameters of 34cm and under) and with a characteristic rim shape. Where identifiable, bases appear to be convex, obtuse or sagging. The new rim form is best described as everted and internally collared, with some examples rounded and some squared off. In addition the body of the bowl becomes either rather more rounded, or carinated. All but one of the nine late medieval bowls exhibit the new form, the exception being a Fabric D bowl which is larger, with an internally thickened rim, and is very much in the earlier style. All of the later bowls for which method of manufacture is evident, are wheelmade. As well as bowls, fragments from two handmade oval/rectangular dripping dishes in Fabric C were identified. A few LMEL bowls have internal and/or external green glaze, but most are unglazed.

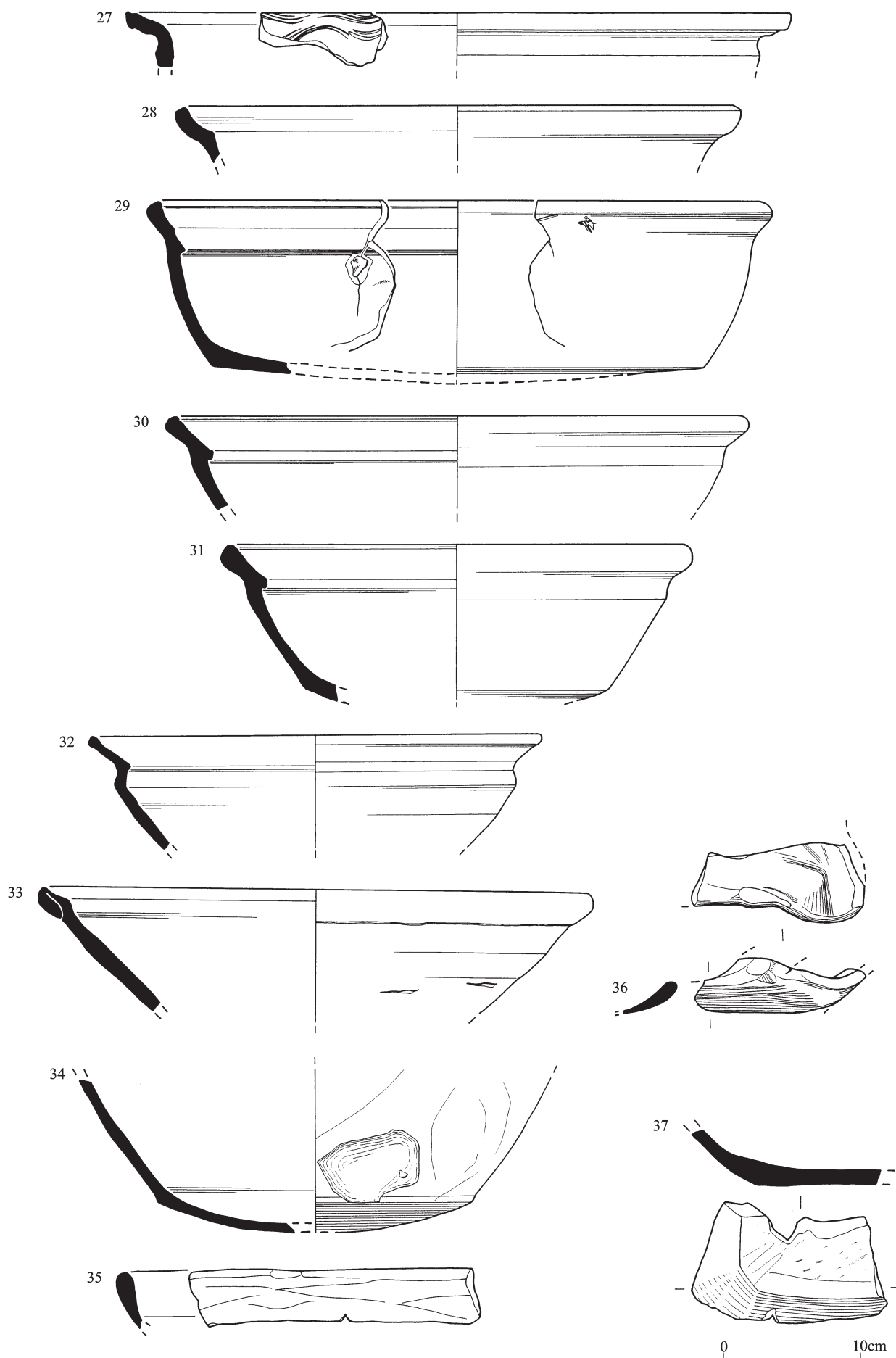


Figure 8 Potters Lane, Late Medieval Ely ware bowls and dripping dishes (Nos 27–37). Scale 1:4

Pottery fragment descriptions; bowls

(NB glazing is not shown)

27. Everted externally bevelled rim of bowl with incised wavy line decoration on upper surface. Internally overfired thick green lead glaze is present. The fabric is hard with brown surfaces, red-brown margins and a grey core. Wheelmade Fabric D. (110/116)
28. Everted internally bevelled (lid seated?) rounded rim of bowl. Smooth hard-fired fabric orange-brown throughout. Wheelmade Fabric C. (102)
29. Distorted and cracked rounded bowl with everted collared (internal) rim and slightly convex obtuse base. Fabric is hard-fired (overfired); dark grey surfaces and margins with black core, occasional very large flint inclusions, one of these appears to have caused the cracking. Wheelmade Fabric C. (526)
30. Everted collared (internal) rim of rounded bowl. Hard-fired fabric dark brown surfaces with grey margins and core. Wheelmade Fabric C. (102)
31. Everted collared (internal) rim of straight sided bowl. Hard fabric, probably slightly overfired, dark brown surface with dark grey margins and core. (137)
32. Everted collared (internal) rim of rounded bowl with carination. Overfired lead glaze internally, slightly coarse hard-fired fabric red-brown surfaces and margins with grey core. Wheelmade Fabric D. (102)
33. Thickened (externally folded) bevelled (internal) rim of bowl, orange-brown surfaces with black margins and core, Fabric C. (130)
34. Convex obtuse base of a thin walled bowl, partial overfired lead glaze internally, smears of accidentally applied, overfired lead glaze externally. A large spall from a single inclusion is very prominent. Slightly coarse fabric orange-buff surfaces and margins with a black core. Probably wheelmade Fabric C. Exhibits throwing marks but this could be a 'finish' as it has a sagging base. (102)
35. Upright internally thickened rim of dripping dish, slightly soft smooth fabric partially, internally lead glazed and sooted externally. Orange-buff surfaces buff margins and grey core. Handmade Fabric C. (102)
36. Pulled or pinched lip (partial) at corner of dripping dish. Smooth fabric, internally glazed (lead glaze), orange-brown surfaces and margins with a black core. Handmade Fabric C. Possibly same vessel as No. 37. (102)
37. Convex obtuse base, the corner of a dripping dish. Internal green glaze possibly with copper added, soft fabric moderately hard fired. Red-brown surfaces with black margins and core. Handmade Fabric C. Possibly same vessel as No. 36. (102)

Jars

(Fig.9, Nos 38–41)

Jars were more common in the late medieval period of manufacture, although they still only represent around 15% of the LMEL vessels recovered for which vessel type can be identified, all of these being in Fabric C. All appear to be wheelmade, usually with short, rounded, everted rims, sometimes with internal thickening. Rim diameters vary from 16cm to 36cm, with 26cm to 28cm perhaps being most common. Some vessels have horizontal incised lines below the rim. Bases are smaller than rims, at 10cm to 20cm in most cases. The full profile of these vessels is difficult to reconstruct from the fragments that survive, but they are probably all medium, rounded jars with slightly convex or flat, obtuse bases.

Twenty-eight examples were recognised, all in Fabric C and around a quarter of these have partial internal glaze, usually clear. Only two examples exhibit any glaze externally. Two vessels have been used, one having external sooting and one with internal limescale. Some jars have combed wavy line decoration externally.

Pottery fragment descriptions; jars

(NB glazing is not shown)

38. Everted thickened and bevelled (both internally) jar rim. Slightly soft sandy fabric, light brown surfaces and buff margins with grey core. Wheelmade Fabric C. (130)
39. Everted rounded jar rim with partial overfired lead glaze internally. Hard fired smooth fabric, brown surfaces and margins with a grey core. Wheelmade with horizontal grooves on body, Fabric C. (102)
40. Everted rim of jar, spalled away on rim, some very large calcareous inclusions have also caused splitting, very fine rilling on body. Mid-brown surfaces and margins with grey core. Wheelmade Fabric C. (102)
41. Everted rounded jar rim, hard-fired smooth fabric with horizontal grooves on body. Orange-brown surfaces and margins with grey core. Wheelmade Fabric C. (102)

Jugs

(Figs 9–11, Nos 42–52)

As with the earlier phase of manufacture (MEL), jugs are the most common product at around 62% of vessels, the majority of which (84%) are in Fabric C. Rim form is, as before, upright, some with internal or external thickening, some rounded and some squared off. Rims vary in diameter from 10cm to 16cm, as with MEL. Pulled and pinched lips are present.

Three quarters of vessels have at least a partial green glaze externally; this is sometimes glossy and thick and sometimes appears to have been coloured through the addition of copper. A few fragments show some glaze internally, although whether this is accidental or not is impossible to say. In all cases where body shape is recognisable (thirty examples), the vessels are medium sized rounded jugs. All are at least wheel-finished if not wheel-thrown. Incised wavy line decoration on the body of the vessel is quite common, incised horizontal straight lines less so.

All bases identified are convex and obtuse, and eighteen out of twenty are thumbbed, usually singly with four, and sometimes perhaps five, around the vessel. The other two bases both exhibit a faceting that suggests knife-trimming of handmade vessels.

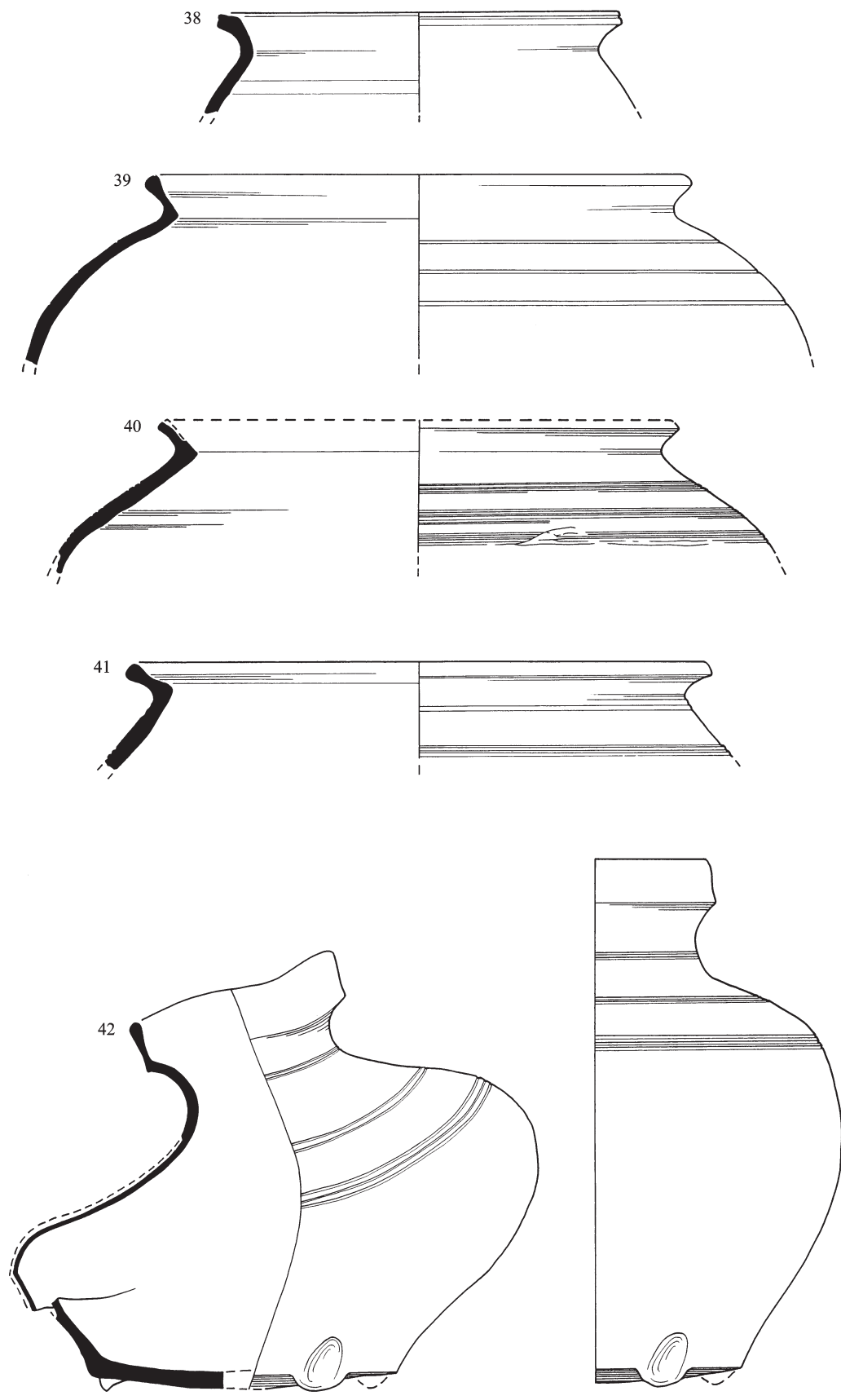
Handles are all of strap form. Most have a central groove and 'platelet' type section.

One example (Fig.11, No.52) exhibits an incised and stamped heraldic-type motif between two very thin horizontal applied and fingered strips. This example may be a trial piece or a special commission; certainly nothing similar has so far been reported from other excavations in the town. It is probable that the heraldic shield is an invention, rather than intended to depict the arms of a specific individual.

Pottery fragment descriptions; jugs

(NB glazing is not shown)

42. Complete profile of badly distorted and split rounded jug. Upright internally thickened rounded rim with pulled or pinched lip? or this may be distortion of the rim, convex obtuse thumbbed (single pulled, finger-impressed) base. Failure of the vessel could be due to over thinning of the walls during throwing or turning. External lead glaze and fine incised lines, fabric hard fire, orange-buff surfaces with black margins and core. Wheelmade Fabric C. (102)
43. Upright internally thickened (slightly) rounded rim of jug, with vertical loop strap handle with three finger-impressed grooves and incised central groove. Thick overall external lead glaze with fine grooves in bands on body. Orange-brown surfaces with grey margins and core. Wheelmade Fabric C. (102)
44. Upright internally thickened (slightly) rounded rim of jug, externally cordoned above neck, loop handle (strap) scar below



0 10cm

Figure 9 Potters Lane, Late Medieval Ely ware jars (Nos 38–41) and collapsed jug waster (No. 42). Scale 1:4

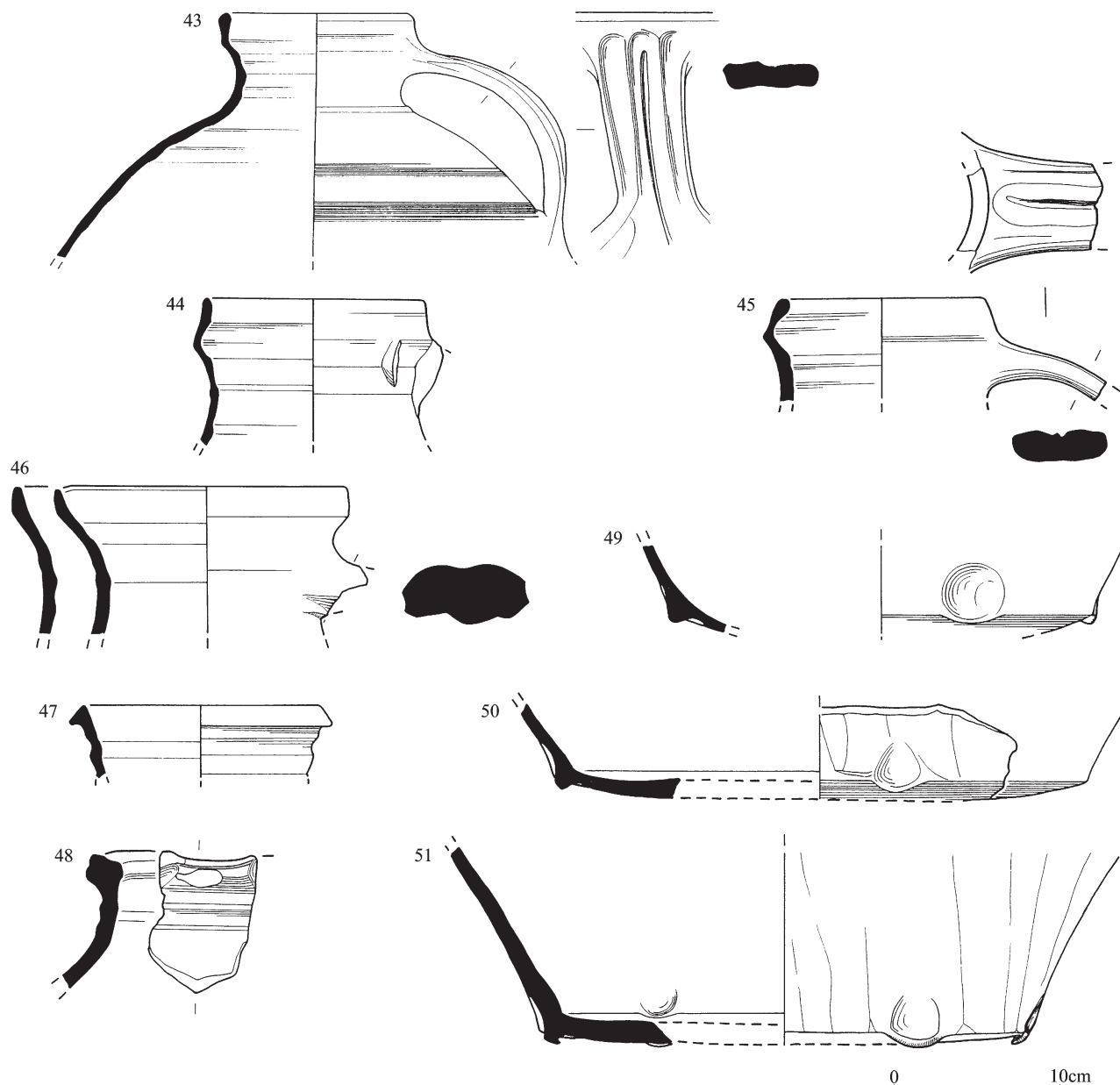


Figure 10 Potters Lane, Late Medieval Ely ware jugs (Nos 43–51). Scale 1:4

- rim, partially green glazed externally. Red-brown surfaces and margins with grey core. Wheelmade Fabric D. (102)
45. Turned internally thickened rounded jug rim. Vertical loop strap handle with central finger and incised groove luted below rim. External glossy green lead glaze, hard-fired fabric. Brown surfaces with black margins and core. Wheelmade Fabric C. (102)
46. Straight edged rim of jug with vertical loop strap handle (oval section) luted onto neck, partial thick lead glaze externally, overfired and degraded. Fabric hard-fired and fairly smooth surfaces a variety of grey-brown shades with dark grey margins and core. Wheelmade Fabric C. (102)
47. Small fragment of externally bevelled jug rim with rilling on neck, externally partially lead glazed, overfired. Hard-fired fabric brown surfaces and margins with grey core. Wheelmade Fabric C. (102)
48. Pulled or pinched (? distorted) lip from externally thickened and beaded jug rim, externally overfired/degraded lead glaze. Slightly coarse, soft fabric orange-brown margins and core with darker surfaces. Wheelmade Fabric C. (100)
49. Convex obtuse thumbbed (single, finger-impressed) base of jug. Failure of the vessel could be due to over thinning as centre of base has dropped out. Traces of lead glaze externally and internally, hard-fired slightly sandy fabric. Orange internal surface external surface, margins and core are buff-pink. Probably wheelmade Fabric C. (102)
50. Convex obtuse thumbbed (single pulled, finger-impressed) base of jug with traces of lead glaze on external surface. Hard-fired red-orange external surface and margins grey internal surface with dark grey core. Probably wheelmade Fabric C. (102)
51. Convex obtuse thumbbed (single pulled, finger-impressed) base of jug, the base would have had four 'pulled feet' in total of which two survive. Hard-fired fabric with evidence of cracking internally on base, mid-brown surfaces with grey core and margins. (102)
52. Body sherds from a large jug with incised line and ring stamp decoration, which when joined together show a heraldic style shield with a representation of a coat of arms (unlikely to be a specific coat of arms) and a brooch-type design of late medieval form (c.f. Mellor 1997, fig. 34b). The vessel is divided horizontally by narrow finger-impressed applied cordons and is glazed, partially, with green lead glaze both externally and internally. Brown surfaces with grey margins and core wheelmade Fabric D. (102)

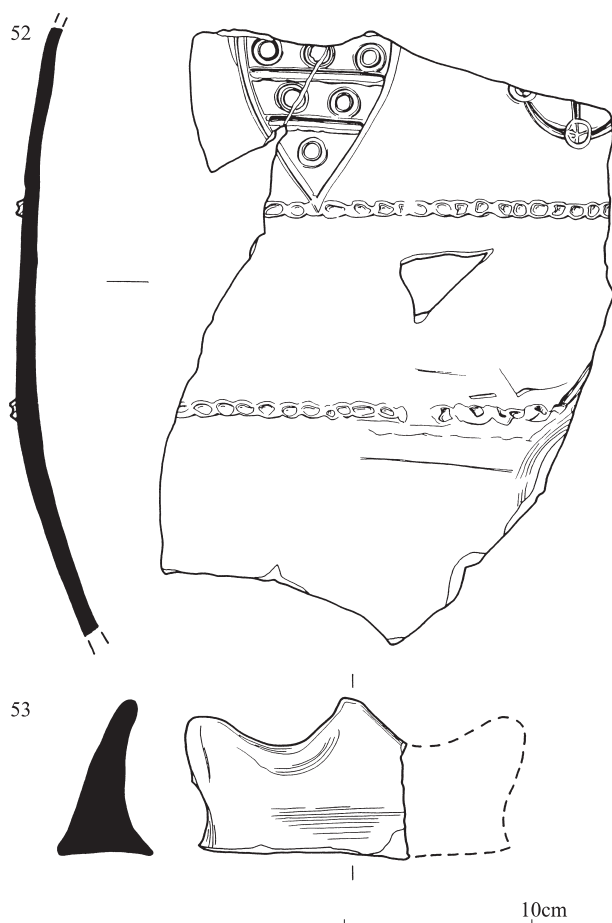


Figure 11 Potters Lane, Late Medieval Ely ware jug with incised heraldic decoration (No. 52) and crested ridge tile (No. 53). Scale 1:4

Medieval Ely ware and Late Medieval Ely ware compared

The earlier pottery from the site (MEL) derives from a number of deposits; some of it may have been used domestically but most is probably kiln waste, albeit perhaps in secondary deposition and representing a number of firings of a kiln or kilns located close by. In contrast the vast majority of the LMEL derives from one dumped deposit that includes fragments of kiln fabric and it is quite probable that this represents part of a single, failed, firing. The two deposits are thus a little different in origin. Although this should be borne in mind, it is not deemed to be of sufficient consequence to prevent comparison between the two production periods represented being made.

There is no doubt that in general the MEL fabrics are more coarsely tempered and less hard-fired than the LMEL fabrics. This is evident even though caution must be adopted with a production site assemblage where most fragments are from vessels where the end result was not as intended. Interestingly the fabrics with the least coarse temper, Fabric A for MEL and Fabric D for LMEL, appear to be used for equal amounts of both bowls and jugs, whilst the more calcareous (coarser) Fabrics B and C are used for many more jugs than bowls. In addition, and at odds with this trend, some MEL bowls were made with a fabric that was tempered with many more and coarser calcareous inclusions (Fabric E). Choices were made

regarding what clays and tempers were to be used for which vessels, but within a very small range of options.

The major technological change from the production of MEL to LMEL, as demonstrated by the two Potters Lane assemblages, is the introduction of fully wheel-thrown vessels. Very few of those sherds that are definitely wheel-thrown are in MEL fabrics, whilst conversely, ignoring building materials, there are few definitely hand-formed LMEL vessels. Many MEL vessels suggest turntable finishing for otherwise handmade vessels, one example being given in Plate 3 which shows a body-neck join where apparent throwing marks on the neck piece suggest that it may have been thrown, or was attached on a turntable.

Firing technology is difficult to study in an assemblage that is primarily composed of fragments of 'failed' vessels, although it should be noted that control, or lack of control, of the kiln 'redox' environment appears to be the same in each phase of production.

Glaze is present in both production assemblages, although there are differences. LMEL jugs are always glazed, often extensively and with a thick covering. The colour of some LMEL examples suggests that sometimes copper was added to the basic lead glaze to give a characteristically brighter green colouration. Glaze on MEL jugs is generally thinner, often covers less of the vessel, and is not ubiquitous.

Bases of most vessels are convex and obtuse, occasionally sagging, and this is common to both periods. Knife trimming is rare, and only occurs on LMEL. Some of the bases that sag only slightly are from vessels that were probably wheelmade, others that sag greatly are undoubtedly handmade.

As noted above, jars are more common later, and bowls less so, but both assemblages are equally dominated by jug fragments. It seems that in the earlier period at least, cooking vessels were not made here; however, as they have been found in other contexts in Ely in this period, they were evidently produced in this industry if not in this kiln.



Plate 3 Detail of the body-neck join on a MEL jug. Note the throwing marks on the neck piece which are absent from the handmade body



Plate 4 Finger-marks inside the body of a MEL jug created during attachment of the handle (by luting) on the exterior

The bowls made during the early period are very different to later examples, the latter being smaller, more rounded or carinated, with everted rims. It seems possible that there is an intended functional difference for these two types of bowl, but what this may have been is not clear.

Jugs are all rounded in shape, where this is identifiable. LMEL jugs are more likely to have thumb-impressed bases, usually singly and with up to five of these arranged around the base to provide 'feet'. Handle form changes between the early and late production periods. Handles from MEL jugs can be both rod and strap, the former sometimes plain and sometimes stabbed or slashed. Strap handles are rather more common and are always stabbed or slashed, or both, in the MEL assemblage. Later rod handles disappear and the strap handles become more regular in section, usually with a central groove, often an incised line down the centre, and often with single thumb impressions where the handle joins the body and/or neck.

Handle attachment can be observed in both MEL and LMEL. The inside of the body from an example of the former (No.16) is illustrated as Plate 4. It is evident here that attachment was achieved by simply luting the handle onto the outside of the vessel wall a little below the rim, whilst applying pressure from inside the vessel (note the finger/nail marks inside). The area of attachment was then smoothed over externally. This method of handle attachment did not change between the two periods of manufacture represented here.

Plate 5 shows detail from the forming of a MEL strap handle in Fabric A (No.21). This ably demonstrates how the handle was made from a piece of clay that was flattened out and then folded in two, with the stabbing being added later.

Wasters and kiln scarring

The majority of pieces of pottery from these excavations can probably be classified as wasters. Such waste usually manifests itself through incorrect firing temperature or conditions and is best seen in glazed vessels where overfired, pitted and bubbling glaze is very evident.

Wasters in unglazed pottery can be more difficult to identify. It is possible that the soft nature of the fabric of some MEL sherds, is a result of underfiring, which means that away from the kiln site the products will look and feel rather different to this assemblage. It is also possible that in such underfired pieces, an incompletely fired glaze may have been degraded to nothing through soil leaching, thus causing an under-representation of glazed vessels within the assemblage. Failed vessels also result from air, water or inclusions within the clay matrix expanding and exploding. Others collapsed through a combination of over-thin walls and over-high firing temperature.

One complete LMEL jug profile demonstrates an extreme case of collapse (Fig.9, No.42), the illustration providing an estimate of the intended shape to give a full appreciation of the degree of failure. Plate 6 provides another view of this piece which helps to appreciate the extreme degree of failure of the vessel.

Plate 7 provides a good example of overfired glaze on the exterior surface of a MEL jug, just below the rim. The glaze has become pitted and opaque, and presuming it covered the upper part of the vessel's body, undoubtedly failed to provide either the intended gloss finish or offer greater water retention properties.

Plate 8 shows two fragments of vessel base that, besides their own twisted shape, have ring marks from other vessels adhering to them. They were both evidently stacked upside down in the kiln with another upturned vessel placed directly on top. Both of these are pieces that were unglazed on the base, but have had glaze run off the vessel stacked above. This alone probably indicates incorrect firing temperature, but it has had the added effect of fusing the upper vessel to the lower, resulting in the marks observable here. It is interesting to note the completely different 'redox' conditions of the parts of the base that lay within and outside of the vessel stacked above. Another rim and handle fragment of a jug (not photographed) showed runs of excess glaze that also indicate that the jug was stacked upside down in the kiln.



Plate 5 Detail of MEL jug strap handle section, showing how it was created by folding a flattened piece of clay in two



Plate 6 A collapsed LMEL jug 'waster'
(see also Fig. 9 No. 42)



Plate 7 Overfired glaze on the surface of a MEL jug

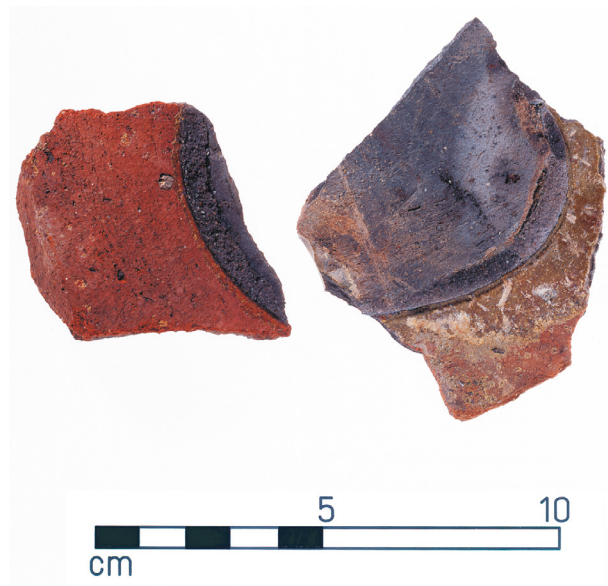


Plate 8 Two vessel base fragments showing scarring
from the next layer of glazed upturned vessels in the
kiln



Plate 9 Refractory brick probably from the kiln floor, showing two surfaces

V. Other Artefactual Evidence

Possible kiln fabric

A number of fragments of possible kiln structure were recovered from the excavation trenches, from Phase 5 contexts in Trench A (101, 102 and 137). Thus it appears there may be direct evidence for the kiln itself in the later period of production, albeit of a minor nature. These fragments possess surfaces, but show no evidence for glaze adherence. This may mean the functional interpretation is incorrect, or they may derive from part of a kiln upon which vessels were not directly stacked.

Two joining fragments of a 'brick' forming part of the kiln floor or superstructure were made from a poorly mixed yellow refractory clay (K69 and K72; Plate 9). They possess two surfaces and are 55mm thick. There

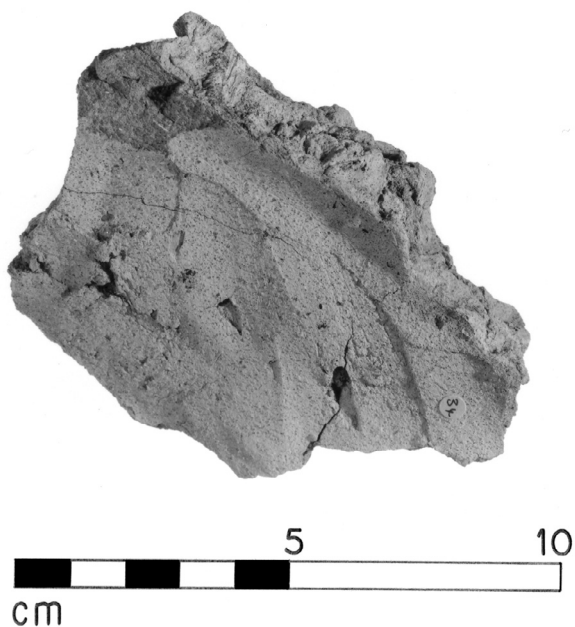


Plate 11 Daub from kiln lining showing finger-marks

were several other pieces from this same context, including one that had been fired an oxidised orange. One other fragment had both surfaces and was 40mm thick.

Plate 10 (K31) shows another large piece of kiln floor in the same yellow refractory fabric. Only one surface survives (the upper?). The fragments amply demonstrate the poorly mixed nature of this material, with massive spalling and an extreme contrast in fabric externally (yellow) to internally where it includes one massive (90mm across) slaggy inclusion that almost certainly represents burnt organic material. This must indicate failure; the slaggy lump appears to have exploded on heating.

Plate 11 shows a fragment of daub (K34) in a slightly sandy fabric that is similar to those of MEL. The exterior surface shows finger-marks from application and smoothing. It is well fired and oxidised and is likely to be a piece of kiln lining, rather than accidentally fired and from a domestic structure.



Plate 10 Refractory brick fragment showing poorly mixed fabric and massive slaggy inclusion

Other ceramic finds

Brick and tile

A variety of ceramic fragments other than pottery was recovered from the site, including roof and floor tile, along with post-medieval brick (Table 4). An important aspect of this assemblage was the presence of a few ridge tile wasters, all in contexts from Phases 5 or 6 or from the layer immediately beneath the topsoil (*e.g.* Fig. 11, No.53), and two complete floor tiles (Plate 16a and b) with overfired glaze suggesting they were also wasters (also from Phase 5, Trench A). This assemblage represents the first physical evidence for the manufacture of both roof tiles and floor tiles in Ely during the medieval period.

Roof tile fragments (*peg*), some probably wasters and some undoubtedly not, are present in all phases at Potters Lane. All of these are in Ely ware type fabrics, most being

<i>Form</i>	<i>No. fragments</i>	<i>Weight (kg)</i>
Pottery	2,331	42.638
Brick or Tile	1	0.130
Tile	58	3.973
Peg Tile	110	1.014
Floor Tile	3	0.938
Fired Clay	1	0.075
Ridge Tile	3	0.389
Unclassified	3	0.220
Kiln material — structure	17	2.606

Table 4 Ceramic finds quantification

very close to Fabric B. It is thus apparent that roof tile manufacture took place somewhere in Ely from the 13th or 14th century onwards.

The evidence for tile production in Phase 1 is very limited, with two overfired (peg?) tile fragments (T8 and T9) being the only pieces that may provide direct confirmation of tile production alongside the earlier phase of pottery manufacture. There are, however, a number of obviously structural pieces of ceramic building material present, although their function is unclear; they may be part of a kiln rather than its product.

Most of the examples of tile wasters are from Phases 5 and 6, implying that they were produced around the same time as LMEL vessels. The comparatively small number of pieces suggests that, although production occurred close by (or even in the same property and/or kiln) as the large group of LMEL, it probably did not occur at the same time. Peg tiles and crested ridge tiles were produced for roofing, with ceramic floor tiles also present.

Roof tiles (peg etc.)

Phase 1

- T19.** Small roof tile fragment in an overfired MEL type Fabric. It is 13mm thick with a sanded base.
- T20.** Unglazed tile fragment in hard (overfired) non-Ely fabric. It is 10mm thick and unglazed with a sanded base.

Phase 3

- T8.** Corner of peg tile in a reduced MEL Fabric B, 14mm thick. Traces of overfired glaze on the underside (accidental).
- T9.** Peg tile fragment in MEL Fabric B, 15mm thick. Overfired splashed glaze on upper surface, and cracking (waster).

Phase 4

- T45–49 and T51–53.** A group of roof tile fragments in an oxidised MEL Fabric B, 12–13mm thick.
- T44.** Peg tile fragment in MEL Fabric B, 17mm thick.
- T23–29.** A group of reduced MEL Fabric B variant roof tile fragments including one peg hole. 13mm to 19mm thick, some with sanded bases and some with splashes of green glaze on the upper side.

Phases 5 and 6

Many fragments of roof tile, often with peg holes, in LMEL fabrics (smoother and harder than the earlier material). The peg tiles are not usually glazed. Some harder fired examples in a related, dark red coloured fabric. Wasters present.

Ridge tiles

Several pieces of glazed curving tile that are probably from crested ridge tiles were recovered. There are also two examples of definite crested ridge tiles. The glaze is usually thick, overfired and bubbly; all are probably wasters. Thickness is in the range 10mm to 13mm. All are from Phase 5 or 6 contexts.

- 53.** T96 (Fig.11, No.53). Crest from a crested ridge tile that has broken away from the body of the tile, thick green overfired glaze over most of the surface, suggesting that this is a waster. Hard-fired, calcareous fabric with moderate, medium and very large calcareous inclusions. In Fabric B, but from a late medieval context (102, Phase 5).
- T5.** (Plate 14). An overfired ridge tile in MEL type Fabric (oxidised orange) with an overfired green lead glaze over the whole upper surface. The crest has come away following firing and this shows the method of attachment; a 13–15mm hole has been punched through the tile, presumably to receive a lug from the crest that was made separately.
- T94.** (Plate 15). Two ridge tiles fragments fused together by a green lead glaze. The tiles are each 12mm thick and are in a MEL B Fabric.

Floor tiles

The site also produced evidence for floor tile manufacture, from Phases 5 and 6. This includes fragments of large tiles from Phase 6, as well as two complete examples of two sizes of smaller tiles from context 102 in Phase 5.

Smaller, thicker, undecorated square floor tiles like these are very much characteristic of the 15th to 16th centuries on ecclesiastical and monastic sites. They normally possess a thick, single colour glaze. The fact that these examples do not, but instead have no glaze or a partial and failed glaze, as well as their irregular shape, suggests that they are indeed wasters.

- T95.** Around 50% of a floor tile 25mm thick with chamfered edges in a version of MEL Fabric B. The tile was a minimum of 110mm across and probably rather larger.
- T22.** A small fragment of an unglazed floor tile 25mm thick with chamfered edges in an oxidised MEL Fabric A or B.
- T1.** (Plate 16b). A floor tile in an orange-brown LMEL type fabric 119 x 116mm across with irregular sides, and 15mm thick, with chamfered edges. It has a sanded base on which there is a paw print of a cat. It has a partial and incompletely fired lead glaze on the upper surface and is probably a waster.
- T3.** (Plate 16a). A floor tile in a very smooth LMEL-type fabric 95 x 95mm across but irregular in shape, and 21mm thick with chamfered edges. It has an overfired lead glaze on its upper surface and is probably a waster.

Fragments of uncertain function

A number of pieces of thick CBM were recovered from Phase 1 contexts which are very similar and represent an unrecognised functional type. A further piece was found residually in Phase 6 (K13). These fragments are much thicker than normal 'tiles' and do not possess the general characteristics of shape and fabric of early bricks from the region. They are made in a MEL type fabric and are usually stabbed, presumably to avoid cracking during firing as with many MEL jug handles and rims. If these pieces were part of the kiln structure they might be expected to exhibit more evidence of repeated firing; some are overfired but others not. In addition, even at this early date in the industry, glaze residue would be anticipated on their upper surface, of which there is no trace.

- K13.** This piece (Plate 12) is from Phase 6, but is very like the Phase 1 pieces in Plate 13, and was presumably redeposited in later make-up. It appears to be the corner of a thick tile fragment with a stabbed upper surface in MEL Fabric B. It is 38mm thick.
- K70 and K75.** Two fragments (Plate 13) from Phase 1, in a close approximation to MEL Fabric B with stab marks on the upper surface, probably to prevent cracking. Each piece is a different thickness (K70 is circa 36mm, K75 circa 21mm). One surface of each is flatter than the other and these were probably both on the upper side. Neither has any glaze deposits.
- K15.** A fragment of structural ceramic in a fabric like MEL Fabric B from Phase 1. It is 17mm thick with a non-sanded base.
- K36–39.** A collection of abraded fragments of structural ceramic in versions of MEL Fabric B from Phase 3. Thicknesses are 15mm, 21mm, 22mm and 24mm. All have a definite 'upper' side and one corner is represented.
- K43.** A fragment of stabbed structural CBM in MEL Fabric B, 22mm thick.

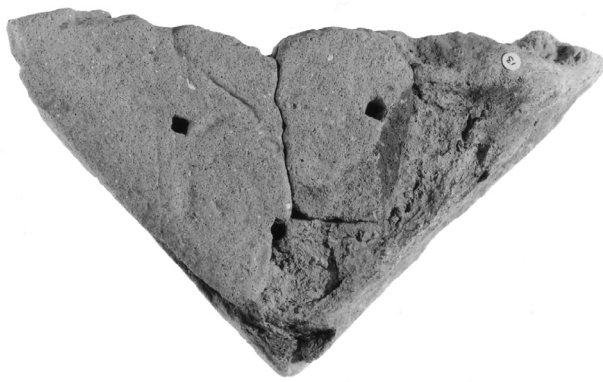


Plate 12 Possible 'kiln tile' fragment K13 in a MEL-type fabric showing stabbed upper surface



Plate 13 Possible 'kiln tile' fragments K70 and K75 in MEL-type fabrics showing stabbing



Plate 14 Ridge tile fragment T5 in a MEL fabric showing peg-hole for a crest that has become detached



Plate 15 Two ridge tiles in a MEL fabric accidentally fused together by a green lead glaze during firing



Plate 16 Floor tiles T3 (a: left) and T1 (b: right) in an LMEL-type fabric

VI. Discussion: the Potters Lane Assemblage, its Affinities and Dating

The ceramic assemblage from Potters Lane represents two 'types' of pottery that are now called Medieval Ely ware (MEL) and Late Medieval Ely ware (LMEL). There is no doubt that the full range of medieval pottery production in Ely, in terms of date, fabrics, forms and decoration, offers a much wider picture than that presented here. It is, however, only by starting with specific groups (in this case two waster groups from one small site), that the wider issues relating to Ely wares can be tackled: Part II of this publication presents a wider assessment of the production and distribution of Ely wares that introduces data from other sites in Ely and from the region as a whole.

The medieval pottery production site that is geographically closest to Ely is the recently published waster group from Colne, Cambridgeshire (Healey *et al* 1998). At Colne, Healey identified three fabrics (Fabrics A, B and C) with the first two showing much similarity with MEL and LMEL, albeit usually slightly smoother. Colne C is hard-fired and oxidised and believed to be 15th to 16th century in date. Healey is noticeably reticent in offering dating for these wares. From the published information, however, it appears that Colne A may start in the late 11th or 12th century and that it overlaps in date with Colne B production which may span the 13th to 14th centuries. The early date for Colne A is, however, based solely on the presence of 'ginger jar' forms that can be either Late Saxon or late medieval. The other forms of Colne A appear similar to those of Colne B and could also easily be 13th to 14th century in date. The forms of Colne A and B include bowls with everted rims that are similar to MEL examples and jugs that are generically similar, but by no means identical. The classic LMEL bowl form, with everted, internally collared, rim and rounded/everted body has approximate parallels in Colne B and C. Jug handles are both rod and strap forms in Colne A, as with MEL, and in Colne C they are a strap form which by this time has a central groove, a feature also common in LMEL at this time. None of the Colne wares have, however, the stabbing and slashing so common on MEL bowl rims and jug handles. There is virtually no decoration of any kind on any of the Colne pottery, except for some possible sgraffito Colne C. All Colne products are wheelmade, whereas most MEL is handmade. It thus seems that, although Colne A and B ware pottery is similar in its fabric, the forms are often rather different.

Colne was recognised by Healey as being rather like the products of the Bourne industry (south Lincolnshire). Although the production sites are not published, excavation of significant amounts of Bourne pottery in Peterborough (Spoerry and Hinman 1998) seems to support this assertion, but this material is no more like Ely wares than Colne is. Other production sources to the north and west also do not offer useful comparison with Ely products.

It is in Norfolk and, to a lesser extent, Essex, that the best comparisons for Ely pottery can be found. The most direct comparison with Medieval Ely ware from Potters Lane is the so-called Grimston Software from excavations at King's Lynn (Clarke and Carter 1977). In Part II of this volume scientific and petrological analysis of pottery fabrics confirm that Grimston Software is in fact Medieval Ely ware. Grimston Software was given that name

because of obvious similarities between it and the usual Grimston industry products as originally described at Lynn (Clarke and Carter 1977) and in Norwich (Jennings 1981). These fall into three general areas; glazed jugs, bowls that are unglazed initially and glazed subsequently, and unglazed jars. The latter at least are now recognised as being the products of a number of other sites in rural north Norfolk as well as Grimston, something first flagged up by Jennings who, in the Norwich report, described much unglazed pottery as 'local' rather than purely from Grimston itself (Jennings 1981). The Potters Lane assemblage did not produce a large number of jars, and those that were identified are generally fairly unremarkable rounded vessels with sagging bases and everted rims. Wavy line combed decoration and incised lines on the outside of the rim were present. This does not provide a very precise description, but it could easily match some of the products of the Norfolk rural industries of the 12th to 14th centuries. Current appreciation of the form and decoration of MEL and LMEL bowls is much better. The Norfolk industries offer some parallels, but it is in Essex where the most comparable material for the early bowls is found (*e.g.* at Mile End; Drury and Petchey 1975). True Grimston ware jugs, particularly the highly decorated examples from the 13th and 14th centuries, are again not a very good parallel for Potters Lane Medieval Ely ware, however, a range of 'local' unglazed jugs, described in the Norwich report and probably deriving from a number of rural producers between Norwich and Lynn, offer a better parallel. It is the later Grimston jugs, glazed but not usually decorated, that are closest to LMEL vessels (*e.g.* in Clarke and Carter 1977, Jennings 1981 and Leah 1994).

The plastic decoration of Ely ware — the stabbing, slashing and thumbing — has its best parallels at Chilvers Coton in Nuneaton (Mayes and Scott 1984), but a range of producers in Essex and Hertfordshire (see below), provide closer examples of some traits, with a little comparable material closer to home in Norfolk (*e.g.* at Langhale; Wade 1976). Hertfordshire Greyware has similar decoration (*e.g.* as found in St Albans; Havercroft *et al* 1987), using more thumbing but combining this with the stabbing and slashing, particularly on jug handles. Products of industries in Essex at, for example, Mile End (Drury and Petchey 1975) and from excavations at Writtle (Rahtz 1969) demonstrate similar traits, although not as flamboyant as in Hertfordshire or at Ely. All of the sites mentioned show examples of bowls that have some similarities in form with the MEL bowls, but nowhere else is the very characteristic rim stabbing present. Furthermore a number of sites have examples of late medieval bowls with a similar 'flanged rim' form to that characteristic in LMEL, but in most of these it is only an occasional form. Interestingly the one exception found to date is at Norwich, where LMT ware bowls offer a close approximation to those in LMEL (Jennings 1981, fig. 24). This ware is described as being more red in colour than Ely ware, and the volume of vessels present in Norwich may be explained by closer proximity to the production centres in north Suffolk (Anderson *et al* 1996), although there are undoubtedly close similarities with LMEL bowl forms. The LMT bowls are at the 'medieval' end of the LMT sequence, and probably have a date in the bracket *c.* 1450–1550.

This brief assessment of parallels unavoidably leads to the conclusion that the Potters Lane vessels owe aspects of their form and decoration to influences from the whole region to the east and south of Ely, and less so to the north and west, although, conversely, it was at Colne, and maybe Bourne, Lincs, that the closest comparable fabrics were made. In addition there is much in the vessels from Potters Lane that is unique and not borrowed wholesale.

There are also problems in the dating of the pottery production at Potters Lane. The site itself offered little opportunity to provide dates through use of other artefactual data. A few sherds of pottery manufactured elsewhere were associated with the Ely wares on the site. These include glazed Grimston jug sherds in Phases 2, 4 and 5, a Sible Hedingham glazed jug sherd and another micaceous sherd from Essex in Phase 4 and a sherd of Brill glazed ware in Phase 5. The rather simple MEL jar forms found at Potters Lane might suggest an early date, perhaps starting in the 12th century, from parallels elsewhere (e.g. Fabrics 12 and 13 at Rivenhall; Drury 1993). In general, though, these few examples provide no new information, and do not refute a general date of late 12th/13th to early 14th century for the Phase 1 production and in the 15th century for the Phase 5 production.

The only published site that provides Ely ware with dating independent of the pottery itself is Denny Abbey (Coppack 1980). Assemblages of pottery are presented that have been dated by association with the dated and documented construction of parts of the monastic buildings. This relies, of course, on the association between particular physical remains and documented works being correct, something that cannot be assessed or criticised here. If the dating is assumed to be correct, and it is accepted that Coppack's Brown Gritty ware is Ely ware generally, then he has it appearing in the first dated phase (1159–1170) and present in the next (1167–1200). There is then a gap in the dated sequence of more than a century, but it is still present in the next two dated groups that are both within the period 1324–1342.

This information may suggest that the start of MEL production should be placed in the third quarter of the 12th century, or slightly earlier. The MEL vessels that are present in these 12th-century contexts are all jars and jugs, the latter including a stabbed strap handle and a complete profile of a rounded jug with a flattened rim, flat base with thumbed 'feet' and a plain rod handle. If the Denny Abbey dating is correct, then a range of MEL forms that appear to be 13th- to 14th-century in date could have first appeared in the middle part of the preceding century. This evidence must be considered, but in the absence of good data from elsewhere, it may for the time being be more appropriate to view Medieval Ely ware as being *possibly* this early, but more usually the types represented here should be given the date range c. 1200–1350 or 1400.

The 14th-century deposits from Denny Abbey (1324–1342) contain a range of Ely-type vessels that include jugs and jars. They show some traits present in MEL at Potters Lane, but are more like LMEL types. This may suggest that the LMEL tradition should be viewed as starting in the early 14th century, but again caution should be adopted in assuming documentarily-derived dating from one excavation is correct and gives a complete picture. It may be more appropriate to assign a generally '15th-century' date for LMEL production at Potters Lane,

but bear in mind that it may become apparent that some LMEL types start in the early 14th century.

VII. Conclusions

The Potters Lane assemblage represents two 'snapshots' in the production of Ely wares. Each is probably in the main the product of one potter or one kiln, at one time. There may have been other potters active elsewhere on Potters Lane or within the 'lower town' of Ely who were making slightly different vessels using slightly different clays at the same time as these potters were active. There may also have been near continuous production of Ely wares throughout the 13th to 15th centuries. This assemblage is therefore a fragment of the real output of what was probably a local tradition of manufacture shared by several producers over three centuries or more. The excavated fragment is nonetheless internally consistent in terms of raw materials used, and contains a reasonably wide range of vessels and decorative forms within which the *common* and the *individual* are both recognisable. Chemical analysis (see Chapter 4) has confirmed differences from, but general similarity with, Ely wares from another site within the town supporting the interpretation of this assemblage as a part of a wider picture.

The Potters Lane assemblages are dominated by jugs and bowls, with jars comparatively uncommon and large storage vessels not present. This suggests that the output was only intended to satisfy part of the local ceramics market during each production phase. In particular, jars used for cooking were generally made elsewhere in the early period. Raw materials were local and there was undoubtedly a major link in the later phase (LMEL production) if not earlier as well, to the production of roof and floor tiles, quite possibly in the same kilns as the pottery.

Styles are generally conservative, although one highly decorated sherd (Fig.7, No.25) hints at 13th-century flamboyance, but probably in another Ely ware producer as it is not repeated here. In addition the one decorated LMEL piece (Fig.11, No.52) has all the hallmarks of a one-off, a trial piece. Decoration in the earlier period, specifically the stabbing and slashing combined with thumbing and wavy line decoration, is of a type that is common in the medieval period in general, but not common in the East Anglian region. Essex and Hertfordshire offer some comparable traits, although it is in the Midlands, and Chilvers Coton in Nuneaton in particular, that the best array of like material for the 13th to 14th centuries can be observed (Mayes and Scott 1984). The later group shows formal similarities with both later Grimston glazed jugs and LMT ware bowls from Norfolk (Jennings 1981).

The Potters Lane assemblage was discovered at an important time in the investigation of Cambridgeshire's medieval archaeology. Ely wares have been sourced through the recognition of these waster groups, just at the time that a post-PPG16 explosion of excavation has occurred in the towns of the fenland and its rivers. This has thrown up Ely-type pottery across the town of Ely itself, but also in all of the other major centres. Potters Lane was, of course, well-placed to use the new cut of the River Great Ouse that was present by the 12th century (Coles and Hall 1994, 136) and which precipitated development in the

lower town. It is easy to envisage how the manufacture of low value high bulk commodities such as pottery and tile would gravitate towards an edge of settlement location that was nonetheless part of a rapidly expanding inland port town, and only 200m from the hithes themselves. It is interesting to consider how the whole *overland* journey of

vessels made at Potters Lane and transferred to barges for sale in the main markets at Cambridge, Lynn, Peterborough or Wisbech, would never have been more than a few hundred metres in total.

Part II
**The Characterisation of Ely Wares and a Study of
their Distribution**

by Paul Spoerry with contributions by Alan Vince

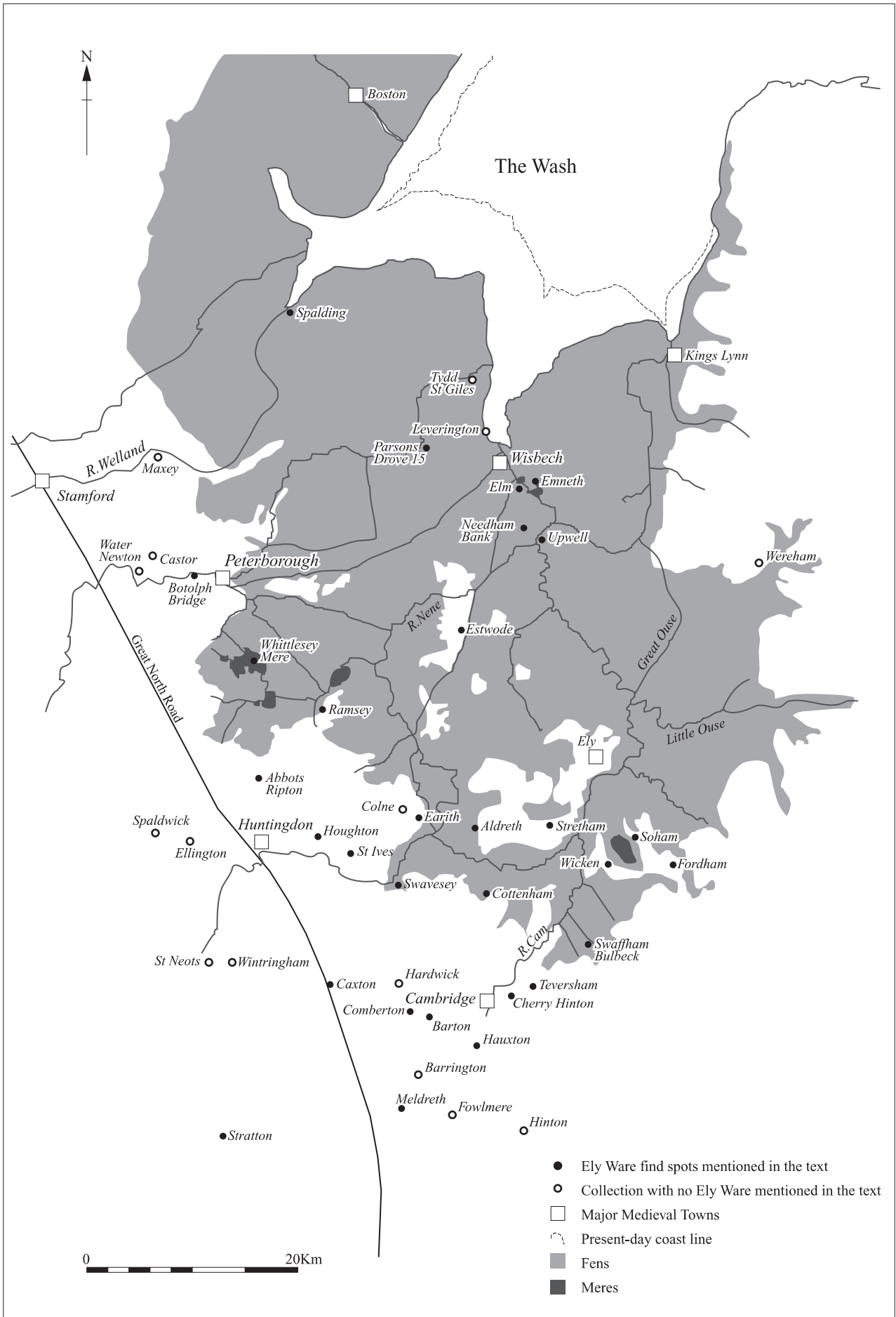


Figure 12 The study area: collections and assemblages assessed. Scale 1:500,000

Chapter 3. Introduction

I. Background to the Study

The two Ely pottery types discussed here are Medieval Ely ware (MEL), dating perhaps to the period 1200 to 1350/1400 and Late Medieval Ely ware (LMEL), dating to the period roughly 1400 to 1500. Together these terms cover all fabrics currently recognised as medieval products of pottery kilns at Ely. It is possible that pottery of a very similar type was also made at locations outside Ely, although still within the southern fenland (Fig.12). Such vessels were closely linked to the tradition of manufacture at Ely, although prior to this study they have not been recognised by eye. It is only through study of thin sections and their chemical make-up that their existence has been recognised and only subsequently has visual study revealed that it may often also be possible to discriminate between these vessels and true Ely wares. The further implications of the presence of this material are discussed at the end of Chapter 4.

Medieval Ely ware was first described in formal publication by the author (Spoerry 1998), but was first awarded its name and provenance concurrently by both the current author and David Hall in 1995. The discovery of medieval waster groups during evaluation trenching by CAM ARC at Potters Lane, Ely in 1995 (detailed in Chapter 1) coincided with large scale excavation by the CAU at Forehill, Ely (Alexander 2003), this being the first major excavation conducted within the historic town core. During this project it became evident to David Hall that the medieval pottery assemblage at Forehill was dominated to such an extent by a group of previously unprovenanced fabrics, that these were probably very local in origin. The present author's investigation of the wasters from nearby Potters Lane at the same time resulted in joint recognition of the products of this newly-defined industry.

Following the discovery of 13th- to 15th-century wasters at Potters Lane, and the recognition that the Forehill pottery was on the whole very similar, the author conducted a short assessment of the potential presence of Ely wares in earlier publications. This did not at first involve study of the pottery itself, being purely a reappraisal of the published forms and fabric descriptions. It was soon established that the largest previously published groups of Ely wares were in fact from King's Lynn (Clarke and Carter 1977) and Denny Abbey (Coppack 1980). In the former publication Ely wares of perhaps the 12th to 14th centuries had been recognised as possibly from West Norfolk or Cambridgeshire, but were described as Grimston Software on account of rather questionable similarities with true Grimston wares in both fabric and form. At Denny, only a few miles south of the Isle of Ely, pottery described as Brown Gritty ware showed all the hallmarks of being in fact Ely products. This was interesting because on this site documented events in the complex life of this small monastery had been combined with key construction phases of the buildings uncovered, to provide some very close dates for

several groups of pottery. These groups started in the mid to late 12th century, with Medieval Ely ware apparent at this time (Groups A, B and C), whilst two mid 14th-century groups also produced large amounts of Medieval Ely ware (Groups C and D). The security of these dated phases is apparently very good and thus this one site provided immediate confirmation that Medieval Ely ware production should perhaps be dated to the period 1150–1350 or 1400. In this report, however, the more cautious occurrence bracket of 1200–1350/1400 will normally be adopted for Medieval Ely ware, as the evidence from Denny Abbey is currently uncorroborated and cannot be independently verified. Other sites where Ely ware sherds and vessels appeared to be present were in Cambridge (Addyman and Biddle 1965) and at Cherry Hinton, just outside Cambridge, where two or more complete vessels had been recovered (Hurst and Fell 1953).

As post-PPG16 excavations continued apace in Ely and elsewhere in the fenland basin, Ely wares appeared to be very dominant during the post-Conquest medieval period, but the lack of definition of the fabric and its variants at source hampered interpretation of much of this material at a useful level. The Potters Lane assemblage remained unpublished, being purely an evaluation that had not led to further work and it became apparent that the analysis and publication of this material, providing as it did wasters from two periods of production (13th-14th century and 15th century), was key to the advancement of an understanding. English Heritage were then approached for aid in funding the analysis and publication of the Potters Lane waster groups, to which they gave their full support (Spoerry, Chapter 1). At the same time a representation was made that the phenomenon of Ely wares beyond the Potters Lane groups should also be investigated, to provide some much needed synthesis in a region devoid of recent work of this nature and with a rapidly expanding development programme that was generating many new assemblages from 'consumer sites'. The lack of analysis and synthesis in the region around Cambridgeshire had been recognised in the English Heritage-funded MPRG report on the state of medieval pottery studies in 1994 (Mellor) and this provided a context within which the proposal to study the phenomenon of Ely wares in more detail was given support. English Heritage subsequently commissioned a project design and the project itself was agreed in early 2000, with work taking place from Autumn 2000 to Summer 2001.

II. Scope of the Study

The approved Project Design (Spoerry 2000) provided a complete justification and description of the aims and scope of the project. In addition the project was designed to lead on from the results of the work on the Potters Lane assemblages. The Potters Lane report (detailed in Chapters 1–2) is not revisited in detail in Part II. It is,

however, necessary to outline some key results of this first project. In Chapter 4, the fabric study elements of the Potters Lane work are reviewed, whilst Potters Lane forms and stylistic traits are incorporated in the classification of Ely ware forms presented in Chapter 5.

The project's key aims were the description and definition of the phenomenon of 'Ely wares' and establishing the extent to which the macroscopically recognisable ware variants (several medieval and late medieval fabrics) are indeed the product of kilns in and around Ely only. Thin section and ICPS data have been utilised alongside macroscopic description to provide the fullest possible definition of Ely ware fabrics. The pottery used in these studies is drawn from the town of Ely and from centres across the Cambridgeshire fenland and its major feeder rivers (Figs 12 and 27 and Appendix 2). Owing to lack of time the study of Ely wares in the Lincolnshire fenland has not been taken forward, although its presence north of the River Welland seems, from subjective assessment, to be somewhat limited. For the purposes of this study in many instances site-derived data is purely the presence or absence of Ely wares within excavated assemblages, or where possible rough figures of their contribution to the medieval assemblage. In the case of some excavations it has been possible to provide such figures on a period or phase basis. Where identified

as a minor component, Ely wares are usually given this simple identification only although, where more common, the fabric sub-divisions have been utilised. In many instances it suffices simply to state whether the pottery in question is Medieval Ely ware or Late Medieval Ely ware (see Chapter 4 below and Chapter 2.III) and whether it is very calcareous or not.

At the start of the project a number of sites were selected to provide sherds for thin section and ICPS study. Assemblages were chosen mainly on the basis of ease of access to the material and geographical position of the findspot. Thus groups from most of the major historic centres in the Cambridgeshire fenland were included, along with 'Grimston Software' sherds from King's Lynn, the primary international port of the fenland basin from at least the 14th century and probably earlier (Figure 12). During the course of the project it became possible to analyse some sherds from known contemporary production sites at Bourne and Baston in south Lincolnshire (Vince pers. comm.; Healey 1969). This material is visually very similar to Ely wares and the characterisation of these kiln groups and their comparison with known Ely products and other sherds of uncertain provenance, enhanced greatly the value and rigour of the scientific and statistical analyses.

Chapter 4. Fabrics

I. General Fabric Descriptions and Identifiers

Both fabric descriptions and identifiers are very much as defined in the Potters Lane report (see Chapter 2.III). A concordance table for the various fabrics at Potters Lane as defined by macroscopic and microscopic means is given there (Table 1): this serves as the best definition of the identifiers that should be used for Ely wares as a whole. When dealing with whole vessels without breaks, it is not usually possible to make identification beyond the level of MEL or LMEL unless there is a high proportion of calcareous temper. Most sherds can be grouped by eye and/or low power microscope into MELCO, MELS, MELC, LMELS and LMELC, as an approximate shorthand for Fabrics A to F (there being two MELC fabrics). The fabrics themselves are the best described units but, as identifiers, are unlikely to be utilised in most routine recording.

II. Potters Lane and Forehill Fabric Analysis

The Potters Lane report (Chapter 2) includes thin section and ICPS analysis of fabrics from the site's waster groups, with sherds chosen for examination that reflect the widest possible range of visually apparent variation, whilst still retaining a solid characterisation of the most common types. Thin section study (Vince in Chapter 2 and Appendix 1) demonstrates that there are five types present (visual identification had provided four), three being from the earlier production phase and two being later. It also shows that, although there are small petrological differences between the two phases of production, in essence all five types described are petrologically very close. This study was rendered more useful following a comparison of the thin section results with sections taken from pottery from the CAU excavation at Forehill, Ely (Hall 2003). The pottery at Forehill, believed to date from the 12th century through into the late medieval period, could be grouped macroscopically and through thin section study, into three fabrics, only one of which (Fabric B) was directly comparable with the Potters Lane material. Fabrics A and C, although generally fitting the wider Ely ware tradition of form and fabric, were not made from exactly the same raw materials as the Potters Lane fabrics. The complete dominance of Ely wares at Forehill and all other sites in the city would seem to demonstrate conclusively that the majority of this material must have been locally manufactured. The results of this study therefore indicate that Potters Lane is only one element within the tradition of manufacture in and around Ely, which is not surprising since the excavated kiln material consists of two time-limited production events on one tenement.

ICPS analysis of the same sherds from Potters Lane and Forehill supported most of the suggestions made through study of thin sections. In addition, although Forehill Fabric B was found to be most like the Potters Lane material, even this was still separable on the basis of

chemical content using multivariate principal components analysis. The conclusion is that Forehill Fabric B was made from similar raw materials, and prepared and fired in the same manner as the Potters Lane vessels. Forehill Fabrics A and C, on the other hand, were made using slightly different raw materials and perhaps slightly different methods to the Potters Lane vessels, but are still in the same tradition, with the same general ware intended.

The Potters Lane and Forehill data were utilised in this project alongside that obtained for sherds from other locations.

III. Thin Section and Inductively Coupled Plasma Spectroscopy Programmes

by Paul Spoerry and Alan Vince

Following the work described in Chapter 4.II, a thin section and ICPS-based description and provenance programme was conducted on macroscopically defined Ely ware from a range of consumer sites across the Cambridgeshire fenland, and on examples of 'Grimston Software' from King's Lynn. In addition waster sherds from the visually similar but geographically distant production sites at Bourne and Baston in south Lincolnshire were also analysed.

Scope of petrological analyses

From the thin section work, petrological descriptions of the main Ely ware variants have been compiled. These are described in detail in Chapter 2.III, while summary definition and description is given here for ease of reference.

Table 5 provides petrological summary descriptions for all Ely ware fabric variants recovered from the Potters Lane waster group. It will be apparent from this table that, MELCO aside, there is little recognisable petrological variation between these macroscopically described fabric types.

<i>Macroscopic fabric name</i>	<i>Petrological fabric name</i>	<i>Acronym for petrological name</i>
Medieval Ely Ware: 13th to 14th century (MEL)		
Fabric A	Standard Medieval Ely ware	MELS
Fabric B	Calcareous Medieval Ely ware	MELC
Fabric E	Calcareous Medieval Ely ware	MELC
Fabric F	Coarse tempered Medieval Ely ware	MELCO
Late Medieval Ely Ware: 15th century (LMEL)		
Fabric C	Calcareous Late Medieval Ely ware	LMELC
Fabric D	Standard Late Medieval Ely ware	LMELS

Table 5 Concordance of fabrics from Potters Lane as defined by macroscopic and petrological means

The next stage was the study of forty-two sherds of certain or possible Ely ware fabrics from consumer sites around the Cambridgeshire fenland, and of Grimston Software from King's Lynn. To these sherds were added ten wasters from Bourne and Baston in south Lincolnshire, the visually most similar material from another known source in the region. Two sherds of the possible Ely wares from consumer sites had also been identified as possible Bourne products (from Botolph Bridge near Peterborough), whilst one sherd was deemed either a Grimston or Ely ware (from Market Mews, Wisbech).

Thin section results and interpretation

(see Table 5 and Appendix 1)

Ely wares from consumer sites: a broad petrological description for Ely wares generally

Almost all of the sherds from consumer sites that had been provisionally identified as Ely wares proved to be petrologically very similar to the Potters Lane fabrics. The descriptions in Table 5 are thus confirmed as valid for most examples of Ely wares, regardless of findspot. A more general petrological description for Medieval Ely ware as a whole has also been provided below, through the inclusion of the consumer site data. Thirty-eight samples from consumer sites contained the same range of inclusions as those from Potters Lane.

General petrological description of Ely wares (includes MELS, MELC, LMELS and LMELC)

Abundant subangular quartz with sparse larger rounded quartz grains, some with definite characteristics of quartz from the Greensand and similar Cretaceous deposits; sparse rounded opaque grains; sparse rounded stained flint and angular fresh flint; sparse rounded chalk fragments; rounded nacreous bivalve shell (non-ferroan calcite), sparry ferroan calcite (cement from a limestone), ferroan calcite microfossils; non-ferroan calcite shells of inoceramus and/or similar large flat molluscs and a range of minor inclusions. These include echinoid shell and spines, fossil bone and lower Greensand chert. Altered glauconite grains were noted in a few sections, but almost always as single grains. Most of these sections had carbon-rich fabrics with thin oxidized margins and surfaces and very few had any evidence for variegated clay matrices (six sections in total). Comparison with the Bourne and Baston wares indicates that the calcareous inclusions in those wares is probably of Jurassic origin (as befits their source) and thus it is the presence of chalk which is distinctive of MEL. There were a few sections where chalk was either definitely never present or where the calcareous inclusions were too badly altered by firing for positive identification. These are listed in Table 8 in Appendix 1.

Other petrological variants believed to be Ely products

Coarse tempered Medieval Ely ware (MELCO)

A single sample of this fabric from consumer sites was submitted for thin section study (V831), and matches the one sample of this fabric identified at Potters Lane (V635). In addition, however, another three sherds have characteristics in thin section which enable them to be assigned to this fabric: V826, V830 and V840. The flint in V840 was angular and fresh unlike the rounded, stained flint in the other three samples. This fabric also contained a fragment of Lower Greensand chert. Only one sample had laminae of different colour clays and two have the carbon-rich cores which at Potters Lane were typical of Late Medieval Ely ware. With these exceptions, the sherds all had similar characteristics to each other and to the one sample of this fabric from Potters Lane.

Following receipt of thin section results the macroscopic appearance of these sherds was reviewed to consider whether they were indeed recognisable by eye:

- V831. Jubilee Terrace, Ely. This was recognised as MELCO at the outset. The petrologically described gravel is obvious to the eye.
- V830. Jubilee Terrace, Ely. Visually, this is at the coarse end of the MEL spectrum. The gravel is less evident, being smaller than in V831.
- V826. Lisle Lane, Ely. This has a pimply surface but is not very different to many sherds that would be classified as MEL.
- V840. Market Mews, Wisbech. This has smaller amounts of gravel. Again this would normally be at the coarse end of a general continuum of MEL types.

In conclusion, MELCO has been shown to be petrologically distinct, owing to a coarse gravel component (primarily rounded quartz sand and stained flint as described in Appendix 1). This is an obvious visual feature in some sherds, but the gravel is less common and smaller in other pieces which otherwise would be classified as MEL. Coarse sherds need more scrutiny (low power microscope) to determine whether the inclusions are purely quartz sand or in fact a mixture of large quartz, red opaques and rounded flint as in MELCO.

Ely-type ware (MELT)

In addition a further eight of the consumer site samples appeared to have a finer textured quartz sand than found in the Potters Lane sherds, but were otherwise petrologically similar. This group includes all five samples taken from Ramsey Abbey, and in addition one each from sites in Huntingdon, King's Lynn and Wisbech. These may derive from a separate source and may not in fact be an Ely product, although it is equally possible that they were made with slightly different materials, by other workshops in and around the city.

It is tempting to speculate that, if any other producers were manufacturing another version of an Ely ware (whether complimentary in distribution or as a rival), then the obvious alternative source within the southern fenland would be on a property associated with another great landowner. Besides Ely Abbey, the greatest owner and administrator of the southern fenland was Ramsey Abbey, the site of which is the source of five out of the eight sherds of this ware that have been petrologically defined. It would be interesting to establish whether the distribution of this Ely-type variant echoed in any way areas under the influence of this great monastery. As can be seen in Chapter 4.III below, four of the five sherds from Ramsey Abbey have also proved to be chemically different, albeit slightly, from the wasters and other pottery from Ely, strengthening the suggestion of a Ramsey-based production centre for an *Ely-type* ware.

Grimston Software from King's Lynn

Four of the five samples of this fabric from Lynn (Clarke and Carter 1977) proved to be petrologically comparable with Ely wares, one being in the Ely-type ware group described above. This very much supports the original assertion by the author that initiated this whole study, that Grimston Software is in fact Medieval Ely ware.

Non-Ely products

(Appendix 1, Table 8)

The thin section and ICPS studies provide an interesting check on the validity of macroscopic identification and description. Where the scientific analyses have thrown up an

unexpected result, it is necessary to review the macroscopic characteristics of the sherds, to determine whether, on reflection, there are visual clues to this variation.

One consumer site sherd was found to be petrologically similar to the sherds from Bourne and Baston (see below). This sherd was excavated at The Still in Peterborough and thus an origin in south Lincolnshire is geographically unsurprising. Perhaps four other sherds from consumer sites appeared not to be Ely products from their petrology, which nonetheless provided no further geological clues to their provenance. Two of these sherds were from Wisbech, one was from Swavesey and one from Ely itself.

- V825. Lisle Lane, Ely. Fairly smooth with fine inclusions and quite a light colouration for MEL. The rim form (triangular and bifid) has not been seen on other Ely jugs.
- V839. Market Mews, Wisbech. Maybe a little light in colouration for MEL.
- V852. School Lane, Swavesey. A fine, hard, jar rim that is much lighter in colouration than most Ely products. Could easily be classed with Colne wares (Healey *et al* 1998) but is visually distinct from most MEL sherds.
- V853. Market Mews, Wisbech. A hard, yellow-buff and pinky-brown, ridged handle that is only a little like standard Ely products. This was added into the analysis as a 'wild card', expected to be different, but needing confirmation. It is visually very like late Grimston sherds, as classified at King's Lynn (observed by PSS in Lynn Museum 2001).

In conclusion, only occasional sherds are petrologically distinct from Ely products, as defined by the Potters Lane and Forehill assemblages. A rule of thumb might be 'a lighter colouration increases likelihood of a sherd not being a true Ely ware', however, the early phases at Forehill were characterised by numerous lighter sherds, suggesting this may not apply in the 12th century. Overall in only two or three sherds out of the forty-two sampled is the petrological difference not supported by any visual feature of the fabric. This suggests that in most of the Cambridgeshire fenland at least 90% of sherds that are macroscopically identified as Ely products will in fact prove to have been made in or around the town if thin sectioned. Bearing in mind that the Potters Lane and Forehill groups are only two 'snapshots' of Ely wares from Ely, it is also probable that there is much variation inherent in true Ely products beyond that described by these two groups.

Bourne and Baston

The full petrological description of Bourne and Baston wares can be found in Appendix 1 and will not be repeated here. Only one of the consumer site sherds matched this petrology — V817 from The Still, Peterborough. The key features distinguishing sherds from these more northerly kiln sites from those made at Ely are mostly only recognisable through thin section. The types of inclusion are on the whole rather similar, but it is the detail that separates the two wares. The only features that might normally be recognisable in the hand specimen are the absence of chalk in Bourne/Baston samples and the purple-stained colour of most calcareous inclusions. Differences between flint or chert and of the type of quartz grain are generally difficult to observe.

- V817. The Still, Peterborough. This was petrologically confirmed as probably Bourne or Baston which makes geographic sense. Visual reconsideration reveals that the core is less dark than is often the case with MEL and there are few obvious calcareous inclusions. Despite this, it would be very difficult to be sure whether it was a Bourne/Baston or an Ely product on visual character alone.

ICPS chemical analysis results and interpretation

A full account of the ICPS analyses on which this section is based is included as Appendix 1. This section provides a summary of the general results, and considers in more detail those sherds that did not prove to be chemically similar to the Medieval and Late Medieval Ely ware wasters from Potters Lane, (Part I, this volume) or two Ely ware fabrics from Forehill (Hall 2003).

Inductively Coupled Plasma Emission Spectroscopy (ICPS or ICP-AES) is a standard technique of chemical analysis that has been successfully applied to archaeological material, especially ceramics, for two decades (*e.g.* Hart and Adams 1983). Through spectroscopic analysis of the ceramic fabric in solution measurements of a huge range of metals and metal oxides, in parts per million, can be made.

As many data points are provided for each sample measured, analysis beyond simple checking procedures of a number of indicator elements has to be conducted through use of computer packages utilising multivariate statistics. In this instance a range of principal components analyses were carried out on the samples. This work is described in more detail in Appendix 1.

Background

Twenty-eight samples of wasters of Ely wares from Potters Lane were analysed for elemental composition and this data was compared with that previously recovered for twenty-two samples of Ely wares from excavations at Forehill, Ely (Alexander 2003; Vince 1999). In addition the Ely wares data was compared with that for five samples each from the production sites at Bourne and Baston in south Lincolnshire, and with five samples of 'Grimston Software' excavated at King's Lynn, all of which have a similar visual appearance to Medieval Ely ware. A further thirty-seven samples of Ely wares from 'consumer sites' in Ely itself, Huntingdon, Orton Longueville, Peterborough, Ramsey, Swavesey and Wisbech (see Table 6) were also analysed and comparisons made. The majority of these sherds were in fact from MEL rather than LMEL vessels. This temporal distinction is not always evident at the petrological thin section level, and not apparent at the level of chemical composition. Throughout these analyses, therefore, the data have been assessed only on the basis of likely provenance, and do not also take into consideration temporal phase.

Petrological thin sections were also taken from all 102 samples. The resultant summary petrological descriptions of the Ely ware fabrics have been presented in Part I, Chapter 3.II.

Results

The first phase of comparison was between the Potters Lane production site sherds and those from the occupation site excavated by the CAU at Forehill, a few hundred metres north along the Ely waterfront (Alexander 2003). The Forehill Ely wares had previously been grouped by petrological means into three Fabrics (A, B and C), however, the glauconitic nature of Fabric C tended to suggest an origin outside the Isle of Ely for this material.

The results of the initial principal components analysis on the Potters Lane and Forehill A and B sherds showed that chemical differences between the groups from the two sites do exist (Fig. 13) but closer examination of the data

<i>Ware</i>	<i>Quartz</i>	<i>Rounded Flint</i>	<i>Opagues</i>	<i>Chalk</i>	<i>Glauconite</i>	<i>Others</i>	<i>Groundmass</i>
MELCO (coarse Medieval Ely ware)	Rounded 'Greensand' with some iron-staining	Stained and patinated	Rounded red with matt surface	Sparse	None noted	Fish bone?, ferroan calcite echinoid shell	Laminated
MELS	Mainly subrounded and less than 0.5mm but some rounded 'Greensand'	Sparse	Sparse	Sparse	Altered grains present	Ferroan calcite, non-ferroan calcite bivalve	Laminated
MELC	As MELS	Sparse	Sparse	Sparse	None noted	Chert, sandstone with bivalves	Laminated, possibly more silt than MELS
LMELS	As MELS	Sparse, less than in MELS	Sparse	Sparse	Altered and fresh		Mainly either isotropic or carbon- rich but otherwise like MELS
LMELC	As MELS	Sparse	Sparse	Sparse	Altered	Glauconitic sandstone, bivalve	As LMELS

Table 6 Summary petrology of Ely ware fabrics in the Potters Lane waster groups, Ely

showed that it was Fabric A from Forehill that was most distinct, whereas Fabric B was much more like the sherds from Potters Lane. As can be seen from Fig. 13, sherds of Ely wares from other sites in Ely (in this case ELYJT95) tend to group with the Potters Lane material, whereas the group of outliers from Forehill with high Factor 2 scores are again Fabric A; in chemical terms it is recognisably different from the rest. In conclusion, therefore, Fabric A from Forehill is chemically distinct from the other Ely wares, whereas Fabric B from Forehill has the same composition as the Potters Lane wasters.

Figure 13 also indicates that, using Factor 1, almost all of the sherds of Ely wares are shown to be chemically distinct from the wasters from Bourne and Baston. Further detail with regard to these analyses can be found in Appendix 1. Here differences between Bourne and Baston wares were also revealed.

The second stage of the principal components analysis compared the groups from Potters Lane, Forehill, Bourne and Baston with the forty-two consumer site sherds. The intention here was to indicate to what extent those sherds found in the southern fenland that would normally be

attributed to the Ely industry on macroscopic grounds, might in fact be examples of the visually similar products from Bourne and Baston in Lincolnshire, or might even be from further as yet unidentified production sites.

As is evident from Fig.37 in Appendix 1, one sherd of a possible Ely ware from Peterborough was shown to be almost certainly from Baston. This was sample V817, from The Still, Peterborough. The attribution of this sample to the Bourne and Baston kilns is entirely in keeping with the thin section results.

In addition five sherds of so-called 'Grimston Software' excavated at King's Lynn were shown to in fact be almost certainly made at Ely. Almost all other sherds identified as Ely wares also proved chemically to match the Potters Lane and Forehill sherds, however, as can best be seen in Fig.33 in Appendix 1, four of the five sherds excavated at Ramsey showed slight chemical differences to the Ely material suggesting an origin in another possible production source.

Some sherds from both Potters Lane and the consumer sites had been assigned through macroscopic means to provisional sub-fabrics of Medieval and Late Medieval

<i>Locality</i>	<i>Site name</i>	<i>County</i>	<i>Site code</i>	<i>No. of samples</i>
Ely	Potters Lane	Cambridgeshire	ELYPL95	28
Ely	Forehill	Cambridgeshire	ELYFH95	22
Ely	Jubilee Terrace	Cambridgeshire	ELYJT95	6
Ely	Lisle Lane	Cambridgeshire	ELYLL95	5
Huntingdon	St Germain Street	Cambridgeshire	HUNSTG99	1
Huntingdon	Stukeley Road	Cambridgeshire	HUNSR99	4
Kings Lynn	Baker Lane	Norfolk	KL69 BL	2
Kings Lynn	Marks & Spencer	Norfolk	KL M&S	3
Orton Longueville	Botolph Bridge DMV	Cambridgeshire	ORLBB00	3
Peterborough	The Still	Cambridgeshire	PETTS95	3
lparRamsey	Ramsey Abbey	Cambridgeshire	RASAB96	5
Swavesey	Blackhorse Lane	Cambridgeshire	SWABL99	2
Swavesey	School Lane	Cambridgeshire	SWASL97	3
Wisbech	Market Mews	Cambridgeshire	WISMM96	5
Bourne		Lincolnshire	Bourne	5
Baston	Hall Farm	Lincolnshire	BHF93	5

Table 7 Origin of sherds used for thin sections and ICPS analysis

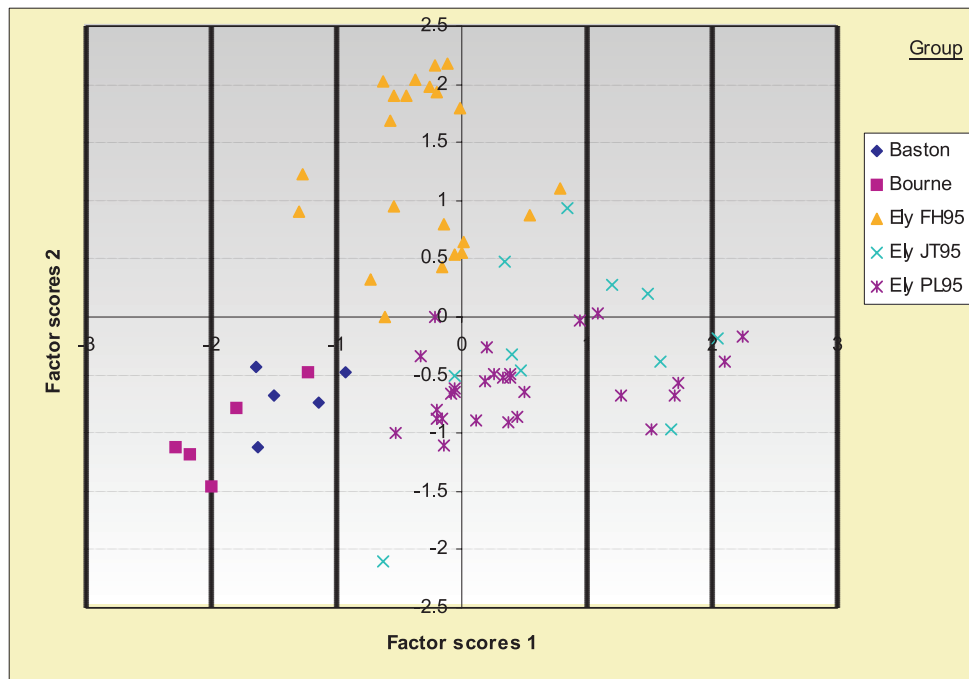


Figure 13 PCA scattergram showing chemical difference between sherds from Potters Lane and Forehill and those from Bourne and Baston

Ely ware; specifically very calcareous and heavily chalk-tempered variants. Although such differences were apparent in thin sections, they proved to be chemically identical to the standard Medieval and Late Medieval Ely ware sherds.

Conclusions of Thin Section and ICPS studies

Even when, as here, a group of sherds from widely varying locations is studied, representing the maximum visual variation possibly assignable to Ely products, the majority appear to match wasters and a single site group from Ely itself.

Petrologically, up to five out of forty-two consumer site sherds are different from the Potters Lane wasters. One of them is definitely from Bourne or Baston in Lincs (sample V817, from Peterborough and thus geographically reasonable). The other four are probably not Ely ware, as defined at Potters Lane and as represented by the Forehill sherds and the other thirty-six samples from further 'consumer sites'. None have recognisable petrology that could point to another geographic source.

Chemically, most macroscopically-defined samples of Ely wares show great similarity. Fabric A from Forehill is a little different to the Potters Lane wasters, and perhaps six consumer site sherds may be more similar to Forehill A than Potters Lane. The majority of the remaining consumer site sherds tend to cluster with Potters Lane and Forehill B. As soon as samples of truly different origin are added into the analysis, (e.g. the Bourne and Baston wasters, see Fig.13) then the relative similarity between sherds of Ely wares, in comparison to those from a kiln in another part of the region, is very apparent.

Grimston Software is shown by both petrological and chemical means almost certainly to be Medieval Ely ware.

Four out of the five sherds from Ramsey may be products from a previously unidentified Ely-type ware producer, perhaps located in the Huntingdonshire fenland. On re-inspection these sherds have fabrics that are perhaps less granular and less organic-rich than typical Ely wares of the same period.

Pottery categorised by eye as Ely wares, of all types, is perhaps 90% of the time likely to prove petrologically a match with the Potters Lane assemblage and the great mass of sherds of Ely wares from other sites around the region. That which does not match may be from Ely, or from another, as yet unknown, producer.

The majority of samples visually categorised as Ely wares are chemically matched with either the Potters Lane wasters or the Forehill group. Those that can be separated are, in reality, still very similar, as demonstrated by their much clearer chemical differences with wasters from Bourne and Baston.

The minor petrological and chemical differences identified through these analyses suggest that sherds visually categorised as Ely wares generally derive from Ely, but there is probably at least one other minor producer in the Cambridgeshire fenland producing vessels in the same tradition, albeit with slightly different raw materials. In addition there is the production at Colne (Healey *et al* 1998) which has some strong similarities of fabric and form with Ely wares. Together these provide a wider Cambridgeshire fenland tradition of manufacture, that has parallels with kilns at Bourne and Baston, Grimston and elsewhere.

Chapter 5. Vessel Form, Technology, Style and Decoration: a Type Series and Catalogue for Ely Wares

Descriptions of pottery forms used here are based as closely as possible on the terms outlined in the MPRG publication *A Guide to the Classification of Medieval Ceramic Forms* (1998). Fabric types are either described, or refer to fabrics as defined in the Ely Potters Lane report (Part I of this volume); thus MEL is Medieval Ely ware and LMEL is Late Medieval Ely ware. In addition for convenience the term Ely wares (not Ely ware), is used as a shorthand here in the description and discussion of forms that are likely to have been present both before and after the mid 14th century. For ease of reference, vessels catalogued for Potters Lane in Part I are re-numbered within the type series below and re-illustrated alongside similar vessels from other sites mentioned in this section. All sherds or vessels illustrated in the type series have been given individual numbers in the type series sequence, but in addition any source catalogue numbers used by their curating institution or relating to their publication previously, have also been included here.

I. Jars

(Figs 14–16, Plates 17–20)

Jar forms include examples of both cooking and storage vessels, ranging in size from 10cm to 50cm at their broadest extent. That only fifteen or so complete and semi-complete examples were identified and presented here might suggest that the jar form was not a major product of the industry, but this assumption would be incorrect. There is good evidence to suggest that numerous jars, particularly those used as domestic cooking pots, were utilised on sites in Ely itself. For instance 31% of rims at Forehill were jars, with 48% bowls and 21% jugs (Hall 2003), whilst at Jubilee Terrace, Ely the percentages were 38% jars, 26% bowls and 36% jugs respectively (Spoerry forthcoming b).

The jars are more often than not in fine to medium fabrics; there are very few if any examples of jars with large amounts of deliberately added coarse calcareous temper, although most have average amounts of small to medium calcareous inclusions (the standard fabric). Since many jars were evidently used as cooking pots, this implies that the addition of coarse crushed shell and similar material was not deemed necessary, or advantageous, in the production of cooking pots at Ely, even though the addition of larger amounts of temper to these forms was a normal trait of medieval ceramic manufacture in general.

In addition it seems highly likely that the origins of the manufacture of Ely wares in the 12th century are in the so-called 'Early Medieval ware' (EMW) tradition. This is exemplified by small to medium-sized handmade jars

with everted rims, often with piecrust decoration, in fine to medium sandy fabric and with variable oxidation conditions exhibited between and on individual vessels. EMW is known from north and west Norfolk and is also seen in south and east Cambridgeshire, and dates to the period 1050–1200. As discussed in Chapter 6 (p.66), it seems likely that one of the centres of EMW production was Ely and in some cases it is very difficult to establish whether early jar sherds should be assigned to EMW or MEL, emphasising how, particularly with jar forms, one develops from the other. Nonetheless, the low number of complete jars held in curated collections is due to factors of use, disposal and curation rather than being an indicator that few jars were made by the Ely potters.

No jars with flat bases have been recorded suggesting that none were wholly wheel-manufactured. Small jars can appear to be entirely handmade, with most larger examples showing signs of hand construction, but turntable or wheel-finishing.

Decoration on jars is very limited. Some medium-sized vessels, particularly of Jar D, have external bands of horizontal incised lines, or rilling. This may be largely a later medieval trait and is often found in combination with short everted rims (Fig. 14, Nos 61 and 62) as seen in other producers such as Bourne (Healey 1969; Spoerry 1998). Pipkin handles (Jar H) can be slashed in the manner of jug handles, but this is essentially practical first and decorative second, whilst some large storage vessels have applied, thumbbed, clay strips, usually vertical only (Jar E). These are again, primarily functional, providing a bracing effect and perhaps to assist carrying when full. Two examples of the latter have been found with thumbbed rosettes, the most complete being from the CAU excavations at Ely Forehill (here Fig. 15, No. 65). This example has the added complication of two vertical loop handles. These large storage vessels with applied strips show similarities with both Thetford ware vessels of the 10th to 12th centuries, and with medieval storage vessels manufactured at a variety of locations throughout the south-east and east midlands from the 13th to 14th centuries. McCarthy and Brooks (1988) illustrate a variety of comparative examples from places such as Tyler Hill in Kent, Hangleton in Sussex, Mile End in Essex, Grimston in Norfolk and the Lyveden-Stanion industries in Northamptonshire. The only very comparable late medieval vessel is from King's Lynn, believed to be a Grimston product and dated to the 16th century (Clarke and Carter 1977, 234, no. 12). One example of Jar E in Medieval Ely ware was found in a group at Denny Abbey closely dated to the period 1167–1200 (not illustrated here), whilst other examples were in much later contexts. The best dated example in an Ely ware is No. 64 (Fig. 15, Plate 19), which was recovered from a wood-lined drain or

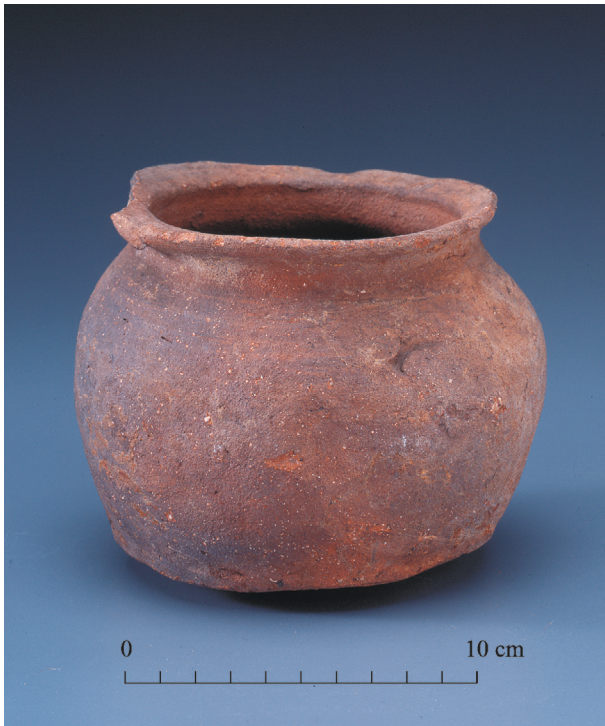


Plate 17 No.54, Jar A. Market Hill, Cambridge
CUMAA 1902.273H

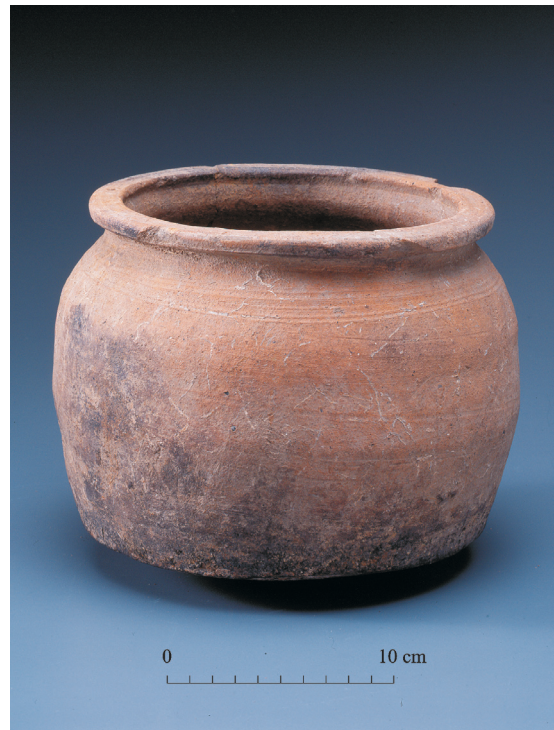


Plate 18 No.57, Jar B. Unprovenanced
CUMAA 60.76

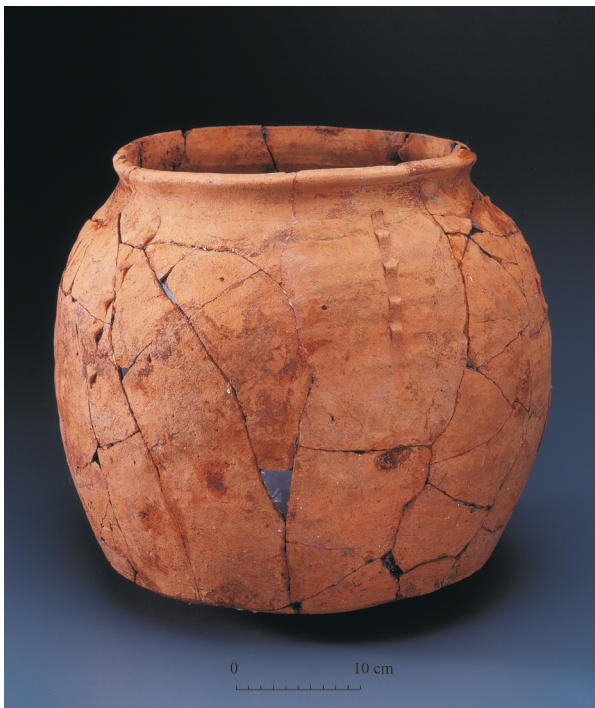


Plate 19 No.64, Jar E. Market Mews, Wisbech
CAM ARC

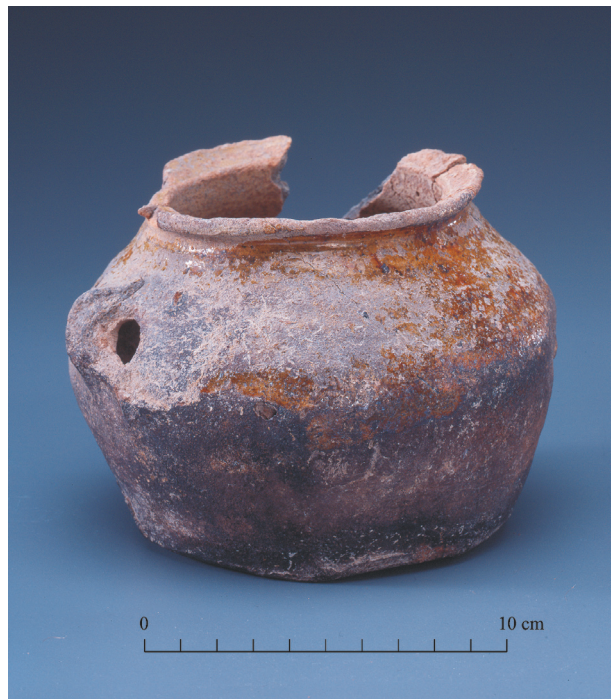


Plate 20 No.68, Jar H. St Peters Street, Cambridge
CAM ARC

cistern in a mid-14th to mid-15th-century metalworker's shop in Wisbech. This feature lay within a well-preserved stratigraphic sequence 3m deep and spanning three centuries which included thirteen phases of occupation separated by layers of silt deposition derived from flooding (Hinman and Shepherd Popescu in prep.). Despite being deposited at this relatively late date, the fabric of this vessel is undoubtedly Medieval Ely ware, perhaps suggesting the retention of the coarse fabric for larger vessels into the late medieval period.

Examples of most small to medium jar forms are found with sooting implying use as cooking pots. These same vessel types are also found without such deposits, and in some instances contain lime scale suggesting alternative use as cisterns, wash bowls, 'kettles' *etc.* A small number of handled pipkins demonstrate that *de facto* cooking vessels were specifically manufactured.

Jar A (Fig.14, Plate 17)

Small handmade and possibly turntable finished, wide, rounded jars. Rims are usually fairly simple, slightly everted: No.55 has an internal bevel. Bases sagging, vessels generally irregularly shaped.

54. CUMAA 1902.273H. Market Hill, Cambridge. Plate 17. Hard-fired calcareous MEL fabric with red-brown surfaces and abundant, fine calcareous inclusions. Very irregular handmade body and an irregular rilling suggestive of wheel-finishing.
55. CUMAA 53.505B. Ely. Classic calcareous MEL fabric with buff-brown surfaces and dark grey core and margins. Handmade, sooted.

Jar B (Fig.14, Plate 18)

Handmade and wheel-finished medium-wide, shouldered jars (No.58 is an inturned variant). Rims are usually flat-topped, clubbed, often with a bevel internally or externally. Bases always sagging.

56. CUMAA A 1908.61. Barton Moats, Cambs. Calcareous sandy fabric in varying shades of grey and brown (core not observed). Handmade and wheel-finished with much sooting.
57. CUMAA 60.76. Unprovenanced. Plate 18. Standard MEL fabric with orange-brown surfaces and dark grey core and margins. Handmade, with neck and rim added on a wheel. Heavily sooted externally with limescale internally.
58. Clarke and Carter 1977, fig.79, no.15. King's Lynn. Oxidised 'Grimston Software' jar with inturned body shape. Perhaps 95% of the Grimston Software sherds observed by the author in these King's Lynn assemblages were without question Ely wares.

Jar C (Fig.14)

Handmade and wheel-finished wide, rounded jars. The rim forms are as Jar B, but this is a rounder-bodied variant.

59. CUMAA 1902.273G. Market Hill, Cambridge. Medium-large jar in a slightly calcareous MEL fabric with buff-brown surfaces and a grey core. The sagging base is lost, but it is burnt and sooted on the sides.

Jar D (Fig.14)

Wheelmade or wheel-finished large and medium jars, either rounded or shouldered, with regular, incised rilling on the body externally and a short, simple, everted rim. The fabric is often fine and smoother than average and would often be classified as Late Medieval Ely ware (LMEL). Some slightly sagging bases in the Ely Potters Lane assemblage have been associated with these vessels, but no complete profile has been recognised to date.

60. Hall 2003, no.49. Forehill, Ely.

This is described as Cookpot type 3 by Hall (everted rim with a hollow on the inner slope). Rilling on the body appears to be a deliberate finish, although perhaps in actuality a by-product of wheel work. Buff fabric.

61. Spoerry, Chapter 2 this volume, No.39. Potters Lane, Ely. Hard-fired, smooth LMEL fabric (C) with brown surfaces and margins with a grey core. Wheelmade with horizontal grooves on body. Partial overfired glaze externally.
62. Spoerry, Chapter 2 this volume, No.40. Potters Lane, Ely. Wheelmade in a smooth LMEL fabric (C) with mid-brown surfaces and margins and grey core. The fabric has some very large calcareous inclusions which have caused splitting and may be unintended.

Jar E (Fig.15, Plate 19)

Handmade and wheel-finished large, wide, rounded jars with vertical, thumbbed, applied strips. One example with two vertical strap handles and thumbbed, applied rosettes. Sagging bases. As discussed above (p.42) these jars have various parallels in form through the Late Saxon to medieval period.

63. Hall 2003, no.44. Forehill, Ely. In darkened buff fabric. This and No.65 below are classified as Cookpot type 1 by Hall, which has a flat-topped and hollowed rim.
64. Spoerry in Hinman and Shepherd Popescu in prep. Market Mews, Wisbech. Plate 19. This vessel is in a medium coarse MEL-type sandy fabric with very occasional calcareous inclusions, with buff-brown surfaces, orange-brown margins and a mid-grey core. It has a partial green glaze internally under a layer of limescale. It is believed to have been used as a cistern in a mid-14th to mid-15th-century metalworkers shop.
65. Hall 2003, no.43. Forehill, Ely. Buff surfaces, partially flaked away, patchy green glaze on upper outer and lower inner surfaces. The additional decoration supplied by the thumbbed and applied rosettes, along with the (probable) paired vertical strap handles, are variations on the standard form.

Jar F (Fig.16)

Wheel-finished, or possibly wheelmade, jar — incomplete but probably a shouldered profile with vertical sides. Perhaps a variant of Jar B.

66. Hall 2003, no.51. Forehill, Ely. Classified as Cookpot type 4 by Hall (everted or flanged rims) the single example provided here is the only near-complete vessel found. The short hooked or everted rim, straight-sided from and fingertip rilling on the body are a combination without any direct parallels, although the vessel shape is most commonly found in the west midlands in the high medieval period (*e.g.* at Chilvers Coton, Nuneaton; Mayes and Scott 1984).

Jar G (Fig.16)

One example known of a very small jar with an upper body carination, perhaps to allow a soft material cover to be attached with twine. This category is reserved for other vessels exhibiting similar body shapes, but not necessarily for very small jars only.

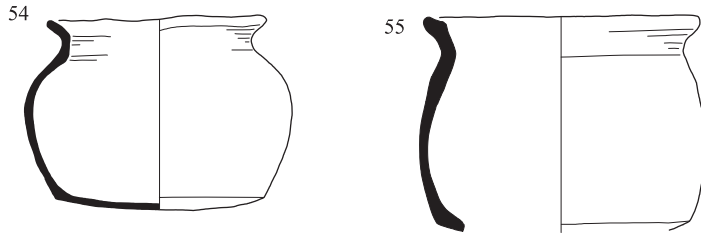
67. CUMAA 1902.273I. Market Hill, Cambridge. A sandy MEL fabric with brown-black surfaces and much sooting. Handmade and wheel or turntable finished.

Jar H: Pipkins (Fig.16, Plate 20)

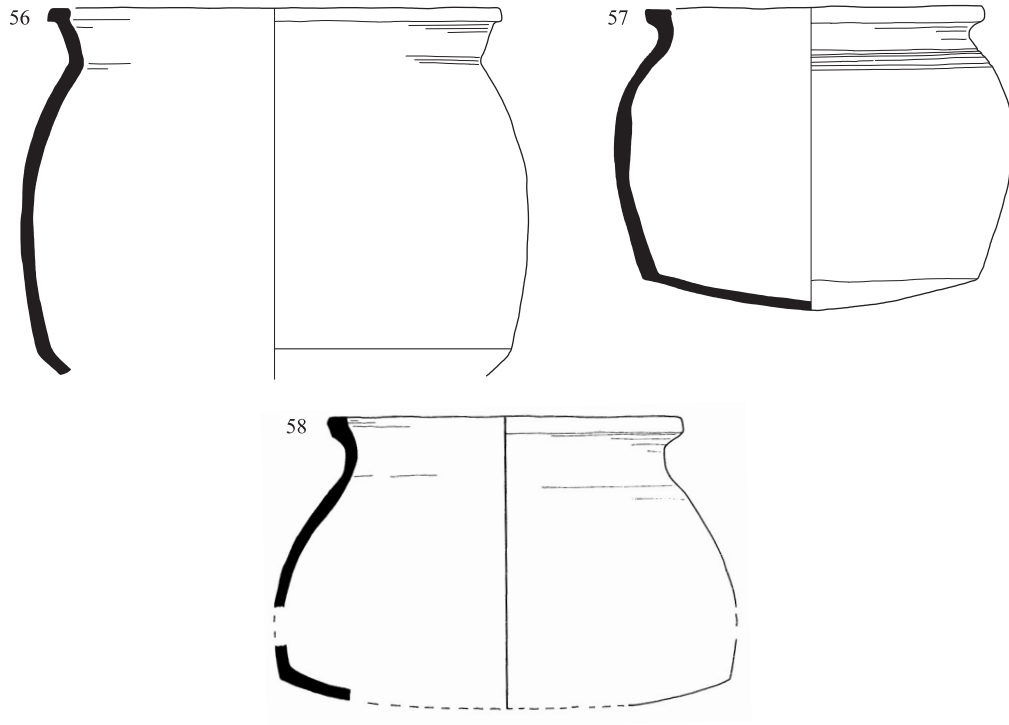
Jars with a straight or curving handle with a single attachment that are specifically a cooking vessel. Two further examples of handles are to be published from the Ely Forehill excavation (Hall 2003).

68. CCC Store at Landbeach. St Peter's Street, Cambridge. Plate 20. Medium biconical jar with handle scar. The fabric is light in colouration, buff-brown surfaces, pink-tinged margins and a

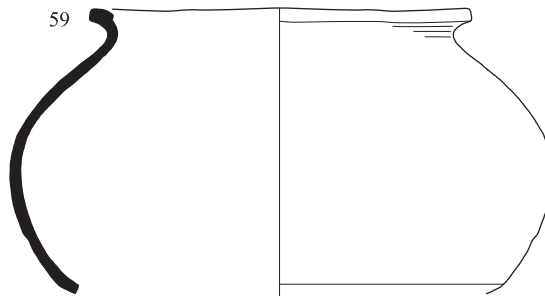
Jar A



Jar B



Jar C



Jar D

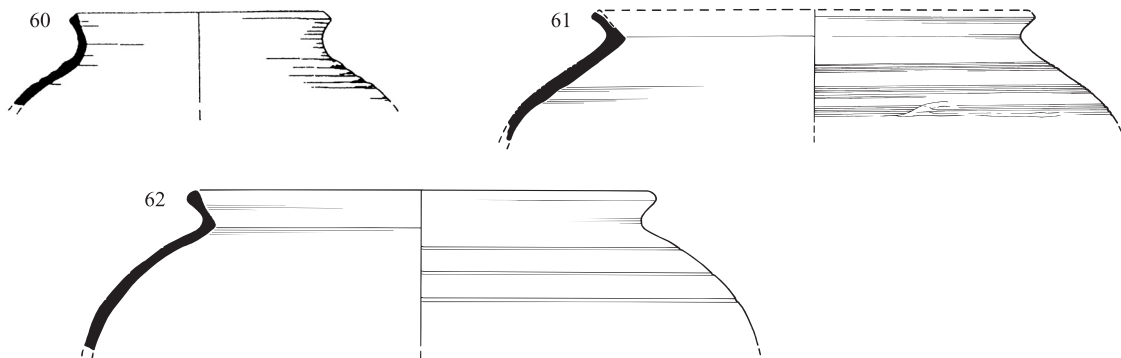


Figure 14 Jar types A to D (Nos 54–62). Scale 1:4

10cm

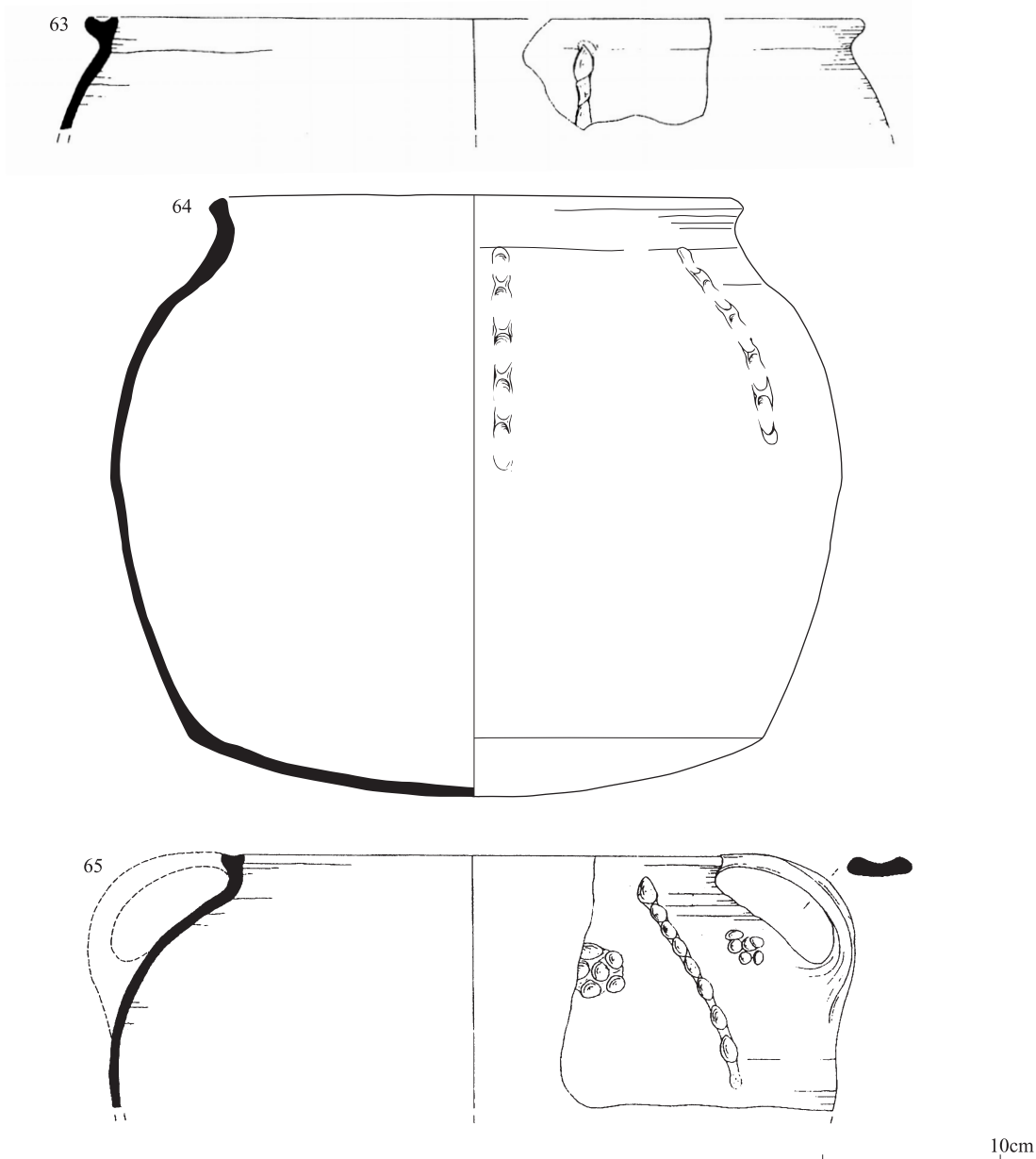


Figure 15 Jar type E (nos 63–65). Scale 1:4

light grey core and has fine quartz sand temper. It has a patchy, glossy green lead glaze on the upper half of the body externally, and has external sooting on the lower half and internal limescale. It has spalled but is quite hard-fired and may well be a LMEL fabric.

69. CUMAA 1902.273. Cambridge, Market Hill.
Large curving pipkin handle in standard MEL fabric, brown surfaces, with sooting. This round-sectioned handle has several lines of slashing to facilitate repeated heating without fracture.

II. Bowls

(Figs 17–20)

It is perhaps strange that the museum collections, particularly that of CUMAA, produced no complete or semi-complete examples of bowls in Ely fabrics at all. Excavated assemblages across the region have generated many fragments, sometimes quite large ones, of Ely bowls of various forms, with dates apparently spanning the whole period of medieval manufacture. Why is it then that

these have not found their way into museums? It is possible that the large and comparatively fragile nature of many bowls, when compared to closed vessels such as jugs, may be responsible. Jugs survive when cracked and/or dumped, whilst bowls tend to be large and unwieldy, and when disposed of or broken they are more likely to collapse under their own weight. Another factor may be that bowls are simply not as attractive or inherently valuable, when compared to jugs, for example, and therefore collection policy is biased against them and the chances of *ad hoc* curation are lessened. It is, however, an extreme situation when, for example the sixty-two fragments of Ely ware vessels worthy of illustration from the Forehill excavation (Hall 2003) include twenty-eight bowls (about 45% of the total and rather high by the standards of any medieval assemblage), but no complete bowls are present in a collection of around fifty Ely vessels (both MEL and LMEL) held by CUMAA. Differential distribution in the medieval period cannot be blamed for

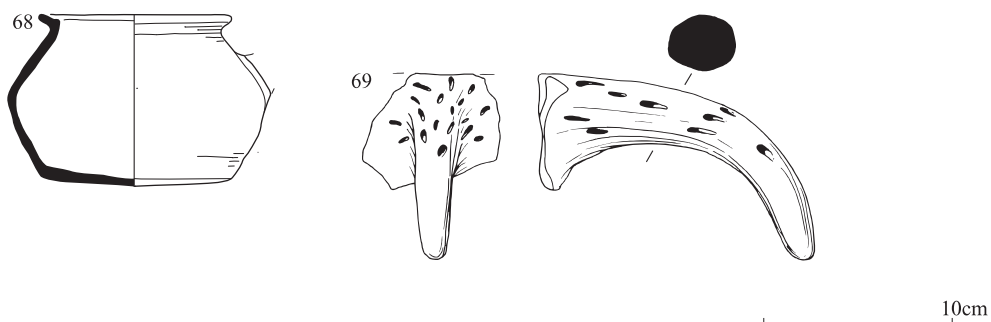
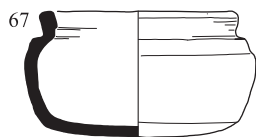
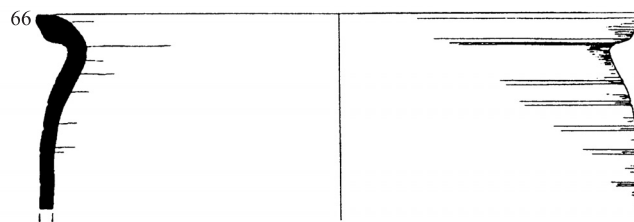


Figure 16 Jar types F to H (Nos 66–69). Scale 1:4

this as bowls are consistently present as the second or third most common Ely component after jugs and sometimes jars, in many excavated collections from across the region. In some instances they can be much more common. Although no actual quantification figures for Grimston Software at Lynn are published (in Clarke and Carter 1977), the vast number of bowl profiles published entirely dwarfs the selection of jugs and jars. A cursory examination of the boxes in store by the author confirmed this dominance of bowl forms. Similarly at Forehill (Hall 2003) bowls account for 45% of the illustrated pieces.

Characteristic bowl forms are often, alongside stabbed and slashed jug handles, the most recognisable products of the Ely industry (see Chapter 6 for more detailed discussion). Large unglazed bowls of flaring or concave form, with simple or everted rims and exhibiting stabbing on the rim (like Fig. 17, Nos 76–79) are the exemplars of the Medieval Ely ware bowl for much of the period. At Forehill, Hall found that Bowl B2 (here Bowl D) was present from the 13th century onwards, with decorated examples starting in the 14th century, although on many other sites decorated Medieval Ely ware bowls have been recorded in apparently 13th-century contexts. Other types of plastic decoration including thumbing on both rim and body, piecrust finger-tipping on the rim and a variety of wavy line decorations, are also common features of these vessels. In the late medieval period the Potters Lane bowl (Bowl I) is equally recognisable, but rather less commonly found.

Bowl A (Fig.17)

Deep flared or rounded bowls with simple or thickened rims.

- 70. Hall 2003, no.41. Forehill, Ely. Dark core, buff with slight darkening on outside.
- 71. Clarke and Carter 1977, fig.80, no.4, King's Lynn. Published as Grimston Software.
- 72. Ratkai 1993, fig.11, no.15. White Hart, Ely. External rilling on body and patchy light olive glaze internally. Fabric C3; medium sandy with very rare limestone, organic and ferruginous inclusions with pale brown surfaces and grey core. This sherd is likely to be late medieval in date.

Bowl B (Fig.17)

Shallow, flared or rounded bowls (dishes) with simple rims, sometimes thickened.

- 73. Hall 2003, no.42. Forehill, Ely. Pink inside, buff outside with muddy light green glaze on the bottom. Also variants with light green glaze on outside.
- 74. Spoerry, Chapter 2 this volume, No.9. Potters Lane, Ely. Orange-brown surfaces and grey core. Wheelmade in Fabric A (13th to 14th century).

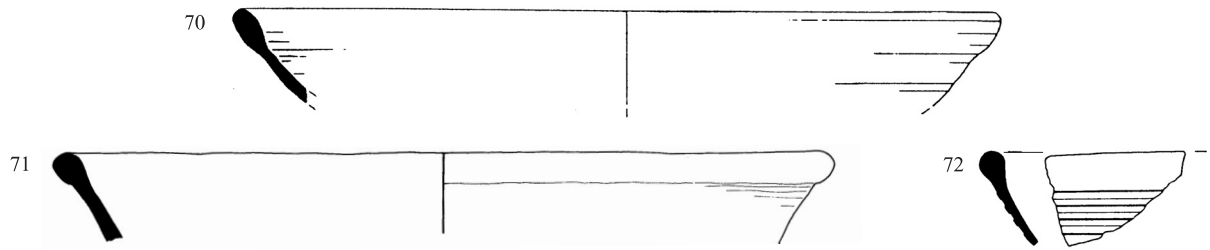
Bowl C (Fig.17)

(Like Hall 2003, bowl B1).

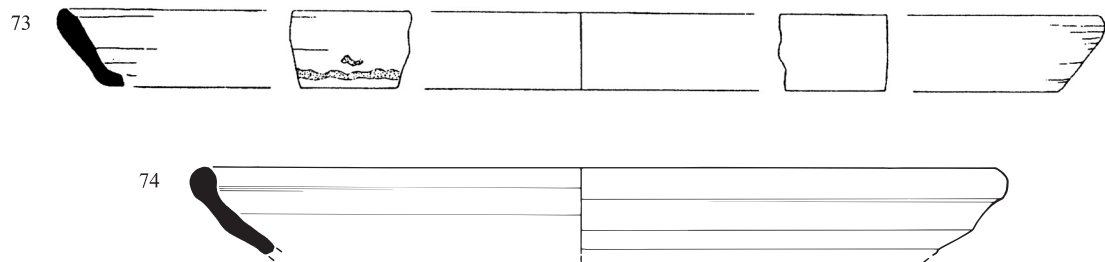
Flared or concave bowls, usually handmade and often wheel or turntable finished, with everted rims, often with internal hollow.

- 75. Hall 2003, no.13. Forehill, Ely. Buff-grey surfaces with dark grey core, with lightly incised grooves in coarse gritty fabric. Found in 12th-century context. This could also be a lamp.
- 76. Hall 2003, no.14. Forehill, Ely. Buff-pink surfaces and dark core, fairly large white grits. Thin, patchy internal green glaze. Smoke-blackened externally.
- 77. Spoerry Chapter 2, this volume, No.3. Potters Lane, Ely. Buff surfaces, orange margins and core in Fabric A, probably wheelmade.
- 78. Clarke and Carter 1977, fig.80, no.10, King's Lynn.

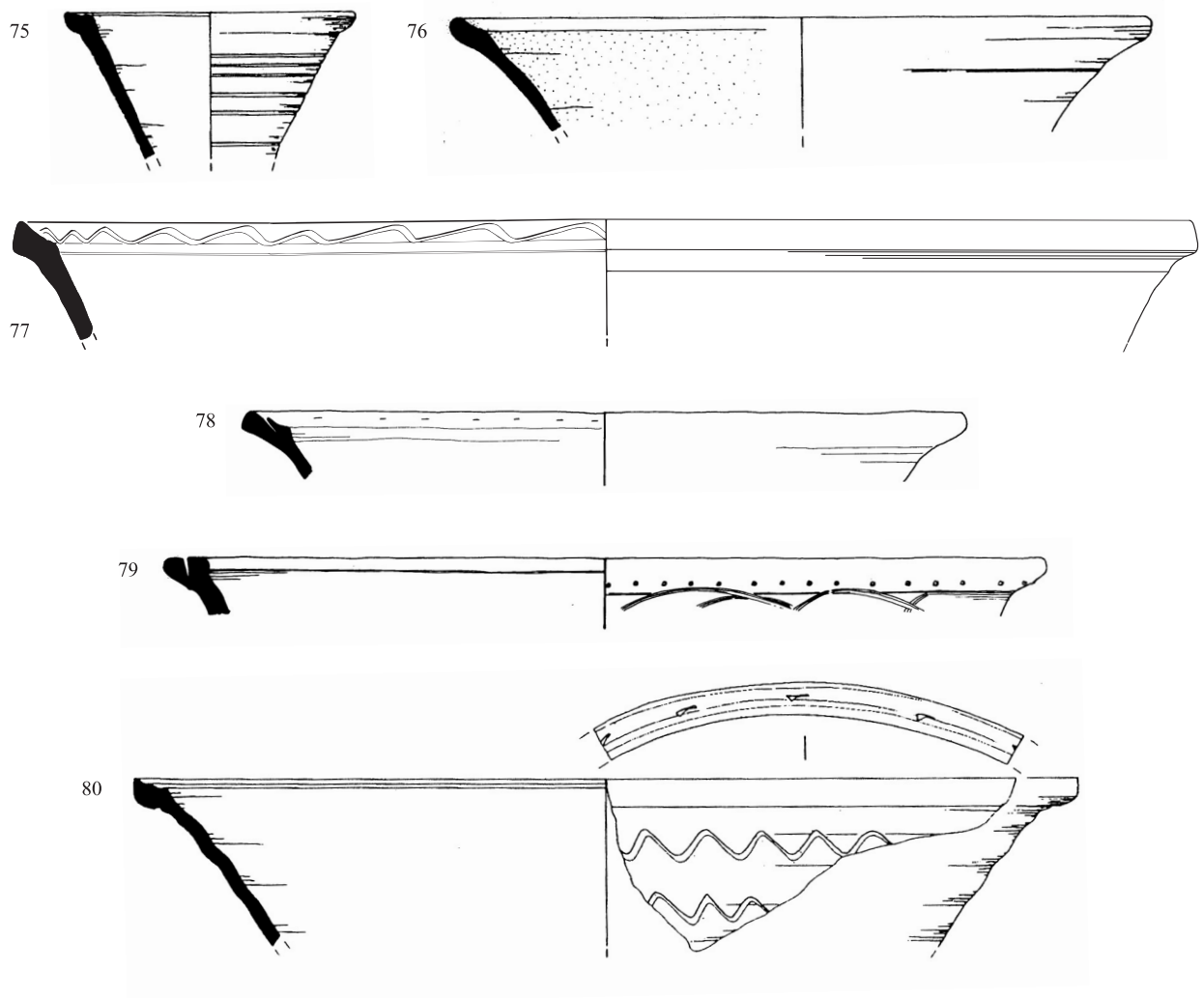
Bowl A



Bowl B



Bowl C



10cm

Figure 17 Bowl types A to C (Nos 70–80). Scale 1:4

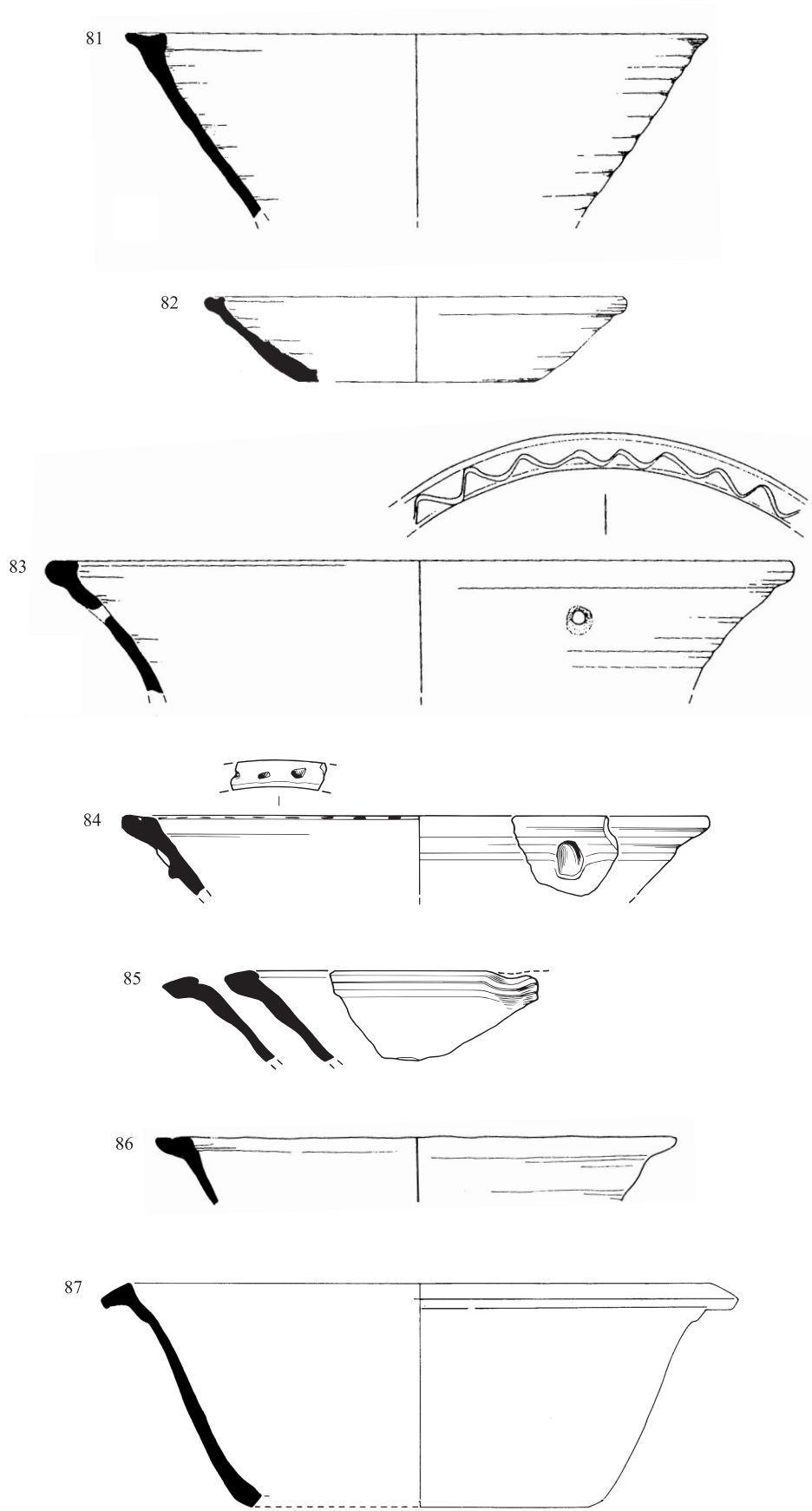
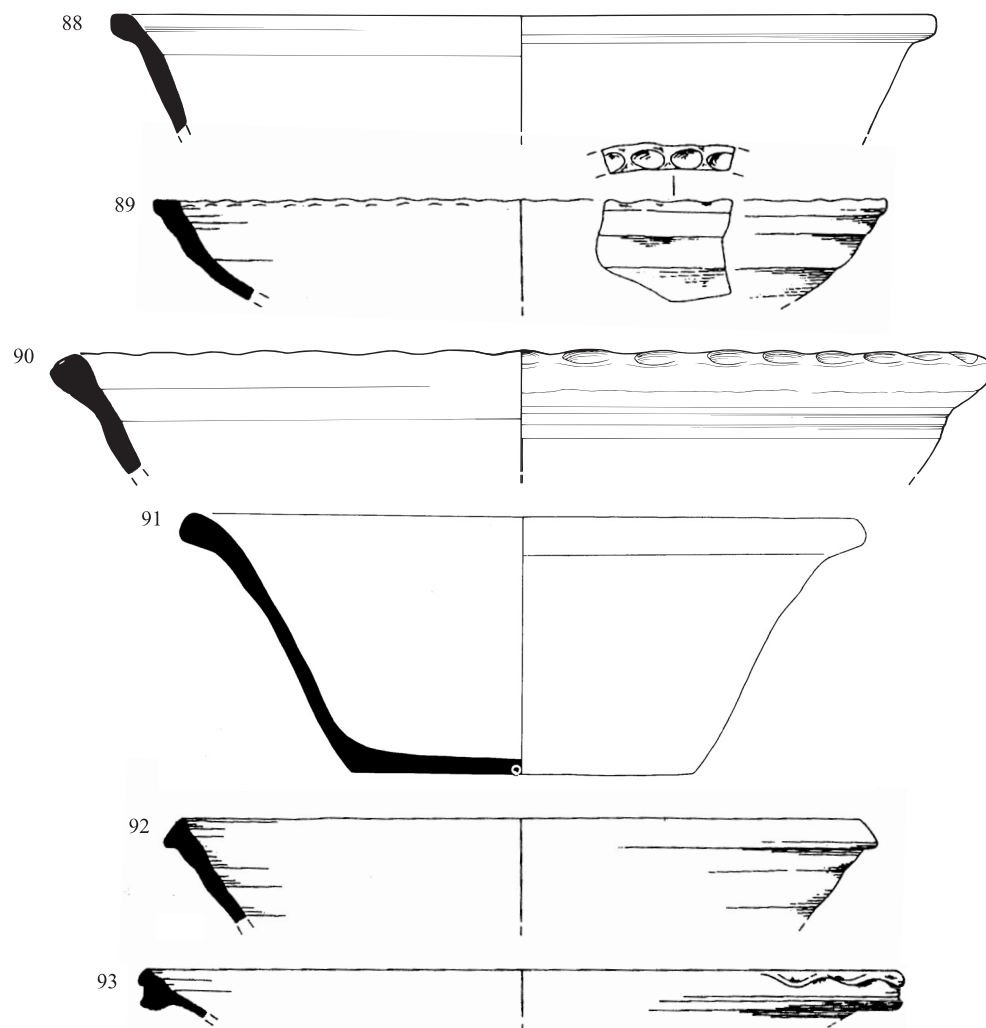


Figure 18 Bowl type D (Nos 81-87). Scale 1:4

10cm

Bowl E



Bowl F



Bowl G



Figure 19 Bowl types E to G (Nos 88–98). Scale 1:4

10cm

Published as Grimston Software but this has harder fabric, heavily chalk-tempered.

79. Clarke and Carter 1977, fig.79, no.22, King's Lynn. Published as Grimston Software.
80. Hall 2003, no.30. Forehill, Ely. Pink-buff surfaces with small holes.

Bowl D (Fig.18)

(Like Hall 2003, bowl B2).

Flared or concave bowls with thickened, sometimes everted, rims with internal bevel. Often decorated with stabbing or wavy line.

81. Hall 2003, no.25. Forehill, Ely. Pink-buff surfaces with darkened exterior in a coarse, gritty fabric.
82. Hall 2003, no.26. Forehill, Ely. Buff inside, darkened outside, internal green glaze on base.
83. Hall 2003, no.33. Forehill, Ely.
84. Spoerry Chapter 2, this volume, No.6. Potters Lane, Ely. Soft buff fabric throughout and possibly handmade; Fabric A, 13th to 14th century.
85. Spoerry Chapter 2 this volume, No.7. Potters Lane, Ely. Orange-brown fabric throughout, wheelmade with rime finished on turntable. Fabric A, 13th to 14th century.
86. Clarke and Carter 1977, fig.80, no.11, King's Lynn. Published as Grimston Software, smoke-blackened externally
87. Ratkai 1993, fig.12, no.1. White Hart, Ely. Fabric D4, fine sandy matrix with sparse, large ferruginous inclusions. Generally orange, but reduced examples with grey core present. Internal glaze usually tan to brown. This is probably from very late in the medieval period.

Bowl E (Fig.19)

(Like Hall 2003, bowl B3).

Flared or concave bowls with thickened or clubbed rims (sometimes an internal bevel).

88. Spoerry, Chapter 2 this volume, No.2. Potters Lane, Ely. Soft buff-brown (underfired) version of Fabric A throughout. Wheelmade, 13th to 14th century.
89. Hall 2003, no.37. Forehill, Ely. Dark core, grey inside, darkened outside, roughly finished.
90. Spoerry, Chapter 2 this volume, No.1. Potters Lane, Ely. Orange-brown surfaces and margins with black core in Fabric E (soft, calcareous). Probably handmade with rim added/finished on a turntable.
91. Ratkai 1993, fig.12, no.2. White Hart, Ely. Fabric and date as no.87 above.
92. Hall 2003, no.34. Forehill, Ely. Dark core, buff-pink surfaces.
93. Hall 2003, no.39. Forehill, Ely. Pink inside, buff outside with patchy muddy green glaze internally on base.

Bowl F (Fig.19)

Inturned, rounded bowls with simple or thickened rims.

94. Clarke and Carter 1977, fig.80, no.3, King's Lynn. Published as Grimston Software.
95. Spoerry, Chapter 2 this volume, No.10. Potters Lane, Ely. Handmade with wheel/turntable finishing in mid-grey Fabric B (13th to 14th century).

Bowl G (Fig.19)

Deep bowls with near vertical sides and simple rim, sometimes with thickening.

96. Clarke and Carter 1977, fig.80, no.1, King's Lynn. Published as Grimston Software; this sherd completely reduced with some red inclusions.
97. Clarke and Carter 1977, fig.80, no.2, King's Lynn. Published as Grimston Software.
98. Clarke and Carter 1977, fig.79, no.21, King's Lynn. Published as Grimston Software.

Bowl H (Fig.20)

Deep, rounded bowls with near vertical sides and clubbed rims, sometimes with an internal bevel.

99. Ratkai 1993, fig.11, no.6. White Hart, Ely. Fabric B1 (standard Medieval Ely ware); varying amounts of ill-sorted rounded and sub-rounded quartz and sparse-moderate irregular pieces of limestone and ooliths.
100. Clarke and Carter 1977, fig.80, no.6, King's Lynn. Published as Grimston Software.
101. Clarke and Carter 1977, fig.79, no.7, King's Lynn. Published as Grimston Software.
102. Clarke and Carter 1977, fig.79, no.8, King's Lynn. Published as Grimston Software.
103. Hall 2003, no.38. Forehill, Ely. Grey surfaces, not very gritty.

Bowl I (Fig.20)

The 'Potters Lane Late Medieval Bowl'; rounded or carinated bowls with concave, everted rims with internal bevel. A group of these vessels was found in a 15th-century kiln dump at Potters Lane (Spoerry, Chapter 2), but the only complete profile of a similar vessel recorded elsewhere is this probable post-medieval Ely redware example (No.107). Its presence suggests a late date for Bowl I, and demonstrates some continuity from the mostly brown medieval fabric to the orange post-medieval one.

104. Spoerry, Chapter 2 this volume, No.29. Potters Lane, Ely. Wheelmade bowl waster in overfired, reduced Fabric C (15th century).
105. Spoerry, Chapter 2 this volume, No.31. Potters Lane, Ely. Slightly overfired Fabric C; dark brown surfaces, dark grey margins and core (15th century).
106. Spoerry, Chapter 2 this volume, No.32. Potters Lane, Ely. Overfired lead glaze internally. Slightly coarse hard-fired fabric with red-brown surfaces and margins with grey core. Wheelmade Fabric D (15th century).
107. Ratkai 1993, fig.11, no.16. White Hart, Ely. Fabric C6, fine sandy matrix with sparse red and grey angular and sub-angular quartz and rare calcareous inclusions, oxidised orange fabric which is probably a 16th century variant of Late Medieval Ely ware.

Bowl J: Dripping Dish (Fig.20)

108. Spoerry, Chapter 2 this volume, No.35. Potters Lane, Ely. Dripping dish (sub-oval) rim with partial internal lead glaze, with orange-buff surfaces, buff margins and grey core. Fabric C, 15th century.

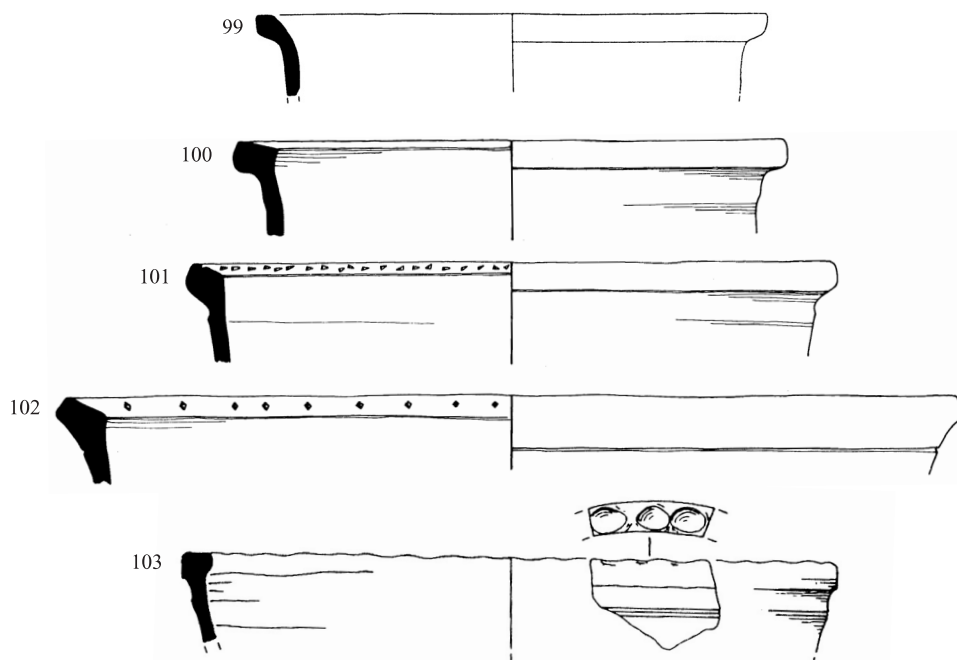
III. Jugs

(Figs 21–26, Plates 21–29)

Whatever the output of jugs was at the Ely kilns during the medieval period, this is the form that now dominates the assemblage of complete vessels. Jugs were often more complex to manufacture than jars and bowls, and were sometimes more elaborately decorated; in very general terms these were more valuable vessels and, not surprisingly, jugs tend to be distributed further from production sites than the other common vessel forms. As stated above the effect of differing breakage rates, coupled with an apparent preferential curation of jugs over other vessel types, has also resulted in there being many more complete examples in museum collections.

Ely jugs were manufactured by all methods available; there are examples that appear to be entirely hand-formed, many which were finished on turntables or wheels, and other vessels which were almost certainly entirely manufactured on a wheel.

Bowl H



Bowl I

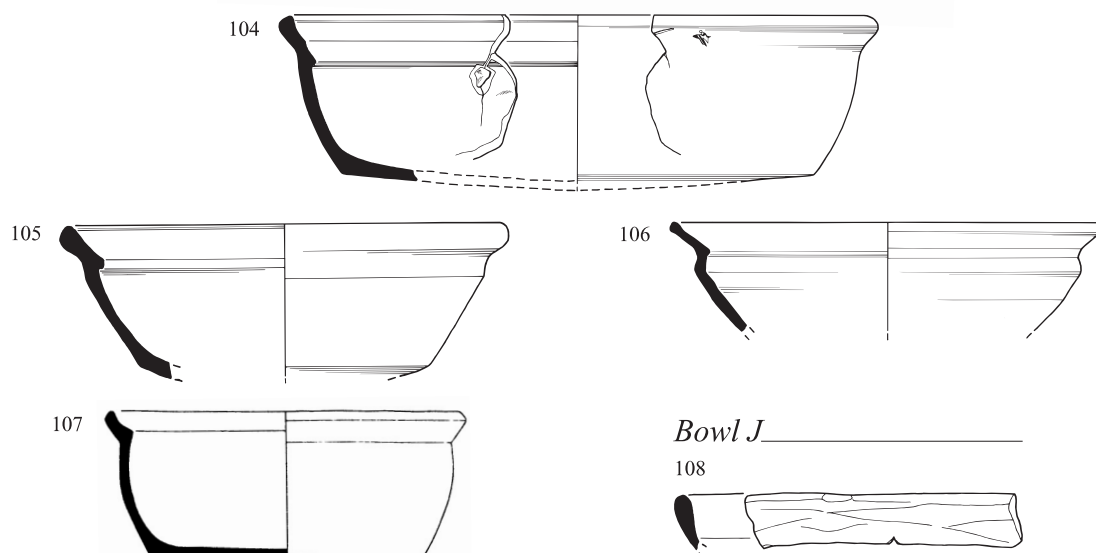


Figure 20 Bowl types H to I (Nos 99–108). Scale 1:4

The earliest contexts from which these vessels have been recovered appear to be 12th-century in date, exemplified by a single example of the barrel-shaped form Jug B from Denny Abbey (here Fig.21, No.112). The more common early forms are Jug A and some examples of Jug C and Jug E. It may well be that in all cases poorly-made rod handles are present initially, with strap handles, often with complex treatments and decoration involving stabbing, slashing and thumbing arriving in the 13th century, the rod forms continuing alongside them. Certainly both types are present in the 13th century and it is not until the late 14th or 15th century that handle forms are again recognisably different. At some point in the 15th century the stabbed and slashed strap handles disappear, to be replaced by simple strap handles with central incised lines or wide thumbed grooves (as seen at Potters Lane) or

more often by rod handles, plain except for the thumb impressions at the joins with the body. One example of a twisted rod handle has been recorded here (Fig.24, No.125) and one rope handle is known from Forehill (Hall 2003, no.58). Where information on handle attachment is present it occasionally shows that the upper join includes a peg-in-hole attachment beneath the luting and smoothing.

Most jugs are handmade from the 12th to 14th centuries, but almost all also exhibit signs of turntable or wheel-finishing. One shouldered jug (Fig.22, No.114) has a completely flat base, perhaps suggesting this was entirely wheelmade, although why this should be so is not clear. The only definitely wheelmade type is the metal copy baluster, Jug G, the one late medieval example being No.135 (Fig.26). Some partial late medieval jugs from Potters Lane, Ely (Spoerry, Chapter 2) show so much

evidence for wheel-turning that it might be concluded that they too were totally wheelmade. This assumption should be treated with caution, however, as the same could be applied to the upper body of some vessels, for example No.124 or 125 (Fig.24). Both of these exhibit evidence for turning, but further down the body a slightly sagging base and knife-trimming are both attributes that might indicate a vessel that started out as hand-formed.

Jug rims mostly conform to two general types. Simple, slightly out-turned rims, often with a thickened, flat top, characterise the 12th to 14th centuries whilst in the later medieval period rims tend to be more upright and more complex, often with ridges and cordons beneath. Lips are always slight and pulled. The rim forms do vary, however, and it is entirely possible that a minority of early rims are of late shape and *vice versa*. The triangular rims so characteristic of Grimston ware (*e.g.* Jennings 1981; Leah 1994) are not present on any Ely vessels whatsoever.

As already indicated in this section, the type of base a vessel has can indicate its method of manufacture. It is perhaps surprising that so few Ely jugs show thumbing to help stabilise a sagging base. Apart from the barrel-shaped jug from Denny Abbey (Fig.21, No.112) thumbing is confined to later medieval vessels, particularly the larger rounded jugs (Jug D) which perversely often had the most stable base profiles anyway. This absence earlier on can undoubtedly be put down to tradition and function/environment for these vessels in the earlier part of the medieval period. Current knowledge of Late Saxon forms shows that there was little tradition of making feet for ceramic vessels in eastern England and around the earthen-floored house of the 12th to 14th century, a rounded base was perhaps entirely practical. There currently appears to be little consistency in the number and arrangement of pulled feet. One jug base from the 15th-century assemblage at Potters Lane shares with jug No.124 a fully nail/thumb-impressed basal cordon.

Lead glaze appears to have been used, albeit quite sparingly, on Ely vessels from the 12th century onwards. The iron impurities in this glaze tend to give it an olive green colouration when oxidised and this was the preferred finish. It is, however, a moot point whether the glaze was really intended as a finish or a seal. It was usually haphazardly thrown over the upper part of the body of jugs and was sometimes less haphazardly applied within the base of large jars and usually smaller bowls. In the latter case it was undoubtedly seen as a waterproofing agent. In the former it might have reduced the 'sweating' out of cold liquids, but it was probably applied more to give a lustre to the vessel. Jars and bowls with internal glaze are mostly found in later contexts, mainly from the 14th century onwards.

It is in the later period that jugs received the greatest application of glaze. By the 15th century the Potters Lane kilns were producing rounded jugs with a thick layer of glossy green glaze over the whole upper two thirds of the vessel. This is paralleled in some vessels from consumer contexts classified here as Jug type D, and also from perhaps a century earlier small rounded jugs were likely to have been more heavily glazed. The best example of glazing is in the metal copy baluster jug (Fig.26, No.135) which seems most likely to date to the 14th or 15th century and possesses, as would be expected, a thick lustrous glaze in imitation of the sheen of metal vessels that its form so successfully apes.

Two examples illustrated here show poorly realised body decoration in the form of 'fake scales' made with a ring stamp held at an angle (Fig.25, No.127) and wavy lines on the body that are so shallow as to be almost invisible under the glaze (Fig.25, No.128). To these can be added the quasi-heraldic incised/stamped design of No.52 at Potters Lane (Chapter 2, Fig.11), which is late medieval in date.

As discussed in Chapter 6.I, late medieval jugs are usually rounded, both small and large, and show more evidence for wheel-turning. Stabbing, slashing and thumbing of handles eventually disappears and plain rod handles or straps with a single narrow incised groove or wide central finger groove are common from some point in the 15th century. Less common jug forms include undecorated, small squat examples (here Jug F) and odd forms including the biconical jug (Fig.26, No.139) and metal copy baluster (Fig.26, No.135).

In the medieval to post-medieval 'transitional' period the baluster jug appears as very much the start of the post-medieval forms. Nos 136 to 138 (Fig.26) demonstrate this development quite spectacularly (see discussion below).

Jug A (Fig.21, Plate 21)

Irregular squat, rounded jugs, almost globular in shape. From their irregular profiles and sagging bases it is evident that these vessels were handmade, but most examples studied also show signs of some lateral stress from turntable or wheel-finishing (probably the former). The two examples from King's Lynn (Fig.21, Nos 109 and 110) both exhibit quite complex and well-conceived strap handles, whilst the illustrated example from Hauxton Mill, Cambs (Fig.21, No.111), has a much thicker handle that is almost rod in section, which exhibits only irregular stabbing. Another example from Sidney Sussex College, Cambridge (CUMAA not illustrated) has a true rod handle, although irregular in shape and angle of positioning on the body. No.109 is from Period I at King's Lynn (1050–1250), whilst No.110 is from Period II (1250–1350). A realistic date for this form type might in fact be 1150–1350.

109. Clarke and Carter 1977, fig.78, no.1, King's Lynn. Sparse, external dull grey-brown glaze over body that shows no definite signs of turntable finishing. Well-made stabbed and thumbled strap handle attached below a thickened rim with single rib and groove. Published as Grimston Software.
110. Clarke and Carter 1977, fig.78, no.6, King's Lynn. Exceptional number of mixed red, black and white inclusions in fabric. Lateral stress lines indicate turntable or wheel-finishing on body, with again a well-made, decorated strap handle attached below a clubbed, everted rim. Published as Grimston Software.
111. CUMAA D56.6; Hauxton Mill, Cambs. (Plate 21). Slightly calcareous red-brown fabric with a dark grey core. The square rod-sectioned handle is poorly luted-on to the body, which has signs of turntable finishing on the neck and rim. The latter is clubbed, but simple. A thin olive green glaze has been applied to the upper half of the body and lower part of the neck.

Jug B (Fig.21)

Barrel-shaped jug. The single example, from the written description, is undoubtedly in an Ely fabric, however, there are problems in squaring aspects of the form and technology with the early date. Coppack's phase date of 1159–1170, supported by documentary evidence for the initial construction of this monastery, seems very secure (Christie and Coad 1980, 159–167) and it seems wise to

assume that this piece is indeed late 12th century in date. If that is so, then the almost flat base is rare, and the creation of pulled feet to support it not evident in any other Ely ware jugs of otherwise early character. The simple rim shape, poorly conceived rod handle and generally sagging body shape are all, however, characteristics that might suggest an early vessel, but stratified data elsewhere has not so far confirmed this. Thus the evidence for date is inconclusive on form alone.

112. Coppack 1980, no.3.

Jug C (Figs 22–23, Plates 22–24)

Shouldered jugs. The reserve collection of CUMAA produced twelve vessels of this general type, of which eight are illustrated here, along with one example from the Fitzwilliam Museum. In terms of complete vessels this type, along with Jug E, are therefore the most common but it is probable that this type is less long-lived than Jug E.

One example (Fig.23, No.119) shows no evidence for turntable or wheel-finishing at all, but all others do, whilst one example possesses a very flat base. The general shape is slightly irregular and shouldered, but there are smaller and wider examples (Fig.22, No.114 and Fig.23, No.120) which tend towards Jug E shapes and a tall version (Fig.23, No.121) which has experienced much wheel-work, but a sagging base and some general irregularities might signal it started life as a hand-formed vessel. Jug C vessels can have rod handles, although most appear to have well-made and often elaborately slashed, stabbed and thumbled, wide strap handles. Most vessels have a fairly random application of lead glaze, but none show any other surface treatment or decoration. Rims are usually quite simple, with no examples of the more complex rim forms seen later on (*e.g.* Jug D).

These vessels may have originated in the late 12th century and probably continued to be manufactured until the 15th century. Hall's sequence at Forehill, Ely has the stabbed and slashed handle forms placed rather later in date, with a mean date in the late 14th century, and an occurrence band from the late 13th to 15th centuries.

113. CUMAA Z.20758 Unprov. Cambs.
Handmade, irregular shape with pronounced squared rim and a bib of green glaze on the upper body. Smooth calcareous brown fabric.
114. CUMAA R8643A Barnwell, Cambridge.
Slightly squat, shouldered jug with a flat base, but showing irregularities of shape associated with handmade vessels. The fabric is a standard MEL type buff-brown with a black core and abundant fine calcareous inclusions. There is a patchy, thick green glaze over most of the body.
115. CUMAA Z20733 Ely. Plate 22.
A classic sandy MEL fabric (some calcareous inclusions) with orange-brown surfaces. The body is probably handmade, but deep turning marks inside the rim indicate wheel-finishing. It has an olive green glaze on the shoulder of the vessel.
116. CUMAA 1901.199 Rose Crescent, Cambridge. Plate 23.
A fairly coarse fabric which is slightly calcareous with mostly orange-brown surfaces and mid-grey margins and core. A patchy clear/green glaze covers most of the vessel. This may have been found in association with No.71.
117. CUMAA Z20761 Unprov. Cambs.
A coarse mid-brown fabric, red-brown on the base with a grey core. Slight turning marks on the rim suggest wheel-finishing of a handmade vessel. A hammerhead rim that looks triangular in external view, but is unlike, for example, Grimston forms. The vessel is unglazed.
118. Fitzwilliam Museum, CAM454, 1852A83, Cambridge.
Hard-fired, red-brown surfaces with grey margins and core. Much wheel-finishing evident on a slightly irregular body with no glaze.

119. CUMAA Z.20747 Unprov. Cambs.
Unglazed buff-brown vessel in a smoother than usual fabric (possibly wiped) with a grey core. Lateral lines are irregular and may suggest no wheel or turntable was used, thus it may have been handmade only.
120. CUMAA 1919.74 Cambridge.
Small version of Jug C in a brown sandy fabric with dark grey core and few calcareous inclusions. A wheel-finished, unglazed, vessel.
121. CUMAA 2.20756 Unprov. Cambs. Plate 24.
A slender version of Jug C in a coarse, calcareous fabric with orange-brown surfaces and a black core. It has a thin glaze over most of the body (see plate). An irregular, sagging base coupled with turning marks down the whole body suggest this is a wheel-finished, handmade vessel.

Jug D (Fig.24)

Large rounded jugs. These vessels have similarities in form to Jug E, but are similar in size to Jug C. They are all well-made and show evidence for much work on the wheel, even if the sagging bases still suggest handmade origins. Rim forms in the complete vessels shown here are quite consistent, with an internal hollow producing a single rib below the rim present in all examples. Most vessels are glazed and there is likely to be more widespread and thicker glazing than is found on Jug C. No examples with strap handles have been found, most are well-rounded rod-sections, although twisted handles of both faceted and rope type are present. These vessels are the only medieval Ely forms to show knife-trimming, which here may be another aspect of the high degree of wheel, or turntable, work found on most examples. A variety of base-thumbing variations have been identified, of which three are illustrated here.

The fabric of these examples is of both MEL and LMEL types, but more examples of the latter have been found. Jug D has similarities with vessels produced at Grimston from the mid 13th century onwards, and these well-made, largely undecorated and simply glazed jugs are likely to continue into the 15th century. Several sherds, both rims and bases, from Potters Lane are very much of this type (and also like later examples of Jug E). It seems wisest to place the date-range of Jug D as in the region of 1250 to 1500.

122. Hurst and Fell 1953, and CUMAA 52.119 Cherry Hinton, Cambridge.
Rounded jug with a rod handle applied at an angle with a red-brown, calcareous fabric (some pieces 2mm+) with grey core. Has a degraded glaze over the upper half of the body which may have vertical lines painted in Fe-rich slip beneath it.
123. CUMAA Z20858 Rose Crescent, Cambridge.
A large, rounded jug in a comparatively smooth buff-brown to mid-grey fabric with dark grey core and some fine calcareous inclusions. There is a splashed glaze on the upper half of the body which also has rilling from wheel-finishing (the base is sagging). The vessel walls are very thin for the vessel's size. The handle is luted to the body at its base but under the rim the internal surface reveals that the method of attachment was via a peg through a hole punched into the vessel wall. This pot may have been found in association with No.64.
124. Fitzwilliam Museum C56.1930 Whittlesford, Cambs.
This vessel was found in a well. It is in a calcareous orange-brown fabric with very dark grey core, very characteristically of Ely type. It has bands of distinct turning lines on its surface along with a thumbled, slightly sagging base, and was probably finished on a wheel following hand-forming. It has an olive green glaze over the upper body and neck. The thumbing at the handle attachments and the raised rib below the rim are quite pronounced and well-executed. Knife-trimming is present above the base.

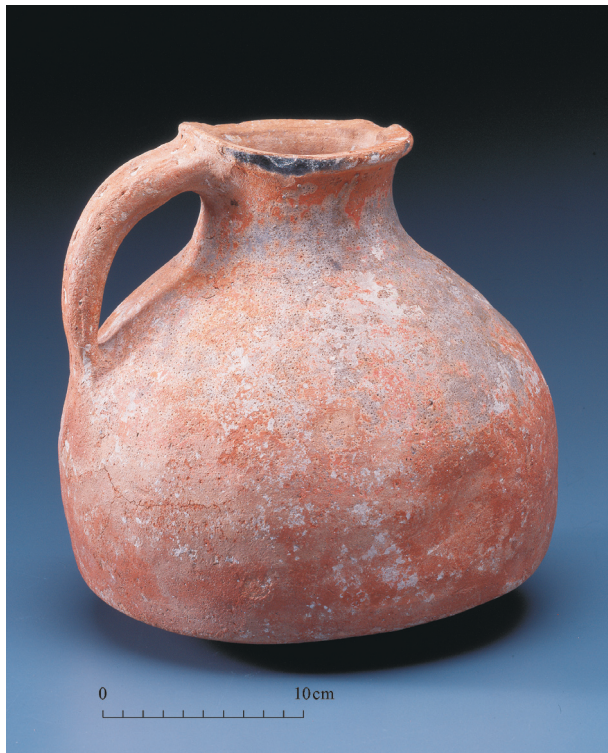


Plate 21 No.111, Jug A. Hauxton Mill, Cambs
CUMAA D56.6



Plate 22 No.115, Jug C. Ely
CUMAA Z20733



Plate 23 No.116, Jug C. Rose Crescent, Cambridge
CUMAA 1901.199



Plate 24 No.121, Jug C. Unprovenanced, Cambs
CUMAA 2.20756

125. CUMAA 1952.333 Fen Ditton, Cambs.
Rounded jug in mid-brown, hard sandy fabric with common calcareous inclusion, characteristically of LMEL type. It has green glaze covering the upper half of the body and external turning ridges at the base of the neck suggesting, along with the sagging base, that this vessel was finished on a wheel. Eight single thumbed 'feet' are irregularly arranged around the base below a zone that may have been knife-trimmed to decrease the wall thickness. The handle is of a characteristic twisted, faceted, design not seen in any other complete Ely ware, although rope-twisting was observed in an excavated fragment at Forehill (Hall 2003, no.58).
126. Hurst and Fell 1953, and CUMAA 52.118 Cherry Hinton, Cambridge.
A rounded jug in a classic calcareous MEL fabric with mid-brown surfaces and dark grey core. Turning marks are very evident on the body, externally, and it has a speckled olive green glaze across the whole of the upper body. There are five single thumb impressions on the sagging base and a line of fine stabbing is evident along the centre of the rod handle which has been applied at an angle.

Jug E (Fig.25, Plates 25–28)

Small rounded jugs. These jugs can be everything from the completely handmade and very irregular (No. 127) to the heavily wheel-finished and well executed (No.130). Despite this, all of the examples illustrated here seem to be, in general terms, attempts to produce the same specification of vessel. There is a uniformity of shape and size that is surprising in its persistence. The examples shown here are a selection from a wider group of semi-complete and complete vessels from Cambridge, Ely, Swavesey and elsewhere.

It seems highly likely that No.127 represents the earliest example of this jug type. Providing a date for this is difficult but the use of stamping and generally poor technology would perhaps place it in the late 12th or early 13th century. The other examples shown here suggest some form of continuity in manufacture through into the late medieval period, with a date between 1350 and 1500 appropriate for Nos 130 to 132. No.132 is the only example known with a strap handle; but this need not mark it down as contemporary with other strap-handled Ely jugs. The simple lines of the form, the thin handle with no decoration, and the hard fine fabric suggest rather a late medieval date.

Another example of this jug type is shown in Plate 25 only (CUMAA Z.20741). This provides a good example of the standard later medieval version of Jug E, rather like No.130. It is in a calcareous, hard-fired, smooth orange-brown LMEL fabric with grey core. It has the standard upper body green glaze and is 21cm high.

127. CUMAA 1909.128 Aldreth, Cambs. Plate 26.
The fabric is a MEL type, buff-brown and grey surfaces with a grey core. It has all the hallmarks of a hand-formed vessel, with no turntable work at all and a simple, regular rim form. The body shape is very irregular (see Plate) and the decoration and finishing are poorly realised generally. The irregular stamping is with a ring stamp, applied directly on to the neck and at an angle to leave a crescent impression on the rest of the body — perhaps to give the impression of scales. Stabbing on the rod handle is very irregular and there is a partial green glaze on the upper body.
128. CUMAA Z.20748 Arts Theatre, Peas Hill, Cambridge.
A hard red-brown, calcareous fabric with a grey core; a lighter fabric than some examples but definitely MEL. There is a patchy green glaze on the upper body. The wavy line decoration is irregular and very shallow (almost invisible in most lighting conditions).
129. CUMAA 50D7, unprov. Plate 27.
A MEL fabric with orange-brown surfaces and black core and margins and a thin green glaze on the upper surfaces. The

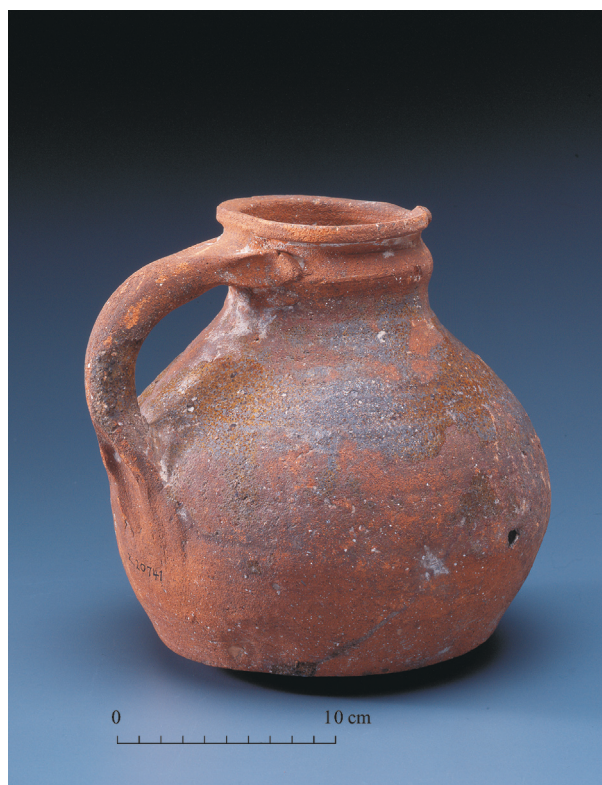


Plate 25 (no catalogue no.), Jug E. Cambridge
CUMAA Z.20741

slightly corrugated body belies finger pressure during throwing or, more probably, secondary wheel-work. A rare example of a vessel where evidence for the method of handle attachment is present. Inside the vessel wall a hole has been punched through and the handle attached with a cylindrical clay peg.

130. CUMAA 220738, Peas Hill, Cambridge
A hard mid-brown fabric that may be LMEL, thus dating the vessel to post-1350. This vessel is wheel-finished, as evidenced from very prominent turning marks, and has a patchy green glaze on the upper body and lower neck.
131. CUMAA A1905.300, Chesterton, Cambridge.
Dense, wheel-finished, fabric that is probably classified as LMEL; mid-brown with a grey core. This vessel is sooted externally and has a thin green glaze on the upper half of the body.
132. CUMAA Z20751 unprov. Cambs. Plate 28.
A variant of Jug E with a strap handle; so far the only example recognised. This vessel is wheel-finished and is in a hard, dark grey-brown coarse fabric with abundant calcareous inclusions. It is certainly an Ely product, but may be rather late in the medieval period, perhaps 15th-century in date.

Jug F (Fig.26)

Small squat-rounded jugs. These two vessels share some characteristics, but could be two oddities, and have been grouped together in part through a lack of similarity with other types. Both are likely to be late 14th- or 15th-century in date.

133. CUMAA A.83453, Brazen George Yard, Cambridge.
A squat, rounded jug, almost biconical in shape, less than 15cm high, in a hard brown fabric with grey core that is probably Ely ware. The vessel was probably hand-formed and finished on a wheel, it has abraded surfaces, but an opaque, overfired glaze is present over the upper half of the body of the vessel. The rod handle is luted on to the body and the rim has one rib, hollow on the inside.
134. CUMAA A.B3.457, Trinity Street, Cambridge.
A very rounded, squat jug covered in concretions making fabric description difficult. It appears to have red-brown surfaces and



Plate 26 No.127, Jug E. Aldreth, Cambs
CUMAA 1909.128



Plate 27 No.129, Jug E. Unprovenanced
CUMAA 50D7

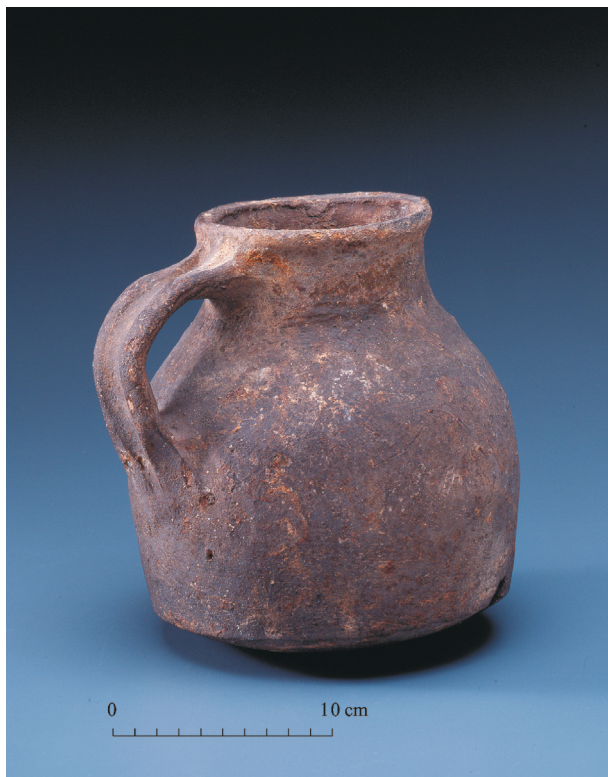


Plate 28 No.132, Jug E. Unprovenanced, Cambs
CUMAA Z20751

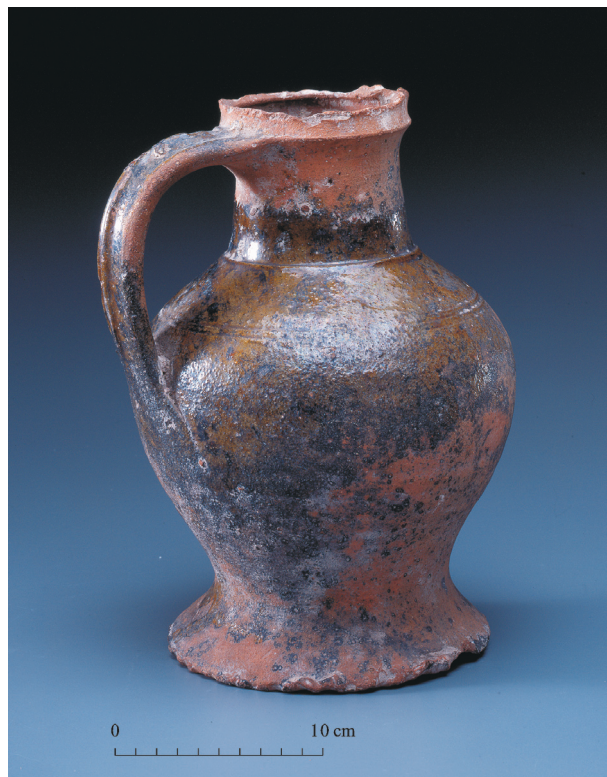


Plate 29 No.135, Jug G. Fen Ditton
CUMAA Z.14857B

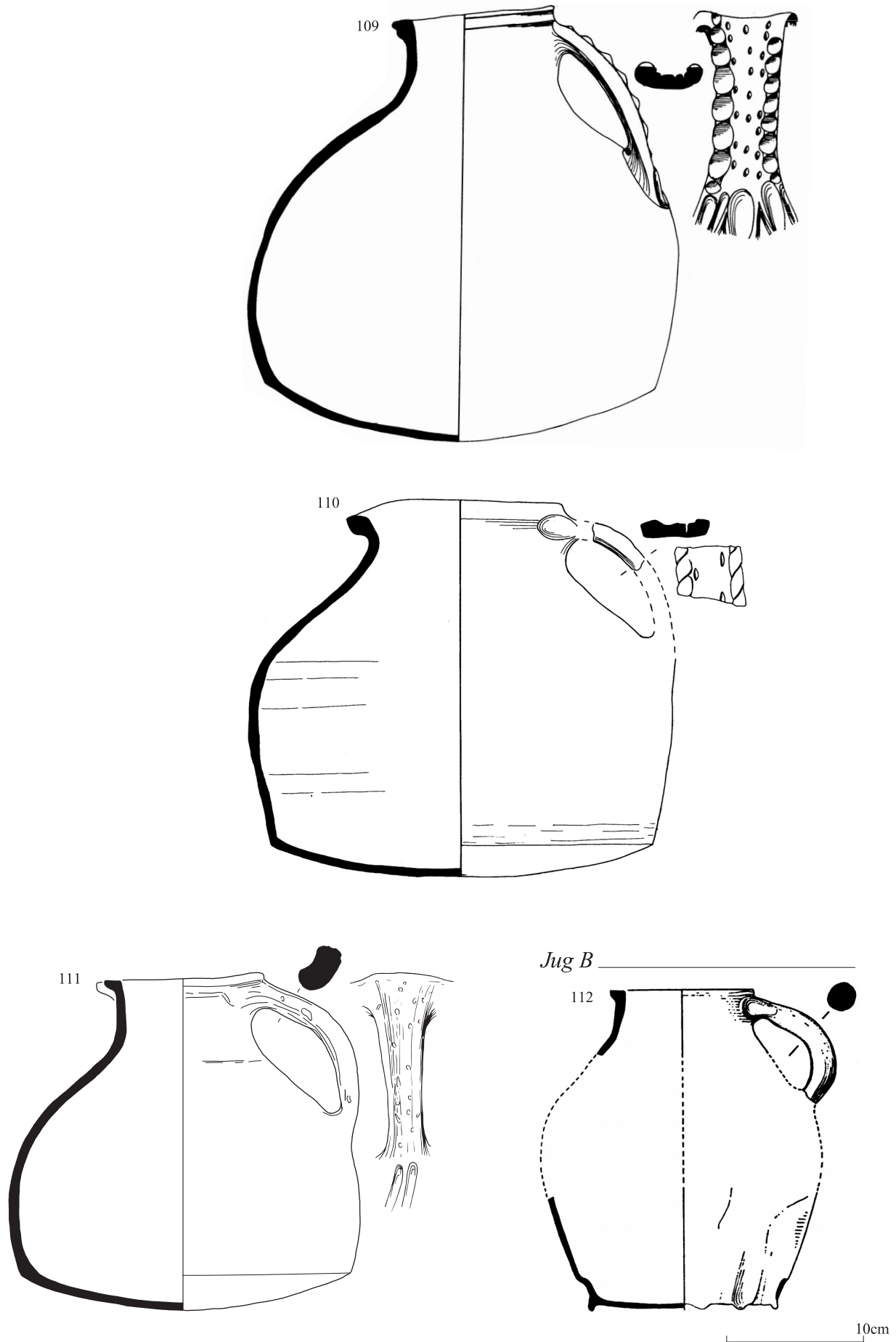


Figure 21 Jug types A to B (Nos 109–112). Scale 1:4

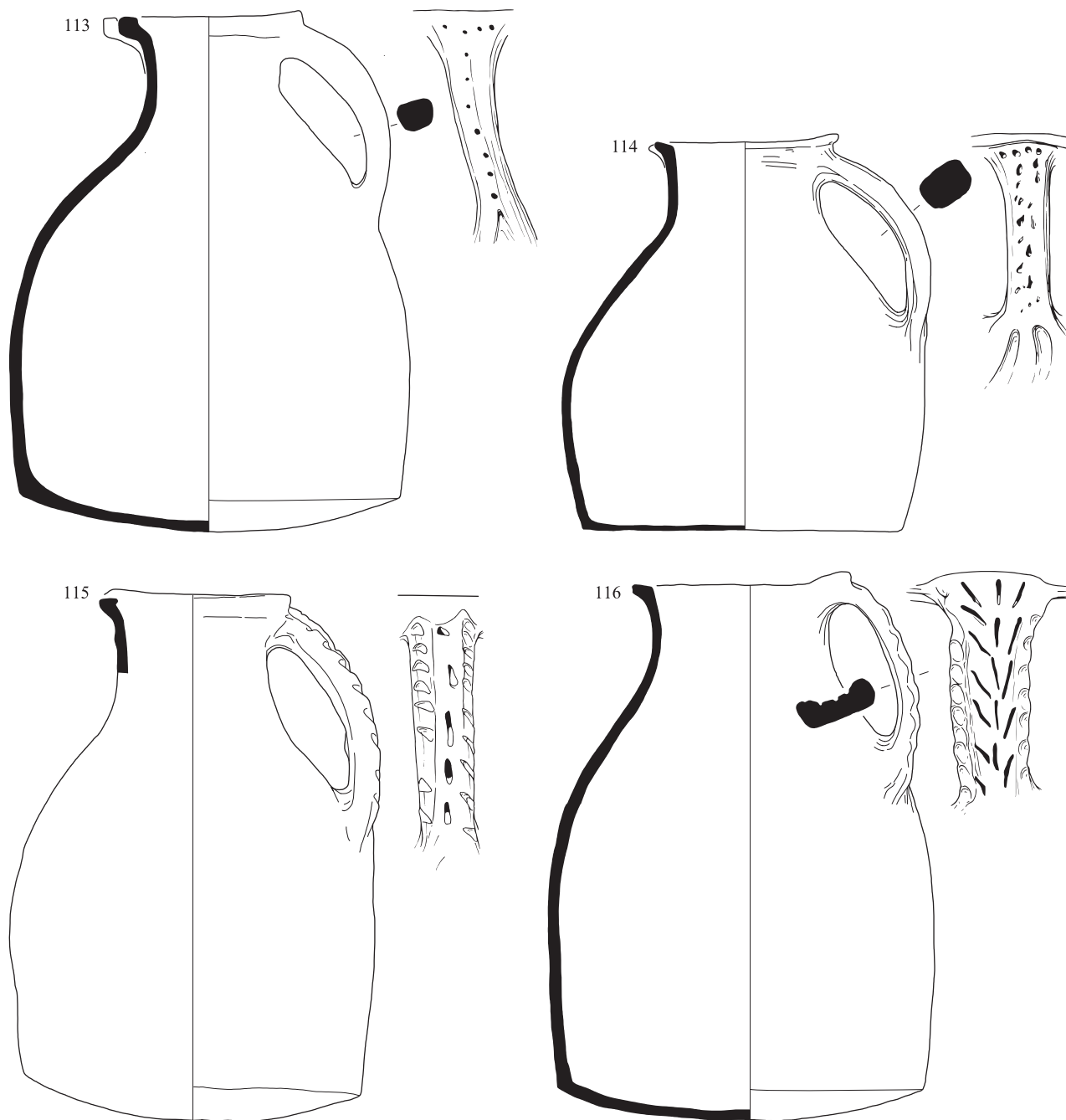


Figure 22 Jug type C (Nos 113–116). Scale 1:4

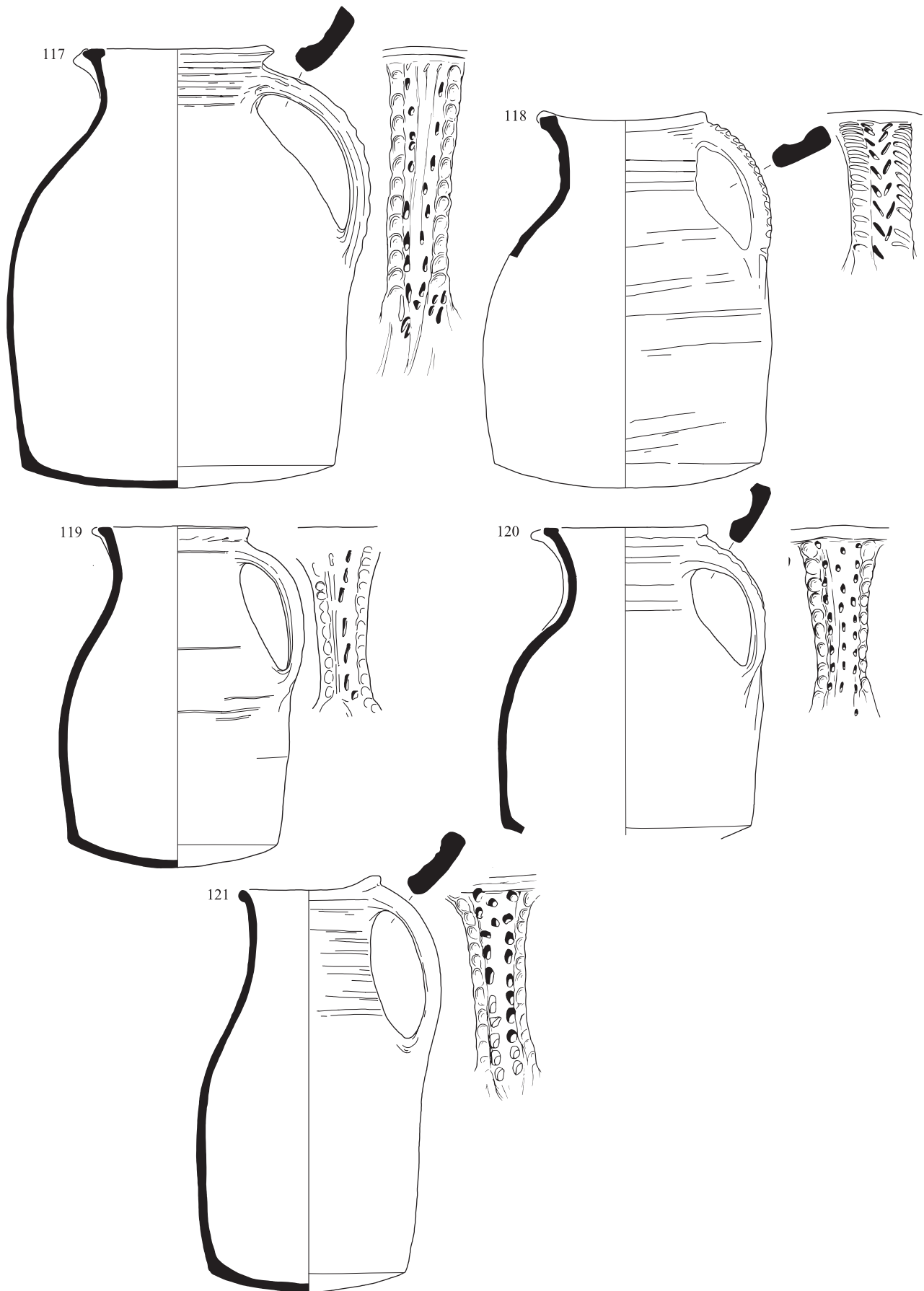


Figure 23 Jug type C continued (Nos 117–121). Scale 1:4

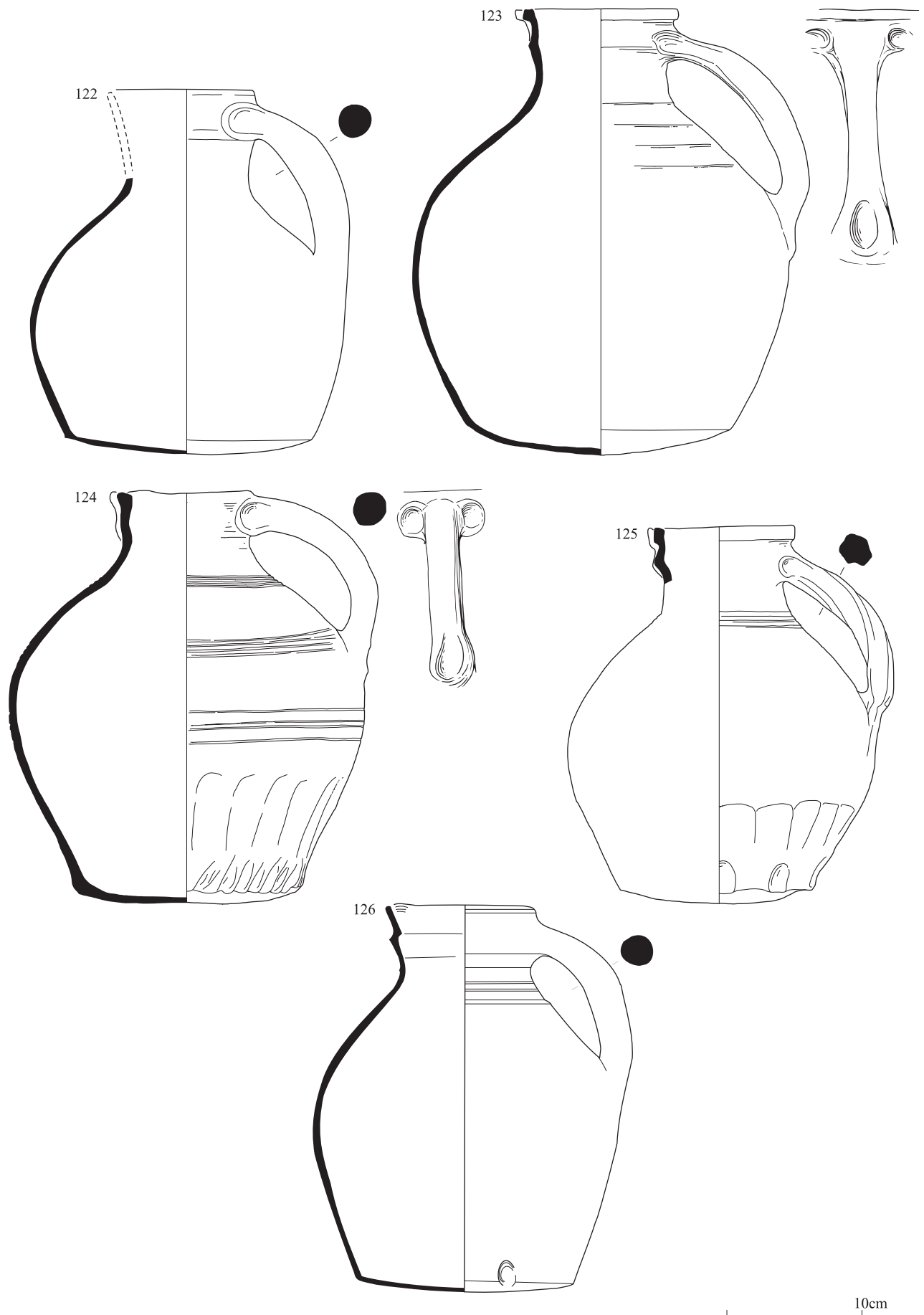


Figure 24 Jug type D (Nos 122–126). Scale 1:4

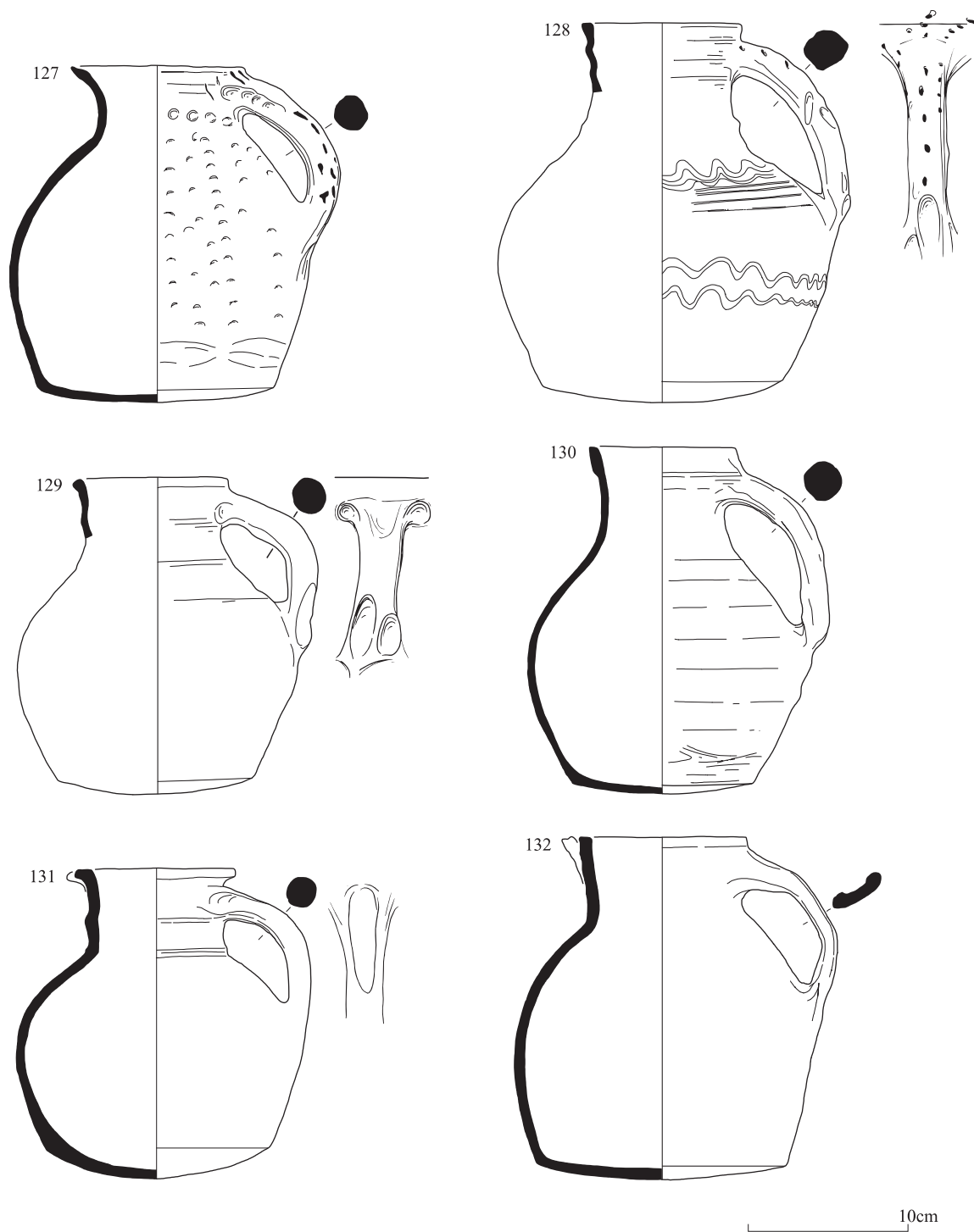
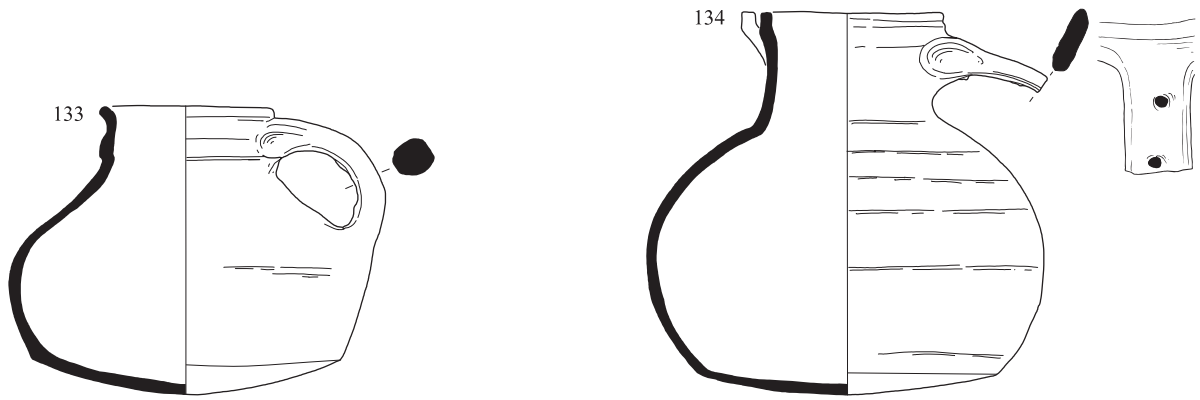
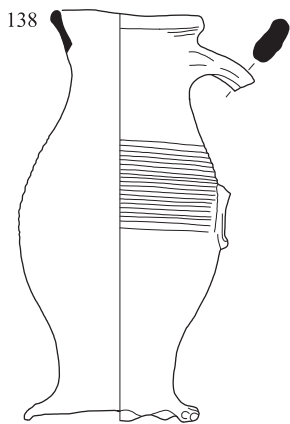
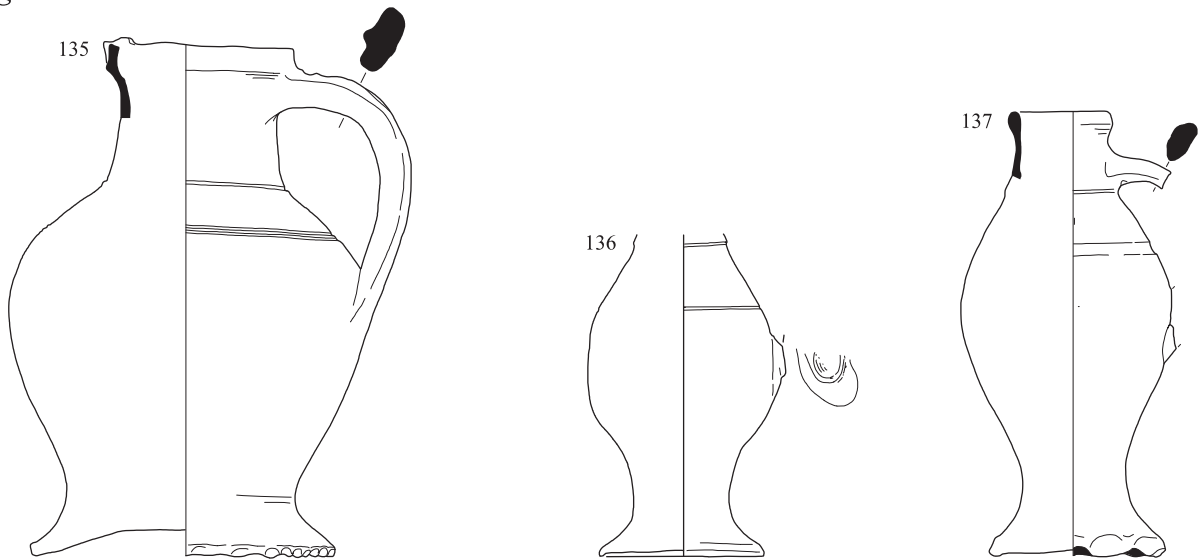


Figure 25 Jug type E (Nos 127–132). Scale 1:4

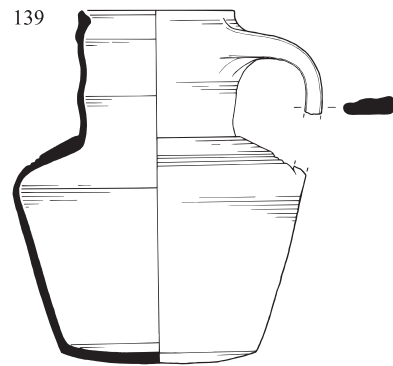
Jug F



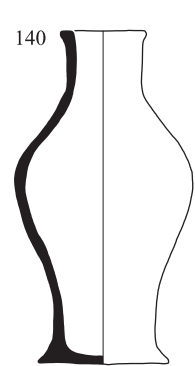
Jug G



Jug H



Bottle



Curfew



10cm

Figure 26 Jug types F to H, bottle and curfew forms (Nos 133–141). Scale 1:4

a grey core and has the surface appearance of an Ely ware. The pulled lip is unlike others seen from Ely so far, being more substantial but other aspects of form and technology are in keeping with Ely products. It has a partial, splashed glaze over the upper two thirds of the body.

Jug G (Fig.26, Plate 29)

Baluster jug. This type includes one medium-sized medieval example that perhaps dates to the late 14th or 15th century, and three small, slender drinking jug type balusters, one of which is in an LMEL fabric, the other two being a transitional and early post-medieval redware example, also manufactured at Ely. The last two vessels (Nos 137 and 138) are presented here as there seems to be a progression from No.136 to these, perhaps originating with the likes of No.135. This is the first evidence that demonstrates the relationship between medieval and post-medieval production at Ely. The latter is being studied in much more detail by David Hall following the excavation of a 16th-century redware and whiteware kiln on Broad Street, Ely (Cessford *et al* 2006), thus the subject will not be tackled here. The key point that needs to be made is that the potters in Ely in the 15th century were quite prepared to copy styles from elsewhere: they first found it necessary to manufacture metal copy baluster jugs and then they produced drinking jug-sized versions of the same form, again following the fashion of the time. Finally, as clays were exhausted and/or styles and kiln technology changed, they continued to manufacture essentially the same vessel type, but in a redware fabric now thought of as 'transitional' or early post-medieval.

135. CUMAA Z.14857B, Fen Ditton. Plate 29.
This vessel is a metal copy baluster, evident by both its shape, reminiscent of metal vessels, and also the high gloss mottled green glazed finish. It is made in a mid-brown fabric that, despite the absence of breaks to view it in section, is certainly a version of Late Medieval Ely ware (LMEL). The strap handle is luted on to the body, and it has a characteristic section, incorporating two wide grooves. These seem to echo the regular groups of turning grooves on the body. The recessed base and thumbled cordon around it are not matched in any other Ely vessel found to date, but the thumbing on vessels such as No.124 demonstrate the basic techniques for this approach were present.
136. CUMAA Z.16583, Emmanuel Street, Cambridge.
Metal copy baluster drinking jug in thin-walled, red-brown LMEL-type fabric with grey core.
137. CUMAA Z.16563, Guildhall Street, Cambridge.
Metal copy baluster drinking jug in a thin-walled, red sandy fabric with a band of clear glaze centrally and a faceted base.
138. CUMAA Z.20750, Hobson Street/Passage, Cambridge.
Metal copy baluster drinking jug in a slightly sandy redware fabric with a faceted base.

Jug H (Fig.26)

Biconical jug.

139. Spoerry forthcoming a. St Germain Street, Huntingdon
Late medieval biconical jug in hard-fired dark brown to grey LMEL type fabric with calcareous inclusions. Wheelmade with dark green glaze over the upper body and patchily on the handle and neck. There are groups of deliberately incised turning lines at intervals on the body.

Bottle A (Fig.26)

140. CUMAA A83.485
Unglazed, hard calcareous Ely fabric, mid-brown surfaces and mid-grey core, probably LMEL and dating to the late 14th to 15th century. Fully wheelmade with a flat base that has slight faceting. This form is very like that of the metal copy baluster drinking jugs.

IV. Other Vessel Types

The range of vessel types manufactured by the Ely potters was never great. Fragments of curfews have been identified (*e.g.* No.141), looking like and in reality being, little more than an upturned variation of the flared or rounded bowl, with additional thumbled strips (*e.g.* Hall 2003, no.73). Several vessels of this general form recovered from a 12th- to 14th-century settlement on the medieval mere-side at Soham have been provisionally interpreted as fish smokers (Spoerry 1999). Small fragments of colanders have also been recorded from a number of locations in the town, but no examples are large enough to determine vessel form.

At Potters Lane evidence for the manufacture of peg tiles and crested ridge tiles from perhaps the 15th century onwards in an Ely fabric has been identified (Spoerry, Chapter 2), with examples seen in excavations and in some instances on rooftops, in Ely. There is also slight evidence that this manufacture started in the 13th or 14th century. Potters Lane also produced late medieval glazed floor tile wasters and a variety of thick pierced or stabbed tiles in a coarse Ely fabric that are either oven or kiln flooring. In addition at Jubilee Terrace (Spoerry forthcoming b) and 2 West End (Kenney 1999), both in Ely, cylindrical green glazed medieval drainage pipes in an Ely fabric have been recovered. The production of bricks and tiles is documented in Ely in the post-medieval period (Lucas 1993) and it may well be that there was a significant history to this industry stretching back to the 13th or 14th century, with at least some products being made and fired alongside the pottery vessels.

141. Clarke and Carter 1977, fig.80, no.9, King's Lynn.
Curfew base with fingertip impressions externally, dark grey throughout with smoke-blackening internally. Published inverted as a Grimston Software bowl.

Chapter 6. The Ely Pottery Industry in its Contemporary Context

I. Temporal Variation

Previous dated groups

Unfortunately there is little well-stratified data to provide a good temporal progression for Ely ware types. Currently the best-dated sequence containing Ely wares is that from Denny Abbey where, owing to good documentation on the development of the monastic buildings and the association of excavated features with architecturally-diagnostic structures, several groups of pottery including Ely-type wares, were given close dates (Coppack 1980). The author has not been able to examine the pottery itself within the constraints of this study, although the published information has been reconsidered. It is therefore necessary to view these examples as Ely-type wares; they are almost certainly Ely products, but this is not proven without access to the pottery itself. To avoid clumsiness in terminology, however, these vessels will be referred to as Ely products in the text below and in the descriptions of individual vessels elsewhere. As no quantitative data is present in the report, the information is very much of a 'presence and absence' nature.

Study of Coppack's illustrations and written fabric descriptions leaves no doubt that much of his brown gritty ware is in fact Medieval Ely ware. The other pottery present in the published groups includes a variety of fabrics originating in Essex (Sible Hedingham glazed, Essex redwares and micaceous light grey wares: possibly also from Hedingham), shelly pottery from the Rockingham Forest in Northamptonshire as well as coarsewares from north-west Norfolk (LMU as defined by Jennings 1981).

At Denny, Coppack's first dated assemblages were Groups A and B which were from levels associated with the construction of the Benedictine monastery that existed for only eleven years from 1159 to 1170. The pottery should therefore date to 1159 and perhaps a short period before. The published pieces are mainly Ely wares (probably MEL), Hedingham ware and other Essex red and grey types. The published Ely wares include a barrel-shaped jug (here No.112) with thumbled base and rod handle along with a more complex jug rim with stabbed strap handle and inturned, everted and upright jar rims.

The second dated assemblage of significance comes from the next phase of construction, that of the Templar preceptory which started in 1170 and finished by perhaps 1200. Only two sherds are shown, one is a large Medieval Ely ware jar with everted rim and applied thumbled strips (here Jar E).

The third set of dated assemblages from Denny that are significant are from the 14th century. Groups D and E are respectively related to the latter Templar use (first quarter of 14th century) and the Countess of Pembroke's rebuilding of 1327–42. Both contain Ely wares, alongside

Essex redwares and Orange Sandy ware, the latter probably also being an Essex product (fabric 40 in Cunningham 1985) and the fabric of so-called Cambridge sgraffito ware. The 14th-century Ely wares include wheelmade jug rims, a strap handle with incised central wavy line decoration (as seen in the 15th-century wasters at Potters Lane) and a variety of comparatively plain out-turned jug rims. These are almost certainly LMEL vessels.

The excavated assemblage from Forehill, Ely (Hall 2003) provides a complex stratigraphic sequence within which Ely wares are the most common pottery group. Hall attempted to pin down the date range of all the key vessel forms and stylistic traits through provision of an average notional date for each calculated through combination of the spot-date range with the number of examples. He concluded that Medieval Ely ware vessel forms and styles changed very slowly indeed. Of thirteen types of vessel, ten were assigned a date range of 13th- to 15th-century. One type started in the 12th century, this being Bowl B1 (here, Bowl C). Two types were later. Surprisingly at Forehill these were the stabbed and slashed bowl rims and jug handles that, in other circumstances, might be seen as most representative of the 13th to 14th centuries. Slashed and stabbed jug strap handles, although appearing in the 13th century, had a mean date of *c.*AD1375 at Forehill (Hall 2003), whilst decorated examples of Bowl 2 (here Bowl D) did not appear until the 14th century and were mainly 15th-century in date. This information from Forehill is not entirely consistent with that from other locations including Jubilee Terrace, Ely (Sperry forthcoming b) and the generally 12th- to 13th-century assemblage at King's Lynn (Clarke and Carter 1977). In both cases these decorative treatments — including slashing, stabbing, thumbing *etc.* on jug handles and bowl rims — are present from the earliest (12th to 13th century) phases and seem no less common in the 13th century than they do later in the medieval period.

At King's Lynn, Ely ware was called Grimston Software (Clarke and Carter 1977). This volume of town excavations gives only broad information on the period of remains and artefacts. The key period for the presence of Ely ware is Period I (1050–1250) after which its presence decreases rapidly due to competition from the much more locally-made products of the Grimston industry (from Period II, 1250–1350 (Clarke and Carter 1977, 3)). The published examples include in Period I a variety of jars, including a thin-walled cooking pot with simple out-turned rim that is very much an Early Medieval ware form, handmade jugs with thumbled and stabbed strap handles (here Jug A, No.109) and vertically sided bowls (here Bowl G, Nos 96 and 98). Those illustrated vessels that derive from Period III and Period IV contexts do not generally exhibit differences in form with those from Period II.

A recently analysed assemblage from Market Mews, Wisbech provides data on pottery from a stratigraphic sequence of thirteen successive occupation horizons, each separated from the other by layers of waterborne silt, and overall dating from the 13th to 16th centuries (Hinman and Shepherd Popescu in prep.). Such a sequence presents great potential for identification of ceramic seriation, amongst many other areas of study. Unfortunately only a very small area of land was excavated and subsequently the ceramic data set is not yet large enough to provide real advances in study of ceramics in the region. Nevertheless this assemblage does give certain new information. Firstly it is largely composed of pottery from Norfolk and Suffolk; Grimston wares, LMU and LMT (Jennings 1981). Secondly, the only other common types represented are Ely wares. In this sequence Ely wares occur from the 13th to 15th centuries, contributing perhaps 15–20% of the assemblage in 1250–1350, a little more in 1350–1450 (around 25%) and dropping off sharply after that. Medieval Ely ware is present as bowl and jug forms from the start, with one complete large storage jar present in a mid-14th to mid-15th century phase (here No.64), but later on, when LMEL fabrics start appearing, only the bowls are present, including one example of the late medieval Potters Lane bowl (here Bowl I). There is evidence for specialised supply by producers or biased procurement by purchasers here, with Late Medieval Ely ware being chosen for bowls, LMU for jars (cooking pots), and Grimston ware for glazed jugs. Both of the latter were made in rural Norfolk.

The start of the industry; Early Medieval ware and 12th-century types

As noted at Forehill, Ely by Hall (2003) and by this author in the study of an assemblage from Jubilee Terrace, Ely (Spoerry forthcoming b), the start of Ely ware production appears to be characterised by a version of EMW (Milligan 1982) in an Ely-type fabric that dates from at least the early 12th century onwards and possibly earlier. Such material has also been observed by the author at Ramsey Abbey (Fletcher and Spoerry forthcoming a) in Late Saxon/Saxo-Norman contexts. The classic EMW vessel is the thin-walled handmade, baggy jar with an out-turned rim that was sometimes added on a turntable and often with piecrust decoration. These vessels have variable oxidation states evident across their surface and thus appear to have been clamp-fired.

The Ely version of EMW has not been fully investigated or described here, but more often than not the fabric appears from macroscopic study to be similar to MEL, but with a finer quartz sand component and often lighter in basic colouration, but with colour variation indicative of bonfire or clamp kiln firing. Full assessment of this type must await later work, although a note of caution about its ubiquity or ease of identification must be sounded by the absence of many 12th-century Medieval Ely ware vessels, or any description of the early EMW-type fabric, in the report on excavations at West Fen Road, Ely (Hall 2005) which includes occupation and activity from the Middle Saxon period to the 14th century.

Sometime in the middle of the 12th century true Medieval Ely ware appears, although as noted by Hall (2003) the early Ely fabric is, like that of Ely EMW, comparatively finely textured. Such early material has been found at Forehill by David Hall and to this must be added

the 12th-century groups from Denny Abbey (Coppack 1980). Although some information is contradictory, the general trend as evidenced by the assemblages discussed above, is for jars to be smaller in the 12th century than at later times. There is not enough evidence to define changes in the shape of jars from the 12th to 13th/14th centuries, although that which is available suggests a wide variety of shapes are present throughout, and upright rims may well be an early feature. Several baggy jars like No.58 here are recorded from Phase 1 at Lynn, with none from later phases being published.

Bowls are present in 12th-century groups. Hall identified one tall, narrow conical bowl as very early (here No.75) but no other examples of this form are known. Otherwise it is perhaps Bowl F, the inturned form and Bowl G, the form with upright sides and a comparatively simple rim, that are commonest in the earliest period of manufacture. The 12th-century Denny Abbey groups contain no bowls, which may be significant, although it is entirely possible that the particular nature of this monastic site precluded their use; there are few published bowls in any of the monastic phases from the site.

Green glazed jug sherds were present in 12th-century phases at Jubilee Terrace, Ely and similarly the 12th-century groups from Denny Abbey include jugs, (e.g. No.112). The presence of rod and strap handles in the Denny Abbey groups points to an early origin for both handle forms but it seems likely that there were no complex rim forms on 12th-century jugs. The Phase 1 examples from King's Lynn, which admittedly may be as late as 1250 in date, nonetheless support these last two assertions. Handmade jugs, with little wheel-finishing, may well be 12th-century in date but examples from the following 150 years are also evident.

Medieval Ely ware types: 13th to 14th centuries

The vast majority of vessel types as presented in the illustrations will date to this period. The standard cooking pot type jars are common (Jar type B and C) and in addition large storage jars are probably present from 13th-century contexts onwards, although most examples are later in date. Handled pipkins are also more common later, but are first seen in Ely fabrics in this period.

Bowl forms with a flared profile, sometimes slightly rounded and sometimes slightly concave, are a distinct feature of Medieval Ely ware in the 13th and 14th centuries. Bowl types A, C and D provide examples, many being decorated with stabbing, wavy lines or thumb impressions although, as already stated, at Forehill such decoration was found to be more common later on. Similar treatments are given to more upright forms (Bowl H) which are also common in this period. There is some value in the view that the Ely potters treated such bowls as a key specialist product at this time. Large flaring bowls with stabbing *etc.* are often the most easily and commonly recognised product of the industry in collections from other locations around the fenland, the King's Lynn assemblage demonstrating this well. Very few bowls in this period show any deliberate glazing. Some bowls appear to be made in a fabric that has very coarse shell and/or other calcareous inclusions added. Sometimes this is just present on the surface of the vessel, sometimes it lies throughout the fabric. The purpose, if any, of this remains unclear. Most Ely pottery in this period is in variations on a standard quartz-tempered fabric with

varying amounts of calcareous inclusions, as described in Chapter 4.

Two types of jug constitute further recognisable products of the Ely industry in this period: shouldered jugs, often quite large (Jug C) and small, rounded jugs (Jug E). The former have strap handles, always with a variation on a decorative theme (with a practical basis) that includes thumbing, stabbing and slashing in all possible combinations, and the rims are invariably quite simple, sometimes with a slight pulled lip. These shouldered jugs usually show evidence of hand-forming and wheel or turntable finishing and more often than not possess a partial lead glaze on the upper body and lower neck. The second type, the small rounded jugs, usually have rod handles which in this period are often elaborately stabbed. Two examples illustrated here show poorly realised body decoration in the form of 'fake scales' made with a ring stamp held at an angle (No.127) and wavy lines on the body that are so shallow as to be almost invisible under the glaze (No.128). Glaze is often thicker than on the shouldered jugs, thus being more green in colour.

One sherd from Potters Lane (No.24) is an intriguing example of a highly decorated jug in Medieval Ely ware. It has applied strips and lattice-stamped pads in white clay, with a white slip wash within panels separated by the strips, contrasting with the brown surface of the vessel elsewhere. This type of design, although originating with 12th-century French types, is probably a copy of examples made in other English potteries in the 13th century; *e.g.* at Lyveden/Stanon in Northamptonshire, at Grimston or in London ware. Another Ely ware sherd, this time from recording work at Broad Street by CAM ARC in 1996, was decorated with clay sprigs and white slip under green glaze, whilst one sherd from Newnham Street, Ely (Spoerry 1996) was decorated with applied scales and strips under a green glaze, again perhaps copying Grimston examples. To this can be added about six sherds of Medieval Ely ware copies of Grimston face jugs, found at Forehill (Hall 2003), Jubilee Terrace (Spoerry forthcoming b), and Swavesey (Fletcher and Spoerry forthcoming b). In conclusion it seems evident that potters in Ely in the 13th to 14th centuries were experimenting with copies of the more elaborate vessels that entered the town from outside. There is not yet good evidence of large scale production of highly decorated vessels, but an increasing variety of decorative treatments should be expected as more pottery is excavated.

Late medieval Ely ware types: late 14th to 15th centuries

Late medieval Ely vessels include a different suite of jug forms, as discussed on p.53. These are present in the 15th century at Potters Lane and, in line with trends in ceramic manufacture nationally, it is expected that these new variants emerge from the latter half of the 14th century onwards. The fabrics are also finer by the 15th century, vessel walls of jugs are often thinner, vessels are usually wheelmade, more heavily glazed and with much less plastic decoration. The small rounded jug continues, but the shouldered jug probably disappears in the later 14th or 15th century to be replaced by larger rounded jugs and possibly some other new shapes. The late medieval jugs show their wheelmade, or heavily wheel-worked, origin in wheel-incised horizontal lines in groups on the body of the pot. One vessel from Potters Lane (No.52) has a quasi-

heraldic motif incised and stamped onto the body of the pot below a thick green glaze.

Late medieval jars tend to have very rounded bodies and often show groups of wheel-incised lines like the jugs. Short everted rims are common. The large storage jars (Jar E) are probably more common later on and these are the only late medieval vessel type to show applied, thumbbed strips.

Flared bowls continue, but rounded profiles appear to become more common. Internal glazing is also more common and bowl sizes are usually smaller than in the 13th to 14th centuries. The Potters Lane bowl (here Bowl I), a carinated and/or rounded type, is a form that owes general inspiration to Low Countries examples of the late medieval period. It is found in, for example, LMT at Norwich (Jennings 1981, 63), an unsurprising continental influence in an eastern port town in this period.

It seems likely that minor types such as dripping dishes and handled pipkins are generally late medieval in date, by analogy with material elsewhere, but a lack of stratified examples currently prevents this assertion from being confirmed.

The production of a variety of ceramic building materials, as described in Chapter 5.IV, was underway by the 15th century, and many types were probably made a century or two earlier as well.

II. Distribution

Evidence for the distribution of Ely wares

The extent of each of the zones discussed in this section is shown in Fig.27, whilst all places producing pottery discussed in the text appear in Fig.12.

Ely

From perhaps the mid 12th century onwards Medieval Ely ware dominates the town's ceramic assemblage. This is not, however, the first element in local pottery manufacture as it is very likely that a version of EMW was made here first (see p.66). This pottery type has a general occurrence date range of AD1050–1200 and, although it is found widely across a region that extends from Norwich to Cambridge, it seems to be most common in west Norfolk and east Cambridgeshire, thereby encompassing Ely and its surroundings. The other known producers of EMW are rural kilns in Norfolk (*e.g.* Blackborough End, Barton Bendish and Fransham; McCarthy and Brooks 1988). The first of these three, possibly along with some kiln sites at Grimston, produced unglazed reduced ware pottery in subsequent centuries.

Currently the best statistics for the start of Medieval Ely ware dominance in the late 12th century are from Jubilee Terrace (Connor and Oakey forthcoming) where in Period 1 80% of the assemblage is Medieval Ely ware, whilst only 2.4% is EMW.

At Lisle Lane (Oakey and Connor 1999) and Jubilee Terrace (Connor and Oakey forthcoming) in Ely in the period 1200–1350 the amount of Ely ware in the assemblage was around 90% and 75% respectively. No good statistics are currently available from the town for the late medieval period, but a similar level of dominance is likely. At Forehill (Hall 2003) of around 6,600 sherds of medieval fabrics (12th to 15th centuries), 70% were Ely fabrics, with most of the rest deriving from Essex, or Grimston and other kilns in west Norfolk.

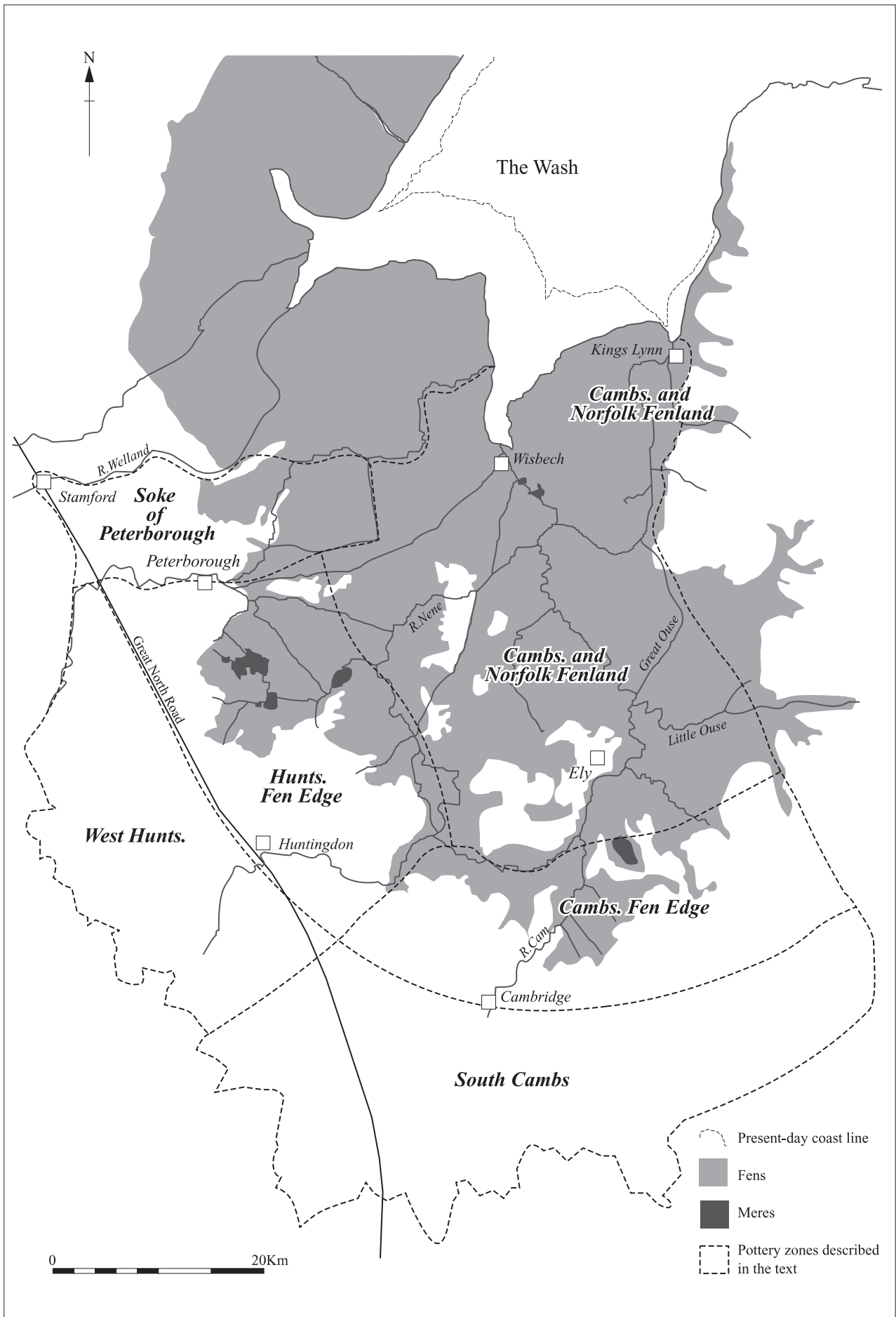


Figure 27 Sub-regional geographic zones. Scale 1:500,000

King's Lynn

The major report on excavations at Lynn provides no numerical quantification of pottery types (Clarke and Carter 1977). There has been very little excavation in the town between that campaign of the 1960s and the last few years (B. Ayers, pers. comm.) and the recent excavations have yet to be published. The 1977 report identified Grimston Software, which is now known from the thin section and ICPS analyses accompanying this report to have been manufactured mainly at Ely. It first appears in the 12th century, partially replacing Grimston Thetford ware. It is common in Phase I at Lynn, perhaps being the most common pottery type at this point (AD1050–1250), and declines markedly in importance in Phase II (1250–1350) (Clarke and Carter 1977, 3) but can still be found in small quantities in late medieval deposits.

There is no doubt that Lynn was a key market for Medieval Ely ware in the 12th and 13th centuries, but it is also apparent that from at least 1250 onwards, the amount of pottery being transported downstream along the eastern Great Ouse system from Ely to Lynn was reducing in the face of competition from alternative producers in rural west Norfolk. In particular the Grimston potteries were to blame, but also kilns producing other reduced wares, but as unglazed vessels, at Blackborough End and possibly Barton Bendish. These sites in west Norfolk had good waterborne access to Lynn and were positioned much closer than Ely.

The Cambridgeshire (and Norfolk) fenland

This area, as defined on Fig.27, includes the Cambridgeshire silt fen to the north, and the wetter peat fen to the south, characterised in the medieval period by islands within the broader wetland landscape. Discounting Ely, to date few excavated assemblages of any note have been recovered or published from this zone, excepting a Fenland Management Project investigation of a saltern site at Parson Drove (Hall in Lucas 2001) and an urban site at Market Mews, Wisbech (Sperry in Hinman and Shepherd Popescu in prep.).

David Hall reports that Ely ware is very common in the Parson Drove saltern assemblage and this provides the only excavated rural assemblage of Ely wares from the fenland proper. A small evaluation assemblage from part of the medieval hamlet of *Estwode* in Wimblington parish on March island was recovered in 1993 (Robinson 1994). This proved to include mostly Late Medieval Ely ware sherds, but with Grimston sherds and one large piece of Cambridge Sgraffito also present.

On the Isle of Ely at Stretham Rectory the remains of a stone tower house, perhaps a parsonage dating to the 12th to 13th century, were investigated (Horton and Lucas 1990) and pottery deriving from this structure, and perhaps pre-dating it, is composed chiefly of Medieval Ely ware, with Thetford and St Neots type wares also evident. The presence of all three types in most contexts points to both residuality and the possibility that the period of activity includes a significant overlap in manufacture of these types, perhaps from 1150 onwards.

At Market Mews, Wisbech a small part of a well-preserved stratigraphic sequence 3m deep and spanning three centuries was excavated. This sequence includes thirteen phases of occupation separated by layers of silt deposition derived from flooding, (Hinman and Shepherd Popescu in prep.). The amounts of pottery recovered are

small (less than 1,500 sherds overall) but the potential value of a thirteen-phase occupation sequence, each phase separated from the previous by flood events, cannot be over-stated. The first excavated phases (the sequence was not bottomed) date to the period 1250–1350 and here Medieval Ely ware constitutes an average of 19% of the pottery and is made up of bowls and jugs. Phases dating to 1350–1450 contain around 8% Ely products (MEL and LMEL) and this is made up of bowl sherds, alongside one complete storage jar (here No.12) only. By the mid 15th century 12% of the pottery is from Ely and almost all of it again is bowl forms. By the end of the 15th century Ely pottery is less than 3% of the assemblage and much of this may be residual. Other fabrics present in this assemblage are mainly Grimston ware (jugs, some bowls) and LMU (Jennings 1981), mostly jars. These two types were both made inland from King's Lynn in west Norfolk, and were presumably moved upstream to Wisbech on boats. There is good evidence at Market Mews for the acquisition of different vessel forms from different producers; bowls from Ely, jars from the LMU kilns and jugs from Wisbech.

The CUMAA collections include a number of assemblages, both small excavation and chance finds, from the southern fenland. In particular there are a number of complete Ely ware vessels from Aldreth, on the south-western edge of the Isle. A group of chance finds from Wicken includes two very large Medieval Ely ware bowl profiles alongside medieval greyware sherds from Essex producers, the micaceous fabric suggesting a possible origin at Sible Hedingham.

The Wisbech and Fenland Museum (WFM) contains a great number of small collections, both excavated and casual finds, of medieval pottery from the northern Cambridgeshire fenland. This includes Ely ware jugs from Upwell Creek and jars and bowls from Emneth. Small excavation groups from the town of Wisbech show Ely wares again to be common, but secondary to Grimston products. At Needham Bank, Warby, a collection from ditching includes Grimston, EMW, LMU Lyveden-Stanion jug sherds, transitional redwares from Norfolk (LMT) and Ely wares. A small excavation group from Elm, of perhaps 13th-century date, is made up of four Medieval Ely ware bowls, several Grimston jugs and jars, LMU jars and one Sible Hedingham jug. Collections not featuring Ely wares are known from Leverington Hall and Tydd St Giles, with Norfolk products dominating.

In conclusion it is apparent that in the northern Cambridgeshire fenland Medieval Ely ware may have had some sort of pre-eminence before the arrival of great quantities of Grimston pottery in the mid 13th century, however, although it continued to be present for the next 200 years or more it was from Norfolk that a larger number of vessels were brought. The eclipse of Wisbech as the main international port of the fenland basin by Lynn from the early 13th century onwards, owing to changes to the river outfalls, must have been a key factor in this part of the county being dominated by Norfolk pottery. Once Ely had a part-canalised river leading directly to Lynn the transport of goods to Wisbech can only have been a secondary route, and an indirect one at that. Conversely potters carting or barging their vessels a few miles from rural west Norfolk kilns straight into Lynn would have found traffic for much of central England to take their goods via Outwell and the Nene system to within a mile or two of Wisbech itself.

Cambridge

There is no doubt that Cambridge was a key market for the Ely potters. The CUMAA holds several excavated collections that were recovered in the 20th century, although only some of them are published (Addyman and Biddle 1965). It is beyond the scope of this survey to reassess and quantify the other collections, however a brief appreciation of their content has been gained through a cursory 'dip' into boxes. To this can be added the great number of whole or semi-complete medieval vessels from Cambridge held by CUMAA, which include at least twenty-two that are almost certainly or definitely Ely wares, many of which appear in the illustrations and plates accompanying this text.

Those excavations that have been published from Cambridge do not on the whole provide ceramic quantification figures (Addyman and Biddle 1965) excepting a recent summary paper on small excavations carried out during the 1990s by the CAU (Edwards and Hall 1997). This paper identifies both Saxo-Norman and 13th- to 15th-century assemblages, the latter including up to 8% by count of 'Ely and Colne wares'. This demonstrates the similarities between these two wares. Hall rightly indicates that Colne is generally more finely tempered and his inability to separate them when studying these groups during the 1990s reflects the very recent recognition of Ely ware and the lack of a full macroscopic or petrological description for either ware before now. The Saxo-Norman assemblage at Cambridge, as identified by Addyman and Biddle (1965) and by Hurst before them (1956 and 1957), is dominated by St Neots type, Thetford type and Stamford wares (the eastern English trinity). The remainder of the post-Conquest medieval assemblage is made up of Developed St Neots/Shelly wares from Northamptonshire, micaceous coarsewares from Essex, Lyveden-Stanion, Brill, Heddingham and Grimston glazed wares, and later with redwares from Essex and greywares probably from Northamptonshire prevalent.

The unpublished boxes of material held by CUMAA, like the group of complete vessels held there, show a greater presence of Ely wares than suggested by the 'up to 8% of medieval sherds' that were present in the CAU's recently published sites. The implications of this are that the assemblage in Cambridge as a whole is not yet sufficiently well-defined to represent all variation inherent in the use of ceramics in a large medieval town over several hundred years. There are no doubt periods that remain under-represented (acknowledged by Edwards and Hall 1997) and there will be plenty of scope for different activity zones within the town, and institutions and properties with differing histories of ownership, to exhibit much more varied ceramic assemblages.

The South Cambridgeshire fen edge

This zone includes those parishes adjacent to, and straddling, the upland and fenland divide in a band mostly to the north of Cambridge. The best excavated collections of medieval ceramic material are unfortunately mostly of pre-Conquest date, including Lordship Lane, Cottenham (Hall in Mortimer 2000), Willingham (Hall 1997), and Hillside Meadows, Fordham (Ratkai forthcoming). In the case of Lordship Lane, Cottenham, the sequence ends in the 12th century, by which time an Early Medieval ware type of pottery has appeared. Fortunately an evaluation

assemblage from Denmark Road in Cottenham produced 172 post-Conquest medieval sherds, eighty-one being Ely wares and fifty-eight being micaceous wares from Essex (Spoerry in Heawood 1997). It is quite probable that this is a good indication of the general medieval assemblage in this area, where by the 13th century Medieval Ely ware is the most abundant type, but Essex material is also common.

A number of evaluations around Soham have largely proved earlier in date than the introduction of Ely products, however, at a former mere-side location at Cloverfield Drive eighty-one sherds out of an evaluation assemblage of eighty-six are Ely wares, perhaps all 13th- to 14th-century in date (Spoerry in Hatton and Macaulay 1999). These include a number of sherds of 'curfew' form that may in fact have been fish-smokers. Other pottery types of this date found in further sites in the village include products of the Lyveden-Stanion kilns, Grimston glazed jugs and micaceous Sible Heddingham sherds. A similar range of high medieval types has been observed at Swaffham Bulbeck whilst at Teversham an assemblage that might be a little later includes some possible Ely wares, along with Colne sherds and other harder-fired sandy wares alongside the Essex micaceous sherds and Northants shelly wares. Vessels and sherds held in the CUMAA collections include Ely and Grimston ware from Fordham.

Large-scale excavations in Swavesey were completed by CAM ARC in 1999. The ceramic assemblage in the Saxo-Norman period is dominated by St Neots-type and Thetford-type wares. The former develops into and/or is replaced by Northants-type shelly ware (SHW) from the mid 12th century onwards whilst alongside it Ely and Colne wares are common with Lyveden-Stanion, Grimston and Mill Green glazed vessels also present as well as some further Essex micaceous coarsewares. In the 13th century around 20% of pottery is Medieval Ely ware, with another 10–20% being Ely-type; slightly harder-fired and finer fabrics that also show some similarities with Colne wares. The Ely-type pottery at Swavesey needs to be investigated further as it may represent the best evidence yet for a previously unknown western fen edge kiln site, perhaps also providing the chemically distinct sherds identified at Ramsey. Almost half of the Ely ware at Swavesey was in the form of jug sherds, with 40% being jars and only 13% recognisable as bowls. There is no doubt that the very recognisable Medieval Ely ware bowls that may have been preferentially selected at, for example, Forehill Ely, Wisbech and perhaps King's Lynn, were not distributed to, or used in the same numbers on, the medieval properties excavated on the Swavesey site.

The Huntingdonshire fen edge

This zone continues the arc of the previous area to the north and west, the most significant aspect of the data from this zone being the presence of the medieval pottery production site at Colne (Healey *et al* 1998) producing pottery of a generally similar tradition to Ely wares. In addition the pottery recovered from sites in this area often includes a slightly harder-fired, fine fabric that has been classified as Ely-type ware, but may originate somewhere else in the fenland; probably within this zone. This pottery has been scientifically studied through Thin Section and ICPS analysis of a few sherds from Ramsey Abbey, which

were originally described as Ely wares and which are chemically distinct from 'true' Ely products.

Evaluation assemblages have not proved common to date, with the following being recovered from a variety of spot-dating notes from assemblages studied by the author during the 1990s. An assemblage from Abbots Ripton produced Ely wares alongside other similar sandy wares with St Neots, Thetford and Stamford wares pre-dating them. Several small groups of sherds from trenches in St Ives have tended to produce Ely ware sherds within medieval assemblages, but only as one of several types of equal importance including Northants shelly wares and Colne wares.

Several phases of small-scale evaluation and excavation by CAM ARC on the site of Ramsey Abbey, one of the wealthiest institutions of medieval England, have produced the Ely-type pottery as previously described alongside true Medieval Ely ware sherds and Colne products. In the 1998 excavation area on the periphery of the monastic complex, 12th-century assemblages appear to contain Grimston Thetford ware, Early Medieval ware and Northants shelly ware (Fletcher and Spoerry forthcoming a) with Medieval Ely ware not being dominant until perhaps the 13th century. During this period the combined dominance of the ceramic assemblage by Medieval Ely ware and Ely-type wares (not fully separated) implies a potentially local source for the latter, and both together appear to be more commonly present as jar forms, than either jugs or bowls (least common).

The CUMAA collection includes a reconstructed Grimston face jug from Earith whilst the Norris Museum's collections include a group of EMW and Medieval Ely ware sherds also from Earith. Other groups from the Norris Museum include Grimston and Lyveden-Stanion vessels from Ramsey, a late Lyveden jug from St Ives and an Ely-type ware bottle from Houghton.

The draining of Whittlesey Mere in the 19th century resulted in the recovery of several complete vessels that had fallen from, or sank with, boats. CUMAA contains two such vessels, one an Medieval Ely ware (or Ely-type) pear-shaped squat jug and the other a red sandy ware jug that may be a product of the Bourne kilns (Lincolnshire). Peterborough Museums collections also include two vessels from the Mere, one of uncertain origin and one a large Medieval Ely ware rounded jug (Jug A).

Re-routing of the A1 Great North Road in 1958 necessitated an excavation at Water Newton House (Green 1964), finds from which have been studied by the author at the Norris Museum. Although the collection was not studied in great detail it was evident from this short assessment and from the published information, that all of the expected wares of the 13th to 15th centuries were represented, *except for* Ely and Colne wares. Brill and Pottersbury wares and shelly sherds, probably from Lincolnshire, were also present. This should caution against assuming that the standard assemblage in any given locale is anything other than an average, with plenty of scope for variation from any perceived 'norm'.

In conclusion Medieval Ely ware is indeed common in the 13th- to 14th-century assemblages from the Huntingdonshire fen edge, but the presence of the Colne kiln, along with a possible further Ely-type ware producer in this area confuses the picture and means there is less than might be expected this close to Ely.

Huntingdon

A number of small and medium-sized excavated medieval collections have been studied from the town over the last few years, offsetting the complete absence of information on the subject that existed prior to the late 1990s. The first to be published was from Orchard Lane (Spoerry 1997) but this did not provide reliably stratified data for the post-Conquest period. More recently the author has studied assemblages from CAM ARC excavations at St Clements Passage (Roberts 1999) and Stukeley Road (Spoerry and Cooper forthcoming), and RPS Clouston excavations at St Germain Street (Spoerry forthcoming a). A large number of smaller evaluation and recording assemblages have also been studied by the author, including sites on Brookside (Cooper and Spoerry 1998), High Street (Heawood 1994; Welsh 1994) and Hartford Road (Connor 1996).

At Orchard Lane, the later fabrics include Medieval Ely ware and EMW amongst pottery from both Northamptonshire and Colne (Spoerry 1997). At the evaluation sites Ely wares are only a minor component on the whole, and only the 13th/14th-century types, as opposed to Late Medieval Ely ware, have been recognised.

At Stukeley Road, the Period 1 assemblage (AD1050–1200) contains no Medieval Ely ware alongside the standard Saxo-Norman 'trinity' of eastern English fabrics, and in Period 2 (AD1200–1350) there is only a small amount of Medieval Ely ware, at 2%, with Colne wares (15%) and other unprovenanced sandy wares more common (Spoerry and Cooper forthcoming). In the same period at St Clements Passage a small medieval assemblage includes 28% Medieval Ely ware by weight, dropping to 8.5% in the period 1350–1500 (Spoerry in Roberts 1999). The vessels recognisable here are jugs, jars and bowls in the earlier period, but only bowls later on.

At St Germain Street a larger assemblage provides, along with Stukeley Road, the best high medieval pottery statistics for the town to date. Mirroring the latter site, the St Germain Street assemblage for AD1200–1350 includes only 3.8% Medieval Ely ware by weight, with 6.2% Colne pottery alongside a majority of vessels from Northamptonshire. Late phases are smaller assemblages but it seems that Ely products are no more, and perhaps less important late on, although one biconical Late Medieval Ely ware jug was identified (here No.87).

In conclusion Ely wares are present in Huntingdon from the 13th to 15th centuries, but it is unlikely that they were ever anything other than a fairly minor component in the assemblage. Again there is difficulty in separating true Ely products from both Colne wares and a previously unknown and probably Huntingdonshire-based Ely-type ware producer.

Peterborough and the Soke

The town and soke of Peterborough have been included together for the purposes of this study. The surprisingly limited extent of excavation in the medieval town has resulted in little publication, however, the author's work at The Still (Spoerry and Hinman 1998) as well as a reassessment of an unpublished ceramic report by Hilary Healey from Bridge Street in the same volume, provide a firm basis on which to build. Ely wares are present from the 13th century onwards but at The Still they are comparatively rare until Phase 4 (1350–1450) where 10%

by weight was deemed to be Ely ware (the division between MEL and LMEL was not recognised in the terminology adopted by the author at that stage). By Phase 5 Ely wares decline to 2% of the assemblage. The market niche utilised by Ely wares was also filled by Bourne pottery in the Peterborough area, and this is reflected in the dominance of Bourne products after 1350, even when Ely products are at their most common. Interestingly, although no statistics are available for the Bridge Street assemblage, *Cambridgeshire sandy wares*, that are believed to be a description of Ely wares, alongside Ely-type ware and probably Colne ware, are a significant post-1350 feature at Bridge Street as well. This suggests that Ely wares may not have featured much in the urban ceramic assemblage as a whole at Peterborough prior to this.

Rural assemblages from the Soke mostly offer very little evidence for Ely wares. Distance from source, indirect water/road transport outside of the Nene corridor and the presence of much more local alternatives, the Stamford, Bourne and Rockingham Forest potteries, are undoubtedly the explanation. Thus assemblages from Maxey (Fletcher in Connor forthcoming a) and Castor (the Potters Oven assemblage in Peterborough Museum and Art Gallery, PMAG) include no Ely wares and little else of apparent Cambridgeshire fenland origin. Recent excavations at Botolph Bridge on the south bank of the Nene and historically in Huntingdonshire, have also shown Ely wares to be a very minor element in the medieval ceramic assemblage, even on a settlement with direct access to river transport (Spoerry and Fletcher forthcoming). Ely wares and Ely-type ware are present in all phases from the 12th to 15th centuries, but only constitute 0.2% of this assemblage of over 3,000 sherds.

Although any small selection of whole vessels from a region might be very biased in favour of the collectable, as opposed to the originally common, it is worth noting that of the fifteen or so near-complete and complete post-Conquest medieval vessels held by PMAG only one is probably an Ely ware or Ely-type ware (4/L168 from Whittlesey Mere, already discussed). Most vessels can be attributed to the Bourne industry, with Stamford and the Rockingham Forest also providing examples. This accords with the excavated collections from the Soke of Peterborough as already described.

In conclusion Ely wares appear to have been a minor component in the late medieval assemblage at Peterborough and may not have been seen much in the town before 1350. In the villages of the Soke Ely products were even less common and did not penetrate north and west of the town at all.

South Cambridgeshire (south of Cambridge)

Ely wares have been recognised in some excavated collections from villages south of Cambridge, but they are nowhere very common. The largest rural assemblage that has been studied in detail, that from the 10th- to 13th-century settlement at Hinxton Hall, includes no Ely ware in more than 3,000 sherds. Saxo-Norman Thetford and St Neots wares are replaced by later shelly wares, probably in the main from Northamptonshire, but perhaps also from further south in Bedfordshire as well. The majority of the post-1150 assemblage at Hinxton is composed of micaceous pottery from north Essex and sandy wares of fairly local origin.

Large fieldwalking collections from Castle Camps (HDAG 1997) also show dominance by Essex types with no Ely wares evident, whilst a large evaluation assemblage from Barrington (Spoerry in Roberts 1996) mostly contains Essex micaceous wares and Hertfordshire grey wares. This picture is continued in many further small evaluation assemblages from this area, whilst the written descriptions from earlier published excavations at Hardwick (Haselgrove 1984) and Fowlmere (Murphy 1977) provide nothing that might be from Ely and plenty that is likely to derive from Northamptonshire, Hertfordshire and Essex.

At Caxton, on the western edge of this zone, a small excavation assemblage has produced a few sherds of Ely wares in all three site phases from the 12th to 15th centuries (Fletcher in Connor forthcoming b). These sherds constitute less than 1% of the assemblage overall which otherwise contains much material from Colne, from Essex and from Northamptonshire.

Despite the lack of sherds in most recent excavated collections, it is apparent that Ely wares were used in the villages around Cambridge as the CUMAA collections include a number of complete vessels. For example, a jug and part of a jar are known from Hauxton Mill (the jug is shown here: Fig. 7, No. 111). It may well be that in this case the location by the River Cam is significant, and that ceramic vessels from Ely might have been transported south of Cambridge on barges.

In addition Ely products are present in older excavated collections held at CUMAA. At Flambards Manor, Meldreth (unpublished but see Lethbridge and Tebbutt 1935) Ely wares were found alongside medieval products of the Colne kilns and shelly wares from Northamptonshire. An assemblage from Barton Moats (Walker 1908) also contains Medieval Ely ware jars, with St Neots ware or the later Northants shelly ware (the inheritor of the St Neots ware tradition in this area; see Spoerry and Hinman 1988). An excavated assemblage from Comberton on the upland side of the zone includes Essex micaceous pottery with some Ely and Colne wares replacing a Saxo-Norman assemblage of St Neots and Thetford wares (held at CUMAA).

In conclusion the small amount of Ely wares present in recent excavated collections from this area is not entirely mirrored by the substantial number of complete vessels recovered in earlier times, both through casual finds and early archaeological endeavour. It is likely that Ely wares were a moderately common component of the medieval ceramic assemblage in parishes to the north of Cambridge, and perhaps along the Cam valley, but they were much less common further to the south.

Central and West Huntingdonshire

There are few recent excavation assemblages of the relevant period from this region. A small site at Spaldwick produced groups from the 11th to 15th centuries and in these 350 sherds there were no examples of Ely wares, but a good number of Colne products (Spoerry in Schlee 1996).

Fortunately two sizeable excavations were published in the 1970s, the moated sites at Ellington (Tebbutt *et al* 1971) and Wintringham (Beresford 1977). These two assemblages show some similar characteristics and the Spaldwick site and several recent evaluations do not alter this picture greatly. At Wintringham the assemblage is

dominated by St Neots type ware and its Shelly ware (SHW; Spoerry 1998) replacements, in this case probably from Northamptonshire. Local sandy wares first appear around AD1230 and the micaceous examples are probably in fact Essex products, whilst others appear from the published examples to be similar to Hertfordshire greywares. Glazed pottery is mostly from Stamford, Lyveden, Brill and Pottersbury. Nothing remotely like Ely ware was described or illustrated. At Ellington again the dominant types are shelly pottery, both St Neots type and later Northants types, but there are also sandy wares which, in this case, were likened in the report to examples from Therfield and Bedford, but could also be of Colne or Ely type, or from Northamptonshire.

Complete vessels and groups of sherds in the CUMAA collection are mostly shelly wares, whilst material held at the Norris Museum, from excavations in St Neots including the Priory (Tebbutt 1966), shows sources to the west of our region being most important, with no Ely wares evident. A group of sherds in the Norris Museum from St Neots Market Place does include some possible Colne products.

In conclusion Ely wares appear to have barely penetrated this region west of Huntingdon.

Elsewhere

From south Lincolnshire, a group of large sherds from the Spalding river consists of pieces of ten Grimston vessels and two Ely ware jugs (in WFM). A recent report on ceramics from a long urban sequence in Boston includes Bourne wares, some of which could be confused with Ely products, but this is perhaps unlikely.

A large assemblage from Stratton, Bedfordshire, includes a few sherds that are either Ely wares or Ely-type ware (Slowikowski, pers. comm.). These include two jars, probably 13th/14th- and 14th/15th-century in date, the former with applied strip decoration. A possible Medieval Ely ware sherd in a Thetford type handled jar form points perhaps to manufacture and movement of Ely pottery in the 12th century, but without other examples from closer to the source this attribution must be viewed with caution.

Published reports from Norfolk provide no evidence of Ely wares outside the town of Lynn, although it is possible that a few pieces of uncertain origin from Norwich are also Ely products. A rural assemblage of 11th- to 13th-century date from Wereham on the Norfolk-Cambridgeshire border contained no Ely wares, but was dominated by Grimston Thetford and Early Medieval wares (Spoerry in Leith and Oakey 1997).

Rivers and roads: the mode of distribution and the market

There is no doubt that water transport played a significant role in the marketing of Ely wares. The known medieval kiln site at Potters Lane was only one of a number of properties where this material was manufactured, but all evidence to date points to the kiln sites being on the east side of town. This 'lower town' is believed to have developed following the re-routing of the eastern Great Ouse river past the foot of the hill, probably in the main to facilitate the supply of materials for various ecclesiastical building campaigns (Fowler 1934, 23). This movement of the river has been dated to the 12th century in the past, with the most recent view on this subject concluding that it occurred 'by the 12th century' and may have been

executed at the same time as the route to Lynn was improved with the cutting of the Ten Mile River (Coles and Hall 1994, 136). Whatever the truth of this, the sudden improvement in communications no doubt aided the growth of the town's commercial activities (Robinson 1993) and this would have included the manufacture and distribution of pottery. The key to successful pottery-making in this context was probably direct access to frequent and extensive river transport for this bulky, heavy, fragile and comparatively low value product. It is thus no surprise that all evidence for pottery manufacture in Ely, from the 13th to 17th centuries, is located adjacent to the river.

Besides the expanding town of Ely itself, one of the earliest large markets for its pottery vessels was undoubtedly the even more successful port at Lynn. As previously discussed the pre-AD1250 levels at Lynn include large quantities of Medieval Ely ware which declines in importance in the face of competition from new and more closely-situated rural Norfolk producers from then onwards. The story of the southern fenland waterways in the medieval period is dominated by the massive changes that occurred during the 13th century when the main outfall for the Great Ouse and Nene systems transferred from Wisbech to Lynn (Darby 1983, 31–34). It is thus somewhat curious that pottery supply from Ely to Lynn declines at precisely the time when Lynn was rising to pre-eminence as the main *entrepot* of the eastern region. There is perhaps a dual explanation for this. Firstly, as already stated, there is the appearance of larger scale competitive producers from the mid 12th century onwards (particularly at Grimston). The impetus for this must itself have been the rise of this great population centre and international trade port close to hand, with the development of pottery manufacture within its hinterland entirely to be expected. Secondly, although the main natural routes for the Nene and western Great Ouse water diverted along the 'Well Creek' from the Wisbech outfall to Lynn during the 13th century, the eastern Cam-Ouse was by then channelled along the already mentioned Ten Mile river (cut by the 12th century at latest) which gave direct access to the sea at Lynn for the emergent town of Ely. It is the man-made river changes in the 11th or 12th century, rather than those associated with 'natural disaster' in the 13th that offered the Ely potters opportunities to market direct to Lynn. It is very likely that the mechanism for the movement of pottery downstream from Ely to Lynn was through utilisation of empty boats that had in the first place brought foreign cargoes upstream. Most of the Ely ware pottery excavated in medieval levels in Lynn had an overland journey of no more than a few hundred yards, from kiln sites adjacent to the hithes at Ely, to the economic heart of the riverside areas of Lynn.

Ely wares are also common in excavated assemblages from Cambridge, the nearest centre of any size upstream from Ely and currently without known ceramic manufacturers of its own. The pottery assemblage in Cambridge is quite diverse, insofar as the most important pre-Conquest producers (St Neots and Thetford type wares, from the west, and south and east, respectively) are joined first by Early Medieval ware and, by the late 12th century, by true Medieval Ely ware, micaceous pottery from Essex and to a lesser extent by Lyveden-Stanion products from Northamptonshire. The Thetford ware

producers disappear around this same time, but all other industries/regions described thus far continue to supply the town into the 14th century. Ely is thus one of several important suppliers of medieval ceramics to Cambridge, none of which are 'local'. Medieval Ely ware, made 27km directly downstream, is thus better placed than perhaps any other product and the fact that it does not come to be much more dominant in Cambridge is a little surprising.

There is no doubt that the presence of large amounts of Ely wares at small ports in the Cambridge sub-region, such as Swavesey, or in village assemblages on the Cambridgeshire fen edge, is not unexpected. It is the most local producer and has access by water, whilst small settlements are unlikely to have the longer-distance contacts evident at Cambridge. A dominance of Ely wares in medieval assemblages from the fen islands is also unsurprising, although the competition from Norfolk producers in the northern Cambridgeshire fens, as seen in the town of Wisbech and in a number of groups from villages also, was real and perhaps ultimately successful.

Small amounts of Ely wares are found in all the larger fenland centres and towns on the main rivers of the middle Ouse and Nene systems. It is likely that examples will be found further up the Nene at Northampton and along the Great Ouse in Bedford and possibly Buckinghamshire. There is no evidence that there was massive movement of pottery upstream even as far as Huntingdon and Peterborough, however. Excavations in both towns produce Ely wares, more often of later date at Peterborough, but in neither case have they so far been seen to be dominant. At Huntingdon, Northamptonshire producers seem most successful, but Ely wares are present as one of a group of 'Fenland wares' that includes Colne and Ely-type wares.

It seems likely that occasional Ely ware vessels will have been transported overseas, Ely being an inland port with direct access to the great North Sea trade port of Lynn.

The Isle of Ely had, in the medieval period, poor major road contact with the rest of the region. The main access to Cambridge to the south was via either Roman Akeman Street, which also continued northwards to Norfolk, and the Aldreth-Cottenham causeway. The parts of these routes that crossed the fenland were subject to inclement weather and, like all minor routes in the fenland, were often only seasonally passable, something that for most minor routes was only rectified in the 1940s. Thus, in terms of transportation of goods Ely was indeed an isle. As with the sea, however, the lack of land-based routeways is not necessarily an impediment to travel. To the outsider the fenland might have seemed frightening; a region of endless meandering waterways, bogs, reed beds and sheets of open water punctuated by seasonal pasture. Although a true description, this does not tell the whole story and, once routeways through the rivers, brooks and meres were known, in comparison to overland transport, the region would have offered safe, speedy movement of people and materials in bulk.

As already discussed, Ely wares appear to have been manufactured close to the waterfront at Ely with the express intention of moving the material around to other market locations via the fenland waterways. Despite this, however, the primary market must have still been the town of Ely itself, and one might envisage sale at the potter's tenement, or on the Market Place on the hill by the Cathedral, to have been the most common route from

producer to consumer. Excavated evidence points to a dominance of Ely wares in medieval ceramic assemblages across the whole Isle, and this may represent the only zone where Ely wares were carted to settlements or hawked on foot. Even so it is perhaps more likely that purchase at the market in Ely was the most common mode of distribution to the peasants of Haddenham, Sutton, *etc.*

Evidence for the distribution of Ely wares during the medieval period points to a good degree of access to major and secondary centres on direct water routeways from Ely, and a dominance of the local southern and eastern fenland rural pottery assemblages, the latter achieved through both waterborne and, presumably, dry land transport. In the main, however, the rivers and the wetlands dictated the degree to which these goods could be moved.

The comparative fall-off of Ely products in assemblages on the Huntingdonshire fen edge and north-westwards to Peterborough needs further consideration. Peterborough and Yaxley represent large inland ports of the period, whilst on the face of it Huntingdon, St Ives and Ramsey are other major centres with water access that might represent easy markets for Ely potters. Good data is not available for all of these centres, but there are reasonably solid indications to suggest that not as much Ely pottery found its way to these towns/ports as might have been expected. Two possible explanations, both linked, spring to mind. Firstly, medieval documents detail the long-running disputes between, for example, the burgesses of Huntingdon and the Prior of St Ives (held by Ramsey Abbey) regarding obstructions to the flow of the River Ouse, and goods along it, at the Prior's Mill at Houghton and elsewhere. The Prior of St Ives, and his master the Abbot of Ramsey, were undoubtedly engaged in a campaign to restrict trade at the county town in favour of their growing and hugely successful market and fair at St Ives. These disputes went on for hundreds of years and there is no doubt that the economies and status of Huntingdon and Godmanchester were affected, whilst St Ives fair became one of the largest in 13th-century Europe. Secondly, Ramsey Abbey, the key player in this drama, owned most of eastern Huntingdonshire which is roughly coterminous with the zone where the presence of Ely ware declines in medieval assemblages, to be in part replaced by a similar fabric with as yet no provenance. Although real evidence is thin on the ground it is worth considering that the region in which Ely wares were most commonly used might have been in part limited by the counter-interests of the main rival in the southern fenland to the economic power of Ely Abbey, namely Ramsey Abbey.

III. Other Elements in the Ely Wares 'Tradition'

The kilns

Although as yet it is uncertain how many pottery kilns existed in Ely, it is certain that there was more than one. It is likely that from the 12th century through to the 17th century, there was at most times a community of potters living and working in the lower town close to the riverside at Ely. The street name Potters Lane is now known to have 13th-century origins, when it was noted as containing four messuages (Owen 1993, 19). By the early 15th century the lane contained sixteen tenements, on one of which 'a potter's house was sometime situated' (Calendar of Patent Rolls 4, Henry V, 1416, Mem 5-1). It is known that a

potter's workshop was present at the waterside off Broad Street in the 16th century as its remains have recently been excavated (Cessford *et al* 2006) and this tenement even had its own mini-lode running off the river to bring barges to within a few feet of the kiln itself. At the same time black-glazed cistercian-type ware may have been made across the River Ouse in an area just outside town known locally as 'Babylon' (Hall 1996, 38). By the late 15th century there were brick and/or tile kilns at both Barton Farm and Turbutsea on the northern edge of town (Lucas 1993). There is thus plentiful evidence to indicate later manufacture of clay products, but it is really the far greater diversity of fabric types and forms exhibited by Ely ware vessels in both excavation from the town and from elsewhere, when compared to the waster groups from Potters Lane (Spoerry, Chapter 2) that indicate the presence of a medieval industry greater than the one production site currently identified. There is no doubt that the great quantities of Ely wares found at Forehill in Ely, now proven to be rather different in form and fabric to Ely wares from Potters Lane (see Vince, Chapter 2), will not have been imported from another producer elsewhere in the region. Thus there were other potters in medieval Ely, even if it cannot be confirmed exactly where or when.

Ely-type ware

The presence of some Ely-type ware in several assemblages mainly from the Huntingdonshire fen edge, points to another producer in the Ely ware tradition, perhaps located in this zone and possibly associated with holdings of, or patronage from, Ramsey Abbey (see Chapter 4.II, and the analyses by Alan Vince p.38). Ely-type ware is chemically and petrologically a little different to Medieval and Late Medieval Ely ware. Its physical characteristics include lighter hues to the fabric and a less granular and smoother fabric due to finer quartz grains. It has not, however, been very well defined and further research is needed.

Colne

The trial trenches and waster groups excavated at Colne in 1991 (Healey, Malim and Watson 1998) are the only current evidence for a pottery producer first recognised as a 'kiln and pottery dump' by C.F. Tebbutt in 1921 (marked on OS 6-inch map 1958). The products of this kiln site have been divided into three fabrics by Healey, of 11th to 12th, 13th to 14th and 15th to 16th century date, all containing varying amounts of quartz sand and oolitic limestone temper. These types have similarities with a range of quartz sand tempered wares from the Eastern / Anglian region that starts with Thetford ware, includes aspects of Grimston wares from Norfolk (*e.g.* in Jennings 1981), pottery made at Bourne, Lincolnshire (Healey 1969) and Glapthorn Northamptonshire (Johnston *et al* 1997). The medieval bowl forms share traits with Medieval Ely ware vessels, whilst the later medieval jugs again share characteristics with LMEL examples. There is much common ground between the Ely and Colne products, but they should not be categorised as entirely the same 'tradition', a term that should be reserved for Ely and Ely-type wares.

IV. The Regional Context

As discussed, in part, in the previous section, there is no doubt that Ely wares share stylistic traits with a range of pottery producers in the eastern region in general.

Jars

Most of the small and medium-sized Medieval Ely ware jar forms (Jar A, B and C) are of generally widespread type. What is interesting is that the narrow Late Saxon type jar forms, as seen in Thetford wares across much of central eastern England, are not present. The best local antecedents for these Medieval Ely ware jar forms are in Early Medieval ware (EMW), both in examples from Ely that might themselves be Ely products, but also in EMW jars recovered from sites in Norfolk (*e.g.* in Jennings 1981, Milligan 1982, Rogerson and Dallas 1984) and Essex (*e.g.* in Cunningham 1982). The rather more squat jar forms appear in pottery from a little further afield prior to and during the period of EMW production. Most notable amongst these is Late Saxon Shelly ware as described in London but originating perhaps Oxfordshire in the late 9th to early 11th centuries (Vince and Jenner 1991). More contemporary with EMW are Early Medieval Shelly ware (11th to 12th century from South London or Kent) and Early Medieval Sand and Shell Tempered ware (mid 11th to late 12th century from south-east London) (Vince and Jenner 1991).

The large jar type (Jar E often with applied strip decoration), also has antecedents in the south-east, in Early Medieval Shelly ware and Early Medieval Sand and Shell Tempered ware (Vince and Jenner 1991). The applied strips may also owe something to large Thetford ware storage vessels in the East Anglian region, but from the 13th century onwards this is a widespread feature of larger jars in many producers in the northern home counties and the east Midlands (seen at Olney Hyde, Brill Lyveden-Stanion *etc.*; McCarthy and Brooks 1988). It is also seen at Mile End, Essex (Drury and Petchey 1975). By the end of the medieval period similar vessels are found in Grimston ware (Clarke and Carter 1977, 234, no.12)

Jar D, with a large rounded body and short everted rim, may also have its antecedents at Mile End in the earlier 13th century, but the best comparative examples come from later 13th century and 14th century pottery from Mile End/Great Horkeley (Drury and Petchey 1975) and the Bourne potteries in Lincolnshire (Healey 1969), with examples from further afield at Nuneaton also known (Mayes and Scott 1984).

Bowls

Ely bowls can be conveniently divided into two major and three minor categories, wide, flaring bowls (A, C, D, E), and upright bowls (G and H) being the major types and dripping dishes (B), inturned bowls (F) and small rounded/carinated late medieval bowls (I) being the minor types.

The two major bowl types constitute the vast majority of examples found in excavated collections, and both appear to be present throughout the late 12th to 14th centuries. In addition these two broad categories themselves share a number of general features. The vessels usually have quite wide rims (invariably more than 32cm, and as much as 64cm) and often the rim carries

plastic decoration in the form of stabbing, wavy lines and thumbing. The size and shape of the bowls is echoed by those made from the 13th century onwards at Colne (Healey *et al* 1998) and also in bowls from a number of Lincolnshire producers (*e.g.* Bourne and Potter Hanworth) of the 12th to 14th centuries, some of which also have similar wavy line decoration. These very general open bowl shapes are much more commonly found in other industries from the later 14th century onwards, being made by potters in Yorkshire, Lincolnshire, Essex and possibly Norfolk in the late medieval and transitional periods. In addition the final phase of the Rockingham Forest industry in Northamptonshire, which is best exemplified by the 15th-century products of the Glapthorn kilns (Johnston *et al* 1997), includes similar bowl types. This is particularly interesting as the earlier phases of manufacture here, as exemplified by Lyveden-Stanion glazed wares (McCarthy and Brooks 1988; McCarthy 1979) and Shelly ware (defined as T1 or SHW; McCarthy 1979 and Spoerry 1998 respectively) exhibit wholly different bowl types. The products of the Glapthorn kilns can also be equated with Orange Sandy ware (OSW), and possibly Late Medieval Reduced ware (LMR), as first discussed by Moorhouse (1974) and as also made at, for example, Higham Ferrers (Hall 1975). Reduced Colne pottery may also in the past have been included in the LMR category. The Nuneaton kilns (Mayes and Scott 1984) produced many examples of wide-mouthed, angled bowls of very comparable shape to those made at Ely. Very surprisingly, even though this industry was characterised by thumbing, stabbing and slashing of jug handles, unlike Ely, none of these techniques appear to have been applied to the bowl forms.

The Grimston and Norfolk LMU kilns have produced a few examples of vessels that are roughly similar in general size and shape to the late medieval 'Potters Lane bowls' (Clarke and Carter 1977; Jennings 1981), but it is not until the Norfolk/Suffolk LMT ware appears by the mid 15th century that a direct parallel is found (Jennings 1981; Anderson *et al* 1996).

Jugs

It is probable that Jug forms A and B are the earliest Ely ware types, although there are no good antecedents in this region. Sagging-based squat jug and pitcher forms are known in Saxo-Norman pottery from London (Local Greyware; Vince and Jenner 1991) and the plastic decoration so evident in Ely wares is prominent in Thetford wares. Nonetheless, the origins of these early jug types, starting in the 12th century, are obscure.

Medieval Ely ware shouldered jugs (Jug C) represent the commonest jug type in the 13th-century assemblage. The earliest comparable shapes thus far recognised are in Lincolnshire splashed glaze ware, particularly examples from a well-dated mid 12th-century phase at Goltho (Beresford 1987). Some developed Stamford ware jugs, from *c.*AD1150–1250, are also similar (Kilmurry 1980) as are one or two examples from Nottingham and Derby kilns (see McCarthy and Brooks 1988), although these are more likely to be 13th-century in date. The stabbing, slashing and thumbing on handles, so much a feature of Ely wares, is present in many industries across the country, but there are no exact parallels for the combinations and specific usage seen at Ely. Thumbing is used in Thetford ware production in the Saxo-Norman

period and this may represent the best local precursor. In the 13th to 14th century several production centres exhibit very substantial use of slashing and stabbing in combination with thumbing, the most significant for the current study perhaps being Nuneaton (Mayes and Scott 1984), the Hertfordshire Greyware kilns (Havercroft *et al* 1987) and Mile End (Drury and Petchey 1975).

The large rounded jugs (Jug D), perhaps a 13th- to 15th-century type, show parallels with 13th-century vessels from Thornholme Priory in Lincolnshire (Hayfield 1985), including rilling on the body, thumbed feet on the base and thumbing on the rod handle attachment. The latter two traits are also shared with 13th- to 15th-century vessels from the Grimston kilns in Norfolk (Clarke and Carter 1977; Jennings 1981), although body shape and surface treatment are different.

The small rounded jugs (Jug E) and small squat jugs (Jug F) have close parallels at Grimston, with examples from Norwich (Jennings 1981, nos 378 to 381), although the handle form and plastic decoration found in Ely examples do not closely mirror a variety of treatments seen at Grimston. Some Hertfordshire greyware small rounded jugs also offer a similar suite of shapes and treatments (*e.g.* Havercroft *et al* 1987, 35, no.6; Turner-Rugg 1995, 50, no.35), including thumbing and stabbing.

A consideration of the minor jug forms and other vessel types from Ely does not add greatly to the range of comparisons and possible influences stated up until now. The one form that needs to be considered separately is perhaps the metal copy baluster jug (No.135). The most flamboyantly shaped metal copy baluster jugs identified to date are products of the Kingston kilns; a 13th-century Surrey whiteware (Pearce and Vince 1988). Other examples more like the Ely ware vessel are known from Mill Green (Pearce *et al* 1982), Nuneaton (Mayes and Scott 1984) and in London ware (Pearce *et al* 1985), with the closest parallel being a vessel possibly made at Nuneaton, but found at Leicester (McCarthy and Brooks 1988, no.960).

Copies and originality

There is evidence for occasional highly decorated Ely ware vessels in the 13th to 14th century, utilising stamps, applied strips and pads, white slip *etc.* (as has already been discussed above, p.67). The fact that these vessels are so rare points to them being one-offs, trial pieces, and almost certainly deliberate copies of pots from elsewhere. The presence of several sherds of Medieval Ely ware Grimston-type face jugs, so far found at Ely and Swavesey, confirms this and such action may be seen in the light of the decline of Medieval Ely ware within the King's Lynn and northern fenland assemblages in the later 13th century in the face of competition from Grimston and other Norfolk producers. Was the response of the Ely potters an attempt to copy the most flamboyant examples of the new styles adopted by their *arriviste* competitors?

The Late Medieval Ely ware vessels show further similarities with Grimston products, including the form of small rounded jugs and the rilling and thick green glaze on jug bodies. In addition the Potters Lane bowls have some parallels in Norfolk LMT fabrics and in Colchester ware (Cotter 2000) where vessels showing similar characteristics typify the late 15th- to early 16th-century phase of production.

Set against these examples of direct copying is the overwhelming evidence that the Ely ware potters, despite being influenced by much from other potters across Eastern England and the midlands, produced an unequivocal style of their own. Nowhere else utilised the same techniques in the same combination on the same types of vessels, even though all traits and forms had their parallels individually.

An urban industry

The current data suggests that Ely wares were made only on the periphery of the town of Ely. The kilns were ideally placed to take advantage of the growing settlement and of the great range of opportunities afforded by the presence of a burgeoning waterborne trade centre, all under the protection of the Abbot, Bishop and Prior. This is then essentially a medieval urban industry. Pottery may have been made on the edge of town owing to the anti-social by-products of the processes involved, but it is the town, its institutions and the waterfront that are crucial to pottery being made there and then.

Urban potteries were on the whole rare in 13th-century England, in comparison with the situation in the preceding centuries. In the east of the country the great Saxon producers of Thetford and Norwich ceased manufacture by the 12th century, whilst at Ipswich there is only slight evidence for 13th-century kilns (McCarthy and Brooks 1988) and at Stamford the major Saxon industry was much reduced in scale after 1150, ceasing by 1250. It is only in places such as the Lincoln suburb of Wigford that urban manufacture on any major scale continued. The rise of the Bourne industry cannot really be seen as truly urban, this being rather more rural style manufacture on the edge of a small town.

The new potteries of the 12th and 13th centuries in this region were invariably located in rural settings. For example, starting with Grimston Thetford ware in the 11th century, all subsequent Norfolk producers (*e.g.* Grimston, LMU and LMT wares) were entirely based in rural settlements.

Most other regions were not quite so extreme as the Norfolk situation. In the north of England there were potteries in towns such as Beverley, Doncaster and Newcastle, whilst in the midlands the Nottingham and Coventry industries were also urban, although at Nuneaton the kilns were in Chilvers Coton, 1.5km out of town and part of a great sweep of rural clay manufacture along the Warwickshire coal outcrop (Gooder 1984). Further south and west the emphasis was again very rural, with some of the Sussex potteries being located outside small towns (Barton 1979), and manufacture also known outside Canterbury at Tyler Hill (McCarthy and Brooks 1988). The exception to this trend was Chichester, from which a number of urban kilns are known (Barton 1979).

Thus manufacture of pottery on the edge of an urban centre was not unknown in 12th- to 15th-century England, but it was much less common than rural production, which itself was very dominant indeed in the Eastern counties. This implies some uniqueness in the Ely potteries, which were a particular response to a particular set of potentially favourable circumstances. Ceramic manufacture at Ely may have been encouraged or commissioned by one of the ecclesiastical or monastic powers, perhaps to supply a need arising from the development of the institutions and their estates, and/or to populate and develop their speculative new port town adjacent to the newly altered 12th-century river line.

General Conclusions

This study has brought together most of the information currently available or easily recoverable regarding Ely wares. It is a response to, firstly, the recognition of the provenance of a previously unsourced pottery type and secondly to the massive increase in excavated information from the Cambridgeshire sub-region, where previously little substantial publication or synthesis had been achieved for the medieval period. A ceramic 'black hole' has therefore been, in part, plugged and a framework laid down around which more published information can be assembled. There is no doubt that this latter point is very important. Although it may be academically sustaining to produce 'the last word' on a subject, this is without doubt an impossibility and the study presented here is certainly not of that nature. Large omissions exist, notably the full dating of the industry and its origins and the presentation of real statistics regarding the presence and importance of Ely wares in the medieval ceramic assemblages of the region during three or four centuries of manufacture. The data presented here offers some pointers towards these areas of study, but the presentation of real distribution maps and histograms of vessel and ware visibility over

time must await the publication of current excavations, and others yet to come. In addition it is recommended that any opportunity to investigate part of the production sites themselves be taken; not just where remains are threatened but where a real advancement of understanding can be achieved through research-based fieldwork. As it is not currently known where in the town much of the pottery was made, although this can probably be guessed, this aim must initially rely on field observation and evaluation, to be achieved.

The key results of this study are as follows:

1. the petrological and macroscopic description of Ely ware fabrics;
2. publication of a variety of vessel forms and styles attributable to this industry;
3. a chemical and petrological provenance study which generally supports the macroscopic descriptions, but which also suggests the presence of another source, with a geographical locus;
4. the aggregation of sufficient stylistic data to enable context and affinity to be assessed.

Appendix 1: Characterisation Studies of Ely Wares and Comparanda

by Alan Vince

Introduction

In 1999 the current author undertook a study of medieval pottery fabrics found at Forehill, Ely, excavated by Cambridge Archaeological Unit in 1995 (Vince 1999; Hall 2003). This study found that the pottery could be divided into three petrological fabric groups, A, B and C. Fabric C has a high glauconite content and no calcareous inclusions and is quite possibly not an Ely product.

This analysis was followed by petrological and compositional studies of the fabrics produced at Potters Lane (Vince 2000) and similar studies of Ely wares and potential Ely wares from consumer sites in Ely and elsewhere in Cambridgeshire and of samples from the south Lincolnshire production sites of Bourne and Baston, whose products are visually similar to Medieval Ely ware (Vince 2001).

In total, 102 samples have been examined, all with both thin section and chemical analyses (Table 8).

Project	Locality	total
Ely Comparanda	Baston	5
	Bourne	5
	Ely	11
	Huntingdon	5
	Kings Lynn	5
	Orton Longueville	3
	Peterborough	3
	Ramsey	5
	Swavesey	5
	Wisbech	5
Ely comparanda total		52
Ely Forehill	Ely	22
Ely Forehill total		22
Ely Potters Lane	Ely	28
Ely Potters Lane total		28
Grand total		102

Table 8 Quantification and location of samples for thin section and chemical analysis

The samples were visually classified into four groups: Medieval Ely ware (MEL), Calcareous Medieval Ely ware (CMEL), Late Medieval Ely ware (LMEL) and Calcareous Late Medieval Ely ware (CLMEL). In addition, a coarse, gravel-tempered variant was present, COARSE MEL. A distinctive feature of LMEL is the presence of a black, carbon-rich core, with a sharp boundary between this core and the margins and surfaces but this core is also present in the other groups. Similarly, although CMEL and CLMEL fabrics have a more prominent calcareous content the thin sections reveal that all of these fabrics have or had a calcareous content. The COARSE MEL fabric is similar to Forehill fabric A whereas the MEL and CMEL fabrics are similar to Forehill fabric B.

Petrology

Sand and gravel inclusions

All samples of Ely wares contain moderate to abundant sand or gravel inclusions. The following inclusion types are present:

Subangular quartz sand: subangular to rounded quartz grains, less than 0.5mm across. These occur in all the MEL, CMEL, LMEL and CLMEL fabrics, but are absent from the COARSE MEL fabric.

Rounded quartz sand: Well-rounded, polished grains, of lower Cretaceous origin, up to 1.0mm across. Some have iron-stained veins. These grains are common in COARSE MEL and present in small quantities in the other Ely ware fabrics.

Rounded, stained flint: Brown-stained, rounded grains of flint, probably all of upper Cretaceous origin, are common in COARSE MEL and sparse but always present in the other Ely ware fabrics.

Fresh flint: Angular fragments of fresh flint are present in COARSE MEL.

Rounded opaque grains: Rounded opaque grains, red and with a matt surface in the hand specimen, are common in COARSE MEL and sparse in the other Ely ware fabrics.

Rounded chalk: Rounded fragments of chalk, identified by their spherical microfossils, are present in small quantities in both the COARSE MEL and the other Ely ware fabrics.

Glauconite: Fresh glauconite is present in some of the LMEL sections but is otherwise absent. Altered glauconite is present in MEL, LMEL and CLMEL.

Other inclusions: Fish bone, sparry ferroan calcite, ferroan calcite echinoid shell, non-ferroan calcite bivalve shell, including large flat shells similar to *inoceramus*, Greensand chert, sandstone with bivalve shell and glauconitic sandstone are all present in small quantities in the sections.

The differences between COARSE MEL and the remaining fabrics are probably due to variations in the size of the various inclusion types present in the Ely sand/gravel used as tempering material and it is likely that the sand is naturally sorted into coarse and finer beds rather than having to be sieved by the potters.

The wide range of inclusions present in the sand is consistent with a Quaternary origin and includes some Jurassic material (mainly fossiliferous limestones), a higher quantity of lower Cretaceous material (glauconite, rounded quartz, chert), and small quantities of inclusions of upper Cretaceous date (chalk and fresh flint) and of Tertiary date (rounded, stained flint). The presence of the Tertiary flint suggests that the source of this sand is a fluvio-glacial deposit derived from the north rather than a Holocene river gravel derived from the south-west.

The Bourne and Baston samples also generally have a calcareous sand temper but no examples of chalk, nor quartz grains or chert of definite lower Cretaceous origin were noted.

The samples of Bourne ware come from a known kiln site and were chosen so as to cover the visual range of textures present in the kiln's products. Those from Baston, on the other hand, were found on excavation of a domestic plot and recognised as wasters or seconds because of the presence of warping or glaze over broken edges. There is thus a likelihood of the Baston sherds being atypical of the Baston industry (which is known to have existed through documentary records) and certainly all five Baston samples have isotropic clay matrices. This relatively high firing temperature also makes it difficult to study the

calcareous inclusions although none appear to have been completely burnt out, which places an upper limit on the original firing temperature.

There are four quite distinct fabrics present within the Bourne/Baston samples, approximately but not completely corresponding to the two separate sources:

- a) Abundant very fine sand (*i.e.* up to 0.2mm across) and little calcareous material V901, V902, V903, V905, V908
- b) Moderate rounded sand and little calcareous material V904
- c) Abundant very fine sand and abundant calcareous material V909
- d) Moderate rounded sand and abundant calcareous material V906, V907 and V910

The rounded sand includes a few fragments which have a cement of non-ferroan micrite still adhering to them and it is clear that some, if not all of this rounded sand is derived from a calcareous sandstone. Angular flint is not found in these samples and the rounded cryptocrystalline silica grains which are present (but not common) are more probably cherts. Similarly, the rounded opaque haematite grains which characterise Ely wares are either absent or rare in the Bourne and Baston sections and where they do occur they are less well-rounded and often have a spongy texture. Instead, small silt-sized fragments, probably of TiO₂, occur in all of these samples, even in sections where very fine sand is absent. Thus they are likely to have been present in the clay itself rather than the fine sand. There is no chalk and no glauconite in any of the sections. Almost all of the sections contained one or two large rounded pellets of laminated clay (clay relicts). The calcareous inclusions are in the main purple-stained micrite with some nacreous bivalve shell. Some appear to be calcareous nodules, with a vaguely concentric structure. However, one section contained an echinoid spine (V903). The fragments of *inoceramus* shell found in Ely wares were not found in these sections.

Groundmass

The distinctive carbon-rich core of the LMEL and CLMEL fabrics is probably the result of using an organic clay which had not been allowed to weather before use rather than to the use of clay from a different source to the COARSE MEL, MEL and CMEL wares. None of these fabrics contain quartz or muscovite silt and most have some evidence for calcareous microfossils or a general fine-grained calcareous content. Samples of Kimmeridge clay collected by David Hall from Ely have a much higher calcareous content but the Kimmeridge clay and other Upper Jurassic clays are known to have organic facies and it is likely that medieval potters at Ely used an Upper Jurassic clay. Those samples without an organic core were either made from a non-organic facies of the same clay or, more likely, from a weathered version of the same clay. This therefore suggests that by the late medieval period the clay was being quarried from deeper pits than those used in the earlier period.

There is no strong evidence for the use of a glauconitic clay and even the fresh glauconite found in some sections is likely to be detrital.

By contrast, the Bourne and Baston wares also sometimes have carbon-rich cores, but without a calcareous content. They too are typical of Jurassic clays, probably also of Upper Jurassic age.

Discussion

In summary, the petrological evidence suggests that the medieval Ely potters exploited an outcrop or outcrops of Kimmeridge clay with a high organic content and low, but appreciable, calcareous content. This clay may initially have been taken from superficial, weathered outcrops but was later probably quarried and used fresh. The pottery was tempered with a Quaternary sand, derived from either a boulder clay or fluvioglacial deposit, containing material ranging from the Jurassic to Tertiary origin, but mainly derived from lower Cretaceous strata.

Ely wares can be distinguished from Bourne/Baston wares in thin section by the presence of chalk and quartz derived from lower Cretaceous deposits.

Petrology of possible Ely wares from consumer sites

In most cases, the thin sections of possible Ely wares from consumer sites confirmed the identification with no difficulty, indicating the presence of rounded chalk together with other calcareous inclusions of Jurassic origin and a silt-free, possibly organic and possibly calcareous groundmass. In a few cases, this identification could not be confirmed (Table 9). Only one of these samples appears to be of Bourne/Baston ware (V817) whereas three are probably from other, unknown sources (V825, V839 and V852). In the main, however, the visual identifications are consistent with the petrological evidence, indicating the transport of Ely ware throughout the fens. Samples identified visually as being of Bourne/Baston type from Orton Longueville were shown in thin section to be probably of Ely origin.

Samples of so-called Grimston Software from King's Lynn have the same petrological characteristics to those of Ely wares, suggesting that Ely is probably the source of this ware.

All of the samples were analysed at Royal Holloway College, London, under the supervision of Dr J N Walsh. The following major elements were measured as percent oxide weight: Al₂O₃, Fe₂O₃, MgO, CaO, Na₂O, K₂O, TiO₂, P₂O₅, MnO. A range of minor and trace elements were measured as parts per million (ppm) weight. These are: Ba, Ce, Co, Cr, Cu, Dy, Eu, La, Li, Nd, Ni, Sc, Sm, Sr, V, Y, Yb, Zn and Zr. Zirconium is likely to be only partially dissolved during the sample preparation process and the Zr count is therefore only a minimum.

Lead was also measured, mainly as a guide to possible glaze contamination. Fig.28 indicates the lead for each ware and shows a strong correlation with LMEL with isolated glaze contamination of CLMEL and the Bourne/Baston samples (BOUA).

In order to estimate the amount of silica present in the sample the total percent oxides count was subtracted from 100% to give a notional SiO₂ value. This will, however, include other unmeasured elements, such as chemically combined water and organic matter. Thus, samples with a high organic content might be expected to have a higher 'SiO₂' value than the equivalent oxidized sample.

Fig.29 indicates the SiO₂ values for the measured groups. This shows no such difference, indicating that the organic content is low in comparison to that of silica.

The data were then normalised by expressing each element value as a ratio with Aluminium, which is present mainly in clay minerals and feldspars. The Forehill A samples show a wide range in silica content and this is mainly explained by the high calcium content of three of

<i>TSNO</i>	<i>Locality</i>	<i>Chalk?</i>	<i>Other diagnostic inclusions</i>	<i>Conclusion</i>
V817	Peterborough	Not present	Rounded flint, rounded opaques, carbon-rich body, laminated clay pellets, calcareous fine-grained sandstone, nacreous bivalve shell, ferroan calcite	Could be Bourne/Baston ware
V824	Ely, Lisle Lane	Some rounded voids may once have contained chalk	Rounded flint, Rounded opaques, some limestone fragments (ferroan calcite) but generally low in calcareous inclusions	Probably MEL
V825	Ely, Lisle Lane	Not present	No flint, no rounded opaques (but silt-sized TiO-rich minerals are present), sparse quartz silt in groundmass	Not MEL and no evidence for likely source area
V835	Huntingdon	Not present	Rounded flint, no rounded opaques, calcareous inclusions include echinoid shell fragments	Probably MEL
V839	Wisbech	Not present	Not a calcareous fabric. No flint or rounded opaques	Not MEL and no evidence for likely source area
V842	Wisbech	Not certain — heat altered		Probably MEL
V846	Ramsey	Not certain — heat altered		Probably MEL
V847	Ramsey	Not certain — heat altered		Probably MEL
V848	Swavesey	Not certain — heat altered		Probably MEL
V852	Swavesey	Not present	Possibly no Greensand quartz, no flint, and quartz sand is finer than normal. Echinoid shell is present	Probably not MEL and no evidence for likely source area
V853	Wisbech	Not present	Rounded flint, no rounded opaques (TiO silt present). One large rounded calcareous nodule	Not MEL and no evidence for likely source area

Table 9 Results of chemical analysis

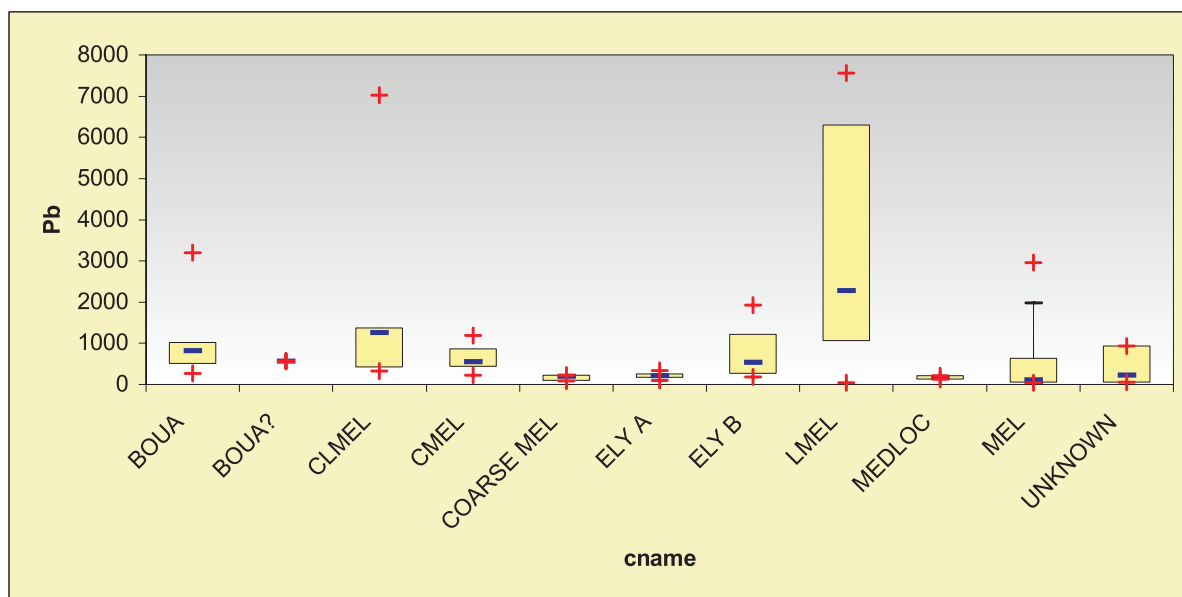


Figure 28 Lead (Pb) content of each ware type

the samples (Fig.30). With their exception, there is no obvious correlation of calcium content and whether or not they were identified visually as being calcareous. This may, however, be due to the firing out or leaching of calcareous inclusions.

Factor analysis was then undertaken of the entire dataset using just the main elements, excluding CaO (for the reasons described above).

A single significant factor was found (explaining 35% of the variance in the data, compared with only 10% for

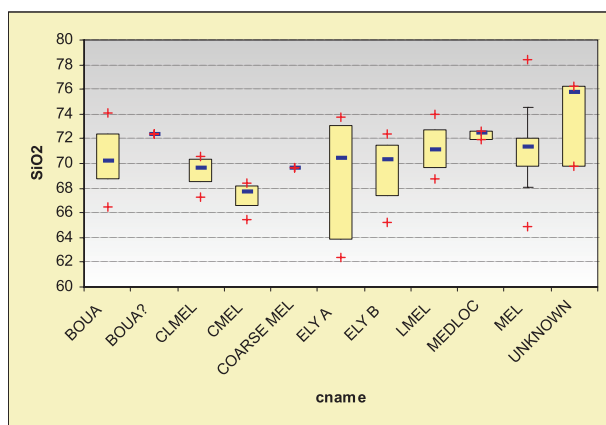


Figure 29 Estimated silica (SiO₂) values for the measured groups

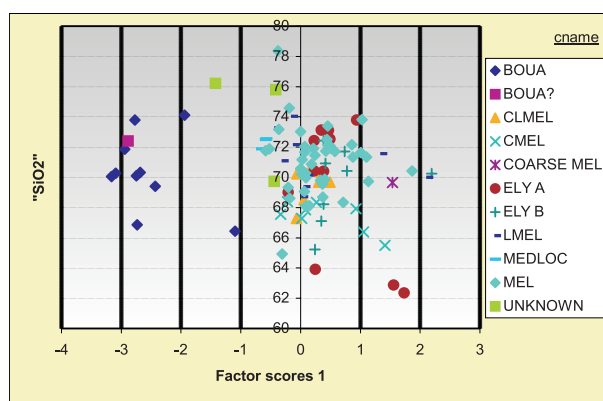


Figure 31 Factor 1 scores against estimated silica (SiO₂) content

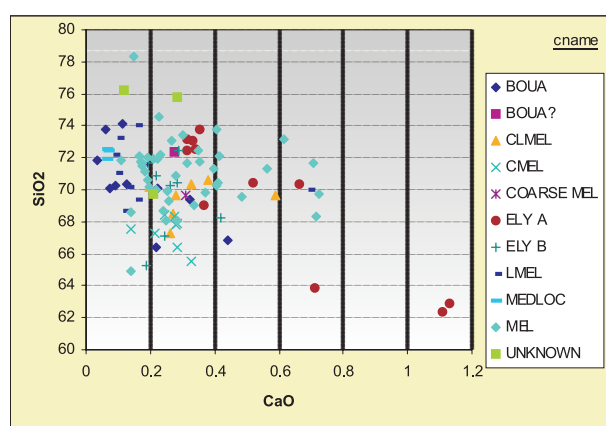


Figure 30 Calcium (CaO) versus estimated silica (SiO₂) content

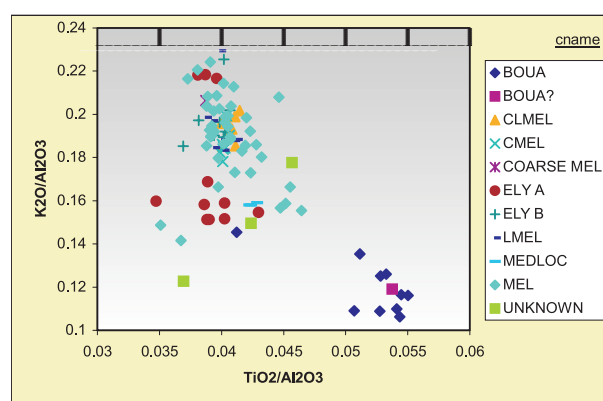


Figure 32 Potassium (K₂O) versus Titanium (TiO₂) by fabric

the next factor). A plot of the Factor 1 scores against Silica content (Fig.31) separates the Bourne/Baston wares from the Ely wares and indicates that the Peterborough sample (BOUA?) is indeed likely to be a Bourne or Baston product. One of unknown samples has a different factor score whilst the other two are similar to Ely wares, as are the three glauconitic samples from Forehill (marked as MEDLOC). The three highly calcareous Forehill samples have similar Factor 1 scores to the remaining Ely wares and are only separated in Fig.31 by their lower SiO₂ samples. High factor 1 scores indicate high values for K₂O, Fe₂O₃ and MgO whilst negative Factor 1 scores indicate high TiO₂ values. This is illustrated graphically by a plot of TiO₂ against K₂O values (Fig.32). This plot not only indicates the clear distinction between the majority of the Bourne/Baston and Ely wares but also reveals that the Forehill A samples fall into two groups, distinguished by their K₂O values. All three 'unknown' samples plot peripherally to the Ely group. When the same data are grouped by findspot, the Ramsey samples are distinguished from the remaining Ely wares by their low K₂O and high TiO₂ values (Fig.33). This suggests that the Ramsey samples might come from a different source, although clearly closer in composition to the Ely wares than to the Bourne/Baston wares.

Factor analysis of the minor and trace elements was carried out but appears to reveal differences which are due to calibration variation rather than variations in the actual chemical content. This is shown in Fig.34 where the rare earth elements alone were including in a factor analysis. Therefore, the analysis was carried out again excluding the rare earth elements, which occur close to the detection

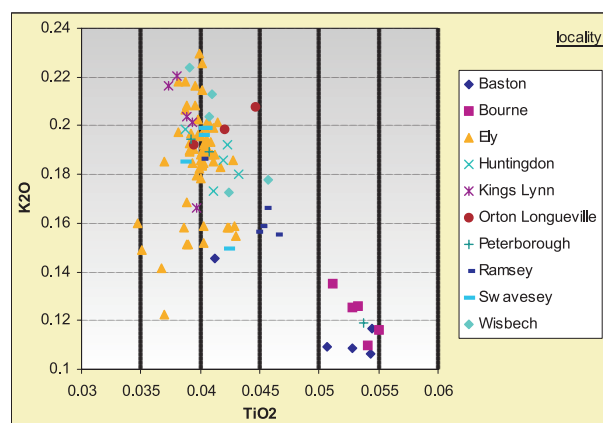


Figure 33 Potassium (K₂O) versus Titanium (TiO₂) by fabric

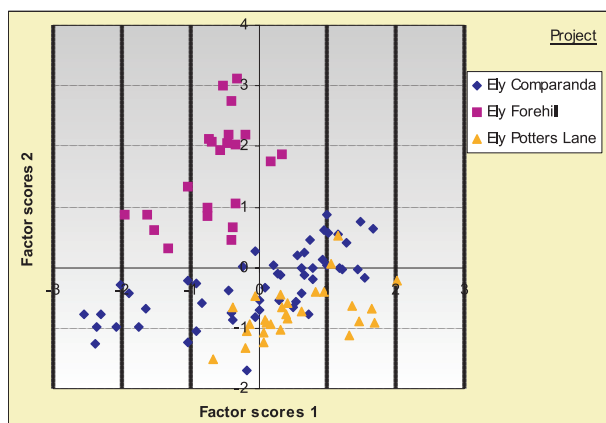


Figure 34 Factor 1 versus Factor 2 scores (including rare earth elements)

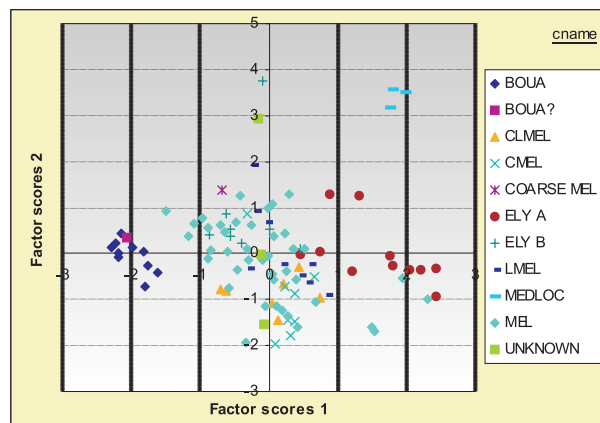


Figure 36 Factor 1 versus Factor 2 scores by fabric

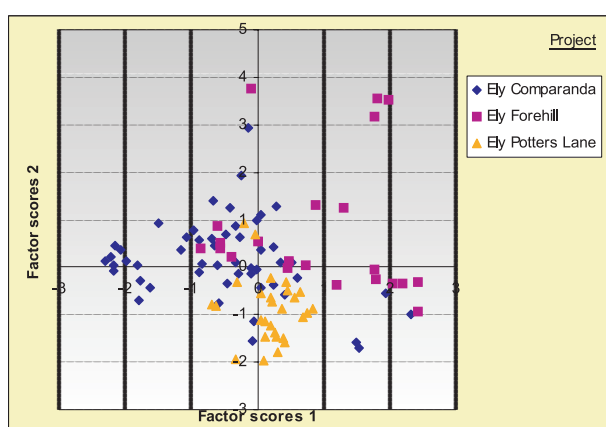


Figure 35 Factor 1 versus Factor 2 scores (excluding rare earth elements)

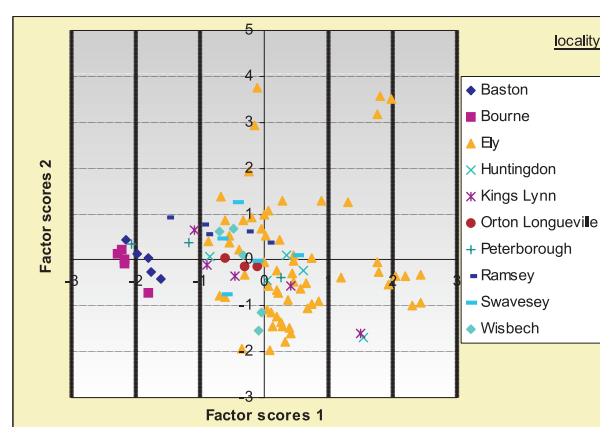


Figure 37 Factor 1 versus Factor 2 scores by findspot

limit of the analytical technique. The results for this dataset also show some possible correlation with batch (Fig.35). However, they are also consistent with the archaeological evidence and appear to show that the Forehill A fabric is distinguishable from the remainder but that Forehill B, the Potters Lane samples and the majority of the consumer site finds have indistinguishable compositions, although this also includes the three samples which thin section analysis rejects as Ely products (Fig.36). The COARSE MEL samples plot within this general Ely group rather than with the Forehill A samples. A further detail revealed in this analysis is a distinction between the Bourne and Baston samples, which were analysed in the same batch. If this slight difference is reliable, it would indicate that the Peterborough sample is actually a Baston rather than a Bourne product (Fig.37).

Conclusions

Thin section analysis indicates differences between Bourne/Baston and Ely wares and also suggests that one

sample from Peterborough is of Bourne/Baston ware. Three of the samples from consumer sites are unlikely to be Ely wares but cannot be provenanced.

The chemical analysis confirms this distinction between Bourne/Baston and Ely wares as well as hinting at a difference in the minor and trace element composition of Bourne and Baston wares. This difference would identify the Peterborough sample as a Baston product.

Forehill fabric A is chemically distinct from the remaining Ely wares whereas Forehill fabric B has the same composition as the Potters Lane and consumer site samples. Forehill fabric C was produced from a glauconitic clay and is unlikely to be an Ely product.

'Grimston Software' from King's Lynn has a similar composition and petrology to that of the Ely wares, including wasters from Ely, and is therefore probably an Ely product. There is only slight evidence for differences in composition between the samples of Ely wares from different consumer sites, indicating perhaps that the Ramsey samples come from a different source, based on their titanium and potassium contents.

<i>TSNO</i>	<i>Al2O3</i>	<i>Fe2O3</i>	<i>MgO</i>	<i>CaO</i>	<i>Na2O</i>	<i>K2O</i>	<i>TiO2</i>	<i>P2O5</i>	<i>MnO</i>
V0041	12.6	5.78	1.51	13.99	0.24	2.75	0.48	0.22	0.07
V0042	12.62	6.31	1.04	3.94	0.3	1.91	0.49	0.22	0.05
V0043	12.09	5.45	0.97	8	0.28	2.04	0.47	0.25	0.06
V0044	12.56	6.62	1.04	4.27	0.31	1.9	0.49	0.23	0.06
V0045	12.96	5.41	1.01	4.27	0.43	2.07	0.45	0.24	0.06
V0046	12.95	5.68	1.06	6.71	0.34	2.05	0.5	0.24	0.05
V0047	14.63	5.98	1.16	6.15	0.22	2.71	0.54	0.35	0.04
V0048	13.8	6.12	1	3.93	0.23	2.71	0.55	1.19	0.06
V0049	17.68	7.41	1.38	3.35	0.22	3.35	0.71	0.64	0.04
V0050	13.52	4.77	1	3.89	0.23	2.73	0.55	0.8	0.08
V0051	14.64	5.47	1.19	3.2	0.25	2.81	0.59	0.87	0.06
V0052	12.69	8.26	1.31	3.35	0.24	2.86	0.51	0.46	0.07
V0053	14.15	6.07	1.09	2.73	0.22	2.79	0.54	0.62	0.08
V0054	16.24	6.85	1.28	3.95	0.24	3.09	0.64	0.56	0.04
V0055	14.66	6.05	1.22	10.41	0.51	2.33	0.59	0.23	0.1
V0056	16.1	5.92	1.25	1.04	0.24	2.56	0.69	0.29	0.02
V0057	12.14	4.85	0.98	4.29	0.45	2.65	0.47	0.33	0.06
V0058	15.63	5.94	1.2	0.99	0.23	2.47	0.66	0.3	0.02
V0059	14.42	6.76	1.05	5.26	0.3	2.23	0.62	0.28	0.06
V0060	12.37	5.69	1.42	13.97	0.23	2.68	0.49	0.21	0.08
V0061	15.57	5.98	1.19	1.12	0.22	2.46	0.66	0.28	0.02
V0062	12.92	6.47	1.05	4.06	0.31	1.96	0.52	0.23	0.05
V0626	13.7655	5.56	0.97	5.2	0.18	2.66	0.56	0.42	0.07
V0627	16.4115	5.96	1.1	4.3	0.15	3.17	0.67	0.93	0.04
V0628	12.663	5.08	0.82	7.46	0.16	2.52	0.52	1.02	0.09
V0629	14.7525	6.28	1.18	4.14	0.16	2.89	0.59	0.3	0.04
V0630	13.986	5.46	0.87	4.6	0.14	2.82	0.58	1.12	0.09
V0631	15.3195	6.35	1.07	2.98	0.23	2.84	0.63	0.32	0.05
V0632	15.708	5.94	1.11	4.22	0.49	2.91	0.63	0.42	0.05
V0633	16.1385	6.35	1.11	4.01	0.18	3.11	0.63	0.3	0.07
V0634	14.5635	5.36	1.09	4.07	0.12	2.95	0.58	0.34	0.07
V0635	14.5635	5.74	0.98	2.77	0.13	2.76	0.57	0.39	0.07
V0636	19.1625	6.99	1.35	2.68	0.22	3.61	0.78	0.24	0.04
V0637	15.6555	5.38	1.05	1.73	0.16	2.91	0.67	0.53	0.03
V0638	16.863	6.82	1.17	2.33	0.15	3.03	0.67	0.31	0.04
V0639	14.6475	5.81	0.84	2.56	0.1	2.68	0.61	1.12	0.16
V0640	17.4615	7.12	1.14	2.44	0.17	3.11	0.7	0.27	0.03
V0641	15.8865	6.56	1.12	4.42	0.17	2.93	0.64	0.34	0.09
V0642	14.4375	8.23	0.79	4.12	0.11	2.67	0.58	0.97	0.16
V0643	15.477	7.81	0.94	4.37	0.11	2.88	0.62	1.18	0.23
V0644	14.763	9.16	0.83	4.83	0.11	2.81	0.6	1.2	0.21
V0645	16.695	6.88	1.17	3.58	0.17	3.07	0.67	0.41	0.07
V0646	16.0545	6.43	1.06	3.93	0.19	2.93	0.64	0.34	0.03
V0647	17.01	6.69	1.24	2.03	0.12	3.14	0.67	0.31	0.08
V0648	15.33	4.79	1.16	1.53	0.12	2.89	0.62	0.28	0.02
V0649	16.338	5.46	1.28	1.58	0.11	3.07	0.67	0.37	0.03
V0650	15.729	6.6	1.18	2.09	0.15	2.96	0.63	0.48	0.03
V0651	13.692	5.73	0.96	2.18	0.1	2.51	0.55	0.22	0.03
V0652	13.503	7.14	0.92	2.38	0.09	2.66	0.53	1.04	0.17
V0653	15.288	6.15	1.14	1.34	0.11	2.88	0.63	0.26	0.04
V0817	15.63	3.36	0.71	4.28	0.26	1.86	0.84	0.65	0.02
V0818	14.99	5.84	0.96	3.29	0.17	2.84	0.61	1.31	0.02
V0819	14.28	5.91	1.04	2.97	0.2	2.78	0.56	0.32	0.04
V0820	15.21	6.08	1.02	2.92	0.2	2.92	0.6	0.44	0.03
V0821	13.81	5.33	1.12	5.61	0.24	2.74	0.58	0.28	0.03
V0822	13.22	5.31	0.99	6.41	0.31	2.75	0.59	0.81	0.06
V0823	13.07	5.58	0.93	2.95	0.24	1.85	0.48	0.3	0.03
V0824	11.03	6.45	1.2	7.66	0.18	2.53	0.44	0.46	0.06

<i>TSNO</i>	<i>Al2O3</i>	<i>Fe2O3</i>	<i>MgO</i>	<i>CaO</i>	<i>Na2O</i>	<i>K2O</i>	<i>TiO2</i>	<i>P2O5</i>	<i>MnO</i>
V0825	14.34	3.89	0.54	1.66	0.15	1.76	0.53	0.87	0.04
V0826	13.11	5.67	0.92	4.58	0.29	1.95	0.46	0.4	0.12
V0827	15.35	6.62	1.12	4.22	0.19	3.06	0.62	0.45	0.04
V0828	12.37	6.66	1.02	5.08	0.16	2.58	0.49	1.05	0.16
V0829	13.2	6.18	0.94	3.06	0.16	2.83	0.53	0.9	0.05
V0830	15.55	6.51	1.17	4.44	0.18	3.02	0.63	0.35	0.04
V0831	13.42	6.54	0.9	4.14	0.14	2.77	0.52	1.79	0.13
V0832	15.58	5.89	1.15	3.04	0.2	2.96	0.61	0.33	0.04
V0833	12.34	6.52	0.88	4.88	0.21	2.57	0.48	0.73	0.05
V0834	16.52	5.84	1.29	2.56	0.22	3.28	0.64	0.25	0.03
V0835	11.44	4.35	0.8	8.09	0.38	1.98	0.47	0.6	0.26
V0836	13.94	6.05	1.02	2.34	0.35	2.68	0.59	0.88	0.07
V0837	12.88	5.39	0.87	4.54	0.2	2.39	0.54	1.41	0.05
V0838	13.65	6.01	1.26	3.04	0.34	2.46	0.59	0.7	0.05
V0839	11.6	5.38	0.74	3.31	0.15	2.06	0.53	0.41	0.02
V0840	11.47	5.86	0.71	6.47	0.19	2.44	0.47	1.03	0.03
V0841	11.51	5.28	0.81	8.33	0.22	2.58	0.45	1.06	0.03
V0842	15.21	5.03	1.18	2.81	0.21	3.1	0.62	0.65	0.02
V0843	13.57	7.87	0.78	4.54	0.26	2.11	0.63	1.11	0.06
V0844	14.44	6.85	1.06	3.63	0.17	2.69	0.58	0.66	0.04
V0845	12.74	6.04	0.8	3.37	0.28	2.12	0.58	0.97	0.07
V0846	14.75	6.16	1.02	2.48	0.27	2.31	0.66	0.56	0.03
V0847	15.06	6.78	1.25	3.89	0.29	2.39	0.68	0.26	0.07
V0848	15.38	6.71	1.2	3.69	0.2	3.06	0.62	0.42	0.04
V0849	12.34	5.3	0.81	5.12	0.17	2.46	0.5	1.15	0.02
V0850	13.92	5.95	0.94	5.17	0.16	2.58	0.54	0.91	0.04
V0851	11.67	4.93	1.17	4.74	0.37	2.29	0.47	0.51	0.05
V0852	15.58	6.75	1.13	3.29	0.27	2.33	0.66	0.21	0.06
V0853	11.57	4.17	0.85	7.14	0.26	2	0.49	0.32	0.03
V0874	12.87	4.89	0.87	3.88	0.23	2.84	0.49	0.53	0.02
V0875	12.61	5.19	0.89	9.02	0.24	2.73	0.47	0.48	0.04
V0876	14.98	5.39	1.09	2.64	0.29	3.02	0.59	0.3	0.03
V0877	12.08	3.86	0.8	1.79	0.38	2.01	0.48	0.16	0.07
V0878	13.4	5.11	0.8	4.22	0.2	2.73	0.52	1.23	0.08
V0901	19.45	4.31	0.97	1.48	0.25	2.26	1.07	0.13	0.02
V0902	17.99	4.89	0.88	2.31	0.27	2.25	0.95	0.11	0.03
V0903	18.85	4.81	0.91	1.75	0.21	2.07	1.02	0.1	0.02
V0904	16.52	4.55	0.72	1.04	0.22	2.08	0.88	0.17	0.03
V0905	14.86	5.25	0.68	1.67	0.35	2.01	0.76	0.25	0.06
V0906	16.37	5.74	0.81	7.21	0.15	1.74	0.89	0.21	0.02
V0907	18.43	5.89	1.26	4.01	0.28	2.68	0.76	0.24	0.01
V0908	18.01	5.51	0.76	0.63	0.21	1.96	0.95	0.11	0.01
V0909	17.16	5.05	0.8	3.81	0.21	1.87	0.87	0.12	0.01
V0910	15.79	5.77	0.91	5.09	0.16	1.84	0.86	0.16	0.02

Table 10 ICPS data for major elements (percent oxides)

<i>TSNO</i>	<i>Ba</i>	<i>Cr</i>	<i>Cu</i>	<i>Li</i>	<i>Ni</i>	<i>Sc</i>	<i>Sr</i>	<i>V</i>	<i>Y</i>	<i>Zr*</i>	<i>La</i>	<i>Ce</i>	<i>Nd</i>	<i>Sm</i>	<i>Eu</i>	<i>Dy</i>	<i>Yb</i>	<i>Pb</i>	<i>Zn</i>	<i>Co</i>
V0825	412	112	20	84	28	19	158	179	18	104	26	54	25.34	4.433	0.9888	3	2.1	932.2100573	65	10
V0826	359	74	24	101	101	13	176	112	22	79	32	87	37.42	7.599	1.5464	3.8	1.8	80.78090045	74	20
V0827	486	116	37	67	67	15	154	155	23	78	36	72	40.78	7.214	1.3704	3.6	2.2	221.1461702	109	16
V0828	514	90	31	64	67	12	179	134	21	69	30	62	30.92	5.802	1.2672	3.8	2	82.73107976	112	15
V0829	498	97	34	57	78	13	173	142	24	79	32	65	31.94	6.046	1.4056	3.8	2.2	79.75650022	108	19
V0830	348	114	30	88	73	15	142	147	26	79	38	73	37.56	7.047	1.4792	4.1	2.3	227.5744298	118	17
V0831	642	106	38	59	54	13	271	147	22	76	30	59	27.86	5.438	1.2768	3.4	2	168.2292384	113	14
V0832	381	114	29	87	67	14	128	157	24	70	36	70	36.96	6.833	1.2288	3.8	2	72.99357981	99	14
V0833	392	93	30	64	57	12	162	127	24	70	32	68	36.12	6.744	1.3784	3.6	2	96.6493043	109	14
V0834	361	117	39	109	78	15	117	147	24	82	37	73	40.44	6.648	1.5328	3.8	2.1	5071.42145	107	21
V0835	494	57	23	91	64	11	311	77	20	58	28	63	32.91	4.995	0.952	3.5	1.4	115.5329084	72	18
V0836	524	98	34	70	74	13	150	123	23	73	32	63	31.66	6.085	1.116	3.7	2	63.29775578	96	20
V0837	689	94	34	61	50	12	253	107	21	68	30	60	36.46	5.683	1.3688	3.2	1.8	649.6428601	90	11
V0838	510	89	24	77	53	13	167	111	24	70	36	66	35.96	6.697	1.3192	3.5	1.9	60.23819731	90	15
V0839	343	80	190	76	41	10	107	82	22	60	32	62	32.69	5.486	1.2696	3.2	1.6	232.476738	66	11
V0840	405	76	29	53	50	11	169	113	19	63	28	59	32.53	5.342	1.1312	2.8	1.6	217.8478695	109	12
V0841	376	83	36	54	48	11	227	103	20	60	27	56	32.67	5.016	1.1776	2.9	1.5	97.2445211	110	10
V0842	364	110	30	70	58	14	132	140	25	71	33	67	36.19	6.491	1.2976	3.6	2	1478.74293	107	15
V0843	472	93	24	52	36	12	248	134	17	89	28	54	25.46	4.939	1.1704	2.3	1.5	59.38806052	108	12
V0844	435	114	33	74	58	14	165	143	22	69	31	58	32.37	5.545	1.152	3.3	1.8	2965.107638	96	13
V0845	470	85	22	55	33	12	200	114	16	86	27	54	26.63	3.988	0.8168	2.4	1.5	57.01778715	91	15
V0846	365	103	21	76	38	13	168	142	19	92	33	67	34.52	5.752	1.2072	2.7	1.7	43.876798	108	14
V0847	412	101	22	91	56	14	166	142	22	91	39	80	40.11	6.766	1.3576	3.6	1.9	47.51288944	113	19
V0848	392	112	29	94	72	15	142	146	31	74	38	74	39.31	6.787	1.4632	4.2	2.2	152.1493096	113	16
V0849	630	95	40	54	67	12	241	120	22	68	30	61	36.88	5.31	1.276	3.1	1.8	53.36649763	125	15
V0850	529	103	42	69	61	13	246	130	23	73	30	59	35.83	5.315	1.424	3.2	1.9	44.63514826	112	11
V0851	497	71	23	58	41	10	180	85	18	59	28	56	33.26	4.521	1.3056	2.9	1.4	50.65932988	97	14
V0852	340	111	19	100	49	13	141	151	20	85	34	67	35.71	5.975	1.36	3.4	1.9	51.68749845	106	18
V0853	273	83	21	65	44	10	164	76	22	53	31	57	34.86	5.949	1.2664	3.2	1.5	237.8906345	65	11
V0874	338	94	37	57	45	12	142	110	18	52	31	53	24.18	5.333	1	3.3	1.7	121.7611062	89	8
V0875	298	93	225	67	55	12	175	111	21	58	34	57	32.47	5.443	1.4	3.6	2	628.925473	93	9
V0876	368	102	33	80	79	14	107	127	26	58	40	71	33.04	7.083	1.6	4.3	2	350.8472516	105	16
V0877	386	66	21	88	54	11	116	79	16	58	29	66	20.315	5.342	1	3	1.4	102.3498119	67	24
V0878	323	102	36	50	50	13	208	118	20	56	33	62	25.67	5.467	1.3	3.7	1.9	55.75567067	120	9
V0901	367	130	25	52	26	17	147	149	16	119	50	76	34.52	5.276	0.9414	2.9	1.8	868.2726455	99	11
V0902	337	109	27	50	31	16	136	128	15	96	46	72	35.69	5.544	1.1066	2.9	1.5	514.5863383	142	11
V0903	333	121	26	48	25	17	146	144	14	107	50	74	37.25	5.476	1.0114	2.8	1.6	822.9540278	74	8
V0904	344	108	25	43	20	15	116	124	13	102	41	64	24.96	4.58	1.027	2.4	1.5	953.0281329	67	7
V0905	349	91	24	47	29	12	118	99	14	81	38	64	30.33	4.6	0.985	2.8	1.5	814.7242951	86	12
V0906	297	106	25	45	31	14	149	132	20	87	43	67	40.79	6.304	1.2556	3.4	1.8	271.0607826	90	10
V0907	371	130	36	62	36	18	149	113	17	69	51	81	43.99	5.844	1.3466	2.9	1.7	474.8379418	103	9
V0908	355	113	27	52	27	17	111	132	17	101	47	70	31.37	4.796	1.0694	3.4	1.8	1246.516367	101	12
V0909	310	107	32	53	27	15	137	125	21	106	46	71	42.19	6.28	1.097	3.5	1.9	3195.215134	172	13
V0910	289	102	27	48	27	14	129	123	15	83	43	65	33.91	5.392	0.9538	2.8	1.5	810.0459678	119	10

Table 11 ICPS data for minor and trace elements (ppm)

Appendix 2: Relevant Collections

<i>Parish</i>	<i>Site Name/ Findspot</i>	<i>Material Held By</i>	<i>Type of Collection</i>	<i>Assessment Type/ Notes</i>	<i>Publication (see main Bibliography)</i>
Abbots Ripton	Parsonage	CCC (Landbeach)	Eval	Spot-dating	
Abington Piggotts		CUMAA	Ex	Boxes scanned	
Aldreth		CUMAA	CF	Vessels recorded	
Barrington	Challis Green	CCC (Landbeach)	Eval	Spot-dating	
Barton	Moats	CUMAA	Ex	Report and boxes scanned, vessels recorded	Walker 1908
Burwell	Castle	CUMAA	Ex	Boxes scanned	
Cambridge	Barnwell	CUMAA	CF	Vessels recorded	
Cambridge	Barton Rd	CUMAA	CF	Vessels recorded	
Cambridge	Bene't St	CUMAA	Ex	Boxes scanned	
Cambridge	Bene't St/Market	CAU	Ex	Ely ware mentioned	Edwards and Hall 1997
Cambridge	Brazen George Yard	CUMAA	CF	Vessels recorded	
Cambridge	Bridge St	CUMAA	Ex	Partially scanned	
Cambridge	Downing Site	CUMAA	Ex/CF	Bags checked, vessels recorded	
Cambridge	Emmanuel College 1993	CCC (Landbeach)	Ex	Mostly later, but some MEL including jar profile	
Cambridge	Emmanuel St	CUMAA	CF	Vessels recorded	
Cambridge	Free School Lane	CUMAA	Ex	Boxes scanned	
Cambridge	Jesus College	CAU	Ex	Reports assessed	
Cambridge	Jesus Lane	CUMAA	CF	Vessels recorded	
Cambridge	King's College	CUMAA	Ex	Vessels recorded and boxes scanned	
Cambridge	King's Ditch	CUMAA	Early ex	Boxes scanned	
Cambridge	Market Hill (and around)	CUMAA	Ex		Addyman and Biddle 1965
Cambridge	Market Place	CUMAA	Ex/CF	Vessels recorded and boxes scanned	
Cambridge	Mill Lane	CUMAA	Ex/CF	Vessels recorded and boxes scanned	
Cambridge	Pembroke College	CUMAA	CF	Vessels recorded	
Cambridge	Rose Crescent	CUMAA		Vessels recorded	
Cambridge	Sidney St	CUMAA	Ex	Vessels recorded and boxes scanned	
Cambridge	St Andrew's St	CUMAA	CF	Vessels recorded	
Cambridge	St Edwards Passage	CUMAA	CF	Vessels recorded	
Cambridge	St Johns College	CUMAA	CF	Vessels recorded and boxes scanned	
Cambridge	St Johns College	CCC (Landbeach)	Ex	A little MEL	
Cambridge	Thompson's Lane	CCC (Landbeach)	Ex	Includes MEL jars and bowls	
Cambridge	Trinity St	CUMAA		Vessels recorded	
Castle Camps	Survey	CCC (Landbeach)	Fieldwalking	Spot-dating	
Castor	Potovens	PMAG	Ex	Boxes scanned	
Caxton	Firs Farm	CAM ARC	Ex	Analysed	
Cherry Hinton	Coldhams Lane	CUMAA		Vessels recorded	
Colne	Old Church Lane Kiln	CCC (Landbeach)	Ex	Part assemblage studied	
Comberton		CUMAA	CF/Ex	Boxes scanned	
Cottenham	Denmark Road	CCC (Landbeach)	Eval	Spot-dating	
Earith		CUMAA	CF	Vessels recorded	
Earith		Norris Museum	Ex	Boxes scanned	
Ellington	Moat	Other	Ex		Tebbutt <i>et al</i> 1971
Elm		WFM	CF	Vessels recorded	
Ely	Broad Street 1984	CCC (Landbeach)	Ex/obs	Boxes scanned	

Ely	Forehill	CAU	Ex		Hall 2003
Ely	Jubilee Terrace	CAM ARC	Ex	Analysed	
Ely	Lisle Lane	CAM ARC	Ex	Analysed	
Ely	Other small sites	CAM ARC	Eval	Various spot-dating	
Ely	Potters Lane	CAM ARC	Ex	Analysed	This volume
Ely	Various	CCC (Landbeach)	Obs	Boxes scanned	
Ely	White Hart	Other	Ex		Jones 1993
Emneth		WFM	CF	Vessels recorded	
Fen Ditton		CUMAA		Vessels recorded	
Fordham		CUMAA	CF/Ex	Boxes scanned	
Fordham	Hillside Meadows	Other	Ex		Ratkai forthcoming
Fowlmere		Other	Ex		Murphy 1977
Hardwick	Moat	Other	Ex		Haselgrove 1984
Hauxton	Mill	CUMAA	CF	Vessels recorded	
Hinxton	Hall	CAM ARC	Ex	Analysed	
Houghton		Norris Museum	Ex	Boxes scanned	
Huntingdon	Castle 1974	CCC (Landbeach)	Ex	Boxes scanned	
Huntingdon	Orchard Lane	CAM ARC	Ex	Analysed	
Huntingdon	St Clements Passage	CAM ARC	Ex	Analysed	
Huntingdon	St Germain St	CAM ARC	Ex	Analysed	
Huntingdon	St Marys 1974	CCC (Landbeach)	Ex	Boxes scanned	
Huntingdon	Stukeley Road	CAM ARC	Ex	Analysed	
Huntingdon	Various small sites	CAM ARC	Eval and Obs	Spot-dating records	
King's Lynn	Various	Other	Ex	Lynn Museum collections from excav. volume	Clarke and Carter 1977
Landbeach	Herne's Croft	CUMAA	Ex	Boxes scanned	
Leverington		WFM	CF	Vessels recorded	
Maxey	Mill Lane	CAM ARC	Ex	Analysed	
Meldreth	Flambard's Manor	CUMAA	Ex	Boxes scanned, vessels recorded	
Needham Bank		WFM	CF	Vessels recorded	
Orton Longueville	Botolph Bridge	CAM ARC	Ex	Analysed	
Parson Drove	Site 15	Other	Ex	Drafts for forthcoming publication	Lucas forthcoming
Peterborough	Bridge St	PMAG	Ex	Boxes scanned and report analysed	
Peterborough	The Still	PMAG	Ex	Analysed	Spoerry and Hinman 1998
Ramsey	Abbey	CAM ARC	Various ex and eval	Analysed	Fletcher and Spoerry forthcoming a
Soham	Various	CAM ARC	evals	Spot-dating	
Spalding River		WFM	CF	Vessels recorded	
Spaldwick	Thrapston Road	CCC (Landbeach)	Ex	Analysed	
St Ives	East Street	CCC (Landbeach)	Eval	Spot-dating	
St Neots	Market Place	Norris Museum	Ex	Boxes scanned	Tebbutt 1956
St Neots	Priory	Norris Museum	Ex	Boxes scanned	Tebbutt 1966
St Neots	Various sites	CUMAA	Ex	Boxes scanned	
Stamford	Castle	CUMAA	Ex	Bags scanned	
Stratton (Beds)		Other	Ex	Examples noted by A Slowikowski	
Stretham	Rectory	CCC (Landbeach)	Ex	Report and boxes scanned	Horton and Lucas 1990
Swaffham Bulbeck	Abbey	CCC (Landbeach)	Ex	Spot-dating	
Swavesey	School Lane/Black Horse Lane	CAM ARC	Ex	Analysed	
Teversham	Pembroke Farm	CCC (Landbeach)	Eval	Spot-dating	
Tydd St Giles		WFM	CF	Vessels recorded	
Upwell		WFM	CF	Vessels recorded	
Water Newton	Manor	Norris Museum	Ex	Boxes scanned	
Wereham	Pipeline (Norfolk)	CAM ARC	Ex	Analysed	

Whittlesey	Mere	CUMAA		Vessels recorded	
Whittlesey	Mere	PMAG	CF	Vessels recorded	
Whittlesford	Well	Fitzwilliam Museum	CF	One whole pot from a well	
Wicken		CUMAA	CF	Bags scanned	
Wimblington	Bridge Lane	CCC (Landbeach)	Eval	Spot-dating	
Wintringham	Moat	CUMAA	Ex		Beresford 1977
Wisbech	Market Mews	CAM ARC	Ex	Analysed	Hinman and Shepherd Popescu in prep.
Wisbech Town	Various sites	WFM	Ex and CF	Boxes scanned and vessels recorded	
Woodhurst		Norris Museum	Ex	Boxes scanned	

CF = chance finds

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