

Computing the DUA pottery

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Introduction

RESEARCH ON THE POTTERY recovered from excavations in the City of London over the last 10 years has perhaps been the best-funded in Britain. However, until late 1981 it appeared that, despite a staff of six working full-time on the Roman and later ceramics, there was very little prospect of progress on the research and publication of a huge backlog of excavated pottery while at the same time material was being recovered from current excavations in ever increasing quantities.

From the end of 1981 onwards this situation has been dramatically overturned. Not only is progress on the publication of pottery from 'backlog' sites now continuing apace, but also the material recovered from current excavations is being catalogued in detail. Visiting specialists to the Museum of London may now retrieve pottery from current sites by suggested date, 'common name' or vessel form.

This reason for this improvement in performance is not to be found in any increase in staff or funding, but rather lies in the wholehearted adoption of 'new technology' in the form of a mini-computer and several micro-computers, and a consequent re-examination of priorities in publication and research.

The method of recording of pottery that has been devised after about 6 months experimentation and refining, some of the immediate benefits of this system and the potential that is now within reach are described below.

Spot dating

Because of the considerable time-lag between excavation of a site and study of the finds, a lag that by 1981 was in danger of becoming infinite, a system of 'spot-dating' was devised by the D.U.A. All of the pottery found during excavation was examined and given a date. Amongst other things, this enabled the simple mis-numbering mistakes which are bound to occur during a large operation to be spotted during the course of the excavation while there was still time for the error to be corrected. The level of detail recorded about the pottery differed from site to site and from one pottery

researcher to another and the end result of the 'spot-dating' process was a series of 'provisional pottery dates' and other comments of rather variable quality stored on simple record cards.

Since these 'provisional pottery dates' were often the only contribution of pottery research to the production of interim reports on the current excavations it was felt that they should be more consistent and contain enough information to enable the dating to be revised as more information about the sequence and date of pottery in London accumulates. Therefore, when computerisation arrived it was decided to make improvement of the spot-dating record an immediate priority. The rough size of the group, comments on the condition of the pottery and the earliest and latest dates for the deposition of the group are now recorded, together with a list of pottery codes for all the types found.

Pottery analysis and classification in the D.U.A. is loosely based on the system described elsewhere by Orton¹ and Rhodes². A series of fabric numbers refer to individual sherds in the Polstore collection (now numbering more than 2500 sherds) and most of these numbered fabrics are grouped into more convenient, broader 'common name groups' (e.g. Verulamium Region White wares) which are usually referred to by a three or four letter code (e.g. VRW). Computers cannot make any allowance for uncertainty in the data so any uncertainty has to be built into the coding system. In addition to the 'named' fabric groups a series of 'catch-all' codes have been devised for use with pottery types of unknown origin (e.g. SAND — miscellaneous reduced sand-tempered wares). The spot-dating index from current sites records both 'common name group' and form, the latter referring to broad typological categories (e.g. bowl, flagon, cooking pot etc.) or recognised types series (e.g. Ritterling form 12).

The full value of this computerised spot-dating record is only now becoming apparent. The information is available at the touch of a button so it is possible quickly to print out a list of all the pottery in a particular stratigraphic phase. Work is progressing on the complete automation of this process,

1. Orton, C. R. 'Studying the City's pottery', *London Archaeol* 3 (1977), 100-104.

2. Rhodes, M. R. 'A pottery fabric type series for London', *Museums Journal* 76 (1977), 150-152.

so that a site supervisor could assign a period and group number to each context and the computer would then produce lists of all finds, not just pottery, sorted by stratigraphic phase.

After completion of all spot-dating for a site an index can be produced, listing all stratigraphical contexts where a certain fabric or type was present, each with a note of the date and size of the group. Additionally it is possible to produce indices across sites listing all occurrences of a type in the spot-dating record.

Alongside these benefits, which greatly facilitate the production of accurate reports on the results of an excavation, the spot-dating record is now being used for several other purposes. These are best described by reference to five recent examples.

The Museum of London often receives visits or enquiries from specialists in various fields. Three of these visits have benefited from the computerised spot-dating. Cathy Brooks, from the York Archaeological Trust, is in the process of writing an article on the post-medieval sugar-refining industry in Britain. Sugar mould fragments are found in a locally-produced red earthenware, often with a white slip painted on the inside. Together with these moulds, which are quite well-known, collecting jars were used. These vessels have a narrow 'bead rim' and a distinctive foot-ring base. Numerous fragments of these moulds and jars have been seen in material from current excavations but since no work was planned on them for the immediate future they were not especially noted. However, a simple enquiry to the Museum of London mini-computer revealed that not all post-medieval pottery collections had produced sugar-refining vessels. Most fragments had been found on the Billingsgate Lorry Park excavation, in a context which suggested that they had been dumped onto the site immediately after the Great Fire. Other finds were all on sites close to the waterfront, such as the Mermaid Theatre and Miles Lane site³. According to Cathy Brooks the reason for this is that the refining of sugar requires large quantities of water, firstly to soak the moulds and secondly to pour slowly through the sugar to refine it.

Recently, David Whitehouse of the British School at Rome was invited to the Museum of London to examine an unusual glazed sherd found with what was otherwise a 'clean' assemblage of Roman pottery from a waterfront at Swan Lane, found dur-

ing a watching brief by Geoff Egan. We took the opportunity to show Dr. Whitehouse all the medieval sherds of possible Mediterranean origin found in the last year. These included sherds of so-called 'Mediterranean Majolica,' a generic term for medieval wares with a tin-glazed exterior and lead glazed interior which usually have traces of external decoration⁴, Spanish wares⁵ and Alkaline Glazed ware⁶. Dr. Whitehouse was able to confirm our attributions for most of these wares but found that our Alkaline Glazed ware, which we had thought came solely from the eastern Mediterranean, included material from two sources. The first was Syria, or possibly Egypt, and was the source of all of our decorated vessels. However, sherds of green alkaline glazed drug-jars, albarellos, were identified as Mahgrebi ware, from the Mahgreb region of north Africa. The Syrian vessels may well have been imported as souvenirs of the Crusades or of pilgrimages to the Holy Land but the undecorated Mahgrebi ware jars are unlikely to have been imported as souvenirs, and may reflect a trade in oils, spices or some other exotic produce. The huge collection of medieval pottery from Trig Lane only produced a single sherd of Mahgrebi ware, from a late 13th century context, and it is only by searching through all of the pottery from the City that sufficient sherds were discovered to make the identification and date of this type of imported pottery clear.

The recent excavations at Rangoon Street⁷ yielded a rather large number of sherds of Montans ware and micaceous Lezoux, which were noted in the spot-dating record. After the excavation had ceased the relevant context numbers, and records of these fabrics from other sites, were retrieved by the computer. The entire group of these wares from the recently excavated sites could then be compared with the examples from the largely unstratified Museum of London collection. The two assemblages were similar in both date and range of forms.

The computerised spot-dating has also made work within the DUA pottery section more efficient. For example, a recent visit by two of the medieval pottery staff to St. Albans showed that the current programme of excavation in the town, organised by the Verulamium Museum, has revealed a previously unknown facet to the local pottery sequence. It has always been axiomatic that Hertfordshire was a 'backwater' in the development of medieval pottery and from the late 12th to the 14th centuries a coarse, sand-tempered ware, Hertfordshire Reduced

3. DUA excavations directed by P. Herbert and L. Miller (site codes THE 79 and ILA 79).

4. Hurst, J. G. 'Near Eastern and Mediterranean medieval pottery found in North West Europe' *Archaeol Lundenia* III (1968), 195-204.

5. Hurst, J. G. 'Spanish Pottery imported into medieval Britain' *Med Archaeol* 21 (1977), 68-105.

6. Hurst, J. G. in note 4.

7. DUA excavations directed by D. Bowler (site code RAG 82).

ware, was the only type produced in the county. However, the excavations at Chequer Street and other sites in the town have now revealed that in the later medieval period large quantities of glazed pottery of a high quality was being used. A small quantity of this pottery has been found in London, where its similarity to that made in Buckinghamshire and Surrey had been noted although the source was completely unknown⁸ (Fig. 1). The code 'LMU' had been given to this ware, standing for Late Medieval Unknown ware! An interrogation of the Museum of London computer produced a list of contexts producing this ware, together with the estimated date of the context in which it was found. This showed that in London LMU ware is never present before the mid-14th century nor is it often found in association with types datable to the 15th century. This essentially mid- to late 14th century dating is confirmed by an examination of the evidence from Trig Lane, where sherds of LMU are first found in deposits dumped behind revetment G7, dated c.1340 and are extremely rare by the time that the stone wall, G15, was constructed, c.1440⁹. From these two lines of evidence it is clear that the majority of LMU vessels found in London are likely to date to the mid-14th to early 15th centuries. This is a narrower bracket than likely in St. Albans itself and therefore vessels in St. Albans having forms or decoration not found in London may be suggested to lie outside this date range. This evidence can be used in St. Albans and the surrounding area to help to reconstruct the local sequence of late medieval pottery¹⁰.

Quantification

Unlike the 'spot-dating' record, which covers all material from the current sites, full quantification is only performed on more restricted groups, largely those that form the basis of D.O.E. funded projects. These projects are directed towards specific questions on the history of London's pottery and the formation of a corpus of London pottery types. The quantification method employed has been described elsewhere¹¹. The pottery from each context is divided into fabric-groups and the weight of each is recorded, and, where rims are present, the 'vessel equivalent' figure, being the percentage of each rim-circumference, is noted for each form. The quantified record uses the same 'common name' codes as the spot-dating, with the addition of a

fabric number, the vessel equivalents and weight data and reference to an example of the same form and fabric in a drawn corpus.

By using computer programs developed for the D.U.A. the quantified data can be totalled up for all the pottery of a certain fabric or type from a certain context, site-phase or site and the results compared with the data on any combination of pottery types from the same context. Comparisons between assemblages reveals information about changes through time and between different classes of site — these are illustrated here by examples drawn from current work by the Pottery Department.

The rise and fall of particular fabrics or types can be illustrated by comparing the quantified data from sequences of pottery assemblages, either from a single site or across a number of sites, thus facilitating the refinement of the date range of industries or styles. The changing balance between different types or fabrics may prove to be an accurate dating tool, once the sequence is adequately documented and understood.

The recently completed study of medieval 'London-type ware' is a good example of the potential of this type of information.¹² Between the mid-12th century and the mid-14th century London-type ware was one of the most commonly used glazed wares in the City. Changes in the overall percentage of London-type ware with time can be plotted using the material from two waterfront sites, Seal House and Trig Lane. These data shows an early peak in the late 12th century followed by a period of relative stability and then a slow decline in the late 13th to 14th centuries (Fig. 2). The form of many body sherds of London-type ware cannot be identified but the class of vessel to which rimsherds belong is almost always identifiable and within this the precise form can often be shown. For London-type ware the quantified analysis of the Seal House and Trig Lane data shows a succession of jug forms from Early Rounded jugs in the late 12th century, through highly decorated Rouen Style and North French Style jugs in the early to mid-13th century and ending up with plain baluster jugs in the mid-13th to mid-14th centuries. More utilitarian forms sometimes show a similar progression but some, such as dripping dishes, continued to be made without change from their introduction in the early 13th century until the demise of

8. DUA code LMU, Fabric code Sgw 2419.

9. Milne, G. & Milne, C. *Medieval Waterfront development at Trig Lane, London*. London and Middx. Arch. Soc. Special paper No 5 1982.

10. Jenner, M. A. & Vince, A. G. (forthcoming) 'A Dated Type Series of Medieval Pottery from Lon-

don; Part 3. Late Medieval Hertfordshire Glazed ware.' *Trans. London & Middx. Arch. Soc.*

11. Orton, C. R. in note 1.

12. Pearce, J. E. Vince, A. G., Jenner, M. A., Rattray, R. (forthcoming) 'A dated Type Series of Medieval Pottery from London: Part 2. London-type ware.' *Trans. London & Middx. Arch. Soc.*

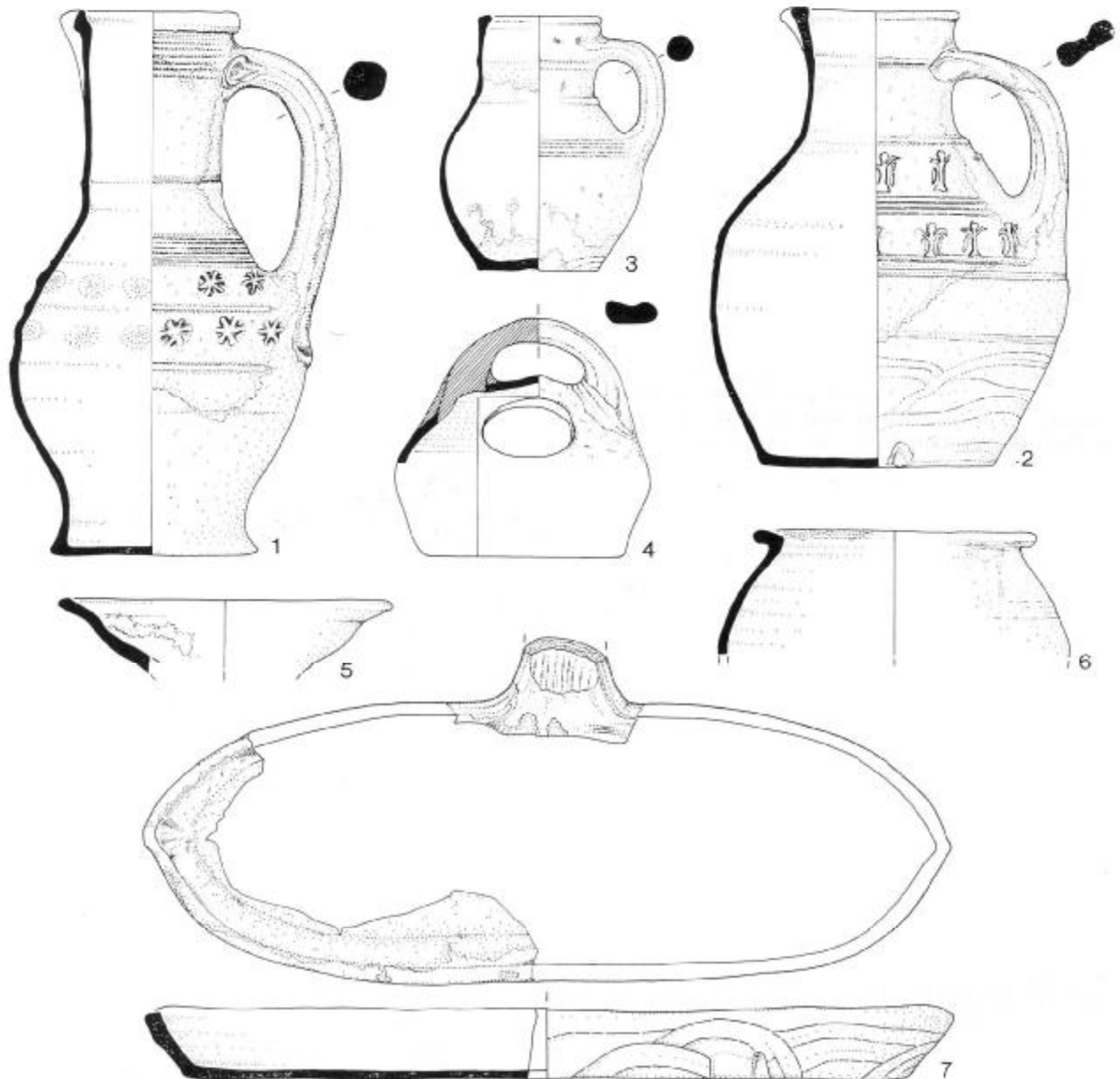


Fig. 1: The principle forms of Late medieval Hertfordshire glazed ware (DUA code: LMU) found in the City of London.

1. Baluster jug
2. Rounded jug
3. Small rounded jug
4. Urinal
5. Bowl
6. Jar or cooking pot
7. Dripping dish

*LOND as a % of All pottery SHTR.MLT

SHW1	0.92	EVE	12.9%	*****
SHW2	0.91	EVE	26.5%	*****
SHW3	3.32	EVE	34.1%	*****
SHW4	10.93	EVE	53.8%	*****
TLG2TOT	8.46	EVE	34.9%	*****
TLG3TOT	5.41	EVE	27.1%	*****
TLG7TOT	1.88	EVE	11.5%	*****
TLG10TOT	0.88	EVE	4.2%	**
TLG11	0.71	EVE	1.0%	*
TLG12	0.77	EVE	9.1%	*****
TLG15TOT	1.85	EVE	2.0%	*

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 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
 Data from B:SHTR.FIL using MPDTF.BLK Last updated: 200583

Fig. 2: Histogram illustrating the relative frequency of London-type ware by Estimated Vessel Equivalents from the Seal House and Trig Lane revetment dump assemblages.

the industry in the mid-14th century (Fig. 3). It is now possible to use London-type ware to date 12th to 14th century pottery assemblages with considerable accuracy. This is not just useful for archaeology in the City itself. A recent visit to Aberdeen for the annual Medieval Pottery Research Group conference showed that late 12th to mid-13th century assemblages at most ports in eastern Scotland contain large quantities of London-type ware, presumably evidence of a direct London-Scotland pottery trade. The dated sequence of pottery types worked out in the City of London can now therefore be used even on sites as distant as Perth and Aberdeen.

Other longer-term changes in the nature of the London pottery assemblage can be illustrated by the data. In the Roman period the balance between the number of jars and bowls alters throughout the

first and second centuries A.D. (Fig. 4). Bowls are rare in Neronian deposits (a bowl: jar ratio of about 1:9) but become increasingly common during the second century A.D. (a ratio of about 1:2 in the Antonine period). This may reflect some change in culinary habits which could perhaps be tested by examining deposits on the inside or outside of pots from excavations.

Similarly the London sequence suggests that amphorae of any type are less common in occupation deposits of the second century than the first. Amphorae of all types form about 40% (by weight) of the pottery in Neronian assemblages, but only some 20% of Antonine groups. This may suggest that amphora-borne commodities were in less common usage in the later period or it could simply be that in the rather more crowded conditions of the second century city rubbish-disposal was rather

*JUG-ROUEN as a % of All except Other LOND.MLT

SHW1	0.00	EVE	0.0%
SHW2	0.00	EVE	0.0%
SHW3	1.46	EVE	43.3% *****
SHW4	0.44	EVE	4.0% **
TLG2TOT	0.00	EVE	0.0%
TLG3TOT	0.00	EVE	0.0%
TLG7TOT	0.00	EVE	0.0%
TLG10TOT	0.00	EVE	0.0%
TLG11	0.00	EVE	0.0%
TLG12	0.00	EVE	0.0%
TLG15TOT	0.00	EVE	0.0%

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 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
 Data from B:SHTR.FIL using LONDFT.BLK Last updated: 200583

Fig. 3: Histogram illustrating the relative frequency of London-type ware Rouen-style jugs by Estimated Vessel Equivalents from the Seal House and Trig Lane revetment assemblages (compare with Fig. 2)

*BOWLS as a % of *BOWLS *JARS

GP01-8/T.MLT

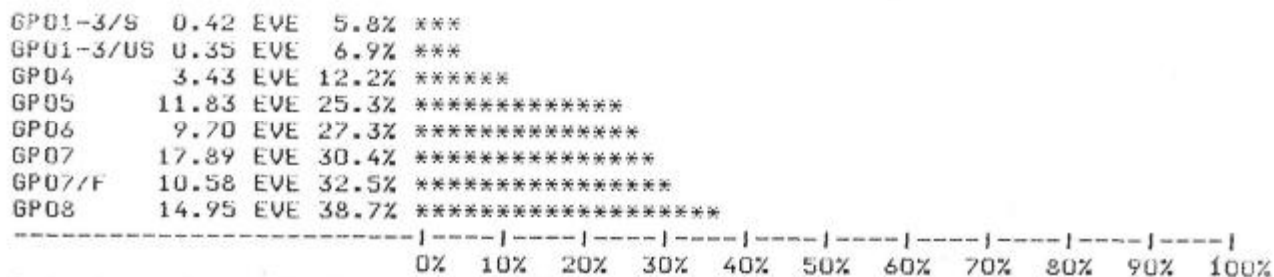


Fig. 4 Histogram illustrating the bowl : jar ratio in early Roman assemblages from the General Post Office Site.

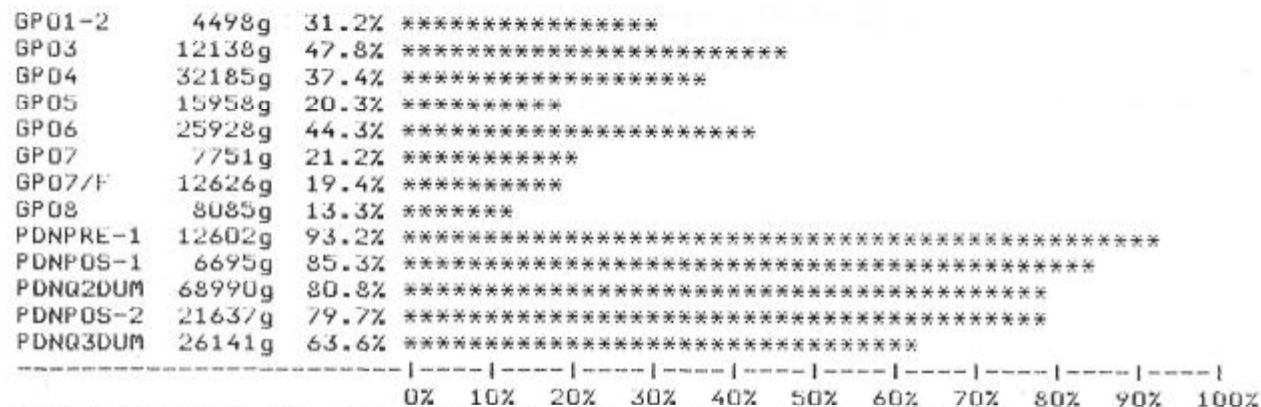
more organised and many of the larger amphora sherds were removed from occupation areas and dumped elsewhere (Fig. 5).

In addition to these chronological patterns the data can be used to demonstrate differences of function between groups from different parts of the City. The assemblages from the quays of the first and second century A.D. stand out particularly sharply. The waterfront assemblages from Pudding Lane include a significantly higher proportion of amphorae than contemporary deposits on domestic sites and the range of amphora types present is also different. Presumably the pottery from the early Roman quays reflects a more specifically 'mercantile' or 'commercial' activities which are not generally represented in domestic assem-

blages (Fig 5).

However the same type of pattern is not apparent in the pottery from waterfront assemblages of the later third and fourth centuries A.D., or those of the medieval period. The large dumps of early 14th century pottery from Copthall Avenue and Ludgate are almost identical to those from the contemporary waterfront dump at Trig Lane and do not reflect a different range of activities. The domestic assemblages from different parts of the medieval or Roman city do not appear to vary in any way, although this, and the more general problems of 'functional' variation, require further study and analysis, which will be greatly assisted by the quick and easy accessibility of quantified data now available from the computer system.

*AMPH as a % of All pottery GP0/PDN.MLT



GP01-3 = pre-Boudiccan	PDNPRE-1 = c. A.D.50
GP04-7 = A.D. 60-120	PDNQ2DUM = c. A.D.70
GP07/F = Hadrianic fire	PDNQ3DUM = c. A.D.100
GP08 = Early Antonine	

Fig. 5: Histogram illustrating the quantity of amphorae sherds by weight as a proportion of the total assemblage of pottery from the General Post Office and Pudding Lane sites.

Books

Martin's Hundred by Ivor Noel Hume. London, Gollancz, 1982; 343pp, £11.95 hardback.

THREE YEARS AGO Ivor Noel Hume's team of archaeologists at Colonial Williamsburg, Virginia, completed the excavation of one of America's most important early colonial sites. *Martin's Hundred* is the story of the excavation, and gives the main results of the project to date. Briefly, it deserves to become a classic, and can be warmly recommended to amateur and professional archaeologists alike, and (since Noel Hume's style rarely fails him) to readers at large who enjoy the past.

It would be unfair to give away too much of the story (and worse still to reveal the research done by Mrs Chapman of Letchworth), but in the absence of a subtitle prospective readers will wish to know something about the 'Hundred.' Martin's Hundred was one of the earliest plantations along the coast of Virginia, planned complete with a fortified administrative centre, 'Wolstenholme Towne,' from the Virginia Company's headquarters in London. It was settled in 1619, but in 1622 the Indian uprising killed 78 of the inhabitants, destroyed the town, and drastically weakened a community which already had a fearfully high mortality rate. A settlement continued, but by the mid-18th century the land was concentrated into the hands of one Carter Burwell, who built an impos-

ing mansion near the forgotten site of the original township.

This is where we begin. The definitive site report (still in preparation) will no doubt begin in 1619 and move on to the 1750s. *Martin's Hundred*, however, succeeds so well as a book because it casts hindsight aside and tells the story of an excavation. The Williamsburg archaeologists began by looking for the relatively mundane outbuildings of the 18th century mansion. Instead, they found signs of 17th century occupation at all points of the compass, eventually identifying Wolstenholme Towne itself. Their excavation of the butchered and burnt remains of the 1622 rising, and their reconstruction of the life and death of the town are quite remarkable feats of archaeological and documentary detection.

Why dig on a site a mere 360 years old, already known from some surviving documentary records? *Martin's Hundred* supplies the answers. Not only was a wealth of information recovered concerning material details, but the whole appearance of an English 17th century 'plantation' was reconstructed—as the colour endpapers show—and its similarity to the Ulster plantations demonstrated. Previously the term 'plantation' was very much an abstraction used by historians who thought little about its physical reality; as a result of the Wolstenholme

(continued from p304)

Future work

For the future there is a need for a body of comparative data from other sites, both in the immediate London area and elsewhere in the country. London's status as an early Roman port and administrative centre may be reflected in the pottery assemblages of the first century A.D., perhaps by a larger proportion of imports or finewares. Another aspect of pottery studies, the analysis of the distribution patterns of known kiln sites would also be facilitated, particularly the analysis of the distributions of different products of the same site.

Comparison of large assemblages of dumped medieval pottery has failed to reveal large functional differences. If they are to be found in the medieval period it may be by comparing the contents of contemporary pits, which yield pottery used in the same household, rather than the broader site-to-site comparison which yields some results with Roman material. Even the absence of differences between

medieval pottery assemblages may be significant for the archaeology of the medieval City. It may be that the range of wealth and trading activities across the City was genuinely less clearly topographically differentiated in the medieval period than it was either earlier, in the Roman period, or later, in the post-medieval period.

It is clear from a single year's work that the system of computerised recording now in use in the pottery section of the Department of Urban Archaeology has benefits for the work of excavators not only within the department but also as far away as eastern Scotland. The use of pottery for quick, accurate dating of the layers within an excavation, so often held as an ideal, is now practical.

Of even greater importance, however, is the contribution which the pottery section can now make to the study of the past economy and sociology of the City. A wealth of potential information has been recovered from the ground since the foundation of the DUA in 1973 and by the use of computers this potential is being turned into a reality.